Journal of Youth Studies

ISSN: 1367-6261 (Print) 1469-9680 (Online) Journal homepage: www.tandfonline.com/journals/cjys20

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To cite this article: Essi Ahlroth, Markus Laaninen & Mikko Niemelä (02 Jul 2025): Conditions of youth transition: individual and municipal factors related to the NEET rate in Finland, Journal of Youth Studies, DOI: 10.1080/13676261.2025.2520311

To link to this article: https://doi.org/10.1080/13676261.2025.2520311

Published online: 02 Jul 2025.

JOURNAL OF YOUTH STUDIES
https://doi.org/10.1080/13676261.2025.2520311

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Conditions of youth transition: individual and municipal factors related to the NEET rate in Finland

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ABSTRACT

The increasing number of youths who are not employed or studying – that is, youth not in education, employment, or training (NEET) – has been one of the most pressing issues for welfare societies in recent decades. We examined how individual characteristics and municipal conditions are associated with the NEET rate in Finnish municipalities. Utilizing full-population register data and 2-level random intercept models, we investigated youth aged 19–29 in 2017. We found that men, youth with lower levels of education, and migrant youth had a higher NEET rate, as anticipated. Contrary to expectations, however, the NEET rate was highest among older individuals. We found that benefiting from the availability of entry level jobs is tied to individual characteristics, whereas a better labor demand benefits all. The availability of public services is not associated with the NEET rate, suggesting that more in-depth exploration of public services is needed. While municipal differences in the NEET rate are explained mostly by individual factors as well as labor market factors, we noted geographic patterns in the NEET rate distribution, which implies the presence of unobserved factors. Our results provide support for labor demand policies and underline the importance of local actors.

ARTICLE HISTORY
Received 27 January 2024
Accepted 10 June 2025

KEYWORDS
NEET; regional differences; youth transition; youth unemployment; education; labor market

1. Introduction

Youth unemployment and social exclusion have become central political concerns in recent decades (Eurofound 2012; Vieira, Pappámikail, and Ferreira 2021). However, *youth at risk,* not following the transitional path they are expected to pursue, is a topic of debate that is at least centuries old (Follesø 2015). The transition to adulthood is becoming increasingly complex as structural determinants change rapidly, traditional social structures are dismantled, and individual choices are emphasized (Brooks 2009; Saloniemi et al. 2021).

The concept of NEET (not in education, employment or training) measures youth exclusion and the fluency of youth transitions. NEETs are temporarily or permanently detached from sectors of society that are typically considered productive, and their trajectories

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somehow deviate from normative ones. They are often dependent on social security and have health-related concerns (Anvik and Waldahl 2016). An increase in, or a persistently high, NEET rate is viewed as an indicator of severe structural problems with long-term consequences (Eurofound 2012). In 2015, the United Nations (UN) declared reducing the NEET rate as a sustainable development goal (SDG) (UN 2015).

Non-linearities in the youth transition pathway are typically seen as dysfunctions that negatively affect the well-being of both individuals and society. These issues apply not only to European countries but to emerging economies as well, although the phenomenon manifests differently in different societal circumstances (e.g. Cieslik, Barford, and Vira 2022; O'Higgins et al. 2023). In Nordic countries, the population is aging, which has led to labor shortages, decreased tax revenue, and rising healthcare costs. Political interests are founded on integrating youth into the labor force (Halvorsen and Hvinden 2014). Nordic countries are considered to be developed economies with functional labor markets, comprehensive social security, accessible education, and public services. Across Europe, the NEET rate is lower in Nordic countries than in Eastern and Southern Europe. According to Eurostat statistics, the Finnish NEET rate is below the European average but the highest among the Nordic nations (Eurostat 2024).

Nordic NEETs are viewed as a group with relatively difficult challenges since they have not integrated into school or the labor market, regardless of favorable conditions (Anvik and Waldahl 2016). In turn, the region's comprehensive social security model enables terms outside of the labor market and education, without the immediate risk of severe poverty. Regardless of individual experiences, the persistent NEET rate is seen as a risk in Nordic welfare policy, and Nordic countries have invested in targeting the problem of youth exclusion. The focus is on early intervention, but the service system includes a variety of actions designed to rehabilitate youth, increase their employability, and activate youth who already have NEET status. The youth services in Nordic countries are considered comprehensive, although there are weaknesses in the network (Jonsson et al. 2022).

Policies adopted in Finland have concentrated on individual traits (Karjalainen and Saikku 2011). The 'NEET issue' is often understood as an outcome of shortcomings in individual characteristics and abilities. In this way, categorizing individuals as NEETs can stigmatize youth in vulnerable positions and encourage studies or interventions to focus on and their deficiencies, rather than tackling structural disparities (Serracant 2015).

The NEET question should be de-individualized (e.g. Lőrinc et al. 2020). From this point of view, the youth transition pathway can be perceived as an interplay between changing labor market conditions, shifting welfare policy orientations, available services, and societal norms regarding transitions and the 'right kind' of young citizens (McLaughlin 2024).

Individual characteristics do predict NEET status in the interplay with the surrounding society. Similar personal resources can result in different outcomes under different conditions. Hence, following Sen's (1985) terminology, regional factors can be understood to provide the capability to utilize individual resources. From the standpoint of positive freedom (Berlin 1969), regional factors indicate the possibility of acting to realize one's fundamental purpose. However, policy discussions regarding the NEET question have focused on national policy, and analyses have mainly been conducted from either an individual or a macro-structural angle. This ignores the variation in NEET rates within

countries and the significance of local factors. There is substantial variation in the NEET rate between Finnish municipalities and regions (Finnish Institute for Health and Welfare 2023). Finnish municipalities have traditionally had high autonomy in decision-making regarding public services (Niemelä and Saarinen 2012) and local industrial policies (Makkonen and Kahila 2021), which leads to the need to study municipal differences alongside individual-level ones.

Therefore, we examined how individual-level sociodemographic factors and municipal conditions are associated with the fluency of youth transitions in Finnish municipalities. Concentrating on within-country differences in transition fluency, we chose a cross-sectional approach. The novelty of this study is that it shows whether individual characteristics predict NEET status similarly across the country. With multilevel modeling, we have shed light on the complex interplay between individual and structural factors. In addition, this study highlights the importance of public services as emphasized in the welfare state literature. From a welfare and employment policy perspective, we propose a broad view of both labor market factors and the availability of various public services.

We formulated three hypotheses (Figure 1). We assumed that the NEET rate would be higher among those with an immigrant background, those with a low level of education, males, and younger individuals (H1). Regarding labor market conditions, we assumed that the NEET rate would be lower in municipalities with lower unemployment, a higher proportion of low-skilled jobs, and greater industrial diversity (H2). Finally, we expected that the NEET rate would be lower in municipalities with better availability of education, healthcare, and social services (H3). We used full-population Finnish register data and focused on youths aged 19–29 in 2017. We employed two-level linear probability models through which we analyzed 738136 individuals nested in 295 municipalities.

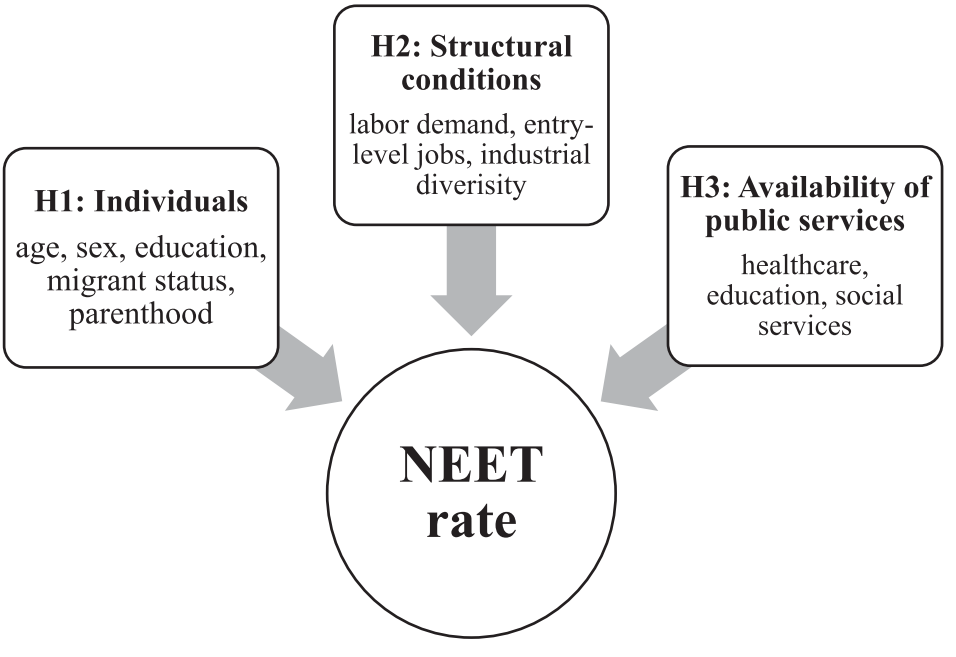

Figure 1. Hypotheses.

2. Previous research

2.1. Individual characteristics and NEET

The NEET rate is higher among Finnish men than among women, except in the age range of 25–29, in which women had a slightly higher NEET rate, typically because of family responsibilities (Niknami, Schroder, and Wadensjo 2019). In addition, youth with at least a secondary degree are less likely to have NEET status (Saloniemi et al. 2021) than those without it. Consequently, for young Finnish men, a weak connection to the education system is a central factor that explains the higher NEET rate in comparison to women (Niknami, Schroder, and Wadensjo 2019).

Women perform the majority of unpaid care work, making it a key factor in explaining gender inequality (Addati et al. 2018). Long periods outside the labor market and education due to family duties may have a negative impact on women's careers and income. Earlier literature (e.g. Bacher et al. 2017; Tamesberger and Bacher 2014) has discussed whether young mothers should be considered NEETs. In Finland, staying home is culturally accepted and formally supported by parental leave and home care allowance schemes (Hakovirta and Nygård 2021). Differences in childbearing and childcare choices are partially rooted in cultural and religious reasons with regional variation. Young parents' choice to stay at home and utilize parental social benefits represents an adaptation to certain conditions (e.g. cultural or economic circumstances) in relation to personal interests. Young migrant mothers without language skills are often in a vulnerable position and have limited options (Ciccarelli and Fabrizi 2017; Kil et al. 2018; Maguire 2017). The NEET rate is generally higher among youths with immigrant backgrounds, particularly first-generation immigrant youth (Niknami, Schroder, and Wadensjo 2019).

Health and mental health issues are linked with NEET status as an outcome and also as a predictor of exclusion (Anvik and Waldahl 2016; Gariépy et al. 2022). Adverse childhood experiences predict NEET status (Pitkänen et al. 2021), and many people have experienced bullying or learning difficulties in childhood (Lőrinc et al. 2020). NEET status experienced early on predicts recurring NEET periods in the future, unemployment later on in life (Heglum and Nilsen 2024), and may cause harm to mental health. Weakening support and authorities' control during youths' transitional phase, combined with much needed long-term planning and decision-making, may cause trouble for youth who experience hardship (e.g. with mental health, living conditions, or a lack of social support) (Robertson 2019).

The most demanding turning points are experienced after graduation. In Finland, basic education is compulsory, free, and completed at age 16. Secondary education is typically completed by age 19. In 2019, compulsory education was extended from 16 to 19 years of age, making secondary education compulsory. Most youths attain secondary education and face a potentially demanding transitional phase after graduating or discontinuing their studies.

The present study explores whether individual traits predict NEET similarly across Finnish municipalities. We expected that the NEET rate would be higher among men than women, and higher among youth with lower levels of education. We assumed that the NEET rate would be highest after graduating from secondary education and decline with age as individuals begin to find their place in higher education and the labor market. We also assumed that the NEET rate would be higher among youths with an immigrant background (H1, Figure 1).

2.2. Municipal circumstances and NEET

Economic circumstances and labor market competition impact the NEET rate, with a lack of job opportunities being the primary contributing factor (Bacher et al. 2017; Rambla and Scandurra 2021). As competition in the labor market intensifies, young people are the first to be excluded, especially in terms of part-time, fixed-term, and low-paying positions, which serve as entry-level jobs for youth (Bradley, Migali, and Navarro Paniagua 2020). Difficulties in employment may contribute to an increased risk of long-term exclusion. Current circumstances not only involve the difficulties youth experience but also entail expectations regarding future career prospects, which can seem daunting.

Within-country differences in labor market outcomes, such as unemployment and NEET, stem from the limited mobility of labor and capital. Labor market conditions differ across regions because the composition of the population (i.e. the labor force) and businesses differ (Pehkonen and Tervo 1998). Municipalities aim to influence local labor demand and supply to increase economic well-being and cut down on public spending (Makkonen and Kahila 2021). Municipalities strive to enhance the well-being and capabilities of their residents, influence the amount and quality of business activities, and adjust the quality and quantity of public services.

In line with the idea of decentralization, Finnish municipalities are obliged to arrange for people's childcare, basic education, and social and health services. There are regional differences in the quality and availability of public services across Finland (e.g. Kangas and Kalliomaa-Puha 2018), especially regarding services that are means tested and not quantitatively regulated. Many services have been restricted to municipal residents but some are regional resources rather than municipal. Municipalities have shared services and joint decision-making structures within regions to advance the vitality of the entire area. Thus, in addition to mobility factors, municipal and regional political autonomy as well as differences in (or the allocation of) resources are potential sources of within-country variation in the NEET rate (Bacher et al. 2017; Mellberg et al. 2023).

In Finland, the number of student places and licenses to provide education are nationally regulated, but municipalities are not obliged to commit to any given number of degrees at the secondary level. While funded nationally, the organization of secondary education lies within municipalities themselves, the private sector, or other registered organizations. During our analysis period, municipalities arranged for their residents to receive basic healthcare, although individuals could choose to change their health center, and smaller municipalities did collaborate. Specialized healthcare was a regional service mostly found in urban central cities. Social services were restricted for municipal residents but often arranged jointly with 2 or 3 municipalities, with bigger cities being an exception.

From a capability perspective, the public services mentioned above enable youths to overcome a demanding transitional phase and utilize their potential. We assumed that (Figure 1, H2) a lower unemployment rate, a higher proportion of low-skilled jobs, and a greater level of industrial diversity would predict a lower NEET rate. As for public services, we posited that (H3) living in a municipality with better availability of secondary education, healthcare, and social services would predict a lower NEET rate.

3. Material and methods

We utilized high-quality, full-population register data that covered all Finnish residents from 1987 to 2021. We concentrated on cohorts born between 1988 and 1998 and observed individuals in 2017 when they were between 19 and 29 years of age. The age group diverges from more standard approaches (e.g. Elder 2015; OECD 2024). However, this is justified by the structural characteristics of the Finnish education system discussed above. We consider our data to be hierarchical; thus, individuals are nested within municipalities. Table A1 presents the descriptive statistics for individual-level variables, while Table A2 contains specific municipal and regional variables.

The outcome in this study is a binary variable indicating whether an individual is categorized as NEET or not. Table 1 displays the conditions and criteria of the categorization, and Figure A1 depicts the distribution. Because the focus is on municipal (macro) level differences in transition fluency and its conditions, we did not classify individuals under subgroups; nor did we observe the duration or recurrence of NEET period(s).

Employment status is typically measured at a given timepoint during the reference year, either self-reported in survey-based studies (Elder 2015; OECD 2024) or drawn from registers on the last day of the year (Finnish Institute for Health and Welfare 2023). Register data enabled us to measure *not working* based on income received from paid work. Individuals are categorized as NEET if they have received less than 6600 euros (550 euros per month) from paid labor during the year in question. This amount corresponds to the basic element of Finnish last-resort social assistance, which is intended to cover minimum living costs. It is used as a proxy for the lowest possible acceptable level of income. In this way, we measured labor market participation throughout the entire year, condensed it into a single value, and controlled for seasonal variation, including youth with occasional employment but who had very low incomes in NEET category.

We did not categorize stay-at-home parents of children under 3 years of age as NEET since we could not unambiguously determine such individuals to be excluded from, or inactive in, society. In this way, we avoided overestimating the NEET rate among women. We identified stay-at-home parents based on whether they received parental leave or child homecare allowances during the year in question. Military (or civilian) service is mandatory for Finnish male citizens and optional for women. Unfortunately, register data do not provide a comprehensive view of individual participation in military or civilian service. However, we assumed that the bias in the NEET categorization would be minor because participation in military or civilian service is exogenous at the municipal level. We considered our outcome variable to be an indicator of general fluency in the youth transitional pathway, rather than a measure for the municipal amount or individual risk of marginalization (in comparison to, e.g. Contini, Filandri, and Pacelli 2019; Saloniemi et al. 2021).

Table 1. Description of the conditions and criteria for the outcome variable.

Not in education or training	Not in employment	Not a stay-at-home parent of children under 3 years old
Not receiving a student allowance Not registered as enrolled in an educational program Not participating in labor market training	Have received less than 6600 euros (550 euros per month) from paid labor during the year	Not receiving parental leave or child homecare allowances during the year

In our study, the national NEET rate and variations between municipalities are lower than official statistics indicate (Finnish Institute for Health and Welfare 2023). The differences between the figures can be explained by choices related to how NEET status is measured. Considering stay-at-home parents as not NEET led us to make a lower estimation and control for regional/cultural differences in childcare and the birthrate. Second, we used annual income for not working and information on education for the entire year, while official statistics measure working and studying based on individual status in the last week of the year. Also, we excluded the Åland islands from the analysis, which removed significant outliers and impacted the range of variation.

Individual-level variables related to NEET status included sex, origin, education level, and age. Although our NEET definition accounts for caring for infants, we also controlled for whether the individual had children at all, because previous research suggests that having children is associated with a labor market position, especially among women (Kil et al. 2018). Due to the small number of immigrants in Finland, we categorized origins into three groups: (1) natives; (2) first-generation immigrants; and (3) second-generation immigrants. We categorized education level as: (1) primary education, unknown; (2) secondary education (ISCED 3 and ISCED 4); (3) lower tertiary education (ISCED 5 and ISCED 6), and (4) higher tertiary education (ISCED 7 and ISCED8). The first category consisted of individuals still in primary or secondary education and those who had not acquired at least secondary education. We could not distinguish between those who had dropped out of school before graduating from primary education. We categorized age into 5 groups: 19–20, 21–22, 23–24, 25–26, and 27–29 years. For descriptive statistics, we also categorized individuals by municipality type, as follows: (1) urban municipalities; (2) semi-urban municipalities; and (3) rural municipalities (Statistics Finland 2024).

We calculated municipal unemployment as the ratio between the number of municipal residents who registered as unemployed during the year in question and the total number of residents aged 15–64. The definition we used differs from the standard one as those outside the labor force are not excluded from the calculation. However, our definition was suitable for measuring differences in labor market competition between municipalities within our data. We computed the proportion of employees in low-skilled jobs as the ratio between the number of residents working in so-called 'low-skilled' jobs – categorized as codes from 900–933 in the ISCO classification (ILO 2023) – and all employed residents aged 15–64. Following Mellberg et al. (2023), we measured industrial diversity using Simpson's reciprocal measure of diversity, which considers the number of industries in a municipality and the distribution of employees across these sectors. The variables regarding public services included the availability of secondary education, healthcare, and social services. We measured them as the number of professionals (teachers, doctors, social workers) working in the region in relation to 19–29-year-old residents (teachers) or the total number of residents (doctors and social workers). We measured these variables at the regional level – that is, in so-called working areas – instead of at the municipal level. This is because the use of well-being services and secondary education is not restricted to residents of certain municipalities; they are also partially organized regionally. These factors allowed us to gauge service provision instead of usage.

We excluded the Åland islands because as a self-governing region, local decision-making differs from that of mainland municipalities. In addition, there are some distinct features of school-to-work trajectories and youth migration patterns in the Åland islands that do not

apply to mainland municipalities. Thus, the data contained all 295 mainland municipalities that existed in 2017. We utilized two-level random intercept linear probability models, from which we can see how different factors are associated with the probability of being NEET. We employed linear probability models because we could compare the coefficients of our predictors between nested models (Breen, Karlson, and Holm 2018). The reasoning for using the two-level research setting is that, based on theory, the probability of having NEET status varies between municipalities. This may be related to the different administrative features of municipalities that can influence the scope of local decision-making.

Table 2 presents the content of our regression analyses. We began by showing the results of a null model to determine the overall probability of being a NEET in an average municipality. Next, we added individual, labor market, and public service variables and examined how individual traits and municipal circumstances are associated with the odds of being NEET.

4. Results

Of the 738136 individuals included in the analysis, 13% belong to the NEET category (Table A1). Figure 2 shows the NEET rates in Finnish municipalities in 2017, which vary between 5.5% and 26%. The NEET rate in our study is lower and the variation between municipalities is moderate compared to the official statistics that reported a national NEET rate of 16.9%, which fluctuated between 8.5% and 45.8% in 2017. Figure 2 indicates that the NEET rate is between 11% and 18% in around 80% of municipalities. The NEET rate is lower in western Finland and higher in eastern Finland. Most of the 20 municipalities with NEET rates greater than 20% are in eastern Finland, whereas municipalities with NEET rates lower than 11% are mostly located in western Finland. Figure A2 suggests no clear regional trend in variation in the rate of low-skilled individuals. The average unemployment rate is 8.8% of the workforce, but the variation is quite notable, at 2.5% to 15.7% (Table A2). Unemployment is concentrated in the northern and eastern parts of the country and is lowest in the western part (Figure A2).

Table 3 displays the outcomes of the multilevel regression models. The first column presents the results for the empty model. The intraclass correlation (ICC) indicates that the multilevel model is not required for analysis because only less than 1% of the variation belonging to NEET lies at the municipal level. In other words, the differences between municipalities in terms of the probability of being NEET are moderate. However, the likelihood ratio test shows that the multilevel model fits the data better compared to the single-level model (χ^2 (df) = 2589.53, p-value <0.001).

Beginning with Hypothesis 1 regarding individual-level variables, the NEET rate in the youngest age group (19–20) is higher in relation to the next two groups (21–22 and 23–

Table 2. Contents of regression models.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Overall NEET rate	x							
Independent associations		x						
Individual characteristics			x			x	x	x
Structural characteristics				x		x		x
Public services					x		x	x

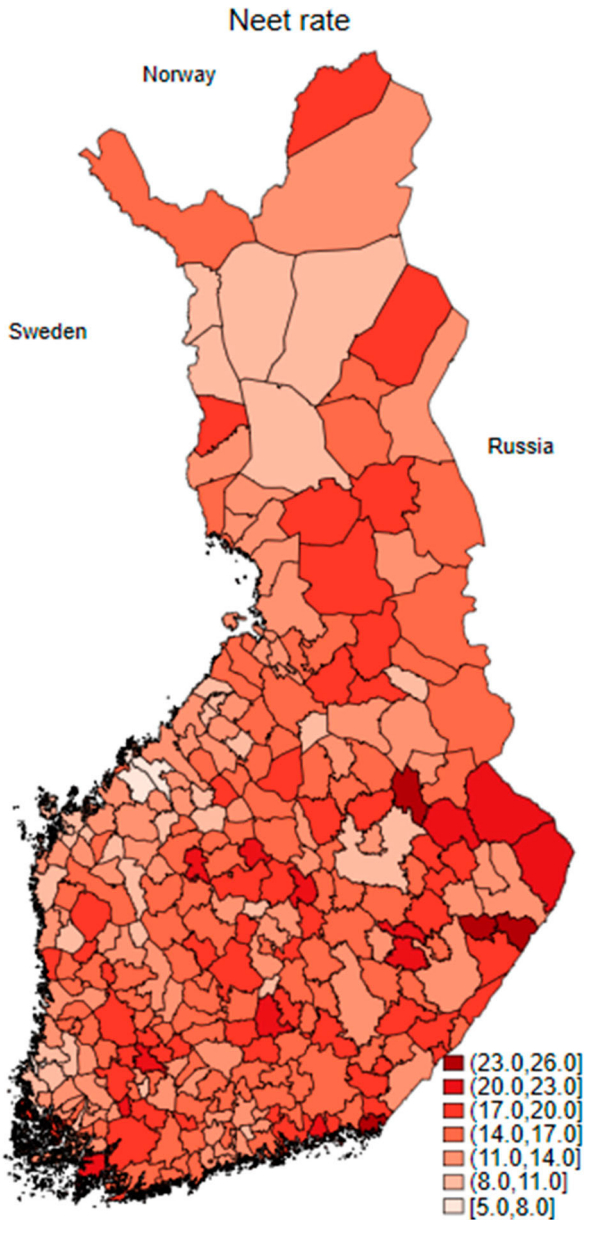

Figure 2. The NEET rate in Finnish municipalities in 2017.

24). Nevertheless, contrary to our first hypothesis, the NEET rate in the age bracket of 25–26 is as high as in the youngest group; this figure is highest among the oldest cohort (27–29).

In Model 2, where only sex is considered, women are 5 percentage points less likely to have NEET status than men. This difference shrinks when other individual-level factors are added to Model 3. In the full model, women are 2.8 percentage points less likely to have NEET status than men. Further, parents have a lower NEET rate than childless individuals, but given that our NEET definition considers stay-at-home parents of small children to not have NEET status, we expected this outcome. Overall, having a post-compulsory

Table 3. Multilevel linear probability models of factors explaining the probability of having NEET status. Standard errors in second rows.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Age group (ref. 19–20)								
21–22		−0.0467***	−0.0271***			−0.0272***	−0.0271***	−0.0272***
		0.00134	0.0013			0.0013	0.0013	0.0013
23–24		−0.0570***	−0.0204***			−0.0205***	−0.0204***	−0.0205***
		0.00132	0.0013			0.0013	0.0013	0.0013
25–26		−0.0477***	0.00376**			0.00371**	0.00376**	0.00371**
		0.00131	0.00133			0.00133	0.00133	0.00133
27–29		−0.0384***	0.0290***			0.0289***	0.0290***	0.0289***
Sex (ref. male)								
Female		−0.0496***	−0.0276***			−0.0276***	−0.0276***	−0.0276***
		0.000777	0.00077			0.00077	0.00077	0.00077
Has children (ref. #)								
Yes		−0.0734***	−0.0974***			−0.0974***	−0.0974***	−0.0974***
		0.00111	0.00115			0.00115	0.00115	0.00115
Education level (ref. primary / missing)								
Secondary		−0.168***	−0.166***			−0.166***	−0.166***	−0.166***
		0.00103	0.00111			0.00111	0.00111	0.00111
Lower tertiary		−0.235***	−0.240***			−0.240***	−0.240***	−0.240***
		0.00137	0.00149			0.00149	0.00149	0.00149
Higher tertiary		−0.217***	−0.235***			−0.235***	−0.235***	−0.235***
		0.00208	0.00218			0.00218	0.00218	0.00218
Origins (ref. native)								
Second-generation		0.0694***	0.0315***			0.0316***	0.0316***	0.0316***
		0.00417	0.00407			0.00407	0.00407	0.00407
First-generation		0.105***	0.0169***			0.0169***	0.0169***	0.0169***
		0.00141	0.00149			0.00149	0.00149	0.00149
Low-skill		−0.000115		−0.00197		−0.00440**		−0.00465***
		0.00175		0.00158		0.00141		0.00141
Municipal unemployment		0.00574***		0.00582***		0.00535***		0.00520***
		0.000678		0.000683		0.000612		0.000629
Simpson's index		0.098		0.0497		0.0342		0.0556
		0.0847		0.0771		0.0697		0.0712
Teachers / region		0.312			0.195		0.296	0.0824
		0.168			0.196		0.177	0.162
Doctors / region		−8.021			−4.852		−1.885	−4.049
		4.601			5.144		4.647	4.188

Social workers / region		−5.36			−2.271		−0.781	−0.196
		3.803			4.225		3.832	3.472
Intercept	0.147***		0.324***	0.0614	0.148***	0.270***	0.314***	0.253***
	0.00182		0.00205	0.0731	0.0149	0.0661	0.0135	0.0675
Between-municipality variance								
Intercept	0.000730***		0.000571***	0.000544***	0.000706***	0.000408***	0.000549***	0.000401***
	0.00004		0.0000322	0.0000308	0.0000393	0.0000241	0.0000317	0.000024
Within-municipality variance								
Intercept	0.112***		0.105***	0.112***	0.112***	0.105***	0.105***	0.105***
	0.0000919		0.0000863	0.0000919	0.0000919	0.0000863	0.0000863	0.0000863
N	738136	738136	738136	738136	738136	738136	738136	738136
Groups	295	295	295	295	295	295	295	295

school degree decreases NEET risk. The effect is strongest for those with a lower tertiary degree as their highest, and the association prevails throughout all models. In Model 2, where we see an independent association between origins and the NEET rate, youth with second-generation immigrant status have a higher NEET rate than native-born youth, and first-generation immigrants have the highest NEET rate. In Model 3, where other individual factors are added, the difference between native-born and migrant youth shrinks, and second-generation immigrants end up having the highest NEET rate. These findings are consistent with our first hypothesis.

Hypothesis 2 relates to municipal factors. In models 2 and 4, there is no association between individual NEET risk and the municipal low-skill rate. Nevertheless, the association is significant when individual-level factors are included. In the full model, a 1-unit increase in low-skill rate decreases the likelihood of having NEET status by 0.5 percentage points. A higher unemployment rate in the municipality where a person resides heightens the individual NEET risk by 0.5 percentage points for each 1-unit increase. This association prevails in all models. Industrial diversity does not seem to be associated with NEET risk. These findings are consistent with our second hypothesis. In relation to Hypothesis 3, none of the variables regarding the availability of public services are associated with the outcome variable.

The ICC coefficient indicates that less than 1% of the variation in the probability of having NEET status is at the municipal level, the net of the covariates in the model. Acknowledging that our ICC is low, we also considered other classifications such as provinces or working regions as second-level units. However, these adjustments did not significantly change the ICC. We also replicated our regression models with a NEET definition that allows for stay-at-home parents to be identified as NEETs and which accounts for parental leave and child homecare allowances in statistical analysis. We ran these additional analyses because parents of young children can still be NEETs although we originally categorized them as non-NEETs. In this analysis, the observed difference in the NEET rate between first- and second-generation immigrants disappears. Otherwise, the results presented in Table A3 remain similar.

Municipalities with very low or very high NEET rates are outliers that may have considerable weight for our results. Table A4 compares 10 municipalities with the lowest NEET rate, 10 municipalities with the highest NEET rate, and the rest of the 275 municipalities by socioeconomic characteristics. Overall, there are no large differences between the low NEET rate, the high NEET rate, and other municipalities regarding sociodemographic characteristics. We also replicated our results, excluding 10 municipalities with the highest NEET rates and 10 municipalities with the lowest NEET rates (Table A5). The outcomes remain the same in these additional models as well.

5. Discussion

This study contributes to the understudied topic of the importance of municipal factors in NEET rates (see, e.g. Bacher et al. 2017; Mellberg et al. 2023) by examining the role of municipal conditions in terms of labor market features and the availability of public welfare and educational services, and also by analyzing whether individual characteristics predict NEET status similarly across the country. We found that in general, individual characteristics, and labor demand factors in particular, are associated with the NEET rate.

The higher NEET rate among youths with a migrant background is largely explained by other individual-level factors. Age, education level, and sex explain more of the NEET risk among second-generation immigrants than among first-generation immigrants, whereas taking care of small children at home is more typical among first-generation immigrants. The NEET gap between immigrant youths and natives is not fully explained by individual traits and municipal factors in the model, indicating that there are other contributing factors (see also Niknami, Schroder, and Wadensjo 2019). This is especially the case among the first-generation immigrants, who experience the influence of a language barrier and cultural differences firsthand. Second-generation immigrants might be more similar with native youth in terms of parenthood decisions and language, but might experience the effects of over-generational disadvantage in relation to migrant background.

The NEET rate is higher among men than among women, as assumed. For men, however, this is likely a slight overestimation as data on military service were omitted. Based on previous literature and the effect size, our conclusion is that men's NEET rate remains higher even if military service is accounted for.

The relatively high NEET rate in the youngest age group and the decline in the next age group indicates that a taking gap year before tertiary education is typical. However, contrary to our first hypothesis (H1), the NEET rate is highest among the oldest individuals (27–29 years). It is possible that we observed a cohort effect. Niknami, Schroder, and Wadensjo (2019) found that these same cohorts had the highest NEET rates in Finland in 2010. The findings on the cohort effects of lower relative income demonstrate that cohorts who faced the financial crisis of 2007–2008 during their transitional phase from education to the labor market have been in a disadvantaged economic position (Karonen and Niemelä 2020; also, Heglum and Nilsen 2024).

NEET periods in the early transitional phase predict repeated or prolonged periods outside of education, training, and the labor market as well as cumulative health problems (Bäckman and Nilsson 2016). Thus, a considerable proportion of older NEETs could be in rehabilitation or living on a work disability pension. This outcome is particularly interesting in the post-pandemic period as concerns have been raised about the impact of the COVID-19 pandemic on young people who were in transition at the time. Longitudinal research should be applied for further examination of scarring effects and NEETs.

In line with Hypothesis 2, the amount of low-skilled jobs and labor demand are associated with the NEET rate. Benefiting from low-skilled jobs is tied to young people's varying characteristics, whereas the overall labor demand benefits all youth, which could be further examined in different NEET subgroups. Contrary to our hypothesis, industrial diversity does not play a role, suggesting that a variety of options is not as important. Many young people move away from their hometowns to work and study. This may cause short periods when people have NEET status, but most individuals are eventually able to make use of a national variety of options. However, youth with more difficulties depend on a low threshold for the labor market locally. Our results indicate support for social investment kinds of policy measures that pursue job creation, especially for youths (see, e.g. Tamesberger and Bacher 2014; Zudina 2022).

We did not find an association between the availability of public services and the NEET rate (H3). This is an important finding, highlighting the need to more closely investigate

public services at the local level, consider distances, and provide a more detailed view of services. A purely quantitative measure of availability drawn from registers does not provide a comprehensive picture of the situation that service users face. Future research should focus on the local governance of public services to fully grasp local differences in public services for young people (see, e.g. Mellberg et al. 2023). Moreover, future research should differentiate between enabling or implementing 'active' social investment policies and 'passive' compensating policies (Hemerijck 2017). This would allow us to more closely focus on those opportunity structures, which can be provided through public services for young people with different backgrounds.

In 80% of municipalities, the NEET rates ranges from 11% to 18%. The remaining 20% – with NEET rates of 5.5%–11% and 18%–26% – consist of the most interesting municipalities. All the bigger cities are in the middle group, and both the top and bottom groups consist mostly of rural municipalities, with a few exceptions. Municipalities with a low NEET rate have slightly more male youth and youth with children, and the education level is slightly higher, but the differences are small. Interestingly enough, they are concentrated in the western Swedish-speaking part of the country where well-being is typically higher in terms of several indicators (e.g. Hyyppä and Mäki 2001; Saarela and Finnäs 2006). The composition of the young population, labor demand, and entry level positions explain some of the municipal-level differences in NEET rates. However, the geographic pattern observed, alongside with the characteristics of the municipalities at both ends of the NEET rate spectrum, provide grounds to keep searching for other reasons.

Regardless of municipal differences in NEET rates and structural conditions, we did not observe significant regional differences in how individual characteristics predict NEET status. Global, cultural, and economic circumstances mold the individual life course, regardless of where one lives. Notwithstanding, this does not mean that NEET policies are worthless. Although we are left with the need to further investigate public services, local actions can play a significant role in preventing and treating youth exclusion. The knowledge of the needs of young people exists locally. Hence, individual traits predicting NEET rates call for locally structured solutions, requiring active municipalities working with a high level of autonomy. In Finland, NEET policies are based on the idea of decentralization, combined with extensive legislation demanding a certain level of effort. The institutional structure is in its place; perhaps local implementation is something to examine next.

To evaluate the limitations of this study, one notion concerns the type of NEET examined. We did not look at social or economic exclusion but rather the general fluidity of youth transitions. This notion should be highlighted because social and economic marginalization and general delays in transitional phases are two different phenomena. One might argue that the ideal of linear transition without sidesteps should no longer be considered the norm, which is supported by previous literature (e.g. Saloniemi et al. 2021). Nevertheless, in macro-level examinations, this type of NEET definition is beneficial and can help elucidate the structural aspects of the NEET question.

Ethical statement

We used secondary data retrieved from registers; we did not contact any human participants to collect the data. According to the General Data Protection Regulation (GDPR) of the European Union (EU) and the Finnish Data Protection Act, processing of personal data

is permitted without informed consent for a task carried out in the public interest, such as scientific research. In Finland, an ethical review statement is not required for studies based solely on administrative register data. We followed good scientific practice, data protection guidelines, and ethical standards in collecting and analyzing the data and in reporting the results.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This study was supported by the Academy of Finland's Flagship Programme (decision #320162).

Data availability statement

Due to legal restrictions and data protection regulations of the administrative sources providing individual-level register data, we do not have the permission to make sensitive personal data available.

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Appendix

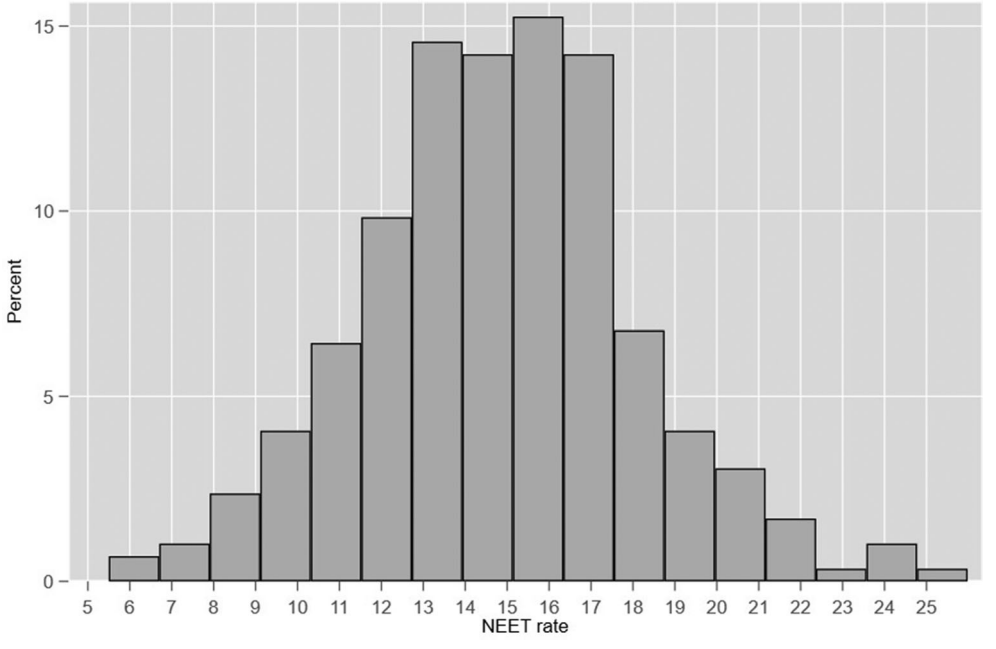

Figure A1. The distribution of the dependent variable (the NEET rate).

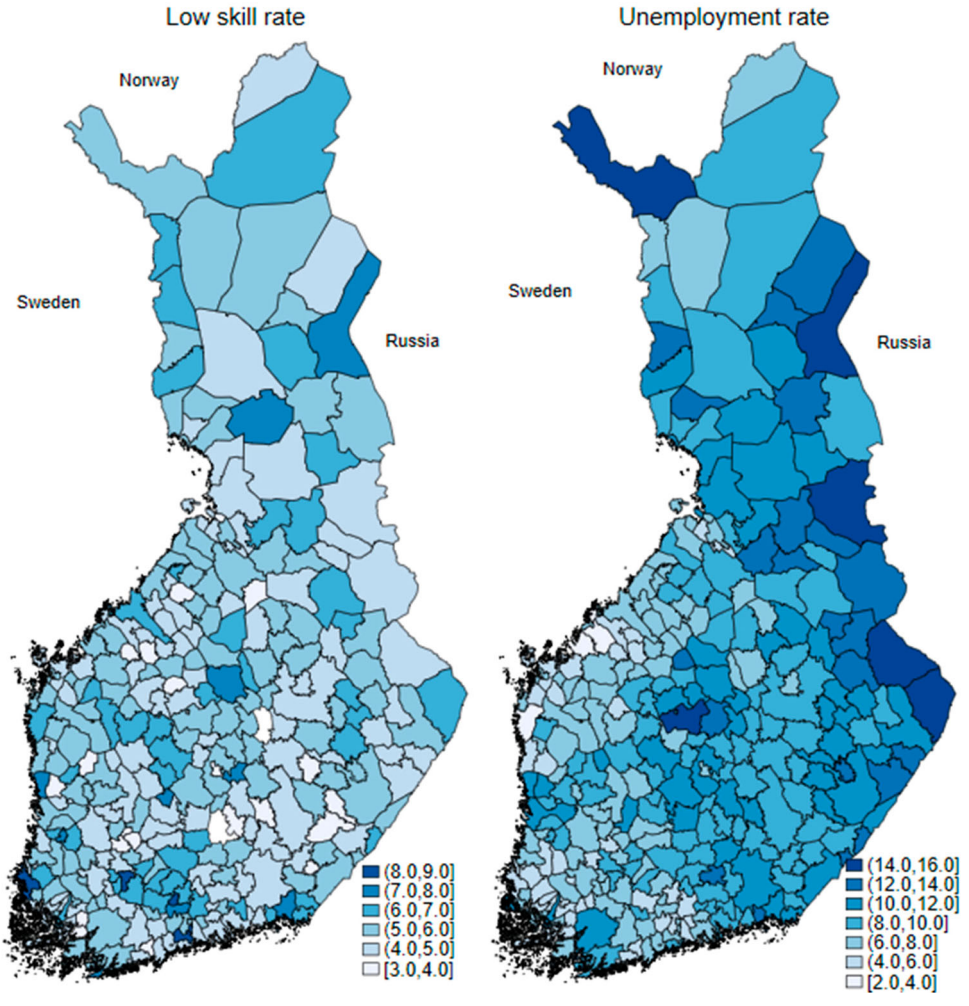

Figure A2. The low-skilled and unemployment rates in Finnish municipalities in 2017.

Table A1. Descriptive statistics for individual-level variables.

	NEET					
	No		Yes		Total	
	N	%	N	%	N	%
Age group						
19–20	100198	15,58	20498	21,58	120696	16,35
21–22	113294	17,62	15468	16,29	128762	17,44
23–24	121264	18,85	14925	15,71	136189	18,45
25–26	124378	19,34	16831	17,72	141209	19,13
27–29	184027	28,61	27253	28,69	211280	28,62
Sex						
Male	320863	49,89	58170	61,25	379033	51,35
Female	322298	50,11	36805	38,75	359103	48,65
Has children?						
No	541941	84,26	87123	91,73	629064	85,22

(*Continued*)

Table A1. Continued.

	NEET					
	No		Yes		Total	
	N	%	N	%	N	%
Yes	101220	15,74	7852	8,27	109072	14,78
Education level						
Primary / missing	93658	14,56	36193	38,11	129851	17,59
Secondary	423117	65,79	52903	55,7	476020	64,49
Lower tertiary	97370	15,14	4134	4,35	101504	13,75
Higher tertiary	29016	4,51	1745	1,84	30761	4,17
Origins						
Native	588203	91,46	80090	84,33	668293	90,54
Second-generation	5353	0,83	1149	1,21	6502	0,88
First-generation	49605	7,71	13736	14,46	63341	8,58
Municipality type						
Urban	525429	81,69	74831	78,79	600260	81,32
Semi-urban	64875	10,09	11111	11,7	75986	10,29
Rural	52857	8,22	9033	9,51	61890	8,38
Total	643161	87,13	94975	12,87	738136	100

Table A2. Descriptive statistics for municipal-level variables.

Variable	*N*	Mean	SD	Min	Max
Low-skill rate	295	5.29423	1.01264	2.80760	8.92211
Unemployment rate	295	8.78293	1.88431	2.44732	15.68730
Simpson's index	295	0.95577	0.01238	0.77003	0.96626
Teacher / region	295	0.03849	0.00764	0.02808	0.07952
Social workers / region	295	0.00195	0.00036	0.00017	0.00381
Doctors / region	295	0.00132	0.00033	0.00014	0.00218

Table A3. Multilevel linear probability models of factors explaining the probability of having NEET status. Standard errors are in the second row. A NEET group may include parents on parental or child homecare allowance.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Age group (ref. 19–20)		−0.0352***	−0.0240***			−0.0241***	−0.0221***	−0.0241***
21–22		0.00145	0.00139			0.00139	0.00141	0.00139
		−0.0360***	−0.0155***			−0.0155***	−0.0139***	−0.0155***
23–24		0.00143	0.00139			0.00139	0.00141	0.00139
		−0.0169***	0.00901***			0.00895***	0.00869***	0.00895***
25–26		0.00142	0.00141			0.00141	0.00143	0.00141
		0.00391**	0.0290***			0.0290***	0.0256***	0.0290***
27–29		0.0013	0.00138			0.00138	0.0014	0.00138
Sex (ref. male)								
Female		0.00206*	−0.0103***			−0.0103***	0.0109***	−0.0103***
		0.000842	0.000832			0.000832	0.000832	0.000832
Has children (ref. #)								
Yes		0.103***	−0.0519***			−0.0519***	0.0729***	−0.0519***
		0.00119	0.00157			0.00157	0.00124	0.00157
Education level (ref. primary / missing)								
Secondary		−0.194***	−0.175***			−0.175***	−0.177***	−0.175***
		0.00111	0.00118			0.00118	0.00119	0.00118
Lower tertiary		−0.260***	−0.262***			−0.262***	−0.259***	−0.262***
		0.00148	0.00159			0.00159	0.00161	0.00159
Higher tertiary		−0.246***	−0.257***			−0.257***	−0.255***	−0.257***
		0.00224	0.00232			0.00232	0.00236	0.00232
Origins (ref. native)								
Second-generation		0.0704***	0.0351***			0.0351***	0.0358***	0.0352***
		0.00449	0.00432			0.00432	0.00439	0.00432
First-generation		0.145***	0.0331***			0.0331***	0.0330***	0.0331***
		0.00152	0.00158			0.00158	0.00161	0.00158
Low-skill		−0.000822		−0.00274		−0.00435**		−0.00466**
		0.00196		0.00182		0.00152		0.00152
Municipal unemployment		0.00566***		0.00588***		0.00603***		0.00578***
		0.000784		0.000787		0.000661		0.000678
Simpson's index		−0.0653		−0.114		−0.0252		0.00277
		0.0947		0.0882		0.0752		0.0767
Teachers / region		0.487**			0.326		0.401*	0.14
		0.187			0.217		0.193	0.175
Doctors / region		−9.705			−3.733		−1.354	−2.961

(*Continued*)

Table A3. Continued.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
		5.151			5.704		5.07	4.514
Social workers / region		−9.634*			−5.643		−4.146	−1.664
		4.224			4.679		4.178	3.738
Child homecare allowance (ref. #)								
Yes			0.315***			0.315***		0.315***
			0.00238			0.00238		0.00238
Parental allowance (ref. #)								
Yes			0.0890***			0.0891***		0.0891***
			0.00217			0.00217		0.00217
Intercept	0.187***		0.324***	0.259**	0.186***	0.319***	0.307***	0.296***
	0.00205		0.00222	0.0836	0.0165	0.0713	0.0147	0.0727
Between-municipality variance								
Intercept	0.000935***		0.000690***	0.000755***	0.000883***	0.000485***	0.000659***	0.000471***
	0.0000494		0.0000388	0.0000405	0.0000478	0.0000287	0.0000383	0.0000284
Within-municipality variance								
Intercept	0.130***		0.118***	0.130***	0.130***	0.118***	0.122***	0.118***
	0.000107		0.0000975	0.000107	0.000107	0.0000975	0.000101	0.0000975
N	738136	738136	738136	738136	738136	738136	738136	738136
Groups	295	295	295	295	295	295	295	295

Table A4. Comparison of municipalities with low and high NEET rates by sociodemographic factors.

	Municipality type							
	Low NEET rate		High NEET rate		Other		Total	
	N	%	*N*	%	*N*	%	*N*	%
Age group								
19–20	881	18,64	761	18,65	119054	16,32	120696	16,35
21–22	832	17,6	670	16,42	127260	17,45	128762	17,44
23–24	854	18,07	726	17,79	134609	18,46	136189	18,45
25–26	840	17,77	784	19,22	139585	19,14	141209	19,13
27–29	1319	27,91	1139	27,92	208822	28,63	211280	28,62
Sex								
Male	2511	53,13	2320	56,86	374202	51,31	379033	51,35
Female	2215	46,87	1760	43,14	355128	48,69	359103	48,65
Has children								
No	3605	76,28	3236	79,31	622223	85,31	629064	85,22
Yes	1121	23,72	844	20,69	107107	14,69	109072	14,78
Education level								
Primary / missing	568	12,02	749	18,36	128534	17,62	129851	17,59
Secondary	3489	73,83	2871	70,37	469660	64,4	476020	64,49
Lower tertiary	564	11,93	395	9,68	100545	13,79	101504	13,75
Higher tertiary	105	2,22	65	1,59	30591	4,19	30761	4,17
Origins								
Native	4570	96,7	3833	93,95	659890	90,48	668293	90,54
Second-generation	5	0,11	9	0,22	6488	0,89	6502	0,88
First-generation	151	3,2	238	5,83	62952	8,63	63341	8,58
Municipality type								
Urban	0	0	2205	54,04	598055	82	600260	81,32
Semi-urban	0	0	0	0	75986	10,42	75986	10,29
Rural	4726	100	1875	45,96	55289	7,58	61890	8,38
Total	4726	0,64	4080	0,55	729330	98,81	738136	100

Table A5. Multilevel linear probability models of factors explaining the probability of having NEET status. Standard errors are in the second row. Municipalities with high and low NEET rates are excluded.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Age group (ref. 19–20)								
21–22		−0.0472***	−0.0276***			−0.0276***	−0.0276***	−0.0276***
		0.00135	0.00131			0.00131	0.00131	0.00131
23–24		−0.0575***	−0.0209***			−0.0210***	−0.0209***	−0.0210***
		0.00133	0.00131			0.00131	0.00131	0.00131
25–26		−0.0484***	0.00320*			0.00316*	0.00319*	0.00316*
		0.00132	0.00134			0.00134	0.00134	0.00134
27–29		−0.0391***	0.0284***			0.0284***	0.0284***	0.0284***
		0.00122	0.0013			0.0013	0.0013	0.0013
Sex (ref. male)								
Female		−0.0495***	−0.0276***			−0.0276***	−0.0276***	−0.0276***
		0.000782	0.000775			0.000775	0.000775	0.000775
Has children (ref. #)								
Yes		−0.0730***	−0.0970***			−0.0970***	−0.0970***	−0.0970***
		0.00112	0.00116			0.00116	0.00116	0.00116
Education level (ref. basic / missing)								
Secondary		−0.168***	−0.166***			−0.166***	−0.166***	−0.166***
		0.00103	0.00111			0.00111	0.00111	0.00111
Lower tertiary		−0.235***	−0.241***			−0.241***	−0.241***	−0.241***
		0.00138	0.0015			0.0015	0.0015	0.0015
Higher tertiary		−0.217***	−0.235***			−0.235***	−0.235***	−0.235***
		0.00209	0.00219			0.00219	0.00219	0.00219
Origins (ref. native)								
Second-generation		0.0693***	0.0313***			0.0313***	0.0313***	0.0313***
		0.00417	0.00407			0.00407	0.00407	0.00407
First-generation		0.104***	0.0154***			0.0155***	0.0154***	0.0155***
		0.00141	0.0015			0.0015	0.0015	0.0015
Low-skill		−0.0000895		−0.00137		−0.00384**		−0.00423**
		0.00154		0.00146		0.00131		0.00131
Municipal unemployment		0.00409***		0.00413***		0.00395***		0.00364***
		0.000652		0.000661		0.000597		0.00061
Simpson's index		0.108		0.0585		0.037		0.0657
		0.0832		0.0792		0.072		0.0725
Teachers / region		0.319*			0.154		0.262	0.138
		0.148			0.171		0.157	0.15

(*Continued*)

Table A5. Continued.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Doctors / region		−9.176*			−5.213		−1.114	−2.79
		4.085			4.643		4.257	3.997
Social workers / region		−7.769*			−4.676		−3.27	−2.635
		3.41			3.835		3.527	3.334
Intercept	0.146***		0.323***	0.0635	0.153***	0.275***	0.318***	0.254***
	0.00162		0.00193	0.0752	0.013	0.0684	0.012	0.0686
Between-municipality variance								
Intercept	0.000499***		0.000399***	0.000419***	0.000467***	0.000320***	0.000375***	0.000305***
	0.0000287		0.0000236	0.0000244	0.0000278	0.0000193	0.0000229	0.000019
Within-municipality variance								
Intercept	0.112***		0.105***	0.112***	0.112***	0.105***	0.105***	0.105***
	0.0000924		0.0000867	0.0000924	0.0000924	0.0000867	0.0000867	0.0000867
N	729330	729330	729330	729330	729330	729330	729330	729330
Groups	275	275	275	275	275	275	275	275