Determinants of youth education and employment status decisions in a contexto f vulnerability and poverty: the case of NINIs and SISIs in Lima Sur

ABSTRACT

This paper seeks to define the determinants of youth educational and employment status decisions in contexts of high poverty and vulnerability. We estimate nonlinear multinomial logistic regression model with an unordered dependent variable while using data of youngsters from Lima Sur compiled in INEI's 2017 Census data base. The results show that cohabiting, a head of household with higher education, having a private insurance, internet availability, being a woman, and living in a single-parent household all have significant effects over the youngster's education and work decisions.

Key words: youth, education, work, NINI, SISI, Lima Sur.

INTRODUCTION

In recent decades, the occupation conditions of young people have become increasingly relevant at the academic, social and political levels. Hence, Sustainable Development Goal 8 has proposed, by 2020, the reduction of the proportion of youngseters not employed and not in education and/or training (UN, 2015). Despite this, official statistics have not formalized an adequate categorization for these groups (Elder, 2015; Negrete and Leyva, 2013). This prevents the formulation of approaches that allow taking advantage of certain potentialities, such as the so-called demographic bonus (ILO, 2019), or correcting deficiencies, such as closing educational or gender gaps (UNICEF, 2018; Tavera et al, 2017; de Hoyos et al, 2016; León and Sugimaru, 2013; Chacaltana and Ruiz, 2012, Ñopo et al, 2002; Saavedra and Chacaltana, 2001).

The different classifications of the occupation conditions of young people can be understood within the school-to-work transition process and are usually classified based on combinations of study status, employment status and disposition towards job search (Furlong et al, 2006; ECLAC 2017). Following the classification proposed by the

Peruvian Ministry of Labor and Employment Promotion (MTPE, 2018), this paper considers four conditions[1]: Studying and not working (only studying), studying, and working at the same time (SISI), not studying but working (only working)[2] and neither studying nor working (NINI).

The occupational decisions of young people are usually related to individual characteristics, family characteristics, and socioeconomic characteristics, and the institutional environment that surrounds them (ILO, 2022; ILO, 2019; Ng and Feldman, 2007). However, due to the eclectic definition of transition systems (Rafe, 2008) few papers investigate the determinants of the entire school-to-work transition process. Instead, the literature concentrates its attention on the various variants of the definition of the term NINI and more recently, and less frequently, on the term SISI. This is because the former constitutes the most vulnerable group of young people as they see their human capital accumulation process limited while their transition to the labor market is completed (de Hoyos et al. 2016) and the latter includes those who face challenges that could favor the acquisition of skills and knowledge (Dedehouanou et al, 2022).

In general, the importance of research on the occupation conditions of young people lies in the fact that the accumulation of human capital of these generations will affect the future productivity of a society and with it the future living and welfare conditions (Hanushek and Woessmann, 2008). Moreover, particularly young people are responsible for the reduction of the intergenerational economic gap, social and economic mobility, poverty reduction, and long-term economic growth (Buitrón et al., 2018; de Hoyos et al., 2016; Ferreira et al., 2013; Vakis et al., 2015). Finally, focusing this analysis on contexts of vulnerability and high levels of poverty can help to identify specific policy proposals for these types of contexts aimed at closing economic and social gaps (ILO, 2020; ILO, 2015) that need to be addressed, with special emphasis on developing countries.

Within this framework, this study focuses on the population of Lima Sur (LS), a subregion of Metropolitan Lima (LM) composed of eleven districts on the southern periphery of the metropolis. This space is relevant because it comprises 32.5% of the surface area (850.50

[1] For other classifications see León and Sugimaru (2013), ECLAC (2017), Tavera et al. (2017), Alcázar et al. (2018).

[2] With respect to the complete transition from school to work, it is considered that the largest proportion of youth in the only working category are in precarious jobs and a considerable proportion are youth in the skill accumulation stage, in that sense, despite being working-only we consider all youth in the transition process and none with the transition completed.

km2) and 20% of the total population (1.7 million inhabitants) of LM (INEI, 2019). At the socioeconomic level, the districts of LS show intra-district levels of poverty ranging between 15% and 25% (INEI, 2020). In this sense, LS is characterized by developing districts in process of consolidation, usually occupied by population living in poverty or economic vulnerability conditions (Carrillo et al., 2019).

A first look at the data on youngsters between 18 and 25 years of age living in LS is shown in Table 1. This population group is made up of 240,793 youngsters from which 19% (45 536 people) neither study nor work (NINI), 25% (60 772 people) only study, 39% (93 947 people) only work, and 17% (40 484 people) study and work at the same time (SISI). This distribution highlights the significant proportion of the SISI and NINI groups. NINI's proportion equals the proportion of young NINIs in the 15-24 age group in Latin America and the Caribbean, which reaches 20.3% (de Hoyos et al., 2016).

Table 1. Lima Sur: population, aged 18 to 25 years old, by sex, and educational and employment status, 2017.

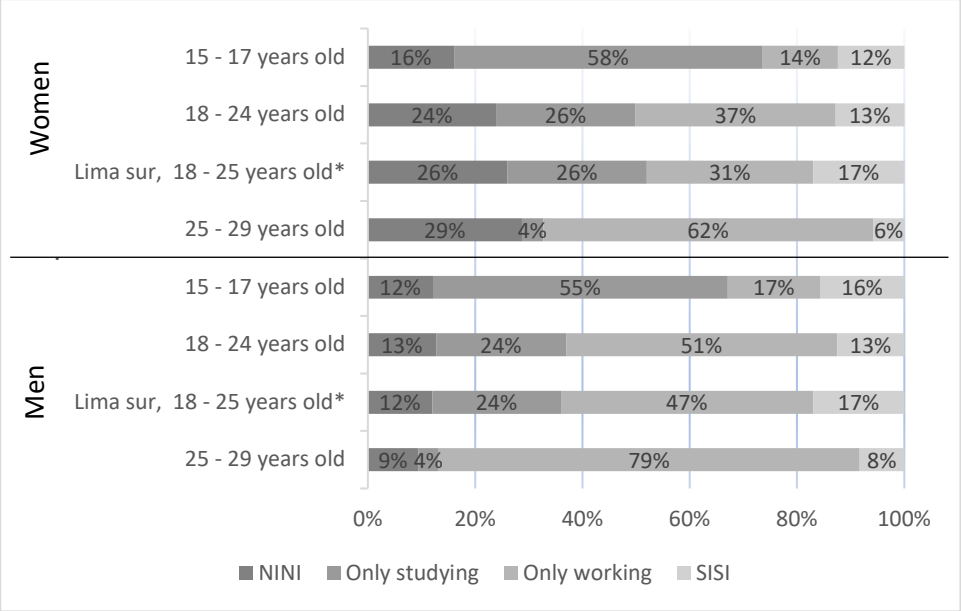
Condition	Man (%).	Woman (%).	Total	
			Frec.	Porc.
NINI	14'074 (0,31)	31'462 (0,69)	45'536 (1,00)	0,19
Only study	28'832 (0,47)	31'940 (0,53)	60'772 (1,00)	0,25
Only work	56'230 (0,60)	37'717 (0,40)	93'947 (1,00)	0,39
SISI	20'265 (0,50)	20'219 (0,50)	40'484 (1,00)	0,17
Total	119'401 (0,50)	121'338 (0,50)	240'739 (1,00)	1,00

Source: Instituto Nacional de Estadística e Informática - INEI (2017).
Authors' elaboration

When a comparison is made between the distribution by occupational status of the young population at the national level with respect to LS, no considerable differences are found.

Figure 1 shows the estimates made by the Peruvian Ministry of Labor and Employment Promotion (2018) combined with data for youngsters between 18 and 25 years old in LS. It is observed that the data at the national level shows proportions quite like those of LS when it comes to the NINI and only studying groups. For the only working and working and studying at the same time (SISI) categories, it is shown that in LS the proportion of young people who only work, for both sexes, is lower than that at the national level, and the difference translates into a greater presence of SISI youngsters. It also highlights that the distribution by occupation status is different for each sex. Compares to men, there is a greater presence of NINI and a lower presence only working youngsters in the group of women. This evidence the existence of gender gaps in the labor market and in the access to higher education, based on the social roles described in the literature (León & Sugimaru, 2013; Alcázar et al., 2018; Málaga et al, 2014).

Figure 1. Youth population, by occupation status, age and sex, at national and Lima Sur level.



Source: Instituto Nacional de Estadística e Informática – INEI (2018) Ministry of Labor and Employment Promotion – MTPE (2018).

Authors' elaboration.

Considering all the above, this paper aims to identify the determinants that influence the youth educational and employment status decisions in contexts of high poverty and vulnerability. That is, the factors that influence the decision of young people not to study nor work (NINI), to only study, to only work, and to study and work at the same time (SISI). For this purpose, we analyze the case of youngsters aged between 18 and 25 years of age in the peripheral subregion of Lima Sur. This way, we intend to give answers to the question: What factors determine 18 to 25 years old LS youngsters' decision on their studying and working status. It is hypothesized that individual and family factors have the strongest effects on this decision.

The layout of this document is as follows. First, a conceptual framework is presented to delimit and define the concepts on which the analysis of youth employment and educational conditions are based. Subsequently, the national and international literature on the determinants of these employment conditions is reviewed in the Literature Review section. Then, the methodology and empirical strategy employed are presented in the Methodology section. Next, the results obtained from the estimations of the proposed model are showed in the Results section. Finally, conclusions and policy recommendations are presented.

CONCEPTUAL FRAMEWORK

The groups according to occupation status can be studied within the framework that addresses the transition between the education system to the labor market (ECLAC, 2017). Through this, this transition process is catalogued as complete when the young person finds the first stable job and feels that it provides personal satisfaction. During this process, it is possible to be a student or not. Additionally, as detailed by Ng and Feldman (2007), there are many perspectives regarding the definition of a successful "school-to-work transition" and the criteria to choose from can be objective (e.g., employment versus unemployment, job performance ratings, or productivity or income levels) or subjective (job attitudes, job satisfaction, stress levels, and perceptions of job fit). The authors define school-to-work transition success as a state in which individuals are employed after leaving school, perform at levels acceptable to their employers, and have positive attitudes toward their work environments and job requirements (Ng and Feldman, 2007).

For its part, UNICEF (2019) considers school-to-work transition and employability as two interrelated concepts and distinguishes two stages in the transition process: The process of preparing young people for the transition and the process of making the actual transition. In the former, young people primarily acquire skills and competencies that the labor market demands and match them to their aspirations and aptitudes, and in the latter, young people access job opportunities that make effective use of their skills. In this regard, Ng and Feldman (2007) highlight the importance of role identity on the results of the transition process: Depending on the roles assumed and with which both young individuals and institutions or organizations identify themselves, the transition from school to work will achieve an optimal result or not. The more the demand for the skills required by the labor market and the availability for the acquisition of these skills by the young people have, the more successful the transition process from school to linear work will be (UNICEF, 2019a).

An additional characteristic regarding the school-to-work transition process is that this process is not linear (UNICEF, 2019a) and the life trajectories of young people can be affected by different factors that can delay or slow down the transition time from the adoption of skills and competencies to the insertion in a decent and productive job. Even the stability of the trajectory can be affected by factors such as immigration status or educational attainment that can result in precarious trajectories (Verd et al., 2019; Carbonell and Simó, 2022).

Finally, some estimates on the duration of the school-to-work transition indicate that on average in Latin America and the Caribbean this process lasts 6 years, in contrast to the 2.7 years estimated for the European Union (ECLAC/ILO, 2017 p.18). In addition, there are clear differences according to gender, the age at which they left school and whether they worked and studied at the same time at some point. It is worth noting that in all Latin American countries' women have a higher average duration than men, and in Peru this difference is one of the lowest: 4 years for men and 6.9 years for women (Gontero and Weller, 2015).

In this paper, following Leon and Sugimaru (2013), we study young people between 18- and 25-years old living in southern Lima who have not yet completed the process of

transition to the labor market[3]. They can be classified into four groups: young people who neither study nor work (NINI), young people who study but do not work (only study), young people who study and work (SISI) and young people who do not study but work (only work) (Figure 2). Buitron, et al. (2018) indicate that the decision of young people to belong to a particular group does not depend entirely on their individual will, but is influenced by family and demographic factors.

LITERATURE REVIEW

There is a large literature on the determinants of the study and employment status of young people. In general, the works border the literature on human capital (UNICEF, 2019), educational supply and demand (Saavedra and Chacaltana, 2001), labor market access (Gontero and Weller, 2015), human expectations and motivations (Ng and Feldman, 2007), economic growth and informality (Castro et al., 2008), among others. Attempts to consolidate a single literature under the name "school-to-work transition" remain unfruitful in the academic field (Behrman et al., 2015). Despite this, a large number of works have been developed identifying the most significant and determining factors on the condition of being NINI or some of its variants and more recently the condition of being SISI. The review presented in this paper places special emphasis on works with similar objectives to ours that allow us not only a better identification of variables for our empirical model but also a more complete approach to the implications of our results.

At the international level, there are studies that describe the average characteristics of the group NINI. Mascherini (2017) points out that in Europe, young NEETs are generally female, from migrant families, with a low or medium level of formal education, with parents with a low level of education, belonging to poor or wealthy families and divorced parents. For their part, O'Dea et al. (2014) point out that individual characteristics such as age and sex are determining factors and they have a different incidence depending on the social context to which the young person belongs. Furthermore, in line with a large

[3] Although there may be young people who are employed or self-employed, our data do not allow us to infer their level of satisfaction. Therefore, even though some of them may have already completed their training, we will assume that their process of insertion into the labor market is still in progress.

number of authors (Istance et al., 1994; Guryan et al., 2008, Mascherini, 2017; Ospina et al. 2017) indicate that it is demographic and socioeconomic factors that influence a young person's decision to become NINI.

At the level of the countries in the region, the ILO (2019) and the World Bank (2016) agree that the profile of the NINI in Latin America is female, has not completed secondary education, lives in a poor or vulnerable urban household and is settled in the care economy and household chores. This description is complemented by that of Buitron et al. (2018), who point out that young people from low-income families, female, living in urban areas and belonging to ethnic minorities are more likely to become a NINI for the Ecuadorian case. In Peru, Málaga et al. (2014) find that the condition of being a woman, the presence of children in the household, having a partner and a lower educational level increase the probability of being a NEET[4] .

With respect to the study of young who are SISI, we note that there are few studies on the subject. CEPLAN (2016) describes that young people between 15 and 24 years old who are SISI in Peru are characterized by being male, with secondary education who live in urban areas, single and without marital responsibilities or family burden. It also indicates that 90% of SISI work in the informal market and are engaged in low-productivity activities. Alcazar et al. (2002) find that family income and parental education determine the decision to work and study at the same time in rural Peru.

METHODOLOGY

Econometric Model

To model the youngster's choice on studying and working, we define a nonlinear multiple discrete choice model with an unordered dependent variable. Following the Leon and Sugimaru (2013), this model combines human capital theory with discrete choice models and assumes that a rational decision-maker does whatever maximizes his or her utility function (McFadden, 1984; Cameron & Trivedi, 2010). This way, the i-th youngster has

[4] Acronym for *not in employment, education, or training*.

four alternatives regarding his or her educational and working status: neither studying nor working (NINI), to only study, to only work, or studying and working at the same time (SISI). Thus, the multinomial unordered dependent variable Y_i is defined as:

$$Y_i = \begin{cases} 1, & \text{NINI} \\ 2, & \text{Only study} \\ 3, & \text{Only work} \\ 4, & \text{SISI} \end{cases} \qquad \forall i = 1, \dots, N \tag{1}$$

Generically, the probability that the i-th youngster chooses to adopt alternative j (i.e., $Y_i = j$), where j takes a value from 1 to J (for the first and last alternatives, respectively), is explained by his or her personal and surroundings characteristics, a relationship that will be given in a nonlinear way through a probability function $F(.)$. Based on a goodness-of-fit analysis presented in Appendix 1, $F(.)$ is defined to follow a logistic distribution. Thus, the nonlinear multiple discrete choice model with an unordered multinomial dependent variable is defined as a multinomial logit model in which:

$$\text{Prob}(Y_i = j|x_i) = F(x_i'\beta_j) = \frac{e^{x_i'\beta_j}}{\sum_{m=1}^{J} e^{x_i'\beta_m}} \qquad \begin{matrix} \forall i = 1, \dots, N \\ \forall j = 1, \dots, J \end{matrix} \tag{2}$$

$\text{Prob}(Y_i = j|x_i)$ will be the probability that the i-th youngster chooses to adopt one of the four alternatives given his or her information in x_i. This vector x_i has a $K \times 1$ order and includes the K variables that capture the information on the own youngster's and his or her surroundings' characteristics. On the other hand, β_j is a vector of order $K \times 1$ that includes the coefficients associated with each one of the K variables contained in x_i for the j-th category. This way, four vectors β_j will be estimated, each one associated with each one of the four categories in Y_i.

The four β_j vectors' coefficients are estimated using the maximum likelihood method. However, because of the nonlinearity in the model's parameters, the estimated coefficients for each β_j cannot be interpreted as the direct effect of each variable on $\text{Prob}(Y_i = j|x_i)$. Instead of that, the marginal effects (ME) are estimated as the partial

derivatives of $\text{Prob}(Y_i = j|x_i)$ with respect to each one of the *K* variables, *ceteris paribus*. Hence, for the i-th youngster with a vector of characteristic variables $x_i = \tilde{x}_i$, the ME_i of the k-th variable for the j-th category will be given by:

$$ME_{ijk} = \frac{\partial \text{Prob}(Y_i = j|x_i = \tilde{x}_i)}{\partial x_{ik}} \qquad \begin{matrix} \forall i = 1, \dots, N \\ \forall j = 1, \dots, J \\ \forall k = 1, \dots, K \end{matrix} \tag{3}$$

Now, because the ME_{ijk} depends on the particular values of $\tilde{x}_i$ for each observation, the average marginal effects (AME) are reported as the simple arithmetic average of the ME_{ijk} of each youngster for each category. Then, for the j-th category, the AME_{jk} of the k-th variable on $\text{Prob}(Y_i = j|x_i)$ is:

$$AME_{jk} = \frac{1}{N}\sum_{i=1}^{N} ME_{ijk} \qquad \begin{matrix} \forall j = 1, \dots, J \\ \forall k = 1, \dots, K \end{matrix} \tag{4}$$

Data

This paper utilizes the publicly available database of the XII Population and VII Housing Census of 2017 by Peru's Instituto Nacional de Statistical e Informática (INEI). This is a cross-sectional database which describes each citizen's individual, household and residence characteristics. We only analyse the population of youngsters between 18 and 25 years of age, who are children of their head of household and who live in one of the districts in Lima Sur. Thus, we end up with information on 129'471 youngsters.

Variables

Based on the literature reviewed, the vector of explanatory variables x_i is divided into 3 groups: individual, household and residence. The detail is presented in Table 2.

Table 2. Variables

Group	Variable	Description
Dependent	Study and/or work	4 = SISI; 3 = work; 2 = study; 1 = NINI
Individuals	Woman	1 = female; 0 = male
	Age	Years of age
	Age^2	Years of age squared
	Native language	1 = native or indigenous; 0 = Spanish
	Cohabitance	1 = lives with a partner; 0 = otherwise
	Health insurance	1 = private; 0 = not private or doesn't have
Household	Head - Education	1 = higher education; 0 = otherwise
	Head - Native Language	1 = native or indigenous; 0 = spanish
	Head - Age	Head's years of age
	Head – Age^2	Head's years of age squared
	Head - Works	1 = works; 0 = doesn't work
	Infants	Number of children under 5 years of age
	Older adults	Number of people over 65 years of age
Residence	Type of husehold	2 = mother only; 1 = father only; 0 = both
	Water	1 = from public network; 0 = otherwise
	Drainage	1 = connected to public network; 0 = otherwise
	Lighting	1 = from public network; 0 = otherwise
	Internet	1 = has internet; 0 = doesn't have internet
	Cooking fuel	1 = electricity or gas; 0 = otherwise
	Inadequate [1/]	1 = inadequate residence; 0 = otherwise
	Overcrowded [2/]	1 = overcrowded residence; 0 = otherwise
	Density	District's population density in logarithms

[1/] (i) an improvised residence, or (ii) a residence with walls made out of matting, or (iii) a residence with walls made out of quincha, stone with mud, wood, or similar materials, and, in all cases, without a built floor (INEI, 2018).

[2/] A residence with three or more people per bedroom (INEI, 2015).

Authors' elaboration.

RESULTS

The AME of each variable on the probability of choice for each category are presented below. Each column of Table 3 shows the AME for each category: Each column of Table 3 shows the MPEs for each category: column (1) shows the AME for the NINI category; column (2), for the only study category; column (3), for the only work category; and finally, column (4), for the SISI category. Variables without statistical significance and those with a small AME, even with statistical significance, are omitted from the analysis.

Table 3. Average marginal effects.

Variable	(1) NINI	(2) Only study	(3) Only work	(4) SISI
Woman	0,036 ***	0,043 ***	-0,098 ***	0,019 ***
	(0,002)	(0,003)	(0,003)	(0,003)
Age	-0,157 ***	-0,088 ***	0,124 ***	0,122 ***
	(0,009)	(0,012)	(0,012)	(0,011)
Age^2	0,004 ***	0,001 **	-0,002 ***	-0,003 ***
	(0,000)	(0,000)	(0,000)	(0,000)
Native language	0,017 ***	-0,045 ***	0,020 **	0,008
	(0,007)	(0,010)	(0,009)	(0,008)
Cohabitance	0,129 ***	-0,195 ***	0,148 ***	-0,082 ***

	(0,003)	(0,007)	(0,005)	(0,005)
Health insurance	-0,119 ***	0,046 ***	0,010 *	0,062 ***
	(0,007)	(0,005)	(0,006)	(0,005)
Head - Education	-0,027 ***	0,091 ***	-0,082 ***	0,019 ***
	(0,002)	(0,003)	(0,003)	(0,003)
Head - Native Language	-0,019 ***	0,043 ***	-0,026 ***	0,002
	(0,002)	(0,003)	(0,003)	(0,003)
Head - Age	0,002 *	0,011 ***	-0,010 ***	-0,003 **
	(0,001)	(0,002)	(0,002)	(0,001)
Head – Age^2	-0,000	-0,000 ***	0,000 ***	0,000
	(0,000)	(0,000)	(0,000)	(0,000)
Head - Works	-0,032 ***	-0,007 **	0,004	0,035 ***
	(0,002)	(0,003)	(0,003)	(0,003)
Infants	0,032 ***	-0,058 ***	0,039 ***	-0,014 ***
	(0,001)	(0,002)	(0,002)	(0,002)
Older adults	-0,000	0,010 ***	-0,016 ***	0,007 **
	(0,003)	(0,003)	(0,004)	(0,003)
Type of husehold (1)	-0,007 **	-0,042 ***	0,044 ***	0,005
	(0,003)	(0,004)	(0,004)	(0,003)
Type of husehold (2)	0,007 ***	-0,031 ***	0,016 ***	0,007 **
	(0,003)	(0,004)	(0,004)	(0,003)
Water	0,006	0,018 ***	-0,008	-0,016 ***
	(0,005)	(0,007)	(0,007)	(0,006)
Drainage	-0,001	0,000	-0,006	0,006

	(0,006)	(0,007)	(0,007)	(0,007)
Lighting	-0,007	0,000	-0,010	0,016 **
	(0,006)	(0,009)	(0,008)	(0,008)
Internet	-0,053 ***	0,096 ***	-0,081 ***	0,039 ***
	(0,002)	(0,003)	(0,003)	(0,002)
Cooking fuel	-0,046 ***	-0,006	0,028 **	0,024
	(0,010)	(0,016)	(0,015)	(0,015)
Inadequate	0,016 ***	-0,043 ***	0,023 ***	0,004
	(0,003)	(0,005)	(0,004)	(0,004)
Overcrowded	0,011 ***	-0,035 ***	0,035 ***	-0,011 **
	(0,004)	(0,006)	(0,005)	(0,005)
Density	0,002 *	0,002	-0,003 ***	-0,000
	(0,001)	(0,001)	(0,001)	(0,001)
Observations	129’471	129’471	129’471	129’471

Note: dy/dx for factor levels is the discrete change from the base level. Robust standard errors in parentheses. ***p < 0,01, **p < 0,05, *p < 0,1.

Authors’ elaboration.

On the probability of choosing the NINI category, the following results arise. Individual characteristics show that being a woman increases the probability by 3,6 percentage points and living with a partner, by 12,9. In addition, being one year older decreases the probability by 15,7% and having private insurance by 11,9 percentage points. None of the estimated effects of the household variables are considered relevant. Finally, from the group of residence variables, the availability of internet decreases the probability of being NINI by 5,3 percentage points.

On the probability of only studying, results dictate as follows. Individual characteristics show that being a woman increases the probability by 4,3 percentage points and having a

private health insurance, by 4,6. Being one year older, speaking a native language, and cohabiting with a partner all decrease the probability by 8,8%, 4,5, and 19,5 percentage points, respectively. Household variables show that a head of household with higher education increases the probability by 9,1 percentage points. In addition, the presence of an additional child decreases the probability by 5,8% and belonging to a single-parent household guided by the father or mother by 4,2 and 3,1 percentage points, respectively. Lastly, from the residence variables, having internet access increases the probability by 9.6 percentage points.

On the probability of only working, results show the following. Individual variables show that being a woman decreases the probability by 9.8 percentage points and being one year older, by 12.4%. Cohabiting with a partner increases it by 14.8 percentage points. Regarding the household variables, a head of household with higher education decreases the probability by 8.2 percentage points, while belonging to a single-parent household guided by the father or mother increases it by 4.4 and 1.6 percentage points, respectively. Finally, of the residence variables, the availability of internet decreases the probability by 8.1 percentage points.

On the probability of choosing the SISI category, we have the following results. Among the individual variables, being one year older increases the probability by 12.2%, while having a private insurance, by 6.2 percentage points. On the other hand, cohabiting with a partner decreases it by 8.2 percentage points. As for the household variables, no estimated effect is considered relevant. Finally, from the residence variables, internet availability increases the probability by 3.9 percentage points.

CONCLUSIONS

This paper sought to define the determinants of youth educational and employment status decisions in contexts of high poverty and vulnerability. For this purpose, we analyzed data for youngsters aged between 18 and 25 years in the peripheral subregion of Lima Sur. Based on the literature review, three groups of variables were defined to capture the youngsters' individual, household, and residence characteristics. As part of our empirical strategy, nonlinear multiple discrete choice model with an unordered dependent variable

was estimated using data from INEI's XII Population Census and VII Residence Census of 2017. The results lead to the following conclusions and policy recommendations.

In first place, economic factors are still essential for youngster's decision of studying. We say this since the results show the positive effects of having a private insurance over the probability of only studying and becoming a SISI. We observe that the availability of economic resources induces the youngsters to seek education instead of just working or being a NINI. On the same note, the availability of internet in the youngster's residence has the same effect. Two acknowledgments regarding public policy arise. The first one, there is a need for scholarship programs and educational social credits strengthening. The second one, the universalization of the internet service is a necessity rather than a luxury.

In second place, as in literature, a head of the household with higher education is very important to generate a positive perception in youngsters towards education. This evidences the importance of role model programs to foster young education attainment in the absence of intra-household role models. In the same way, female role models may hay a bigger impact on the youngster's decision to seek education. This is said since living in a single-parent household guided by a mother is less decremental towards youngsters wishes to seek education compared to a father-guided one. Public and private sectors should encourage spaces for interaction between youngsters and these role models.

In third place, results report mixed conclusions regarding the woman condition. Being a woman reduces hardly the probability of only working, while softly and ambiguously rises both the NINI and only studying probabilities. Despite the magnanimous gains in terms of women educational inclusion, there appears to be a small persistence of this gaps. On the other hand, while youngsters grow up in age, their probabilities of only studying or being SISI rise drastically, while being NINI and only working ones fall. This could happen either because of studying prioritization or because they didn't have the economic resources that they now have to cover studying expenses.

Lastly, cohabiting with a partner prematurely substantially rises the probabilities of only working and being NINI, while hardly decreases the only studying and SISI ones. This could theoretically happen because of the prioritization of work and attention to household chores and duties over education. It can be said that, with the creation of a new family nucleus, young people prioritize taking care of the household chores (by being NINI) or generating income (by only working) instead of studying, which is an activity

that, in the short term, doesn't contribute in this sense. It is necessary to encourage policies that address the economic needs of this population, such as social housing loans.

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APPENDIXES

Annex 1. Criteria for choosing the nonlinear multiple-choice model

Based on the goodness-of-fit analysis presented in Table 4, the following can be concluded. The model estimated using the multinomial logit specification presents lower values for the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) than the model estimated under the multinomial probit specification. Thus, it will be correct to state that the ideal specification for the non-linear multiple choice model will be the logistic.

Table 4. Goodness-of-fit analysis

Goodness-of-fit	Model	
	Logit	Probit
AIC	341’746,74	341’939,02
BIC	342’479,58	342’671,86

Authors’ elaboration