

Determinants of youth not in education, employment or training: Evidence from Sri Lanka

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Abstract

The presence of a large proportion of youth neither in education, employment, or training (NEET) signals problems in a country's education and labor market systems, and has wide-ranging negative consequences, extending beyond the individual to the economy and society. Using Sri Lankan Labour Force Survey data for the year 2016 and binomial and multinomial logistic regression models, in this paper we provide the first estimates of NEET-related risk factors in Sri Lanka. Key risk factors of becoming NEET include being female, being of ethnic and religious minorities, belonging to the older 20 to 24 age group, having very low or very high levels of education, being illiterate in English, belonging to a low-income household or one headed by a male, having young children, and living in more remote areas. Our findings hold several important policy implications for reducing the NEET rate in Sri Lanka and engaging more youth in education and in the labor force.

KEYWORDS

logistic regression, NEET, Sri Lanka, youth

JEL CLASSIFICATION

E2; E24; I2; I25; J00; J2; J08; J24

1 | INTRODUCTION

The world stands on the brink of a fourth industrial revolution, with dramatic changes in technological advancements having profound impacts on the future employment landscape and skill requirements. Evidence from OECD countries suggests that 65% of children entering primary school today will ultimately end up working in completely new jobs that yet do not exist, while jobs that do exist are experiencing changes in the skill sets required to do them (World Economic Forum, 2016). Such dynamics highlight the critical importance of engaging in lifelong learning—be it at school or at work—to be able to anticipate and prepare for future labor market demands.

In this context, the presence of a large population of youth not in education, employment, or training (NEET) is a major cause for concern, with consequences that extend beyond the individual to the economy and society. The concept of NEET focuses not only on young persons who are unemployed—an issue that has received worldwide attention over the years—but also on those who lack access to learning opportunities and/or are inactive in the labor market. As pointed out by the International Labour Organization (ILO) (2017), because they are neither improving their future employability through investment in skills, nor gaining experience through employment, the risk of both labor market and social exclusion is particularly high for NEETs, eventually affecting a country's economic and social development. This is particularly so for lower middle-income countries like Sri Lanka, which having exhausted comparative advantages in natural resources and cheap labor, have to crucially depend on investing in its human capital in progressing toward higher income levels.

The ILO estimates that 21.8% of young people between the ages of 15 and 24 are NEET around the world in countries with available data, with females accounting for a lion share of 77% (ILO, 2017). Further, NEET rates are observed to be relatively lower in developing countries because young people cannot afford to be NEET in the absence of well-developed social security systems, therefore resorting to work in vulnerable and lower paying jobs, often in the informal economy (ILO, 2017). Sri Lanka, however, appears to go against this observed trend, with a recorded NEET rate of 26.1% among 15 to 24-year-olds in 2016 (Department of Census and Statistics of Sri Lanka (DCS), 2017a), even above the global average.

In view of the adverse consequences associated with being NEET, it is important to identify root causes and determinants of falling into NEET status, so that appropriate policies can be devised to ensure the productive engagement of young persons in the economy. So far, this is an area of policy attention largely limited to European and other developed countries. Across several European countries, studies have identified several risk factors of becoming NEET, including low levels of education, being female, being part of a low household income, living in a household with poorly educated or unemployed adults, having a large number of siblings, and belonging to immigrant backgrounds or ethnic minorities (Eurofound, 2012, 2016; Feng, Everington, & Ralston, 2015; Gladwell, Popli, & Tsuchiya, 2016; Quintano, Mazzocchi, & Rocca, 2018; Vancea & Utzet, 2018). In the United States too, evidence suggests that the likelihood of returning to education after a short break increases with household income and with the education and skill levels of mothers, while black youth are more likely than their white counterparts to leave the labor market and become discouraged or disconnected (Quintini & Manfredi, 2009). Similarly, being an Aboriginal or Torres Strait Islander increases chances of being NEET in Australia (Rodwell, Romaniuk, Nilsen, & Carlin, 2017).

In Sri Lanka, most of the existing literature on the NEET population focuses on unemployed youth (Arunatilake & Jayawardena, 2010; Gunatilaka, Mayer, & Vodopivec, 2010; Kuchibhotla, Orazem, & Ravi, 2017). To our knowledge, this is the first study to look beyond the unemployed youth at the other categories of the NEET population, and empirically identify determinants of falling into NEET in Sri Lanka.

The rest of the paper proceeds as follows. Section 2 discusses the origins, definitions, and composition of the NEET concept. Section 3 describes the data sources and methods employed, while

Section 4 provides an overview of Sri Lanka's education system and youth labor market. The results are presented and discussed in Section 5. Section 6 concludes and offers policy implications.

2 | NEETS: ORIGINS, DEFINITIONS, AND COMPOSITION

2.1 | Origins

The need for an additional indicator to capture young people not in employment, education or training first arose in the United Kingdom in the late 1980s. This was largely owing to changes in the U.K. benefit regime, when the government increased the eligible age for unemployment benefits from 16 to 18 years, which left most of those aged 16 to 18 without access to unemployment benefits (Furlong, 2007). Government officials subsequently started looking at novel ways of estimating the prevalence of vulnerability in the labor market among young people. The first concrete categorization of 16 to 18-year-olds not in employment, education or training was made by Istance, Rees, and Williamson (1994), who named them 'Status Zero', which later changed to 'Status A'.¹ The term was subsequently changed to NEET, and formally introduced at the political level in the UK in 1999 with the publication of the government's *Bridging the Gap* report (Social Exclusion Unit, 1999; cited in Eurofound, 2012). The term soon gained prominence beyond the UK, with equivalent definitions being adopted in most European Union states and in countries elsewhere, including Japan, New Zealand, Taiwan, and Hong Kong.

The onset of the economic recession in 2007 and 2008 gave added impetus to the use of the NEET indicator, particularly among European policymakers who felt the necessity for a better indicator to measure the health of the youth labor market, subsequently appearing in many policy documents from the European Commission. More recently, the concept has gained new-found relevance and importance in the global development agenda with its incorporation into the SDGs in 2015. Goal 8 which focuses on decent work and economic growth, has a target specifically devoted to tackling NEETs; target 8.6 specifies the intention to "[by 2020] substantially reduce the proportion of youth not in employment, education or training". SDG 4 which deals with quality education also indirectly targets the NEET population, via its emphasis in achieving equal educational opportunities for all.

In Sri Lanka too, the NEET concept appears to have attracted attention as recent as 2015, with it being incorporated into the official government calculations of the DCS in the 2015 Annual Labour Force Survey (LFS) Report for the first time.

2.2 | Definitions

Unlike for other labor market indicators such as unemployment or employment, there is no international standard for the definition of NEETs, and definitions can vary by the age group and type of individuals covered. The ILO and EU define the NEET rate as the percentage of the population of a given age group and sex who is not employed and not involved in further education or training (ILO, 2015). Sri Lanka adopts a similar definition, defining youth as those between the ages of 15 and 24. In particular, the NEET rate in Sri Lanka is calculated as:

$$\text{NEET rate (\%)} = \frac{(\text{Number of unemployed youth} + \text{Number of youth not in the labor force} - \text{number of unemployed youth and youth not in the labor force who are in education or training})}{\text{Total number of youth}} \times 100.$$

The numerator of the indicator refers to persons meeting two conditions: (1) they are not employed (i.e., are unemployed or inactive), and (2) they have not received any education or training in the four weeks preceding the survey. The denominator is the total youth population of the same age group.

Figure 1 provides a clear illustration of the NEET concept (as defined in the European Union and Sri Lanka) and how it differs from the standard youth employment and unemployment measures.

2.3 | Composition

An important aspect of the NEET indicator is the fact that it captures a very heterogeneous population—including both vulnerable and nonvulnerable youth—with widely varying experiences, attributes, and needs. Existing literature (Eurofound, 2012, 2016; European Training Foundation (ETF), 2015) identifies one subgroup as the conventional unemployed youth—those who are without work, but currently available for and seeking work during a given reference period. Other identified groups include inactive youth outside the labor force, categorized according to the reason for their inactivity. Despite minor differences across different categorizations, key groups identified include:

1. *Reentrants*: those who hope to resume education, employment or training activities—with secured placements—in the near future.
2. *Family carers*: those who are not looking for work or remain outside of the labor force because of caring responsibilities for household members including children, the elderly, or the disabled.
3. *The sick or disabled*: those who are not looking for work or remain outside of the labor force owing to an illness or disability.

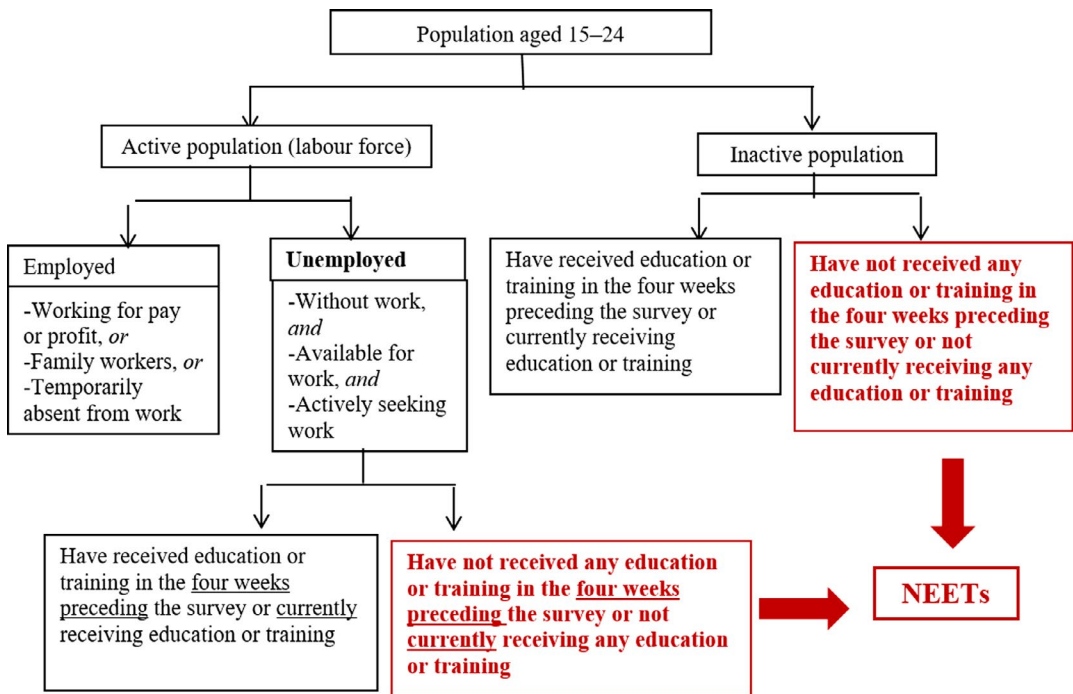


FIGURE 1 Composition of the NEET Indicator [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/j.1469-7610.2019.02411.x)]

Source: Adapted from European Training Foundation (ETF), 2015, *Young People not in Employment, Education or Training (NEET): An Overview in ETF Partner Countries*.

4. *The discouraged*: those who lack jobs, but are not looking for jobs, mainly because they have lost hope of finding one. The ILO specifies the following reasons for discouragement: believing no suitable work is available (relevant to one's skills and capacities), lack of employers' requirements (qualifications, training, experience, age, etc.), inability to find suitable work, or not knowing where to seek work (Elder, 2009)
5. *Voluntary NEETs*: those who are engaged in traveling and/or engaged in other activities such as art, music, and self-directed learning, and remain disengaged from education or work *by choice*.
6. *Other NEETs*: all NEETs whose reasons for being NEET are either unspecified, or do not fall into any of the above categories.
7. The full usefulness of the indicator requires disaggregating it into these subgroups to understand different types of drivers of NEET status, and thereby design tailored policies to address them (ETF, 2015).

We consider five NEET subgroups in our study: (i) the unemployed; (ii) family carers; (iii) sick or disabled; (iv) discouraged; and (v) other NEETs. Our data sources do not provide sufficient information to identify voluntary and reentrant NEETs. We also believe that reentrant NEETs require less policy interventions in terms of welfare or training provisions, given that they will reengage in the economy in the near future.

3 | DATA AND METHODS

3.1 | Data

This study is based on LFS data for the year 2016, collected by the DCS of Sri Lanka. LFS is a quarterly survey covering all 25 districts in the country. The LFS was initiated with the aim of gathering information on labor market and demographic characteristics and trends in education, employment, unemployment, and labor force participation (LFP) rates. The NEET calculation appeared in the 2015 LFS for the first time.

The 2016 LFS covers a sample size of 25,750 housing units and 85,072 individuals from all 25 districts in the country. The population between the ages of 15 and 24, which is our focus population, consists of 12,027 observations. The number of observations drops to 3,067 when focusing only on the NEET population. Appendix B in the Supporting Information (see end of paper for access) details the steps followed in the construction of the overall NEET rate and the different NEET subgroup variables.

For our descriptive analysis, we apply reweighting factors provided in the LFS in order to provide population estimates based on the collected sample.² This gives us a total of 2,872,212 youth in 2016, of which 750,864 are NEET according to the standard DCS definition.

3.2 | Methods

We begin with a descriptive analysis of trends and composition of NEETs in Sri Lanka, after which we proceed to econometric estimations of the determinants of falling into NEET and the relative risks of belonging to a given NEET subgroup. We estimate a binary logit model that focuses on the entire NEET population relative to non-NEET youth, and a multinomial logit model that examines the different NEET subgroups.

The vector of independent variables used in both models includes demographic characteristics, education, and experience, and household and locational characteristics. Demographic characteristics consist of dummy variables for the two age cohorts, ethnicity and religion, and marital status. Variables

capturing education and experience include dummies for the level of education received, whether the individual is literate in English, and whether the individual has previous work experience.³ Household characteristics consist of dummy variables for household monthly income categories, for whether at least one adult in the household is well educated (whether he/she has passed the GCE Ordinary Level Examination (O-Levels) undertaken after completing secondary education), whether at least one adult in the household is employed, whether the household head is male, and whether children under the age of five or seniors over the age of 75 reside in the household. Location dummies are included for the three sectors—urban, rural and estate—and the nine provinces, as well as the district youth unemployment rate as a proxy for potential peer effects.⁴ These variables are described in more detail in Appendix A of the Supporting Information (for access, see end of paper).

We subsequently extend the binary model to a multinomial logistic model, where the dependent variable is a categorical variable that assumes over two possible (unordered) outcomes. These outcomes consist of the different subgroups of the NEET population: (1) unemployed youth; (2) family carers; (3) the discouraged; and (4) other NEETs. We omit those who are NEET because of a sickness or disability in this model, since being disengaged as a result of an illness or disability is not a choice variable.⁵ While, as discussed previously, only voluntary NEETs are strictly NEET by choice, it can be argued that an individual has some control over falling into all NEET categories with the exception of the sick or disabled: for instance, one becomes an unemployed NEET by *choosing* not to be employed in certain types of jobs. Similarly, one becomes a family caring NEET by *choosing* to look after one's children.

Our decision to exclude the sick or disabled NEET category from the multinomial logit model is further supported by results of a Hausman specification test of the Independence of Irrelevant Alternatives (IIA) assumption (Hausman, 1978). This assumption—specific to multinomial and conditional logit models—requires that the inclusion or exclusion of categories does not affect the relative risks associated with the explanatory variables in the remaining categories (Long & Freese, 2014; Williams, 2018). An IIA test using all NEET categories suggests that the estimated model does not meet asymptotic assumptions of the test, whereas an IIA test excluding the sick or disabled category provides evidence that the IIA assumption holds.⁶

Table 1 presents descriptive statistics of our dependent and independent variables for the total youth population and compares mean differences between genders using two-sample *t* tests (column 4). Mean differences reveal that the NEET rate is significantly higher among females. There are a higher number of male youths in the 15 to 19 age group compared with females, while youth who have not married are also greater among males. Young females are relatively better educated than their male counterparts, and females also possess higher English literacy levels compared with males. Despite their advantage in terms of education, female youth are slightly less experienced than their male counterparts. Larger shares of females belong to the poorest of households, while males occupy comparatively more households in the higher income brackets. Educated parents and dependent children are more common in households with female youth. Location-wise differences by gender are not significant, with the exception of the Western Province which records a notably lower share of female youth.

Table 2 disaggregates these gender differentials by NEET subgroup for the NEET youth population. Similar to the above findings, two-sample *t* tests show that the younger age cohort consists of a statistically significantly larger number of male NEETs across all subgroups. There exist larger numbers of Sinhala Buddhist female family carers and discouraged and unemployed Tamil Hindus, whereas family caring Tamil Hindus are larger among males. Never-married male NEETs exceed females across all subcategories. Apart from family carers, there are a lower (higher) number of poorly (highly) educated females in all other groups. Unemployed females are also more English literate than their male counterparts, while unemployed and discouraged male NEETs have more prior experience. There are no significant gender-wise differences in household income across the NEET subgroups,

TABLE 1 Descriptive statistics

Variables	Mean	SD	Mean differences (female–male)
(1)	(2)	(3)	(4)
<i>Dependent variable: NEET</i>	26.7	44.3	0.178***
Independent variables:			
Demographic characteristics			
15–19 years	54.9	49.8	–0.038***
Male	47.8	50.0	–
Sinhala Buddhist	61.7	48.6	0.004
Sinhala Catholic	4.12	19.9	–0.000
Tamil Hindu	17.5	38.0	0.003
Other minorities	8.9	28.4	–0.000
Never married	86.0	34.7	–0.141***
Education and experience			
O-Levels incomplete	51.6	50.0	–0.110***
O-Levels complete	31.3	46.4	0.030***
A-Levels passed and above	17.1	37.6	0.081***
English literacy	25.9	43.8	0.064***
Previous experience	1.41	11.8	–0.007***
Household characteristics			
Income below LKR 25,000	43.8	49.6	0.066***
LKR 25,001–50,000	35.1	47.7	–0.025***
LKR 50,001–75,000	12.3	32.9	–0.020***
LKR 75,001–100,000	4.64	2.01	–0.010**
Above LKR 100,000	4.15	19.9	–0.010**
Household headed by male	77.3	41.9	–0.006
O-Levels passed parent	45.8	49.8	0.063***
Employed parent	82.0	38.5	–0.005
Dependent kids	19.4	39.6	0.077***
Dependent elders	8.46	27.8	–0.000
Locational dummies			
Urban	17.8	38.2	–0.003
Rural	77.8	41.6	–0.003
Estate	4.42	20.6	0.007*
Western	23.2	42.2	–0.016**
Central	12.1	32.7	0.009
Southern	13.8	34.5	–0.002
Northern	11.7	32.1	–0.007
Eastern	10.6	30.8	0.003

(Continues)

TABLE 1 (Continued)

Variables	Mean	SD	Mean differences (female–male)
(1)	(2)	(3)	(4)
North Western	9.20	28.9	–0.004
North Central	5.11	22.0	0.007
Uva	5.94	23.6	0.005
Sabaragamuwa	8.31	27.6	0.006
Youth unemployment rate	7.3	2.44	0.000
Observations: 12,027			

Note: SD = standard deviation. LKR = Sri Lankan Rupees. ***, **, *Denote statistical significance at 1%, 5%, and 10% levels, respectively.

while relatively more females in the family carer category live in households with well-educated adults. Unsurprisingly, a larger share of family carer females also live in households with young children, a difference that does not apply to the other groups. A higher number of male NEETs in all subgroups except the unemployed live in urban areas, whereas female family carers are more prevalent in rural settings and in the North Central Province. The Northern Province is home to a larger number of unemployed female NEETs, whereas a larger number of male family carers and other NEETs and discouraged female NEETs reside in the Eastern Province.

4 | SRI LANKA’S EDUCATION SYSTEM AND YOUTH LABOR MARKET

4.1 | Education system

Education in Sri Lanka is offered via the school and university system as well as via vocational education and training. Public schools, amounting to 10,162 in 2016, account for 92% of total schools (Ministry of Education of Sri Lanka [MOE], 2016).⁷ School education commences at age 5, and consists of 13 years of schooling, organized into four levels: primary (grades 1–5), junior secondary (grades 6–9), senior secondary (grades 10 and 11), and collegiate (grades 12 and 13). Education is compulsory up to age 14 (grade 9) in the country. Students are subjected to three national-level examinations: (1) the grade five Scholarship examination, faced by children in grade 5; (2) the O-Levels undertaken after completing secondary education; and (3) the GCE Advanced Level (A-Level) examination faced by students upon completion of collegiate-level education. Depending on performance at the A-Levels, students can pursue tertiary education at one of the 15 local state universities, the competition for which is, however, exceedingly high.⁸ Currently, only around 19% of eligible students succeed in obtaining university admission (University Grants Commission, 2018).

Technical and vocational education and training (TVET), managed by the Tertiary and Vocational Education Commission (TVEC), provides an alternative pathway for students to pursue further education. While open to any student, TVET is considered inferior to the academic track, and is typically sought by those who fail to secure placements at a university or fail to proceed to the collegiate level after taking the O-Levels. The formal TVET sector includes around 635 public sector training centers, including the Open University of Sri Lanka, University of Vocational Technology and several technical colleges, as well as 718 private and NGO training centers. The National Vocational Qualifications

TABLE 2 Mean gender differences among NEET subgroups (females–males)

Variables	Unemployed	Family carers	Discouraged	Other
<i>Demographic characteristics</i>				
15–19 years	−0.108***	−0.251***	−0.188***	−0.148***
Sinhala Buddhist	−0.403	0.165**	−0.110*	−0.035
Sinhala Catholic	0.004	0.033	0.001	−0.027*
Tamil Hindu	0.047*	−0.152***	0.107**	0.001
Other minorities	−0.037*	−0.028	0.049	0.042
Never married	−0.116***	−0.580***	−0.074**	−0.112***
<i>Education and experience</i>				
O-Levels incomplete	−0.209***	−0.078	−0.181**	−0.143***
O-Levels complete	−0.038	0.060	0.103*	0.030
A-Level passed and above	0.247***	0.018	0.078*	0.114***
English literacy	0.107***	−0.025	0.032	0.047
Previous experience	−0.069**	0.004	−0.072**	0.002
<i>Household characteristics</i>				
Income below LKR 25,000	−0.031	−0.091	0.072	0.010
LKR 25,001–50,000	0.010	0.056	−0.060	0.025
LKR 50,001–75,000	0.016	0.027	−0.013	−0.021
LKR 75,001–100,000	−0.004	0.021	0.001	0.006
Above 100,000	0.009	−0.012	0.001	−0.020
Household headed by male	−0.007	−0.085	0.036	0.014
O-Level passed parent	0.050	0.199***	−0.009	0.058
Employed parent	−0.035	−0.058	−0.048	0.034
Dependent kids	−0.000	0.311***	−0.015	0.034
<i>Locational characteristics</i>				
Urban	−0.019	−0.099**	−0.082**	−0.052*
Rural	0.006	0.108**	0.058	0.038
Estate	0.013	−0.010	0.023	0.014
Western	−0.018	0.063	−0.074**	−0.086***
Central	−0.038	0.011	−0.019	0.030
Southern	−0.021	0.027	−0.059	0.008
Northern	0.054**	−0.038	−0.021	0.032
Eastern	0.014	−0.126**	0.099*	−0.039*
North Western	−0.027	0.018	−0.001	−0.004
North Central	0.018	0.064**	0.049	0.004
Uva	0.033	−0.020	−0.013	0.013
Sabaragamuwa	−0.014	0.002	0.038	0.041**

(Continues)

TABLE 2 (Continued)

Variables	Unemployed	Family carers	Discouraged	Other
Youth unemployment rate	−0.000	0.001	−0.001	0.005***
Observations	738	63	232	790

Note: LKR = Sri Lankan Rupees. ***, **, *Denote statistical significance at 1%, 5%, and 10% levels, respectively.

(NVQ) system developed by TVEC provides a structured seven levels of qualifications from Level 1 to Level 7. Additionally, the MOE, as well as several private TVET providers, operate nonformal vocational education programs targeting school drop-outs and adults with incomplete school education, in a wide range of fields including information technology, dressmaking, beauty culture, sewing, carpentry, plumbing, and painting.

Since the Free Education Act of 1945, education in Sri Lanka is government-funded and offered free of charge at all levels, including the tertiary level. This has consequently led to commendable school enrollment and literacy rates: Sri Lanka has been successful in enrolling nearly all primary aged children and a large proportion of secondary-level school children, particularly in comparison to other lower middle-income countries (Figure 2). Gender-wise outcomes are also impressive, with females recording higher enrollment rates at both the secondary and tertiary levels. However, enrollment rates are far less impressive at the tertiary level, and lie below the lower-middle income average, at only 15% among males and 23% among females. A combination of factors, including the low capacity of state universities and an underdeveloped TVET sector has contributed to this situation (Institute of Policy Studies of Sri Lanka, 2017).

Moreover, there are mounting concerns regarding the quality of education, and wide disparities in academic achievement exist both across and within provinces (Aturupane, Glewwe, & Wisniewski, 2013). Comparatively low levels of expenditure on education is partly responsible for quality

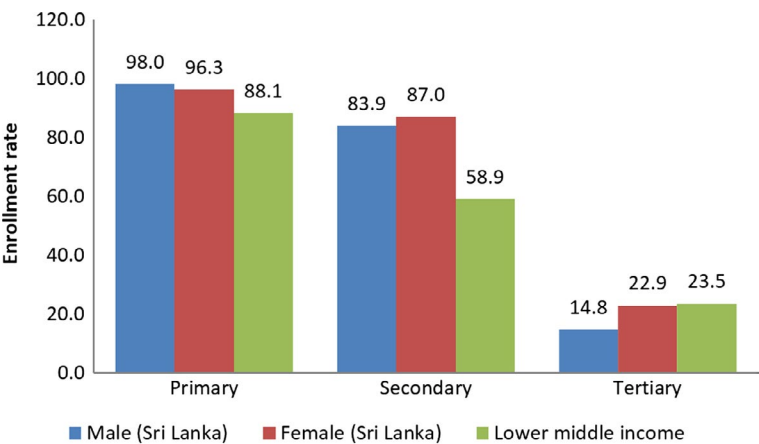


FIGURE 2 School enrollment rates in Sri Lanka and lower middle-income countries, latest available year. [Colour figure can be viewed at wileyonlinelibrary.com]

Note: Figures refer to net enrollment rates at the primary and secondary levels and the gross enrollment rate at the tertiary level. Data for Sri Lanka are for 2014 at the primary level, 2011 at the secondary level, and 2016 at the tertiary level. All data for lower middle-income countries are for 2016.

Source: World Bank, 2018, *World Development Indicators*, <https://databank.worldbank.org/data/source/world-development-indicators#>.

concerns,⁹ while inequitable resource allocation among schools affects the provision of equitable quality of education (National Education Commission (NEC), 2016).

4.2 | Youth labor market

Table 3 gives a breakdown of the youth population by labor market status and gender. As can be seen in the first two columns, out of a total of 2.9 million, only 26% are employed. The remaining 74% is either unemployed or not in the labor force. Most attention in past years has been focused on unemployed persons, who account for only 7.1%. However, there has been limited focus on the 67.3% of youth who are not in the labor force. While 70% of those not in the labor force are engaged in education or training, there still remains a sizeable share of 30% who are inactive.

Notable differences can also be observed by gender. The share of employed males is over double the share of employed females, and interestingly, the share of unemployed young males also exceeds the corresponding female share. Females, however, are disproportionately represented when it comes to those out of the labor force, at 77%. Moreover, the share of young inactive females—those neither in the labor force nor in education or training—at 38%, is over double that of young males.

Figure 3 further illustrates the problems of high youth unemployment and low LFP rates, relative to other age groups. As can be seen, unemployment rates are considerably higher among those in the 15 to 19 and 20 to 24 age groups, at 21% and 18%, respectively, compared with just 0.9% for those above 40. Similarly, LFP rates are relatively lower among the younger age cohorts, especially in comparison with the 25 to 39 age group.

High youth unemployment in Sri Lanka has been largely attributed to three broad hypotheses: (1) the *skills mismatch hypothesis*, which maintains that a mismatch between skills imparted through the education system and that required by the labor market produces educated youth who have few marketable job skills but who nonetheless seek for so-called “good” jobs—jobs that are secure, well-paid, and offer higher social status; (2) the *queuing hypothesis*, which posits that youth queue for public sector jobs often characterized by job security, generous fringe benefits, low work effort, and high social status; and (3) the *institutional or slow job creation hypothesis*, where stringent labor market regulations raise the costs of formal job creation (Gunatilaka et al., 2010). More recent research has also identified gaps in soft skills among educated youth, particularly in English and computer skills, as contributing to the youth unemployment problem (Dundar et al., 2017).

TABLE 3 Youth by labor market status and gender, 2016

Labor market status	Total		Male		Female	
	Value	Share (%)	Value	Share (%)	Value	Share (%)
Employed	737,391	25.7	490,417	35.6	246,974	16.5
Unemployed	202,493	7.1	100,653	7.3	101,840	6.8
Not in the Labor Force	1,932,328	67.3	785,936	57.1	1,146,391	76.7
In education/training	1,352,337	70.0	639,841	81.4	712,496	62.2
Not in education/training	579,991	30.0	146,095	18.6	433,896	37.8
Total	2,872,212	100.0	1,377,006	100.0	1,495,206	100.0

Source: Own calculations using 2016 LFS data.

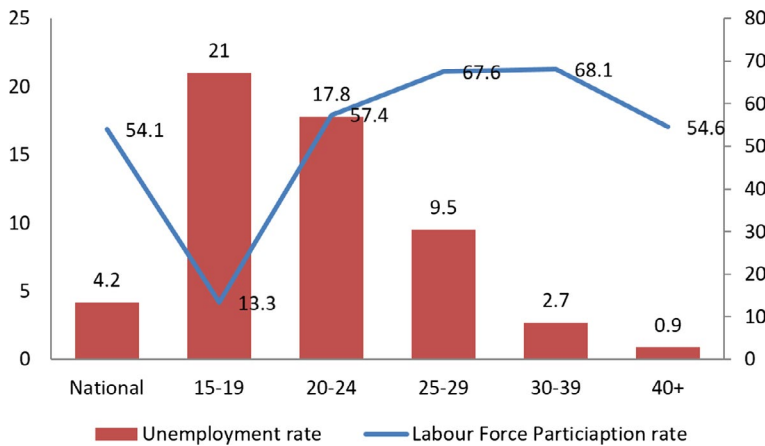


FIGURE 3 Unemployment and LFP Rates in Sri Lanka by Age Group, 2017 [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/rde.12615)]

Source: DCS, 2017a, *Sri Lanka Labour Force Survey: Annual Report–2017*

While low LFP among youth is a relatively under-researched area in Sri Lanka, two broad reasons have been identified for overall low female LFP, despite their relatively high education levels: (1) differences in the way the labor market values identical skills in men and women, especially among labor market entrants aged 20 to 29 years; and (2) the gender division of labor in the household, with married women with young children facing significantly lower employment prospects (Gunewardena, 2015).

5 | RESULTS AND DISCUSSION

5.1 | Descriptive analysis

Figure 4 presents the total number of NEET individuals and NEET rates in Sri Lanka over a 6-year period, by gender. As can be seen, the NEET rate shows an overall increasing trend for both males and females from 2011 to 2014, before experiencing a drop in 2015. In line with the worldwide trend, female NEETs dominate overall NEETs across the years: the numbers of female NEETs are close to three times the number of male NEETs, while female NEET rates are more than double the corresponding male rates.

Figure 5 breaks down the overall NEET population to its various subgroups. As can be seen, over 40% of NEETs are family carers, while the next largest shares are of other NEETs and the unemployed. Indeed, it is this relatively large share of NEET family carers that contributes to disproportionately high female NEET rates, since as in the case in a majority of countries, carers are mostly females. That this is the case is illustrated in Figure 6, which shows that 95% of family caring NEETs is females. In fact, the distribution of the two genders is fairly similar for the other NEET subgroups, with male NEETs outnumbering their female counterparts with the exception of other NEETs.

5.2 | Regression analysis

5.2.1 | NEET vs non-NEET

Table 4 presents marginal effects of a binomial regression model of the determinants of falling into NEET status. The first column shows estimates for the pooled sample. Those in the 15 to 19 age group are 15% less likely to become NEET compared with those in the 20 to 24 age group when the other

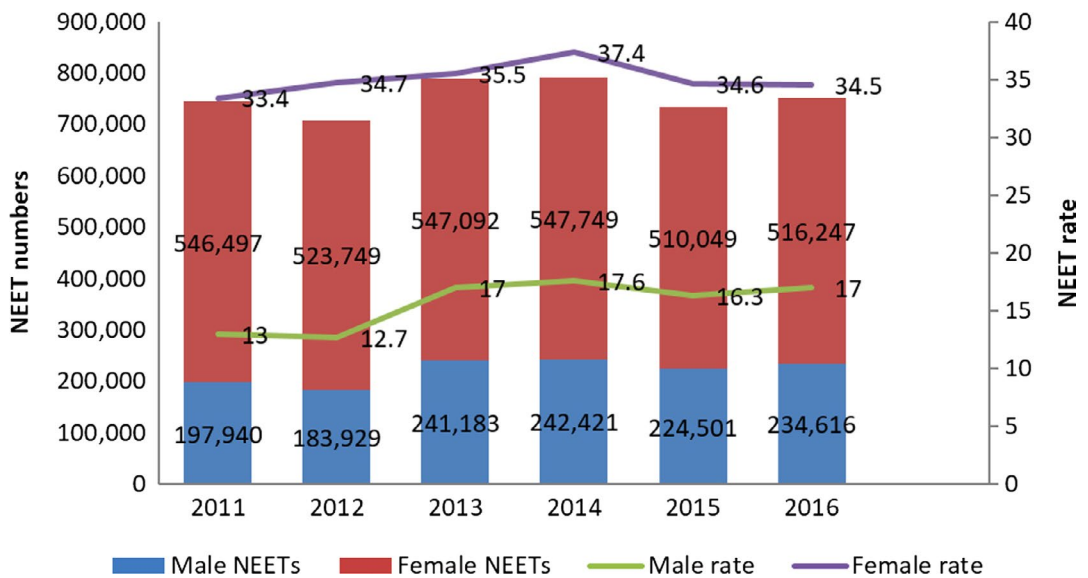


FIGURE 4 Trends in NEET Numbers and Rates in Sri Lanka, 2011-2016 [Colour figure can be viewed at wileyonlinelibrary.com]

Source: DCS, 2017a, *Sri Lanka Labour Force Survey: Annual Report-2016*

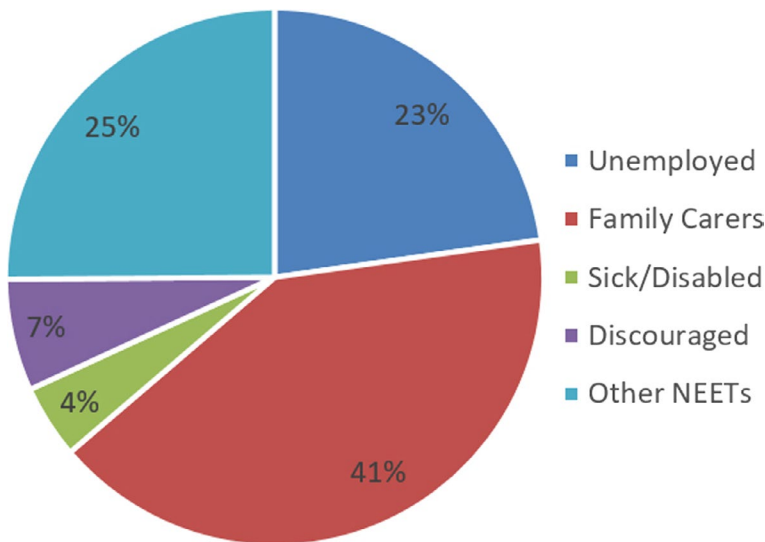


FIGURE 5 NEET shares by subgroup, 2016 [Colour figure can be viewed at wileyonlinelibrary.com]

Source: Own calculations using 2016 LFS data.

independent variables are fixed at their average values. This makes sense, given Sri Lanka's considerably low education enrollments at the tertiary level, meaning that youth in the older cohort are more likely to be out of education or training activities, and hence in NEET. Reflecting our descriptive findings, holding other factors constant, relative to females, males are 13% less likely to belong to the NEET group. Sinhala Buddhists are also less prone to NEET status compared with Tamil Hindus and other ethnic and religious minorities, and so are never-married individuals compared with those who are or have been married, possibly reflective of greater household caring duties falling upon NEET family carers.¹⁰

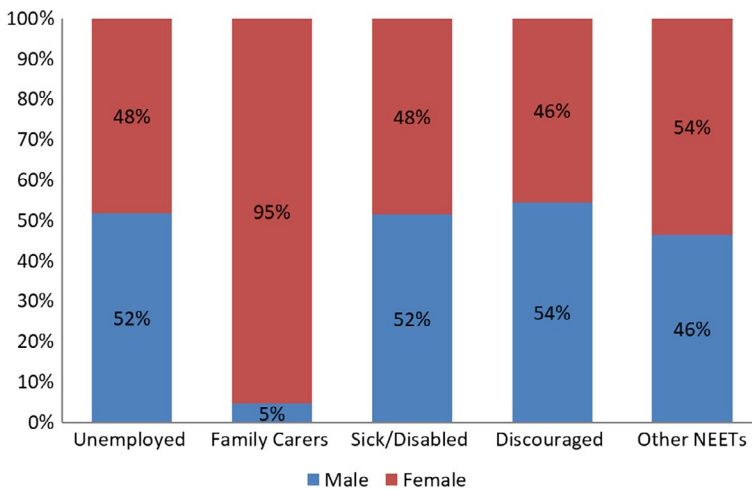


FIGURE 6 NEETs by Gender and Subgroup (%) 2016 [Colour figure can be viewed at wileyonlinelibrary.com]

Source: Own calculations using 2016 LFS data.

In terms of education, not surprisingly, those who have passed O-Levels have a 3% lower likelihood of falling into NEET compared with those who have not passed O-Levels, although having A-Level and above qualifications does not influence NEET status. Competency in English is also important—being able to read and write in English lowers the risk of falling into NEET by 9%, holding other factors at their mean values. A surprising finding is that of previous experience, which suggests that having worked previously for at least two weeks significantly increases chances of being NEET by a large 60%. As noted previously, however, this estimate needs to be interpreted with caution, since by definition it is not a comprehensive or fully accurate measure of work experience. It is also possible that negative experiences and references from previous work have lowered chances of current employment.

Marginal effects for household income are all significant and negative, implying that household income has an important influence on NEET status, in line with existing literature: relative to the lowest income group, those in all other income groups have lower chances of becoming NEET. Youth living in male-headed households face a 3% higher risk of falling into NEET, while neither the education level nor employment status of adult household members have a significant impact on being out of education, training, or employment. As expected, having at least one child below the age of five increases the likelihood of falling into NEET by a significant 4%. Sector-wise location does not have an impact on NEET status, while individuals living in the Southern and Uva provinces face higher risks of falling into NEET compared with those living in the Western Province.

Columns (2) and (3) of Table 4 disaggregate the sample by gender and point to some important differences. A key distinction is with regard to marital status: while NEET risks are significantly higher among unmarried males compared with their married counterparts, the opposite is the case for females, reflecting the strong female family carer role in driving NEET status. That marriage is positively associated with men remaining outside the NEET group is a potential indication that women, by taking charge of household responsibilities, make room for men to engage in the labor market or in education or training, at their expense. It could however also be the case that young men at risk of becoming NEET are less likely to get married. The effect of living in households with small children on NEET status which is insignificant for males but significant and positive for females, also points to similar gender implications. The impact of ethnicity and religion also differs by gender, where female

TABLE 4 Determinants of NEET status, binomial logit estimates

Variables	Pooled (1)	Males (2)	Females (3)
15–19 years	−0.149*** (0.009)	−0.070*** (0.012)	−0.222*** (0.012)
Male	−0.130*** (0.008)	– –	– –
Sinhala Catholic	−0.005 (0.020)	−0.017 (0.028)	0.010 (0.026)
Tamil Hindu	0.034** (0.016)	0.026 (0.019)	0.034 (0.024)
Minorities	0.069*** (0.013)	−0.001 (0.018)	0.128*** (0.018)
Never married	−0.170*** (0.011)	0.146*** (0.031)	−0.263*** (0.015)
O-Levels complete	−0.032*** (0.009)	−0.028** (0.012)	−0.050*** (0.012)
A-Levels passed & above	0.006 (0.013)	0.047*** (0.018)	−0.049*** (0.017)
English literacy	−0.089*** (0.011)	−0.070*** (0.016)	−0.089*** (0.014)
Previous experience	0.600*** (0.052)	0.527*** (0.055)	0.517*** (0.083)
25,000–50,000	−0.069*** (0.009)	−0.076*** (0.012)	−0.057*** (0.012)
50,001–75,000	−0.111*** (0.014)	−0.113*** (0.018)	−0.102*** (0.019)
75,001–100,000	−0.170*** (0.023)	−0.176*** (0.031)	−0.163*** (0.034)
Above 100,000	−0.129*** (0.024)	−0.125*** (0.031)	−0.123*** (0.032)
Household headed by male	0.030*** (0.010)	0.017 (0.014)	0.040*** (0.015)
O-Levels passed adult in household	−0.009 (0.009)	−0.000 (0.011)	−0.013 (0.012)
Employed parent in household	−0.002 (0.011)	0.022 (0.015)	−0.016 (0.016)
Dependent kids	0.044*** (0.010)	0.010 (0.015)	0.049*** (0.015)

(Continues)

TABLE 4 (Continued)

Variables	Pooled (1)	Males (2)	Females (3)
Dependent elderly	0.008 (0.015)	0.029 (0.018)	−0.015 (0.020)
Rural	−0.007 (0.013)	−0.035** (0.016)	0.017 (0.017)
Estate	−0.020 (0.029)	−0.050 (0.044)	0.013 (0.043)
Central	0.002 (0.018)	0.005 (0.027)	0.006 (0.024)
Southern	0.048** (0.019)	0.021 (0.025)	0.090*** (0.026)
Northern	0.026 (0.021)	−0.017 (0.028)	0.081*** (0.029)
Eastern	0.023 (0.018)	0.012 (0.022)	0.043* (0.024)
North Western	0.001 (0.016)	0.011 (0.021)	−0.004 (0.022)
North Central	0.008 (0.021)	−0.006 (0.028)	0.031 (0.030)
Uva	0.054** (0.024)	−0.000 (0.035)	0.114*** (0.032)
Sabaragamuva	0.030 (0.027)	0.002 (0.037)	0.073** (0.037)
Youth unemployment rate	−0.276 (0.322)	0.153 (0.433)	−0.910** (0.443)
Observations	12,027	5,754	6,273

Note: The dependent variable is a binary variable which equals one if the individual is categorized as NEET and zero if an individual is non-NEET. The reported values are marginal effects of the logit estimates. ***, **, *Denote statistical significance at 1%, 5%, and 10% levels, respectively. Standard errors are shown in parentheses. Coefficients on constants not reported.

minorities are at a higher risk of falling into NEET, but not male minorities. This again is a possible reflection of the greater tendency for women of certain ethnicities to function as the primary care giver in households.

Another important finding is that while having O-Level qualifications, relative to below O-Level qualifications, is important in reducing the chances of NEET status for both genders, the effects for those with A-Level and above qualifications differ significantly: higher education *raises* the risks of NEET status for men, but lowers the risk for women. It thus appears that the problem of high youth unemployment among Sri Lanka's educated youth applies particularly to males. The gender of the household head matters only for females, with higher risks associated with living in a male-headed household.

In terms of location, rural sector men have a lower chance of falling into NEET compared with urban men, perhaps reflective of the observed global trend where poorer individuals resort to work in

whatever available jobs compared with more affluent youth who can afford to wait for “good” jobs. It could also be the case that young rural individuals migrate to urban areas in search of better educational and job opportunities, leading to an accumulation of young NEET people in urban areas when they are unable to secure placements. Provincial location, in contrast, is more important for females, where living in the Uva, Sabaragamuwa, Northern, Southern, and Eastern provinces poses a higher risk of being NEET, compared with living in the Western Province. Difficulties in travelling long distances to more urban areas to access training or employment opportunities, for instance, can affect women relatively more. An important estimate is that of the district youth unemployment rate, which significantly lowers the risks of NEET status—by a relatively large magnitude—only for females. This contradicts the general assumption that higher community-level unemployment rates would increase chances of being unemployed, and hence raise NEET rates. One possibility is that, similar to the trends observed in European countries in the face of the recession (Eurofound, 2012, 2016), youth expect the job hunt to be more challenging in the context of high community unemployment rates, and therefore choose to stay in education or training longer—and hence out of NEET—until job market conditions become more favorable. In the Sri Lankan context, it intuitively makes sense to assume that females are more likely to pursue this course of action, given their higher likelihood of being engaged in education at higher levels, and societal expectations that men should be engaged in some form of employment.

5.2.2 | NEET subgroups

Table 5 presents relative risk ratios¹¹ of a multinomial logit model that tests the effects of our explanatory variables on risks of falling into different NEET subgroups, relative to a comparison group—the unemployed NEETs. Some interesting patterns can be observed across the different subgroups. Holding other factors constant, younger NEETs have a relatively higher risk of being NEET owing to unspecified reasons relative to the unemployed group, similar to our findings in the descriptive analysis. In terms of gender, the relative risk for males, compared with females, of being in the family carer and other NEET subgroups is significantly lower than being in the unemployed subgroup. This is especially the case for family carers, where the risk is close to 0 (0.09) (compared with 0.77 for other NEETs), in line with our findings that family carers are predominantly female. On the contrary, the risk of being in the family carer and other groups is significantly higher compared with the unemployed, by 2.5 and 1.9 points, respectively, for youth from ethnic and religious minorities, relative to their Sinhala Buddhist counterparts. The relative risks of being a family caring or other NEET, as opposed to an unemployed NEET, are lower for the never married, relative to the ever married.

One's level of education has important implications associated with being in a particular NEET category. Having O-Level qualifications, relative to not completing secondary education, lowers the risks of being a family caring, as opposed to an unemployed NEET, while having A-Level and above qualifications is associated with a significantly lower risk of being in all three subgroups relative to the unemployed group, reiterating our findings from the binomial logit model. Fluency in English is also associated with lower risks of being in the family carer and the discouraged NEET groups relative to the unemployed group, while this has no effect on the other NEET subgroup. Previous work experience also lowers risks of being NEET in either of the subgroups relative to the unemployed.

The influence of the level of household income in determining the NEET subcategory to which one belongs is not very substantial. Being part of a male headed household is associated with higher risks of being in the family caring and other subgroups relative to the unemployed, while the presence of a well-educated adult also increases the relative chances of belonging to the unspecified NEET category. Mirroring our prior findings, having children below five is associated with a statistically

TABLE 5 Determinants of belonging to NEET subgroups for pooled sample, multinomial logit estimates

Variables	Family carers	Discouraged	Other
15–19 years	1.125 (0.182)	0.980 (0.186)	2.361*** (0.320)
Male	0.086*** (0.017)	0.964 (0.172)	0.767** (0.098)
Sinhala Catholic	0.823 (0.314)	0.249* (0.205)	0.667 (0.204)
Tamil Hindu	1.414 (0.359)	0.994 (0.296)	1.137 (0.264)
Other minorities	2.535*** (0.551)	0.815 (0.269)	1.931*** (0.382)
Never married	0.056*** (0.013)	0.806 (0.303)	0.452*** (0.117)
O-Levels complete	0.610*** (0.111)	0.839 (0.182)	0.955 (0.154)
A-Levels passed & above	0.196*** (0.042)	0.320*** (0.089)	0.632*** (0.109)
English literacy	0.701* (0.132)	0.459*** (0.134)	1.033 (0.165)
Previous experience	0.012*** (0.007)	0.565* (0.171)	0.016*** (0.010)
25,000–50,000	0.848 (0.133)	0.609** (0.120)	0.804 (0.112)
50,001–75,000	1.399 (0.364)	0.907 (0.324)	1.691** (0.381)
75,001–100,000	0.813 (0.395)	0.623 (0.510)	0.809 (0.325)
Above 100,000	1.944 (0.837)	0.378 (0.304)	1.089 (0.425)
Household headed by male	1.449* (0.278)	1.230 (0.283)	1.368* (0.231)
O-Level passed adult in household	1.240 (0.214)	0.971 (0.205)	1.814*** (0.264)
Employed parent in household	0.716 (0.151)	0.954 (0.234)	1.000 (0.190)
Dependent kids	2.178*** (0.408)	1.138 (0.296)	0.755 (0.145)
Dependent elders	1.288 (0.343)	0.962 (0.311)	1.196 (0.264)

(Continues)

TABLE 5 (Continued)

Variables	Family carers	Discouraged	Other
Rural	0.696* (0.152)	1.238 (0.392)	1.023 (0.192)
Estate	1.329 (0.580)	3.578*** (1.740)	1.556 (0.612)
Central	1.239 (0.422)	1.129 (0.549)	0.748 (0.215)
Southern	1.364 (0.453)	1.568 (0.700)	0.821 (0.236)
Northern	1.174 (0.404)	3.314*** (1.472)	1.336 (0.389)
Eastern	1.374 (0.408)	3.910*** (1.475)	0.788 (0.213)
North Western	1.078 (0.334)	4.164*** (1.647)	1.267 (0.317)
North Central	0.654 (0.220)	3.474*** (1.496)	0.706 (0.228)
Uva	1.472 (0.636)	1.349 (0.689)	1.361 (0.453)
Sabaragamuva	1.601 (0.693)	0.955 (0.602)	1.737 (0.671)
Youth unemploy- ment rate	0.000** (0.000)	0.005 (0.032)	0.000*** (0.000)
Observations: 3,067			

Note: The dependent variable is a categorical variable coded as follows: 1 = unemployed NEETs (reference category); 2 = family carer NEETs; 3 = discouraged NEETs; and 4 = other NEETs. The reported values are relative risk ratios of the logit estimates. ***, **, *Denote statistical significance at 1%, 5%, and 10% levels, respectively. Standard errors are shown in parentheses. Coefficients on constants not reported.

significant higher risk of being a family carer relative to an unemployed NEET, but has no effect on belonging to the other NEET subgroups.

Our location dummies point to some interesting findings with respect to discouraged NEETs, where the chances of being a discouraged NEET, as opposed to an unemployed NEET, is considerably higher for youth residing in the estate sector relative to the urban sector, and in the Northern, Eastern, North Western, and North Central provinces relative to the Western province. This is likely reflective of low opportunities in remote and conflict-affected regions,¹² which has a greater adverse impact on the discouraged who have given up searching for job opportunities, than on those who are still on the lookout for work.

6 | CONCLUSION AND POLICY IMPLICATIONS

In this study we use cross-sectional individual-level data to examine Sri Lanka’s NEET population. We empirically identify the risk factors of falling into NEET, and of belonging to a specific NEET

subgroup, relative to a reference group. Our descriptive analysis shows that females account for 67% of overall NEETs, largely driven by the family carer subgroup who is the largest NEET subcategory and is predominantly female. Other NEETs and unemployed NEETs also account for around one-fourth each of the NEET population.

Our binomial logit model identifies the following as key risk factors of becoming NEET: being female or of ethnic and religious minorities, belonging to the 20 to 24 age group, having very low or very high levels of education, being illiterate in English, belonging to a low-income household or one headed by a male, and living in more remote areas. We also find important differences by gender. Being married or living in a household with children below the age of five significantly increases the risk of NEET status for females, but lowers the risk for males. Similarly, having A-Level and above qualifications raises the chances of becoming NEET for males, but reduces the chances for females.

Our multinomial logit model reveals that falling into NEET because of unemployment is more common among the highly educated. In contrast, being female, having children under the age of five, being married, and belonging to ethnic and religious minorities increases the likelihood of becoming a family caring or other NEET. Those in the younger age cohort are more likely to belong to the other NEET category as opposed to being unemployed. Location is the most important determinant of becoming a discouraged NEET.

Our results point to several policy implications in reducing the NEET rate and engaging more of Sri Lanka's youth in education, training, and the labor market. These policy prescriptions can also be broadly applied in other developing country contexts, given that Sri Lanka's NEETs share many similarities with those in other developing countries: four out of five young NEETs in the developing world are female, while a large share of female NEETs remain inactive outside the labor force, compared to developed countries where around half of NEETs are unemployed and actively seeking work (ILO, 2017). Moreover, school-to-work transitions are also more challenging for youth in developing countries compared with those in developed countries (ILO, 2017).

With regard to female family carers who account for the largest share of NEETs and also face relatively higher risks of becoming NEET, it is important to explore policy options that can release women from household responsibilities and bring them into the labor market. In light of our finding that small children are a key risk factor keeping women at home, the provision of good quality and affordable childcare options is an essential area requiring policy attention. Evidence from Europe and the United States suggests that affirmative action-type policies and family-friendly policies that increase the availability and reduce the cost of childcare have succeeded in increasing female LFP (Gunewardena, 2015; Vuri, 2016). Establishing quality on-site day-care centers at workplaces is an important and feasible starting point in this regard (Solotaroff, Joseph, & Kuriakose, 2017).¹³ These centers would ideally provide free, quality childcare, as well as free transportation to and from the facility and free on-site basic medical services to both its employees and their children.

Preventing youth from becoming unemployed NEETs calls for a particular focus on highly educated males. Sri Lanka's 2017 Labour Demand Survey conducted by the DCS highlights a large sectoral mismatch in the demand for and supply of labor—an issue also encountered in other developing countries (Pieters, 2013)—with educated youth waiting for white-collar or so-called “good” jobs, while vacancies are in routine and nonroutine manual jobs (DCS, 2017b). Additionally, identified soft skills gaps among the educated also constrain the employability of youth, as seen in the higher NEET risks for those with poor English language skills. To provide youth with employable skills and prepare and make them aware about existing job opportunities before actual entrance, several OECD countries have experimented with quality vocational education, apprenticeships, internships, and mentoring programs (Eurofound, 2012), which can also be initiated in the Sri Lankan and other developing

country contexts. Moreover, the government's target of creating one million jobs under its national development policy (Ministry of National Policies and Economic Affairs, 2016) should give priority to more white-collar job creation in line with youth aspirations.

Lastly, our findings show that being a discouraged NEET is largely tied to locational disadvantages. Measures therefore need to focus on bringing back hope to potential workers who have given up their job search in the context of living in conflict-affected and remote areas, with limited access to information and infrastructure. In the European Union, financial and mobility assistance is provided to disadvantaged youth, comprising of both support for specific costs—such as transport or accommodation costs—or a grant or allowance, intended to cover the cost of living while participating in learning opportunities (Eurofound, 2012). Such assistance schemes can also be considered in the Sri Lankan and other remote and conflict-affected settings in developing countries. Ongoing efforts to improve connectivity between urban and remote areas are also important.

DATA SHARING POLICY

The data that support the findings of this study are available from the corresponding author upon request.

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ENDNOTES

- ¹ The term Status Zer0 was simply a technical term derived from career services' records, where Status 1 referred to young people aged over 16 years who were in education, Status 2 referred to those in training, and Status 3 referred to those in employment (Eurofound, 2012b).
- ² Please refer to http://www.statistics.gov.lk/FAQ/LFS_20171113.pdf for more information on the reweighting of LFS statistics.
- ³ This variable might however not fully capture experience, as it considers as previous experience a period of just two weeks of continuous work, which also includes family work, in addition to paid- and self-employment. This variable therefore needs to be interpreted with caution.
- ⁴ We also experimented with including district-level shares of students attending school at the upper secondary level, shares of household members currently receiving treatment for any kind of mental illness, average percentages of households in which at least one member currently uses drugs, and average distances to the nearest bus halt, as a proxy for public transport facilities. However, apart from several caveats associated with these variables in terms of samples covered and timeframes, these variables were not significant in our estimations, and did not significantly influence other coefficient estimates. We therefore choose to present estimates excluding these variables.
- ⁵ As shown in Section 5.1, sick or disabled NEETs however account for only 4% of the total NEET population.
- ⁶ Results of the Hausman test are presented in Appendix C of the Supporting Information (see end of paper).
- ⁷ Other types of schools include assisted and autonomous private schools that offer both the local syllabus and the British system, a separate category of English medium international schools approved and registered by the Board of Investment of Sri Lanka also operate in the country.

- ⁸ A few private universities exist, offering Sri Lankan degrees recognized by the University Grants Commission and foreign degrees affiliated with foreign universities; however, strong opposition against private universities, in the context of free state education, has limited further expansion.
- ⁹ Current expenditure on education as a percentage of total government expenditure stands at 9%, which is far below the lower-middle income average of 16% (World Bank, 2017).
- ¹⁰ We show that is the case in our multinomial logit analysis in Section 5.2.2.
- ¹¹ Relative risk ratios refer to the ratio of the probability of an event occurring in a given group (for example, being a family carer NEET) to the probability of the event occurring in a comparison group (being an unemployed NEET). An RRR of one indicates that a conditional increase in the independent variable is not associated with any change in the risk of being in a particular group relative to a reference group, while an RRR above (below) one indicates that an increase in the independent variable raises (lowers) the risks of being in a given group, relative to the reference group. RRRs for a multinomial logit model are obtained by exponentiating the multinomial logit coefficients.
- ¹² Sri Lanka suffered a 26-year long civil conflict from 1983 to 2009, which largely affected the Northern and Eastern provinces.
- ¹³ Some ICT companies based in the capital Colombo already have incorporated day-care centers for workers' young children, with promising results (Solotaroff et al., 2017).

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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