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# A life course perspective on the NEET phenomenon: long-term exclusion across cohorts, gender, and social origin among young adults in Norway

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## ABSTRACT

This study addresses the limitations of the NEET indicator (Not in Education, Employment, or Training) as a measure of the risk of social exclusion. Applying a life course analytical framework and sequence analysis to administrative data from Norway, we investigate the link between NEET status and longer-term exclusion across cohorts, gender, and social origin. Young adults with at least one year of NEET status at ages 22–25 (N = 125 804) are followed for ten years (age 22–31), spanning the years 1993–2017. Results show a mixed picture for individuals with early-career NEET status: 38 percent fare well over the long term, while over one-third face persistent challenges of long-term exclusion or reliance on permanent disability benefits. A deterioration of longer-term prospects, stronger among men than women, is observed across cohorts. An initial large gender gap in long-term exclusion probability in men's favor disappears in the youngest cohorts. Social inequalities remain stable over time.

Findings support recent research emphasizing NEET category heterogeneity. Static measures may both exaggerate and underestimate the challenges faced by different sub-populations. The risk of long-term exclusion changes markedly over time, showcasing how the NEET indicator's sensitivity as a measure of at-risk youth depends on the historical-institutional context.

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Not in Education, Employment, or Training (NEET); young adults; social exclusion; life course; sequence analysis; gender; social origin

## Introduction

Structural labor market changes, economic downturns, and the growing significance of formal education have spurred political and scholarly interest in marginalization and social exclusion among young adults across recent decades. During the same period, the NEET category (Not in Education, Employment, or Training) has been adopted into scholarly literature to measure young people assumed to be 'marginalized,' 'disadvantaged,' or 'at risk' of more permanent social exclusion. However, the link between being NEET at specific time points and longer-term exclusion is unclear, and empirical

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attempts to illuminate this analytical relationship are lacking. While many scholars use the assumed long-term negative consequences of NEET as a primary argument for the relevance of their study (Ayorech, Plomin, and von Stumm 2019; Bania, Eckhoff, and Kvernmo 2019; Barth et al. 2019; Bradley and Crouchley 2019), relatively few provide empirical support for long-term adverse patterns. Instead, most existing studies focus on identifying risk factors of NEET status (Albæk et al. 2020; Bania, Eckhoff, and Kvernmo 2019; Barth et al. 2019; Bradley and Crouchley 2019; Pitkänen et al. 2021; van Vugt, Levels, and van der Velden 2022). Also, most previous studies apply static methodological approaches or summary measures of NEET status at a particular point in time or for one or more specific age groups (Armstrong et al. 2017; Barth et al. 2019; Cornaglia, Crivellaro, and McNally 2015; Hakkarainen, Holopainen, and Savolainen 2016; Meehan, Maughan, and Barker 2019; van Vugt, Levels, and van der Velden 2022; Vancea and Utzet 2018; Veldman et al. 2015). While these studies detail various determinants and a few consequences of a statically measured NEET state, they do not link NEET with long-term processes of exclusion nor distinguish exclusionary paths from those where the NEET state only constitutes a marginal role in the individual's life trajectory.

This paper draws on the life course theoretical framework (Alwin and McCammon 2003; Elder, Johnson, and Crosnoe 2003; Mortimer, Oesterle, and Krüger 2005; Mortimer and Shanahan 2004) to assess the link between the NEET category and long-term exclusion across birth cohorts, gender, and social origin. Theorizing exclusion as a processual and contextual phenomenon, we specifically assess the following research questions:

- (a) To what extent do young adult NEETs experience long-term exclusion across cohorts?
- (b) To what extent and how do stability and change in patterns of exclusion vary by gender and social origin?

Applying sequence analysis to full-population registry data from Norway, this study provides a population-wide empirical mapping of NEET young adults' longer-term educational and labor market trajectories from 1993 to 2017. This period represents a historical-institutional context of large structural transformations in the Norwegian economy, which theoretically predict a worsening of the longer-term prospects of vulnerable young adults. The study traces the journey through young adulthood (age 22–31) for all Norwegian young adults born between 1971–1986 with at least one yearly NEET status at age 22–25 ( $N = 125\,804$ ). We follow individuals from age 22, a time generally characterized by having finished high school education and military service. At this age, most young adults live independently from their parental home and are either navigating their entry into the workforce or pursuing higher education.

Theoretically, this study contributes to the debate about the conceptual viability of the NEET category as a measure of at-risk youth. Building on previous criticisms of the category's analytical capabilities (Furlong 2006; Holte 2017; Roberts 2011; Yates and Payne 2006), we assess its applicability as a marker of longer-term vulnerability, adding to a new strand of trajectory studies sensitive to the dynamic life courses of young people who experience NEET status (Contini, Filandri, and Pacelli 2019; Giret, Guégnard, and Joseph 2020; Levels et al. 2022).

## The NEET category: political origin, scholarly use, and critique

The NEET indicator originated in UK policy circles in the 1990s, where the influential *Bridging the Gap* UK policy report by the Social Exclusion Unit (1999) applied NEET as a measure of youth at risk of social exclusion. Since its political origin, the NEET indicator has been adopted by academic scholars with a common interest in studying different aspects of youth vulnerabilities. Since then, the analytical capacity of the NEET category has increasingly been questioned (Furlong 2006; Holte 2017; Holte, Swart, and Hiilamo 2019; Karyda and Jenkins 2018; Levels et al. 2022; Roberts 2011; Yates and Payne 2006). Previous criticisms relate to the substantial within-group heterogeneity and the ambiguity of which the latent concept 'NEET' is capable of measuring. Furlong (2006) argues that the NEET indicator is too narrow to capture everyone vulnerable to social exclusion and too broad to measure its true prevalence. Holte (2017) maintains it is conceptually unclear whether NEET should be considered a prior *cause* or direct *indicator* of exclusion.

Addressing previous critiques, recent life course studies have introduced a more dynamic understanding of the NEET category (Contini, Filandri, and Pacelli 2019; Giret, Guégnard, and Joseph 2020; Levels et al. 2022). While most former quantitative studies use NEET as a static outcome variable when studying the impact of various background or childhood risk factors (Albæk et al. 2020; Bania, Eckhoff, and Kvernmo 2019; Barth et al. 2019; Bradley and Crouchley 2019; Bynner and Parsons 2002; Pitkänen et al. 2021) or as a static predictor of adverse outcomes (Andersson, Gullberg Brännstrom, and Mörtvik 2018; Bäckman and Nilsson 2016; Gutierrez-Garcia et al. 2017; Ralston et al. 2016), some recent trajectory studies highlight the heterogeneity of life courses and outcomes present within the NEET category (Contini, Filandri, and Pacelli 2019; Giret, Guégnard, and Joseph 2020; Levels et al. 2022).

Adding to this new strand of life course studies, the current study applies an explorative and dynamic approach to studying NEET young adults in Norway. Rather than choosing whether NEET status should be considered an indicator or a cause of exclusion (Holte 2017), NEET status is treated as a state in individual trajectories which must be understood in relation to its timing-, duration-, and sequencing with other states at the individual level, as well as the historical-institutional context and age-graded norms at the societal level.

## NEET and 'social exclusion': a life course perspective

'Social exclusion' broadly refers to a process by which individuals or groups are excluded from participating in the economic, social, and political life of a society (Fangen 2010; Gore 1995; Rimmerman 2009; Rodgers 1995; Sen 2000; Silver 1995; 2010). While the NEET category is historically tied to the social exclusion concept through its political origin, it is evident that a static NEET measure does not encompass the multidimensional-, and processual nature of 'social exclusion.' A closer approximation between indicator (NEET) and concept (social exclusion) may, however, be obtained through the lens of the life course perspective (Elder, Johnson, and Crosnoe 2003).

The life course perspective emphasizes how specific states and transitions of individuals are parts of whole life course biographies and how these biographies are structured by age-graded social norms located in specific historical-institutional circumstances (Elder

2009; Mayer 2004; Mortimer and Shanahan 2004; Möhring 2016). Hence, used as an analytical orientation, the life course perspective invites a *processual*-, *age-dependent*-, and *contextual* understanding of the NEET phenomenon, the social exclusion concept, and the link between them.

Distinct from the poverty concept, 'social exclusion' takes into account the relational aspects of deprivation (Sen 2000), where relative lack of resources inhibits participation in normatively expected or 'normal' societal arenas as compared to others who are subject to the same participatory norms (Gore 1995). Therefore, social exclusion will encompass different types of deprivation or lack of participation across the lifespan and contexts, dependent on the participatory norms and institutions that govern specific life stages.

During young adulthood, the labor market and educational system represent the principal arenas for societal participation in contemporary Western society. Detachment from both these arenas over time is therefore argued to constitute the most important dimensions of social exclusion for young adults, representing not only economic difficulties but also the lack of development of skills, social capital, and confidence (Rimmerman 2012; Rodgers 1995; Sen 2000), and exclusion from the 'symbolic spheres of society,' impacting relational aspects through loss-, or lacking development of-, social identity and social networks (Rodgers 1995, 46). Hence, while the NEET indicator will never provide a faultless or universally valid measurement, young adulthood trajectories dominated by long-term NEET status might more closely resemble social exclusion in contexts where incentives and social norms for labor market-, and educational participation are strong.

## Institutional context and hypotheses

The Norwegian institutional context of the 1990s and 21st century is well-suited for examining the link between NEET status and long-term exclusion. *Firstly*, youth unemployment has remained low compared to many other European countries (OECD 2022), and young people in social-democratic welfare states like Norway are comparatively less likely to be NEET (van Vugt, Levels, and van der Velden 2022). Norwegian NEETs may, therefore, be considered a relatively vulnerable group.

*Secondly*, both policies and cultural norms in Norway favor labor market- and educational participation for both genders (Ellingsaeter 1999; Kavli 2015; Øverbye and Stjernø 2012). Education at all levels is free of charge, welfare arrangements are generous and strongly directed towards work retention and activation (Dahl and Lorentzen 2017), and female labor force participation is among the highest in the world (OECD 2023). Hence, being NEET for an extended period during young adulthood is not the norm for either gender. Consequently, long-term NEET status will serve as a closer proxy for social exclusion in Norway than in countries where youth unemployment rates are high or where a more significant proportion of women are engaged in homemaking.

*Thirdly*, the Norwegian economy has undergone substantial structural transformations since the early 1990s, which theoretically suggests changes in the prevalence of long-term exclusion within the NEET group across cohorts. Most importantly, automatization and digitalization of the labor market have increased the demand for human capital, formal educational qualifications, and competencies among new entrants to the labor

market (Ellingsæter et al. 2020). Competition for low-skilled jobs has intensified due to rises in global competition and labor immigration (Statistics-Norway 2021b). Correspondingly, there has been a significant increase in the number of students in higher education and an expansion of educational attainment (Statistics-Norway 2022b). Therefore, it might be expected that young adults who drop out of education or, in other ways, do not follow the standard school-to-work trajectory may face increasingly more challenging life trajectories across the past decades. A few previous studies provide empirical support for these predictions. Vogt, Lorentzen, and Hansen (2020) found a rise in labor market exclusion among early school leavers across the 1978 to 1988 birth cohorts in Norway, and Bäckman and Nilsson (2016) found a strengthening of the relationship between earlier and later career NEET status in Sweden across the 1975, 1980, and 1985 birth cohorts. Consequently, we hypothesize that:

H1: Among those with early-career NEET status, the prevalence of long-term exclusion increases across birth cohorts.

Since structural changes can impact sub-groups of the population differently (Moen and Miller 2022), we also anticipate that the extent of cohort change may vary across social groups.

Gender disparities can be expected. Across the study period 1993–2017, female participation in the labor market has increased substantially, following expansions of family services and allowances (e.g. kindergartens and parental leave) and an increase in public sector employment (Ellingsæter et al. 2020). Moreover, the structural labor market changes of the past three decades are expected to have a more significant impact on the private sector (Mills and Blossfeld 2005). Considering that the Norwegian labor market is highly gender-segregated (Dämmerich 2015), with a male-dominated private sector (80%) and a female-dominated public sector (70%) (Statistics-Norway 2021a), male NEETs could be facing greater changes in their risk of long-term exclusion than their female counterparts. Furthermore, rising gender disparities in education, with men performing increasingly worse than women at all levels of the educational system, have been identified as a societal problem in Norway (NOU 2019:3; Statistics-Norway 2022a). Significant political concerns are related to the future marginalization and exclusion of low-skilled men (NOU 2019:3). Hence, we hypothesize that:

H2: Among those with early-career NEET status, the expected cross-cohort increase in long-term exclusion is steeper among men than women.

Social disparities by parental education might also rise within the increasingly knowledge-intensive Norwegian labor market. Despite generous welfare and egalitarian educational policies aimed at reducing the intergenerational transmission of disadvantage, a systematic relationship between social origin and educational achievement persists across Norwegian birth cohorts (Wiborg and Hansen 2008). Hence, as formal educational qualifications become increasingly crucial for successful labor market integration, those with low-skilled parents may face an especially challenging long-term outlook. Specifically, we expect that:

H3: Among those with early-career NEET status, the expected cross-cohort increase in long-term exclusion is steeper among those with low-educated parents.

## Data

The data for this article comprise individual longitudinal sequences assembled by linking information on income, education, and social benefits from Norwegian administrative registries for the entire population of young adults in Norway born between 1971 and 1986 (N = 848 544). Individuals are followed yearly from age 22 to 31, covering the historical period of 1993 to 2017. Young adults who spent at least one year outside education and employment between ages 22–25 were categorized into the NEET sub-population (N = 125 804), consisting of 14.8% of the entire population dataset. The population is restricted to individuals born in or who immigrated to Norway before age 17 and registered as residents during the observational period (ages 22–31).

Data was analyzed utilizing the R statistical software (R Development Core Team 2017) and the packages 'TraMineR' (Gabadinho et al. 2011), 'Cluster' (Maechler et al. 2019) and 'WeightedCluster' (Studer 2013).

## Methodology

The methodological approach consists of two main analytical stages. Firstly, sequence analysis was applied to map the trajectory types within the pooled NEET young adult population. Secondly, multinomial logistic regression was used to assess cohort change in trajectory probabilities, modeling the hypothesized three-way interaction between cohort membership, gender, and social origin.

The dissimilarity of each unique sequence in the dataset to every other unique sequence was calculated for the sequence analyses. Different dissimilarity measures are sensitive to different dimensions of the sequences (order, duration, and timing of states) (Studer and Ritschard 2016). To map patterns of long-term exclusion, the order and duration of states seem more important to differentiate individuals than whether a NEET state occurs at precisely age 22 or age 23. This study, therefore, applied the *Longest Common Subsequence (LCS)* measure (Elzinga and Liefbroer 2007), which accounts for the number of distinct states in their distinct order (e.g. A B C) in one sequence that can be matched with the corresponding pattern in another sequence (Studer and Ritschard 2016). A combination of hierarchical (Ward) clustering and partitioning around medoids (PAM) (Studer 2013) was then applied to the calculated dissimilarities to obtain groups of similar unique sequences. The cluster analysis was adjusted for the number of sequences each unique sequence represents. The final cluster solution was determined by several cluster quality measures (Studer 2013).<sup>1</sup> For the subsequent regression analysis, cluster membership was disaggregated from the unique sequences to all sequences in the NEET population data.

### *Status alphabet and variables*

Trajectories are measured with a status alphabet comprising five mutually exclusive yearly states (Table 1). The definition of states is based on the Social Exclusion and Labor Market Attachment model (SELMA) (Bäckman and Nilsson 2016; Lorentzen et al. 2019). Annual labor market income categorizes individual positions in the labor market. It includes income from wage labor, self-employment, and employment-related social insurance

**Table 1.** Status alphabet – yearly states.

Status	Definition
Core labor force	Labor market income equal or above 3.5 PBA
In education	Labor market income below 3.5 PBA & registered with ongoing education OR receipt of student allowance
Unstable labor force	Labor market income between 0.5 and 3.5 PBA
NEET	Labor market income < 0.5 PBA
Disability	Labor market income < 0.5 PBA & receipt of disability pension

(sickness benefits and family allowances, but *not* unemployment benefits). Sickness benefits and family allowances entail full reimbursement of incomes up until 6 Price Based Amounts (PBA)<sup>2</sup>, corresponding to 561 804 NOK (approx. 47 700 EUR) in 2017, for everyone active in the labor market for the past four weeks (sick leave) or for six of the last ten months (parental leave). Hence, young adults on sick leave (up until one year) and parental leave are not included in the NEET category. In addition, we use registered educational attendance, student allowance, and receipt of disability benefits to sort yearly observations into one of the five categories: Core labor force, In Education, Unstable labor force, NEET, or Disability.

*The Core labor force* consists of individuals with income above or consistent with the income level of the lowest-paid jobs in the country, also considered an estimate of the income needed for individual economic self-sufficiency (Bäckman et al. 2011). The income limit for inclusion into the core labor force is 3.5 PBA, corresponding to 327,719 NOK (approx. 27,900 EUR) in 2017. The *Education* category encompasses everyone registered with ongoing education in September of the relevant year or who has received student allowance in the relevant year if their annual income is below 3.5 PBA. Ongoing education encompasses all general education levels, upper secondary and tertiary vocational training, and apprentices. *The Unstable labor force* consists of individuals with annual labor market income between 0.5 and 3.5 PBA who are not registered in education. *The NEET category* consists of individuals not in education and with annual labor market income below 0.5 PBA, equivalent to incomes below 46,817 NOK (approx. 4,000 EUR) in 2017. Those with incomes below 0.5 PBA are not counted as active in the labor market because their income lies below the taxable income threshold and approximate the threshold for receipt of full permanent disability benefits. Hence, the NEET category encompasses young adults who are not active in labor or education, such as long-term unemployed, full-time recipients of work assessment allowance, social assistance recipients, and other inactive not on benefits. The *Disability-category* comprises individuals within the NEET category who receive permanent disability benefits.

Other variables used in the analysis are gender, immigration background, and social origin, measured as parental education level.

*Immigrant background* is measured by a three-category variable where 1) *Norwegian background* denotes everyone with at least one Norwegian-born parent, 2) *Immigrant* denotes foreign-born individuals with two foreign-born parents, and 3) *Immigrant parents* denotes those born in Norway with two foreign-born parents. Due to a small share of individuals in category 3 (1.55 percent in the 1971 birth cohort), categories 2 and 3 were joined to denote Immigrant background.



*Social origin* is measured based on the parental level of education when the individual was 16 years old. The variable has four categories of parental education: 1) *higher education* (long and short), 2) *upper secondary education*, 3) *primary education or less*, and 4) *unknown*.

## Results

### Descriptive statistics

Table 2 presents cohort-specific descriptive statistics for the entire birth cohorts of young adults born in Norway between 1971 and 1986 to provide the historical context of our NEET population. Across the 16 birth cohorts, parental education levels have increased, the share of young adults who have not completed upper secondary education by age 22 has declined, and the share of people with immigrant backgrounds has increased. The prevalence of young adults who have been NEET between the ages 22–25 has declined by 4.5 percentage points from the 1971 to the 1986 cohort (Table 2). The decline was more substantial among women, resulting in gender convergence (Figure 1). Among men whose parents have little education (i.e. primary education or less), NEET prevalence at ages 22–25 declined across the cohorts born 1971 to 1974 and 1981 to 1986 but was interrupted by an increase of 9.3 percentage points across the 1975 to 1981 cohorts. The distribution of the entire status alphabet by cohort and age can be found in the Appendix, table A1.

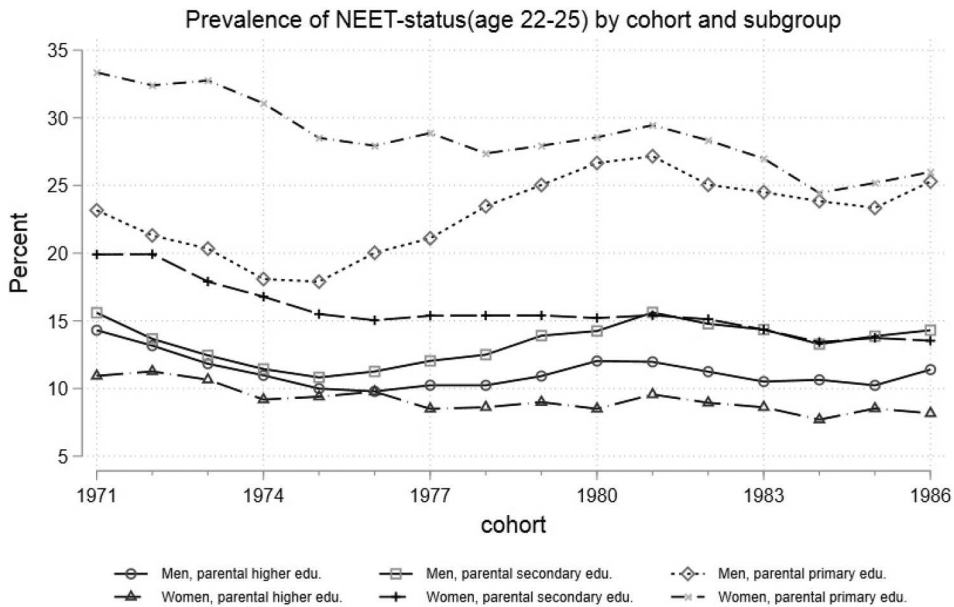
### Sequence analysis: 'NEET' trajectory types

The sequence analysis revealed five sequence clusters in the NEET population: 1) The Stable Labor Force, 2) The Education-To-Work, 3) The Persistently Unstable, 4) The

**Table 2.** Full population descriptive statistics of NEET status between ages 22–25, gender, parental education level, immigrant background, and school leaving in 16 birth cohorts (1971–1986).

Cohort	N Total population	% NEET at age 22–25	% Women	% Immigrants*	% Not-completed secondary education by age 22	Parental education level			
						% Long Higher	% Short Higher	% Upper Secondary	% Primary
1971	62 351	18.4	49.0	1.5	41.0	6.8	17.3	57.5	17.8
1972	61 441	17.2	48.8	1.7	38.9	7.3	18.4	57.6	16.1
1973	58 796	15.9	48.4	1.9	36.1	7.5	19.1	57.4	15.4
1974	57 332	14.5	49.1	2.3	33.8	7.7	20.4	56.9	14.4
1975	54 074	13.6	48.8	2.6	32.6	8.1	20.9	57.0	13.6
1976	51 473	13.6	48.8	3.0	30.2	8.5	21.6	56.5	12.8
1977	49 377	13.8	48.7	3.7	29.1	8.9	22.9	54.9	12.7
1978	50 054	13.9	48.4	3.9	30.5	9.1	23.6	54.6	12.1
1979	50 177	14.7	48.7	4.3	30.8	9.2	24.2	53.4	12.6
1980	50 032	14.9	48.4	4.7	30.3	9.6	24.9	52.1	13.0
1981	49 913	15.6	49.0	5.1	29.0	9.6	25.7	51.2	13.0
1982	50 507	14.8	48.4	5.2	29.2	9.8	25.8	51.1	12.6
1983	49 689	14.2	48.2	6.0	29.5	9.8	26.6	49.8	13.2
1984	50 094	13.3	48.6	6.3	30.9	10.0	27.3	49.2	12.7
1985	50 789	13.6	48.4	6.7	31.0	10.1	27.7	48.4	12.9
1986	52 445	13.9	48.2	6.9	31.6	10.5	28.2	47.7	12.7
Total:	848 544	14.8	48.6	4.0	32.4	8.8	23.2	53.6	13.7

Note: \*Immigrants denote foreign-born and Norwegian-born individuals with two foreign-born parents.



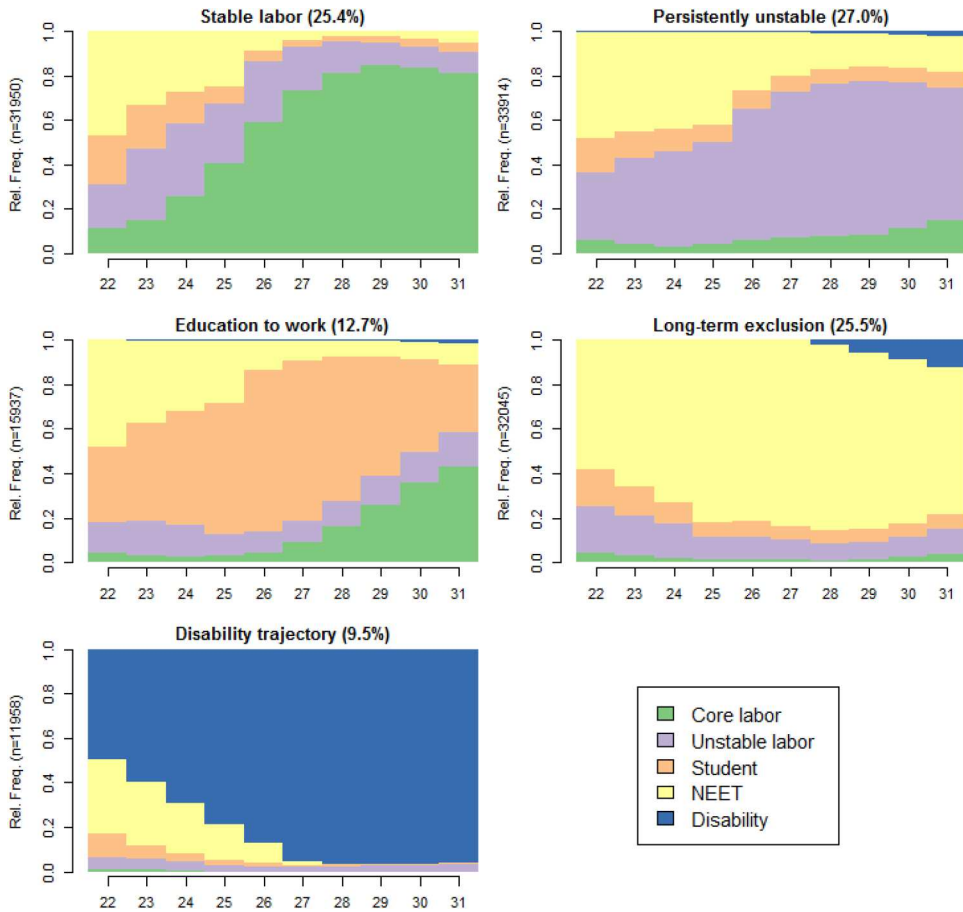
**Figure 1.** Prevalence of young adults with NEET status between ages 22 and 25 across 16 birth cohorts (1971–1986) by gender and parental level of education.

Long-Term Exclusion, and 5) The Disability cluster. The five-cluster solution was rendered as a clear solution by the combination of hierarchical (Ward) clustering and portioning around medoids (PAM) (Studer 2013).<sup>3</sup> Cluster-specific sequence distribution plots (Figure 2) display the distribution of education- and work-related states (i.e. core labor force, in education, unstable labor force, NEET, and disability) at each age within the clusters. The descriptive characteristics of the clusters are presented in Table 3. For state distribution plot of the pooled sample and cluster-specific transversal entropy plots, see Appendix, Figures A1 and A2.

*The Stable Labor Force Cluster* (25.4%) consisted of trajectories dominated by participation in, or transitions to, the stable labor force. Mean years of NEET status were lower than in the general population across ages 26–31, indicating that NEET is rare in this group at higher ages of young adulthood. The cluster was overrepresented by men and young adults who had completed upper secondary education by age 22, especially those who had completed upper secondary vocational education.

*The Education-To-Work Cluster* (12.7%) consisted of trajectories mainly characterized by education, followed by continued education or transitions to the core or unstable labor force towards the end of young adulthood. In this group, NEET status was often experienced temporarily at early ages and was rare after age 25, indicating upward mobility across young adulthood. The cluster was characterized by a high proportion of young adults who completed general secondary education by age 22, indicating that NEET might represent a ‘gap year’ between secondary and tertiary education in this group. The cluster was overrepresented by women and young adults with highly educated parents.

*The Persistently Unstable Cluster* (27%) consisted of individuals transitioning from NEET to low-income labor or transitioning back and forth between these categories. There was



**Figure 2.** Sequence distribution plot for five sequence clusters within the NEET population ( $N = 125\ 804$ ), cohorts pooled.

some upward mobility across young adulthood, with a decreasing prevalence of NEET states at later ages (Figure 2). However, the average duration of NEET status at ages 26 to 31 was twice that of the general population. Hence, this cluster consisted of individuals who gained or maintained participation in the labor force but with yearly incomes inconsistent with economic self-sufficiency. Women, young adults with low parental education levels, and those who had not completed upper secondary education by age 22 were overrepresented within this group.

*The Long-Term Exclusion Cluster* (25.5%) consisted of individuals who either were consistently in or transitioning to the NEET state during young adulthood. This group was characterized by downward mobility from education and unstable labor into the NEET state across young adulthood, in contrast to the persistently unstable cluster. Women, young adults with low parental education, immigrants, and those who had not completed upper secondary education by age 22 were overrepresented in this group.

Lastly, *The Disability Cluster* (9.5%) was characterized by stable receipt of, or the transition to, disability pension from NEET status. Men were overrepresented, and young adults who did not complete upper secondary education by age 22 were highly overrepresented, while

**Table 3.** Descriptive characteristics of the five clusters—cluster distribution (percentage share) by groups.

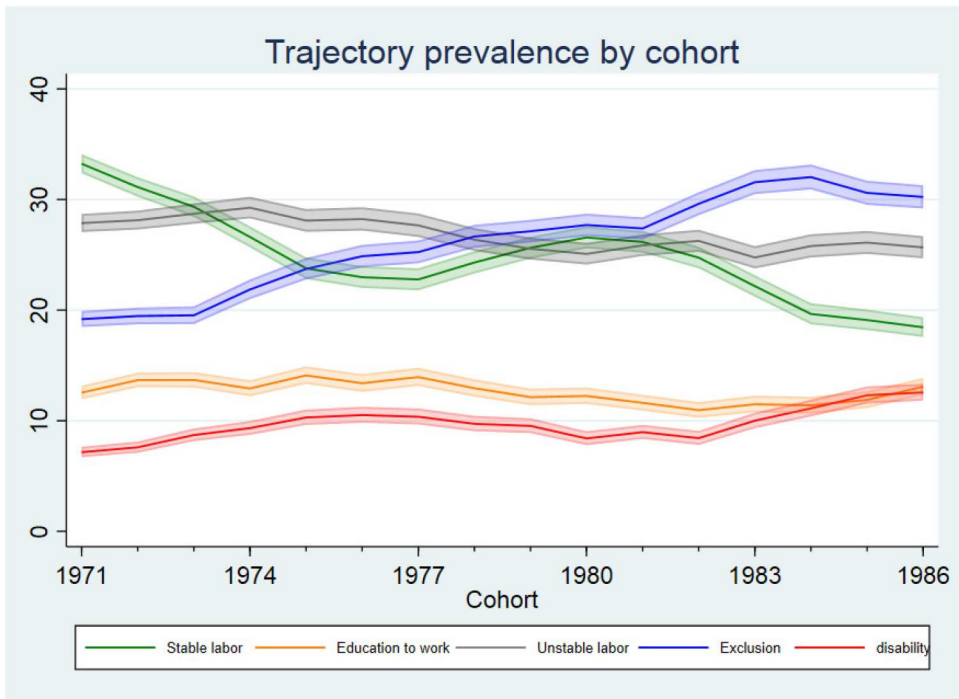
	Stable Labor	Education-To-Work	Persistently Unstable	Long-Term Exclusion	Disability Trajectory	Total: NEET population	Total: General population
<i>Gender</i>							
Male	69.1	42.3	35.3	43.0	54.0	48.5	51.4
Female	30.9	57.7	64.7	57.0	46.0	51.5	48.6
<i>Parental education</i>							
Higher education	23.6	38.9	16.0	18.4	22.8	22.1	32.0
Secondary education	55.6	47.9	55.7	50.4	52.1	53.0	53.6
Primary education	20.8	13.2	28.4	31.2	25.1	24.9	13.7
<i>Immigrant background</i>							
Norwegian	92.9	94.6	92.9	90.3	95.5	92.7	96.0
Immigrant	5.6	4.4	5.7	7.9	3.2	5.8	3.0
Immigrant parents	1.5	1.1	1.4	1.8	1.3	1.5	1.0
<i>Completed upper secondary education by age 22</i>							
Not completed	52.6	45.1	72.9	80.0	90.8	67.8	32.4
Completed general	23.8	40.4	12.5	11.7	5.0	18.0	42.7
Completed vocational	23.6	14.5	14.6	8.3	4.2	14.3	24.9
<i>Years of NEET status</i>							
Mean total trajectory	1.6	2.0	2.8	7.5	1.1	3.4	0.7
Mean ages 22–25	1.3	1.5	1.8	2.8	1.0	1.8	0.3
Mean ages 26–31	0.3	0.5	1.1	4.7	0.1	1.6	0.4
Cluster share of Total	25.4	12.7	27.0	25.5	9.5	100	100
N	31 950	15 937	33 914	32 045	11 958	125 804	848 544

youth with immigrant backgrounds were underrepresented in this group. The disability trajectory was the most stable of the five clusters (see Appendix, Figure A2), indicating that it is uncommon to reverse from a transition to a disability pension.

### Cohort change in trajectories

We examined differences in cluster membership across cohorts, gender, and social origin, focusing on the probability of belonging to the long-term exclusion trajectory. The share of young adults with NEET status between ages 22–25 following the long-term exclusion trajectory increased across birth cohorts in accordance with *Hypothesis 1* (Figure 3). Furthermore, the increase was steeper for young men than women, in accordance with *Hypothesis 2* (Figure 4). Across all the cohorts, the prevalence of long-term exclusion was structured by social origin. Young adults with low-educated parents were more exposed. Cross-cohort change in long-term exclusion appears quite similar across the social origin categories for men and women respectively (Figure 4), in contrast to the expectation of a more substantial increase among individuals with low-educated parents (*Hypothesis 3*).

The impact of cohort membership on trajectory probabilities was further examined by multinomial logistic regression, including a three-way interaction between gender-, social origin, and cohort. Results are presented visually as average predicted probabilities to guide the interpretation, focusing on the long-term exclusion trajectory. For the full regression table and predicted probabilities of all outcome trajectories by gender and social origin, see Appendix, Table A2 and Figure A3.

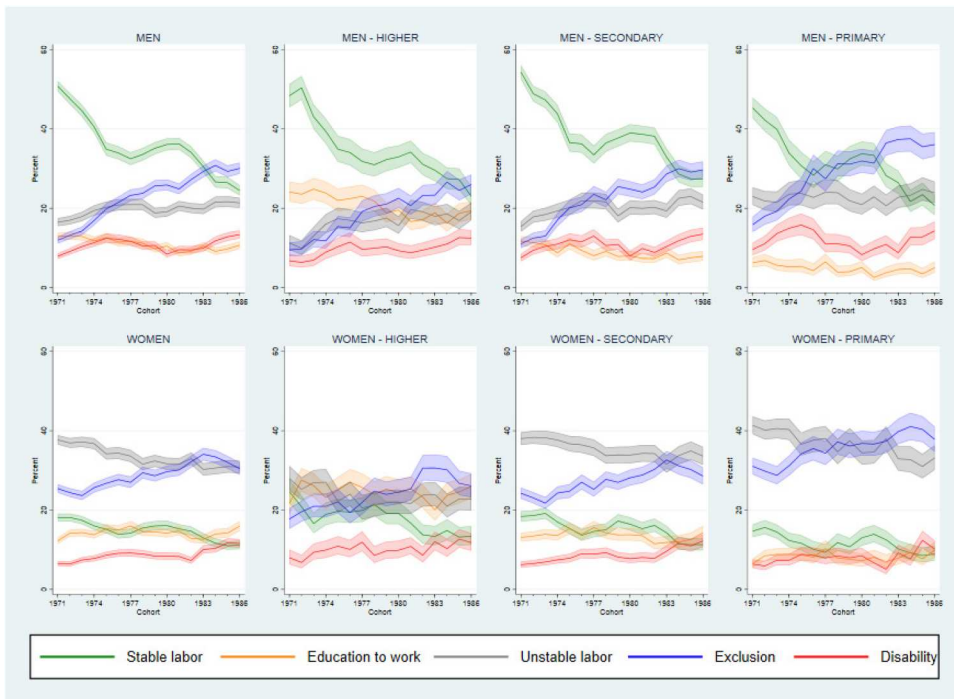


**Figure 3.** Percentage share of NEET population by trajectory and cohort.

The regression analysis confirmed that the descriptively observed cohort change in trajectory prevalence was significant. The most pronounced cohort changes occurred in the probability of long-term exclusion and stable labor force trajectories (Figure 5). The average probability of long-term exclusion increased markedly from 19 percent for the oldest cohort (1971) to 33 percent for the youngest cohort (1986), supporting the expectation of increasing exclusion prevalence across cohorts (*Hypothesis 1*). From being the third least common trajectory in the oldest cohort, long-term exclusion becomes the most common in the youngest cohort. Simultaneously, the probability of a stable labor force trajectory decreased from 32 percent to 18 percent. The average probability of following the disability trajectory increased from 7.8 percent to 11.4 percent.

The cohort change in long-term exclusion probability also displayed pronounced slope differences between the genders (Figure 6, and Appendix, Table A1). In line with our second expectation (*Hypothesis 2*), the increase in long-term exclusion probability was steeper among men than among women, resulting in convergence between the genders. In the oldest cohort (1971), women had a substantially higher average probability of exclusion (24 percent) than their male counterparts (14 percent). Across the cohorts, the probability of exclusion increased among both genders but significantly more among men, reducing the gender gap to zero in the youngest cohorts (1985 and 1986).

The gendered cohort trends in long-term exclusion probability apply evenly across the social origin categories, indicating that gender convergence occurs at all levels of the social strata. Examining the three-way interaction between social origin, gender, and



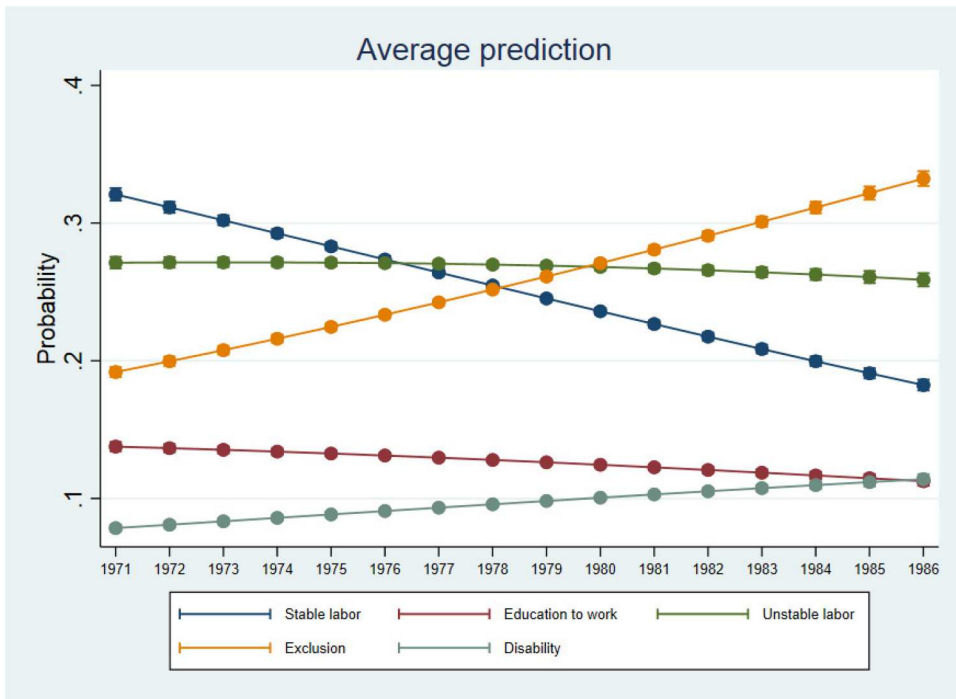
**Figure 4.** Percentage share of NEET population by trajectory, cohort, gender, and parental level of education.

cohort using discrete differences in probability (see Appendix, Figure A3) showed that while social origin differences are slightly larger among women, there is no significant cohort change in the influence of social origin for either gender. While the impact of gender changed markedly across the cohorts as expected, social disparities remained stable over time, contrary to expectations from *Hypothesis 3*.

## Discussion and conclusion

This study aimed to assess the link between the NEET phenomenon and longer-term exclusion across cohorts, gender, and social origin. Sequence analysis was applied to Norwegian administrative data for 16 birth cohorts (1971–1986) of young adults with at least one year of NEET status between ages 22–25 ( $N = 125\,804$ ). This group was followed over ten years (ages 22–31), covering the historical period 1993–2017. Given the changing historical-institutional context of the past three decades, we expected a cross-cohort worsening of the longer-term prospects in general (*Hypothesis 1*), particularly among men (*Hypothesis 2*) and young adults with low-educated parents (*Hypothesis 3*). The empirical analysis indicated a cross-cohort increase in long-term exclusion, which was especially pronounced among men, supporting *Hypotheses 1* and *2*. Findings however indicated cross-cohort stability between the social origin categories, which does not support *Hypothesis 3*.

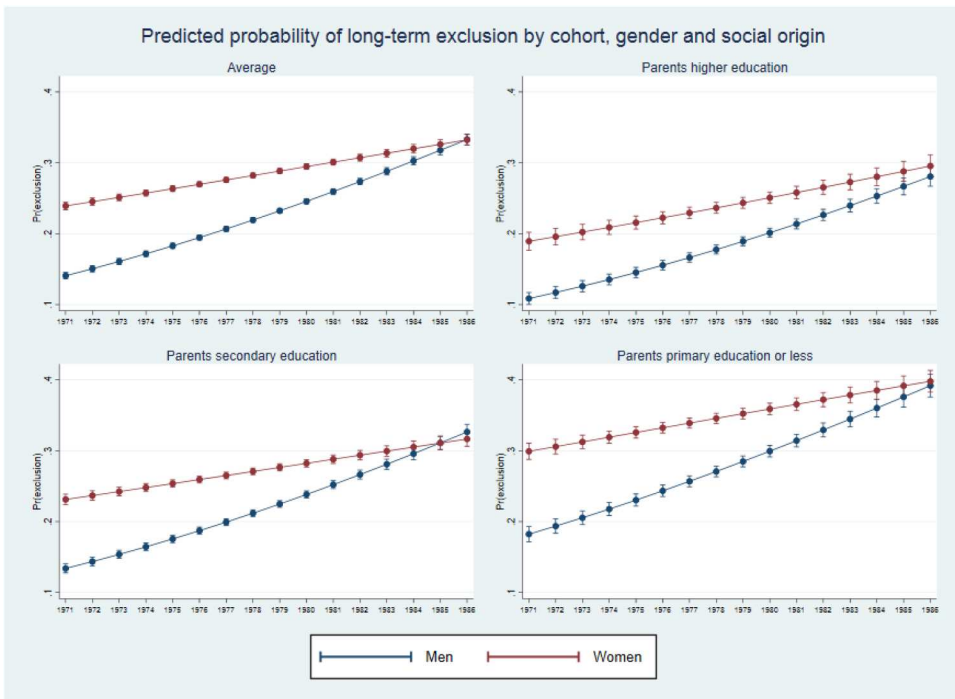
Findings revealed heterogeneity in the NEET population's journeys through young adulthood. The cluster analysis showed five trajectory types among young adults who



**Figure 5.** Average predicted probability of cluster membership by cohort with 95% CIs – all outcomes.

spent at least one year in the NEET state between ages 22 and 25. About 38 percent followed patterns mainly characterized by 1) *Stable Labor Force Attachment* or 2) *Education-To-Work Transitions*, indicative of inclusive long-term patterns. Approximately 35 percent follow the 3) *Long-Term Exclusion*-, or 4) *Disability Trajectory*, indicative of long-term patterns of exclusion. The fifth trajectory *Persistently Unstable Labor Market Attachment*, followed by 27 percent of the NEET population and overrepresented by women, was characterized by maintained low-income labor market participation. While the *persistently unstable*-cluster was not excluded from the labor market and experienced some upward mobility (out of the NEET state) across young adulthood, these trajectories were economically precarious compared to the more secure transition patterns observed in the stable labor force and education-to-work clusters. The findings indicate a solid link between the NEET state and longer-term adversities. Simultaneously, they also reveal patterns of resilience among young adults. Even within the Norwegian context, where NEET young adults might be considered especially vulnerable, a substantial share (38 percent) of those with at least one year of NEET status between ages 22 and 25 still fare well over the longer term.

The increasing prevalence of exclusionary trajectories observed across the birth cohorts coincides with historical institutional changes anticipated to make labor market entry and establishment more difficult for vulnerable young adults. The results support and expand previous research showing a cross-cohort worsening of the longer-term prospects of early school leavers in Norway (Vogt, Lorentzen, and Hansen 2020) and NEETs in Sweden (Bäckman and Nilsson 2016) and illustrate the importance of historical-contextual



**Figure 6.** Predicted probability of long-term exclusion for men and women of differing social origin.

sensitivity in the study of young adult's labor market and educational patterns. Findings highlight how the ability of a static NEET indicator to capture longer-term exclusion changes over time. Hence, while there might be differences between various NEET measures applied across the literature, the current study showcases how the relationship between statically measured NEET status and long-term challenges is embedded in the historical and geographical context of individuals.

Findings revealed pronounced gender differences in the extent of cohort change, demonstrating that trajectory patterns among Norwegian young men and women who have experienced NEET status develop differently during the recent decades' educational expansion and economic restructuring. These results both expand and challenge previous evidence documenting the importance of gender in young adult's labor market establishment patterns (Blossfeld et al. 2015; Brzinsky-Fay 2015; Dämmerich 2015; Reisel 2013; Vogt, Lorentzen, and Hansen 2020). Many previous studies of gender-income differences exclude NEET young adults from their analysis, focusing only on labor-market participants or young people who have secured their first job (Blossfeld et al. 2015; Brzinsky-Fay 2015; Dämmerich 2015; Reisel 2013). The current study contributes knowledge about the changing gender structures among individuals who are at the bottom of the income hierarchy in their early-career years. Furthermore, few previous studies focus on how gender differences among vulnerable young adults change over time. An exception is a study by Vogt, Lorentzen, and Hansen (2020) investigating if gender differences in the trajectories of Norwegian early school leavers have changed across cohorts and concluding that the gender-segregated Norwegian labor



market consistently rewards low-skilled men, as they still dominate trajectories leading to middle and high incomes.

On the one hand, the current study supports the conclusion of sustained male labor market privilege, showing an overrepresentation of men in the stable labor force and an overrepresentation of women in the more economically precarious unstable labor force trajectory. However, findings simultaneously highlight the importance of gaining a more nuanced understanding of such conclusions. Specifically, our findings emphasize the importance of analytically considering the gender-cohort interaction in studies of vulnerable young adults. While men still dominate the stable labor force trajectory, their relative advantage was drastically reduced in the younger cohorts (see Appendix, Figure A3). For the long-term exclusion trajectory, an initially large (10 percentage points) gender gap in favor of men in the oldest cohorts was reduced to zero in the youngest cohorts (see Appendix, Figure A4). Hence, long-term prospects deteriorated among both genders, but more so among men, producing complete gender convergence in social exclusion probability in the youngest cohorts. Although reducing gender inequalities in the labor market is an important goal of the welfare state, it should not be achieved through a surplus of reduced life course opportunities among vulnerable men. Based on our findings, we conclude that within the knowledge-intensive Norwegian labor market, gender appears to become a less important discriminating factor for labor market disadvantages, as it becomes increasingly difficult for all vulnerable young people, regardless of gender, to obtain stable labor market integration. While vulnerable young men still retain privileges in entering the stable labor force as compared to women, they have (also) become relatively more exposed to long-term exclusion over the course of recent decades.

The findings did not confirm the hypothesized cross-cohort strengthening of social inequalities in social exclusion probability. Instead, inequalities were quite stable over time, with sustained level differences in trajectory probabilities for young adults with differing parental education levels. Across all cohorts, long-term exclusion and unstable labor force participation were more common among young adults with low-educated parents. In contrast, those with highly educated parents were overrepresented in the education-to-work trajectory, where early-career NEET status was temporary and not associated with severe long-term outcomes but rather represented a 'gap year' between secondary and tertiary education. While the current study does not attempt to explain the causes of trajectory stability and change, we conclude that cohort change among young people who have been NEET in their early twenties is not driven by rising social origin inequality. Instead, patterns of change are highly gendered.

This study has limitations. While the hypothesis is derived from structural changes over recent decades, the empirical analysis has a descriptive purpose. It does not represent any causal test of the impact of structural change. Although the analysis accounts for compositional cohort differences (i.e. gender, parental education, and immigrant background), our data does not cover vulnerability factors (e.g. physical or mental health problems, substance abuse) which have been linked to the risk of NEET status (Rodwell et al. 2018). The size of the NEET group is reduced by 4.5 percentage points across the studied cohorts (Table 2). The density of unmeasured vulnerabilities may increase in a smaller NEET population, impacting the probability of long-term exclusion. However, the reduction of the NEET group is mainly caused by a declining NEET rate among women (Figure 1).

Supporting our hypothesis of gendered structural changes, the probability of long-term exclusion increases the most among men, where the size of the NEET group is more stable and even increasing among those whose parents have little education.

The present study contributes a nuanced understanding of the NEET category, its link to long-term exclusion, and how this relationship evolves differently between the genders over time. Taking advantage of high-quality population-wide registry data and an all-encompassing and dynamic analytical approach, our findings reveal multiple trajectories encompassing the NEET state. In accordance with recent literature (Contini, Filandri, and Pacelli 2019; Giret, Guégnard, and Joseph 2020; Levels et al. 2022) and reverberating classical insights from life course theory (Alwin and McCammon 2003; Elder, Johnson, and Crosnoe 2003; Fasang and Mayer 2020; Mills and Blossfeld 2005; Mortimer, Oesterle, and Krüger 2005; Mortimer and Shanahan 2004), this study find heterogeneity in the life courses of NEET young people and illustrate the necessity of applying a processual and contextual analytical approach. Static NEET measures presently dominating the quantitative empirical literature may both underestimate challenges present within sub-populations of the NEET group and exaggerate the size of the group. Our findings emphasize that when applying analysis sensitive to heterogeneity, the NEET category can help identify longitudinal patterns of both vulnerability and resilience.

## Notes

1. Average Silhouette Width (ASW), Hubert's Gamma (HC), Point Biserial Correlation (PBC) and Hubert's C (HC).
2. The Price Based Amount (PBA) is a fixed annual amount used to calculate applicability and level of welfare benefits, pensions and student allowances in Norway. The amount is adjusted annually to reflect expected wage growth and adjusted for discrepancies between expected and actual growth during the last year.
3. No negative ASW-values for individual clusters and maximizing the overall cluster-quality measures Average Silhouette Width (ASW), Hubert's Gamma (HC), Point Biserial Correlation (PBC) and Hubert's C (HC).

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