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Book Part — Published Version

NEET in Germany: Labour Market Entry Patterns and Gender Differences

Provided in Cooperation with:

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Suggested Citation: Brzinsky-Fay, Christian (2022) : NEET in Germany: Labour Market Entry Patterns and Gender Differences, In: Levels, Mark Brzinsky-Fay, Christian Holmes, Craig Jongbloed, Janine Taki, Hirofumi (Ed.): The Dynamics of Marginalized Youth, ISBN 978-1-003-09665-8, Routledge, London, pp. 56-86, <https://doi.org/10.4324/9781003096658-3>

This Version is available at:

<https://hdl.handle.net/10419/251722>

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3 NEET in Germany

Labour Market Entry Patterns and Gender Differences

Christian Brzinsky-Fay

3.1 Introduction to NEET in Germany

This chapter aims at assessing the NEET youth (Not in Employment, Education or Training) in Germany, where one finds a strong institutionalized apprenticeship system, a relatively high stratification of the educational system and a gendered vocational education and training (VET) system. For this purpose, I focus on three main questions: (1) Which kind of NEET patterns exists during the period of labour market entry? (2) Do certain socio-economic groups (with a special focus on gender) show particular NEET patterns?, and (3) Do labour market entrants having particular NEET patterns during this period differ on their occupational status afterwards? These three questions are answered using retrospective longitudinal data from the German National Education Panel Study (NEPS), which allows examining monthly activity status changes for 10 years after leaving school. For the explorative analysis of the NEET patterns, only those young people are selected, who experienced at least 1 month of NEET status during this period, because this provides a more detailed picture of how NEET episodes are distributed. I apply sequence analysis (optimal matching) and cluster analysis (Ward's method) to the categorical time series, the statuses of which are school, VET, university, employment, NEET, and other. The explorative analysis reveals eight distinct NEET patterns which are examined descriptively and serve as a dependent variable for the further analysis. The question, which individual characteristics might have higher or lower risks of becoming NEET, is answered in two ways: first, by estimating a multinomial logistic regression model of NEET patterns on socio-economic variables and their interactions and second, by estimating a linear ordinary least-squares (OLS) regression model of the cumulative NEET length on socio-economic variables and their interactions. Here, I use only NEET youth (within group comparison) as well as the whole sample of school leavers (between group comparison) in order to contrast the effects. The third question, whether there are differences in labour market outcome, is also answered by using a within-group and between-group comparison. The dependent variable is the occupational status at the age of 30 measured by the International

Socio-Economic Index of Occupational Status (ISEI). The independent variables are the socio-economic background information and the NEET patterns or respectively the cumulative NEET length. All analyses include information on the birth cohort, which allows for the assessment of effects across time.

The results indicate that the NEET risk is particularly high for women with children, which reflects the male breadwinner model typical for Germany. Women with children have a much higher probability of entering the labour market via a pattern with long NEET periods. People who are born abroad also show clearly higher risks of entering the labour market via patterns which involve long NEET periods. Younger cohorts have a higher risk of experiencing longer NEET periods and have also a higher probability to enter the labour market via those patterns that involve longer NEET periods. I also observe a decrease of the probability by entering the labour market via VET across time. The patterns that include university do gain increasing importance across cohorts and reflect the educational expansion. The occupational status at the age of 30 is only partly affected by the NEET pattern itself, but more by the length in combination with the educational level: individuals with higher education (university) are not really harmed by NEET periods in their labour market entry period.

Germany constitutes an interesting case when looking at the longitudinal patterns of youths who experience NEET periods, for several reasons. First, it has an extensive vocational training and apprenticeship system. This integrates school leavers with intermediate degrees quite well, provides standardized occupational skills, and, therefore, leads to a relatively smooth integration of young people into the labour market. At the same time, the German public employment system does provide a large body of active labour market policies and educational programmes that help problematic school leavers to overcome their competitive disadvantages. Third, and in contrast to Scandinavian countries and many liberal countries, the German labour is quite gendered regarding both female labour market participation and occupational segregation. These characteristics of the German transition system put the focus on gender disparities regarding longitudinal NEET experiences of school leavers.

3.2 Institutions and policies in Germany

In international comparison, the connection between education system and the labour market in Germany is quite structured. Therefore, Germany is often described as a ‘coordinated market economy’ (cp. Hall and Soskice, 2001), where educational institutions and labour markets are tightly connected and pathways of labour market entry are more or less stratified (Maurice et al., 1986). The tight coupling of the German (vocational) education and employment system (cp. Weick, 1976) is reflected in a high proportion of this kind of smooth school-to-work transitions. At the same time, a

large body of active labour market policies exists, which aims at integrating young people into employment. These are institutional reasons, why NEET rates in Germany are comparatively low (Eurofound, 2012).

3.2.1 Education system

The German system of general education shows a high degree of stratification and a high degree of diversity between the German regions (Bundesländer), which is not only the result of the German unification and diverging school systems of former East and West Germany but also the consequence of Germany's federalist structure that is most prevalent in education policy (cp. Hufner and Hufner, 2010). On the national level, this leads to a low degree of standardization of the general education system. Pupils in Germany are tracked early – that is at the age of 10 or 12 – into schools that lead to intermediate secondary and upper secondary degrees. Traditionally, school leavers with an intermediate degree (lower secondary education) enter the dual system of VET, whereas those with an upper secondary degree are entitled to continue with tertiary education. General education in Germany is compulsory until the age of 15 or 16 (depending on the Bundesland) and is followed by a compulsory vocational education (at least part-time vocational schooling) until the age of 18. This means that NEET cannot legally occur by definition before this age. Within the last two decades, there is an increase in the number of those with upper secondary degree who anyhow enter the dual system of apprenticeship. Nevertheless, the social selectivity of the school system is still prevalent. The high degree of stratification of the German education system leads to disadvantages for youth with migration background even in the second generation (Baysu et al., 2018). However, there are a lot of educational reforms after the so-called PISA shock in the year 2000, which showed that German 15-year-old pupils have only average cognitive skills. These reforms are manifold and hardly coordinated between the regions, but in many cases, they refer to the integration of different school types and degrees in order to allow for more mobility between school tracks and therefore lowering the social background effect on school success.

3.2.2 Vocational education and training

The dual system of apprenticeship is the most distinguishing characteristic of the German VET system. It combines school and work-place training and its training regulations are nationally coordinated by including federal and regional governments, trade unions, and employers' organizations. This leads to a high degree of standardization providing clear signals to firms regarding apprentices' qualifications. Apprenticeships are available for school leavers with lower secondary degrees and usually last for 2–3 years. There are more than 300 occupations in all economic sectors available.

Additionally, some occupations are trained in full-time vocational schools, such as nurses or childcare workers. The high degree of coordination is the foundation of the German corporatist structure of the education-labour nexus and the ‘high-skill equilibrium’ (Culpepper, 1999), because it provides high-quality occupational skills and increases the job-qualification match. The chance of finding employment is increased by both the screening effect of work-place training and the provision of industry-specific (i.e. transferable) skills. Across the recent decades, the share of apprentices staying with their firm is decreasing, but this is offset by the positive signal of standardized, industry-specific skills (cp. Brzinsky-Fay et al., 2016). The clear advantages of the dual system also involve some drawbacks, namely a high gender-specificity, a problematic integration of marginalized groups such as migrants (Tjaden, 2017; Bergseng et al., 2020) and low-achieving youth (Solga and Kohlrausch, 2013), and a segmentation between vocational and higher education (cp. Baethge and Wolter, 2015). Gender segregation is related to occupations themselves as well as structured by the distinction between firm- and school-based vocational training (Estévez-Abe, 2012). The latter form of training comprises mostly ‘female’ occupations such as nurses and childcare workers. The German VET system in the past was able to integrate school leavers of lower classes into the labour market, but recently it seems no longer able to fulfil this function (cp. Baethge and Wolter, 2015). This is particularly true for school leavers with migration background. As a consequence, the transition system has been continuously growing during the recent decades.

3.2.3 The German transition system

The transition system includes the sum of measures and programmes of active labour market policy that help school leavers to gain access to employment (Kohlrausch, 2012).¹ In the German case, there are two thresholds for lower secondary degree holders, which these policies address: the transition from school to apprenticeship and the transition from apprenticeship to employment. Both transitions have been creating distinct markets. The vast majority of these programmes and measures are directed to the first threshold (apprenticeship market) and include prevocational training courses, which do not provide vocational degrees, but prepare young people for starting an apprenticeship. Within the last two decades, the transition system expanded and between 30% and 40% of school leavers go through it each year (Baethge and Wolter, 2015), most of them are low achievers. The transition system as it is defined here constitutes the third pillar of the VET system. All programmes and measures are related to education, i.e. they provide school certificates or vocational orientation or preparation, so that their participants are not counted as unemployed or economically inactive and, therefore, not NEET. This considerably well-developed system contributes to a low proportion of unemployed or NEET youth.

3.2.4 Regulation of the German labour market

Traditionally, the level of regulation in Germany is relatively high, e.g. employment protection for regular employees, although trade union density, i.e. the share of trade union members, is only on a low or medium level (OECD, 2019a). However, the proportion of non-standard employment relationships increases, not only since the labour market reforms in the 2000s (cp. Blossfeld et al., 2011a). These employment forms are not as protected and therefore, flexibilization policies have led to a higher number of exits from employment as well as the entries into employment. At the same time, the number of fixed-term employment contracts for young people increased. The consequence of increasing turnover rates is a higher probability of NEET occurrences within employment trajectories. Despite this development, Germany remains a country with a moderate level of deregulation if compared to other countries. However, employment protection is unequally distributed and young people – among other groups – belong to the disadvantaged ones (Buchholz and Kolb, 2011). Unemployment benefits in Germany are quite generous and are based on the insurance principle, where the size of the allowance depends on the length and the level of previous employment. The contribution period after which one is eligible for unemployment benefits is 12 months (OECD, 2019a). For everybody, basic social assistance is provided after 1 year of receiving unemployment benefits. Since labour market entrants by definition do not have long employment durations or high salaries, they are also disadvantaged regarding the provision of unemployment benefits.

3.2.5 Family and welfare policies

Regarding the family and welfare policies, Germany is usually defined as a conservative gendered welfare state (Orloff, 1996; Esping-Andersen, 1999; Sainsbury, 1999; Korpi, 2000), which supports the male-breadwinner model with respect to household labour division. In Germany, the most important characteristics are single earner supporting taxation system and the lack of early childcare institutions. Within the last decade, childcare provision was increased sustainably, including a legal claim for childcare of 1–3-year-old children. However, compared to other countries, the gender division in terms of employment remains quite large, also because traditional role models continue to be widespread. The traditional German welfare system is based on the insurance principle and relatively generous long-lasting unemployment benefits. Decreasing labour demand and high wages were supported by excluding certain groups from the labour market, such as women (due to family care), older people (by early retirement programmes), or even young people (by long education periods and obligatory social/military service). The labour market reforms of the 2000s ('Hartz-Reform') introduced a couple of activation and flexibilization policies while limiting the maximum reception

time for unemployment benefits (60% of former income) to 12 months. After this period, unemployed ones receive only basic social assistance. These and other reforms on the one hand have led to a flexibilization of the labour market, which contributed to the recovering of the German labour market. On the other hand, they created a ‘dualization of employment’ (Eichhorst, 2015), i.e. it increased the segmentation of the German labour market.

3.3 Hypotheses

The institutional and policy characteristics described above lead to particular assumptions regarding the occurrence and duration of NEET among young people in Germany. On the aggregate level and in the longitudinal perspective, we expect to find a lower amount of NEET in Germany, regarding both incidence and duration. Regarding the development over time, there were many reform activities in different policy fields. The most important reform is the labour market flexibilization, which may lead to increasing occurrence of NEET in school-to-work transitions. However, the highly coordinated or tightly coupled systems of education and the labour market reduce insecurity during the job search process by providing information. Therefore, it can be assumed that most NEETs are NEET only temporarily (H1). However, following theoretical assumptions described in [Section 1.3](#), we expect that a group of NEETs is long-term NEET (H2). Furthermore, the stratification of the general and vocational education system implies that early educational attainment determines the school leaving certificate and together with occupational degree determines individual labour market chances. Disadvantaged groups such as low-qualified (H3a) and migrant (H3d) youth will therefore show clearly more NEET periods and longer NEET durations. The German welfare state and its traditional orientation towards the male-breadwinner model lead to a higher engagement of women in family care and, therefore, a higher share of women with children in NEET (H4).

3.4 Data and measurements

3.4.1 Data

The explorative analysis of the NEET patterns is done by applying sequence and cluster analysis to the employment histories of the adult cohort (starting cohort 6) of the German NEPS (Blossfeld et al., 2011b, 2011c). In this dataset, individuals born between 1944 and 1986 were interviewed and asked to retrospectively provide monthly information about their education and employment career. I use individuals who have left school and follow their activity history for 10 years. From this group, only those were taken who have reported at least 1 month of NEET status in order to search different NEET patterns and assess their individual causes and consequences. Thus, this analysis is a within-group comparison that helps distinguishing NEET

patterns and their relative differences. The sample for this analysis contains 4563 individuals with complete information for the period of 10 years (balanced panel).² The monthly activity statuses are school (for those who went back to school after having left it once), VET, university (including technical college), employment (including military service and self-employment), NEET, and other (which is mostly the status ‘unknown’). Each individual has a 10-year-activity-status-sequence, which is 120 months. This gives a huge variation of possible individual sequences³, and the sequence concentration is quite low, that is 91% of all sequences in the sample of NEET youth are unique. Sequence analysis provides an algorithm that is able to compare all these different sequences and creates a similarity measure matrix that can be used as an input for classification methods such as cluster analysis in order to group sequences in a way that the within cluster similarity is maximized, whereas the between-cluster similarity is minimized. The result is an empirically derived, manageable number of ideal sequence types (or patterns), which reflect in our application ideal types of NEET patterns containing at least 1 month of NEET status.

After the exploration of the NEET patterns, I estimate a multinomial logistic regression model, where the patterns are taken as dependent variables and socio-economic characteristics and the cohort serve as independent variables.⁴ This allows identifying the different probabilities of certain individual characteristics for experiencing a particular type of NEET pattern in contrast to those who don’t experience NEET. A special focus is on gender differences, and hence, interaction effects with gender are included here. Individuals in our sample are born in the years between 1961 and 1990. After the analysis of which individual characteristics increase or diminish the probability of experiencing a particular NEET pattern, I examine whether and how these factors also influence the cumulative length and the number of NEET episodes. Since all these dependent variables are on a metric scale level, straightforward OLS regression models are estimated here. This is done in order to find out whether there are different mechanisms in which socio-economic characteristics influence NEET patterns or the cumulative duration of NEET (length) or the number of NEET episodes.

The patterns that were distilled from the exploratory sequence analysis are then taken as independent variables in addition to the individual characteristics in order to investigate their impact on later labour market outcomes, namely occupational status and net income at the age of 30. For this purpose, OLS regression models are estimated. Here, we again check whether there are differences between the effects of NEET patterns or NEET length or NEET episodes on occupational status at the age of 30.

3.4.2 Measurements

The start cohort 6 data of the NEPS provide a wide range of variables. We use time constant variables for gender, migration background, region, children, education, parental background, and birth cohort. Migration background

is measured by the fact whether someone is born in Germany or abroad. The region variable indicates whether an individual lives in East or West Germany. Because having children is a time-varying property, the variable is coded as a dummy indicating whether at least one child is born during the period of observation. Accordingly, educational level refers to the highest educational level within the observation period measured in three categories (low, intermediate, and high). The same categories are used when measuring parental (education) background. In order to assess changes across time, they are divided in six birth cohorts 1961–1965, 1966–1970, 1971–1975, 1976–1980, 1981–1985, and 1986–1990. The last cohort is only small, as individuals born after 1986 cannot be included in the sample, because the last available survey year is 2016. Because also age is time-varying, the age at start of the observation period is added to the regression models as control variable. The model applied for the assessment of NEET outcomes uses occupational status as dependent variable, which is operationalized by using the ISEI (cp. [Ganzeboom et al., 1992](#)), which classifies occupations based on income and education and ranges from 16 (unskilled farm worker) to 90 (judges).

3.5 Analyses and results

The results are presented as follows: first, a descriptive picture of the sample is drawn in order to see how the individuals who experienced NEET differ from those who did not. In addition, I estimate a logistic regression model of the probability of experiencing NEET on the independent variables in [Section 3.5.1](#). Second, the explorative analysis that uses sequence and cluster analysis in order to extract ideal typical transition types of those individuals who experience at least 1 month of NEET will be presented in [Section 3.5.2](#). Third, the results of the multinomial regression models are presented in [Section 3.5.3](#). Some further explorations, namely the analysis of predictors for NEET length and NEET episodes, are conducted in [Section 3.5.4](#) and finally, the results of the models for the consequences of NEET are shown in [Section 3.5.5](#).

3.5.1 Description of NEET in Germany

The first description of the school-to-work transition sequences is provided for all individuals (those with and without NEET experience). [Table 3.1](#) shows the distribution of the three groups by dependent variables. The composition of the whole sample (last column) regarding standard demographic variables does not show remarkable deviations from the general population: there are slightly more women than men, the share of respondents who were born in a foreign country is 10.6%, which is around the same as in the German population. The same is true for people from the Eastern part of Germany. The variable child born is a dummy variable indicating whether during the 10-year observation period a child is born. This has been the

Table 3.1 Sample descriptives

	<i>NEET</i> \geq 1 month		<i>Never NEET</i>		<i>All individuals</i>	
	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>
<i>N</i>	4563		4665		9228	
Age at start (years)	17.2		17.2		17.2	
Gender (females)	2619	57.4	2122	45.5	4741	51.4
Origin (foreign born)	599	13.1	376	8.1	975	10.6
Region (East)	881	19.3	863	18.5	1744	18.9
Child born	1694	37.1	1144	24.5	2838	30.8
Upper secondary degree (Abitur) at start	1463	32.1	1630	34.9	3093	33.5
Upper secondary degree (Abitur) at end	1848	40.5	2025	43.4	3873	42.0
Education: low	945	20.7	734	15.7	1679	18.2
Education: intermediate	1554	34.1	1646	35.3	3200	34.7
Education: high	2057	45.1	2276	48.8	4333	47.0
Education: missing	7	0.2	9	0.2	16	0.2
Father's education: low	588	12.9	480	10.3	1068	11.6
Father's education: intermediate	2944	64.5	3095	66.3	6039	65.4
Father's education: high	775	17.0	863	18.5	1638	17.8
Father's education: missing	256	5.6	227	4.9	483	5.2
Mother's education: low	1252	27.4	1189	25.5	2441	26.5
Mother's education: intermediate	2743	60.1	2912	62.4	5655	61.3
Mother's education: high	400	8.8	415	8.9	815	8.8
Mother's education: missing	168	3.7	149	3.2	317	3.4
Birth cohort 1961–1965	1180	25.9	1647	35.3	2827	30.6
Birth cohort 1966–1970	1055	23.1	1274	27.3	2329	25.2
Birth cohort 1971–1975	749	16.4	702	15.0	1451	15.7
Birth cohort 1976–1980	773	16.9	513	11.0	1286	13.9
Birth cohort 1981–1985	689	15.1	446	9.6	1135	12.3
Birth cohort 1986–1990	117	2.6	83	1.8	200	2.2

Source: NEPS Starting Cohort Adults, doi:10.5157/NPS:SC6:3.0.1; own calculation.

case for 30.8% of all individuals in the sample. The variable upper secondary degree (Abitur) indicates whether individuals have had an upper secondary school degree (higher education entrance qualification) at the beginning of the 10-year period. When looking at the distribution of the characteristics in the other two groups ('NEET \geq 1 month' and 'never NEET'), we find remarkable difference with respect to three variables: *gender*, *origin*, and *child born*. In the group of those who experienced NEET, we find clearly more women (57.4% compared to 45.5%), more people born abroad (13.1% compared to 8.1%), and more people with children (37.1% compared to 24.5%) as in the group who never experienced NEET. It can be assumed that people with these properties are found to be overrepresented in the NEET group also in the multivariate model.

Whereas *gender*, *origin*, and *region* are time-constant variables by nature, *childbirth*, and *school degree* are time-varying in principle.⁵ Because sequence analysis treats longitudinal processes holistically, it was necessary to fix these variables. In the case of childbirth, this leads to some degree of endogeneity when calculating the probability of belonging to a NEET cluster for socio-economic characteristics, but so far there is no satisfying way to avoid this. However, it must be kept in mind when it comes to the interpretation of the results.

The numbers in [Table 3.1](#) are representing only bivariate relationships, that is relationships which are not 'controlled' by relationships of the other variables. In order to assess the net effect of single variables, I estimated a logistic regression model of the probability for experiencing at least 1 month of NEET on the independent variables. The results of this model are presented in [Figure 3.1](#) and the online supplement.

The graph shows the odds ratios (OR) as well as the average marginal effects (AMEs) of the model. There are three two-way-interaction effects among gender, child born, and origin included, which can only be shown in the OR, because AMEs cannot be calculated for interaction effects. The multivariate model mainly corroborates the findings from the bivariate descriptives. When looking at the AMEs first (hollow circles), we find strong and significant effects for gender, origin, and child born, i.e. women as well as people born abroad and people with children have a higher probability of experiencing NEET. On the other hand, holding an upper secondary degree (Abitur/FH) decreases the probability of experiencing NEET. The same is true for parental background (only father's education). Quite strong and significant effects in terms of increasing the probability of NEET we do find for younger cohorts. This effect seems to be large, but it has to be kept in mind that we have retrospective data here, which means that there might be memory bias included, i.e. that the further episodes are back in the past, the worse they are remembered ([Dex, 1995](#), [Manzoni et al., 2010](#)).

The ORs (orange triangles) report the model with the interaction effects included. We see that most of the coefficients have the same direction as in

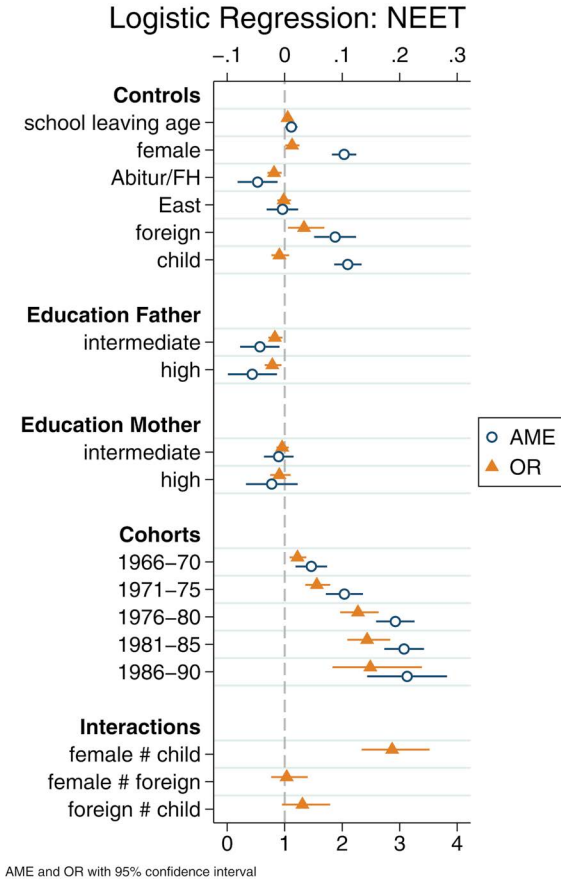


Figure 3.1 Logistic regression of the probability of experiencing at least 1 month of NEET.

the first model, but the strength and the significance are smaller: the pure gender (representing women without children) and the pure child effect (representing men with children) disappear, whereas the interaction of the two becomes outstandingly strong. The other two interaction effects (*gender*origin* and *origin*child*) are insignificant. The pure effect of origin as well as the effects of education and cohort remain significant.

Regarding the probability of experiencing NEET, we can summarize that first, women with children have a very high (i.e. three times higher) probability of experiencing NEET, whereas men with children don't show higher probabilities. This corroborates hypothesis (H4). Second, I find that people born abroad have a higher probability of NEET (H3d), which is only weakly related to the fact of having children. Better education – measured by holding an upper secondary degree – has a negative effect on

the probability of experiencing NEET (H3a). Both findings confirm my expectations. And third, younger cohorts clearly show a higher probability of NEET, but we need to be cautious here because of the memory bias effect.

Because I estimated the probability of experiencing at least 1 month of NEET in the logistic regression model, we know about the effects on the *occurrence* of any NEET, but we don't know whether the duration (how long?) or the pattern of NEET (how often, how long, and where in the trajectory) is affected by socio-economic properties.

3.5.2 Sequence analysis: Exploring patterns of NEET in Germany

The objective of the exploratory analysis of NEET types is to detect possible structures in NEET incidence during the labour market entry process. The optimal matching algorithm and cluster analysis are able to generate a classification of ideal types of sequences. Using those individuals who experience at least 1 month of NEET during the 10-year-observation period produces quite distinct trajectory types as shown in Figures 3.2 and 3.3. The first type (*discontinuity*) represents individual trajectories of school leavers who spend a quite long time in vocational education or training (or vocational preparation), but this training is prolonged, postponed, or interrupted by NEET or employment or even school periods. Seven hundred and eighty-five individuals, i.e. 17.2%, of our sample follow trajectories of

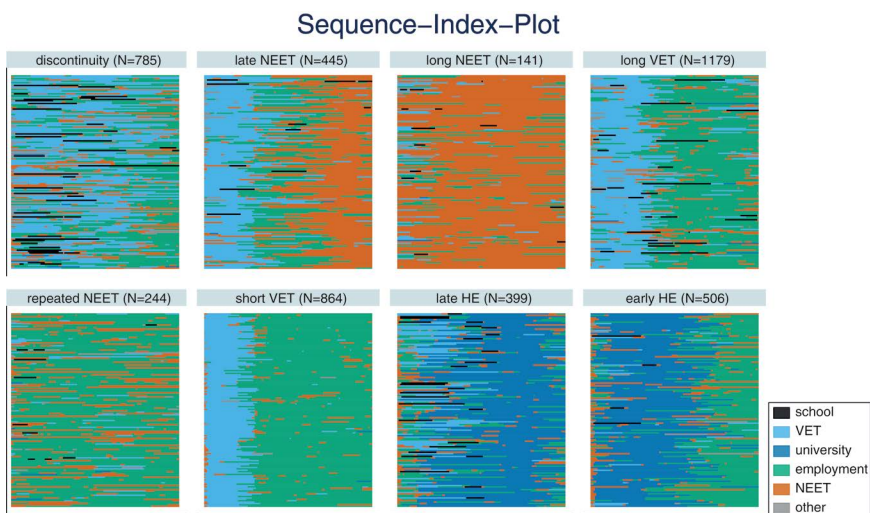


Figure 3.2 Sequence-index-plot of the clusters (trajectory types).

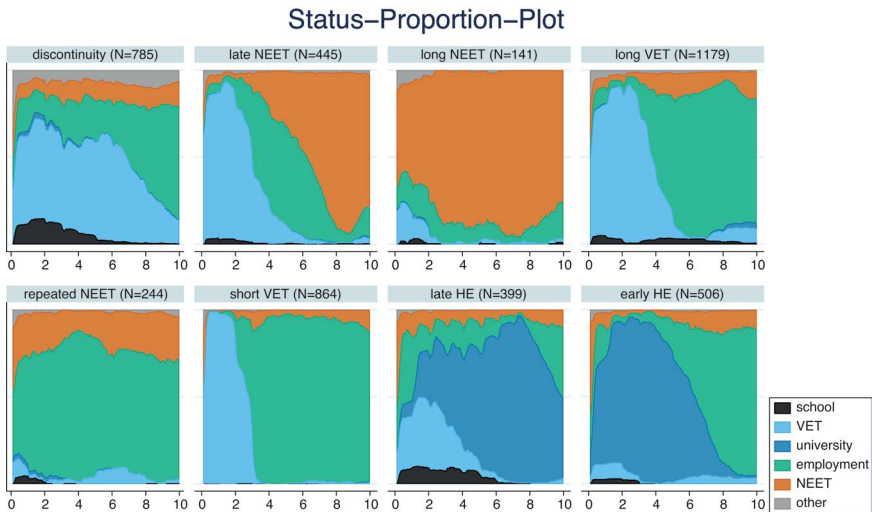


Figure 3.3 Status proportion plot of the clusters (trajectory types).

this type (Table 3.2). Months in VET constitute 45.2% of all statuses, 29.6% are in employment. At the end of the 10-year-period, 65.6% of the individuals are in employment, but the overall number of months spent in NEET is not high (10.6%). The trajectories of this cluster are somewhat slowed down or cumbersome, because the VET duration is much longer than usual in the German apprenticeship system.

The second cluster (*late NEET*) is composed of individuals who start with VET for 2–3 years, have a short employment episode, which is followed by a rather long NEET period that in most of the cases last until the end of the observation period. Around 10% of the sample have such kind of trajectories, and 40% of the time is spent in NEET, 30% in VET and 27.3% in employment. Ten years after leaving school, 75.7% of the individuals are still in NEET and only 17.8% are integrated into employment. This type is a problematic labour market trajectory, because it represents an exit from employment and education.

Cluster 3 (*long NEET*) shows the longest NEET periods: here, most individuals spend more or less the whole observation period in NEET; 81% of all statuses are NEET statuses, only 12.2% are employment statuses. One can assume that these trajectories will turn out to have the most negative effects on later employment careers. However, this cluster is the smallest accounting for only 141 individuals or 3.1% of the sample population. At the end of the observation period, 22% of individuals are integrated into employment, whereas 75.2% remain in the NEET status. It has a low volatility and the lowest value for the integration indicator (Table 3.2). This cluster undoubtedly shows a problematic trajectory.

Table 3.2 Distribution of covariates across clusters

Cluster	Discontinuity		Late NEET		Long NEET		Long VET		Repeated NEET		Short VET		Late HE		Early HE	
N	785	17.2%	445	9.8%	141	3.1%	1,179	25.8%	244	5.3%	864	18.9%	399	8.7%	506	11.1%
Age at start (years)	17		17		17		17		17		17		18		19	
Gender (females)	424	54.0%	364	81.8%	112	79.4%	615	52.2%	140	57.4%	504	58.3%	154	38.6%	306	60.5%
Origin (foreign born)	116	14.8%	52	11.7%	68	48.2%	87	7.4%	106	43.4%	51	5.9%	39	9.8%	80	15.8%
Region (East)	153	19.5%	104	23.4%	12	8.5%	216	18.3%	32	13.1%	199	23.0%	79	19.8%	86	17.0%
Child born	234	29.8%	333	74.8%	104	73.8%	402	34.1%	135	55.3%	304	35.2%	50	12.5%	132	26.1%
Upper sec. degree (Abitur) at start	270	34.4%	67	15.1%	17	12.1%	205	17.4%	53	21.7%	131	15.2%	268	67.2%	452	89.3%
Father's education: low	94	12.0%	60	13.5%	53	37.6%	139	11.8%	66	27.0%	113	13.1%	25	6.3%	38	7.5%
Father's education: intermediate	499	63.6%	299	67.2%	63	44.7%	852	72.3%	137	56.1%	644	74.5%	210	52.6%	240	47.4%
Father's education: high	153	19.5%	43	9.7%	6	4.3%	131	11.1%	19	7.8%	54	6.3%	152	38.1%	217	42.9%
Father's education: missing	39	5.0%	43	9.7%	19	13.5%	57	4.8%	22	9.0%	53	6.1%	12	3.0%	11	2.2%
Mother's education: low	185	23.6%	137	30.8%	83	58.9%	313	26.5%	127	52.0%	258	29.9%	70	17.5%	79	15.6%
Mother's education: intermediate	489	62.3%	265	59.6%	42	29.8%	764	64.8%	94	38.5%	548	63.4%	236	59.1%	305	60.3%
Mother's education: high	84	10.7%	13	2.9%	1	0.7%	61	5.2%	11	4.5%	29	3.4%	88	22.1%	113	22.3%
Mother's education: missing	27	3.4%	30	6.7%	15	10.6%	41	3.5%	12	4.9%	29	3.4%	5	1.3%	9	1.8%
Birth cohort 1961–1965	186	23.7%	100	22.5%	26	18.4%	313	26.5%	75	30.7%	315	36.5%	64	16.0%	101	20.0%
Birth cohort 1966–1970	180	22.9%	110	24.7%	23	16.3%	257	21.8%	70	28.7%	238	27.5%	85	21.3%	92	18.2%
Birth cohort 1971–1975	131	16.7%	88	19.8%	31	22.0%	213	18.1%	34	13.9%	119	13.8%	47	11.8%	86	17.0%
Birth cohort 1976–1980	138	17.6%	94	21.1%	32	22.7%	198	16.8%	38	15.6%	110	12.7%	79	19.8%	84	16.6%
Birth cohort 1981–1985	127	16.2%	48	10.8%	28	19.9%	170	14.4%	26	10.7%	78	9.0%	102	25.6%	110	21.7%
Birth cohort 1986–1990	23	2.9%	5	1.1%	1	0.7%	28	2.4%	1	0.4%	4	0.5%	22	5.5%	33	6.5%
Volatility indicator	0.29		0.24		0.13		0.27		0.18		0.23		0.30		0.25	
Integration indicator	0.34		0.28		0.11		0.61		0.72		0.80		0.16		0.43	
NEET length (months)	12.77		47.93		97.16		10.95		25.88		5.84		9.38		9.58	
NEET episodes	1.65		1.79		1.71		1.60		1.62		1.36		1.69		1.59	

Cluster 4 is the largest (1179 individuals or 25.8% of the sample) and represents one of the ‘classical’ labour market entry patterns for Germany: after apprenticeship of 3–4 years, these school leavers are quite well integrated in employment (nearly 71.2% at the end compared to 16% in NEET). The overall amount of NEET is quite low (9.1%) and does not show a tendency across time for these trajectories. Since the apprenticeship period is a bit longer than normal, this cluster is labelled *long VET*.

The fifth cluster (*repeated NEET*) is mostly composed of employment and NEET (92.3%), but the episodes are often interrupted and there is no core area, where NEET appears. The cluster belongs to the smaller ones (5.3% of the sample) and at the end of the observation period, 67.6% of the individuals are employed, whereas 25.8% are in NEET. This cluster has a large amount of NEET interruptions, but a quite high integration potential. It is regarded as a NEET cluster, but problematic only with some reservations. It is assessed later whether this type of trajectory has negative effects on income or occupational status.

Cluster 6 (*short VET*) is quite similar to cluster 4, with a difference of the duration of VET episodes which are shorter here. There is a lower amount of NEET (4.9%) and a higher share of employment (69%). The integration indicator has its highest value for this cluster (Table 3.2), and therefore, 85.5% of individuals in this cluster are employed at the end of the observation period. Together with this similar cluster 4, individuals with VET and subsequent employment account for 44.8% of the sample.

Clusters 7 (*late HE*) and 8 (*early HE*) contain those trajectories, including university periods. Individuals in cluster 7 in most cases start with a VET period for around 3 years before switching to university, whereas those in cluster 8 immediately start with university. Both clusters account for 19.8% of the sample, only around 10.3% of the individuals are in NEET at the end of the 10-years-period, while 41.1% (cluster 7) and 84.2% (cluster 8) are in employment. Additionally, in cluster 7 there are 45.6% still in university, which is due to the fact that members of this cluster started their university period later. Both clusters contain NEET periods, which are mostly found at transition points, i.e. between VET and employment or university and employment.

The classification of trajectory types is based only on the monthly activity statuses, i.e. other socio-economic variables were not considered for this process. Therefore, if there are relationships between trajectory types and socio-economic variables, we can conclude that structuring processes are at work, which lead to over- or underrepresentation of particular groups in certain clusters. Table 3.2 provides a descriptive overview about potential relationships that are tested in a multivariate model in the following section. The highest share of women we find in cluster 2 (*late NEET*) and 3 (*long NEET*), both of which show the highest share of NEET months. In cluster 7 (*late HE*), there is the lowest share of women. Individuals with migrant background are overrepresented in cluster 3 (*long NEET*) and cluster 5 (*repeated*

NEET). In the VET, clusters 4 (*long VET*) and 6 (*short VET*) people born outside Germany are underrepresented. Regional differences are quite low, maybe with the exception of cluster 3 (*long NEET*), where we find a very low number of individuals from East Germany. For the variable *child born*, we find overrepresentation in all three NEET clusters – very similar to *gender* – that is clusters 2 (*late NEET*), 3 (*long NEET*), and 5 (*repeated NEET*).

A very high share of school leavers with an upper secondary degree (Abitur) we unsurprisingly find in the two university clusters 7 (*late HE*) and 8 (*early HE*), because the Abitur is the necessary degree for university entrance. In the VET clusters and in cluster 3 (*long NEET*), upper secondary graduates are underrepresented. Regarding the parental background, individuals with lower educated parents are slightly overrepresented in the NEET clusters 3 (*long NEET*) and 5 (*repeated NEET*). School leavers of the older cohorts are more frequently found in the VET clusters 4 and 6 and in cluster 5 (*repeated NEET*). Younger cohorts are overrepresented in the HE clusters 7 and 8. In the next section, I will check whether these relations remain stable in a multivariate approach.

3.5.3 Multinomial regression: Explaining German NEET patterns

The optimal matching algorithm together with the Ward's clustering procedure created a classification of distinct patterns of labour market entry trajectories. This classification is only based on the trajectories themselves, so that as a second step it is relevant to analyse whether particular socio-economic characteristics are overrepresented in these cluster. I will answer this question by estimating a multinomial logistic regression model, in which the (time-constant) socio-economic characteristics of school leavers are the independent variables and the membership probabilities in the clusters are the dependent variables. As reference category for the NEET clusters a group (*no NEET*) is created that contains all school leavers without any NEET month during the 10-year observation period.⁶ For each independent variable, the AMEs are presented. Because the multinomial regression table is quite large, it is provided in the online supplement. The independent variables are gender, higher education entrance certificate (Abitur), birth cohort, region (East/West), origin (native/foreign born), social origin (mother's/father's educational level), and childbirth. In the descriptive part, the impression emerged that women with children are particularly affected by becoming NEET. Therefore, I included an interaction effect between gender and childbirth. Additionally, interaction effects of gender and origin and origin and childbirth are tested.

Figure 3.4 displays the marginal effects of gender on the probability of following a specific labour market entry pattern. Women more probably enter the labour market via the *discontinuity* trajectory, but this effect is marginally significant. For two of the clusters involving remarkable NEET periods (*late NEET*, *long NEET*), the marginal effects for females are positive and

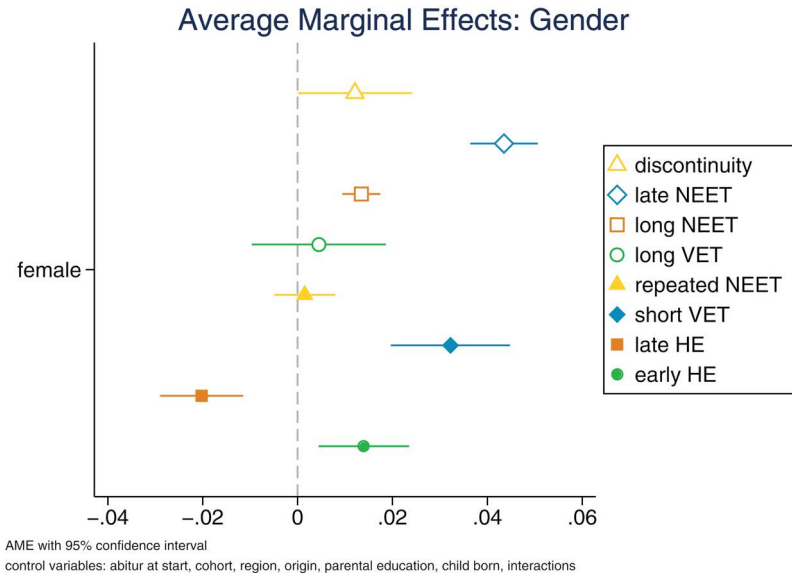


Figure 3.4 Average marginal effects for gender.

significant. For the cluster *repeated NEET*, we do not find a significant effect. The *short VET* is more probable for females and so is the *early HE*, but the *late HE* that combines VET with HE is less probable entry pattern for women. These effects are observable although the interaction effect between gender and childbirth is controlled for.

The finding of the descriptive analysis that it is particularly the group of young mothers which is more frequently in NEET clusters, which include long NEET-periods, is confirmed by looking at the predictive margins of the interaction effect (Figure 3.5): for women without children, there are positive effects for the *short VET* as well as for the *early HE* pathway. The *late HE* trajectory shows a lower probability for women without children. Women with children have a higher probability for the *late NEET* pathway and also – to a lower extent – for the *long NEET* pathway. Also, *long VET*, *short VET*, and *repeated NEET* are more frequently the trajectory for young mothers. The gender effect is in fact a mother effect.

The assessment of the education effect is somewhat difficult in this regression model, because education is both time-varying and an integral part of the trajectories themselves. Because of the holistic notion of sequence analysis, the inclusion of (time-varying) information from parallel developments leads to endogeneity. However, in order to measure the effect of education anyway, I included a dummy variable indicating whether an individual has got an upper secondary school certificate (Abitur) already at the beginning of the trajectory. This certificate is the higher education entrance qualification and requirement. Hence, this variable does not

Predictive Margins (MER): Interaction Females*Child Birth

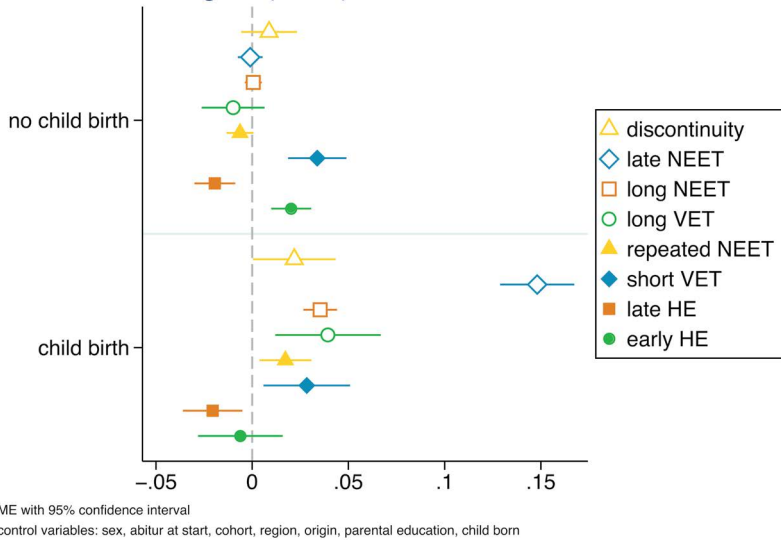


Figure 3.5 Marginal effects of sex at representative values (MER) for child born⁷

measure educational progress within the trajectory, i.e. those young individuals who decide to go back to school in order to get the upper secondary certificate are not covered here. The effect of upper secondary certificates (Figure 3.6) does not provide surprising insights: the strongest effects are a lower probability for the classical labour market entrances (*long VET* and *short VET*) and a higher probability for the university patterns (*late HE* and *early HE*). This fits well to the traditional logic of the German education system, where university education and apprenticeships are perceived as hierarchical order. For the problematic trajectories involving long NEET periods (*late NEET* and *long NEET*), school leavers with upper secondary education certificate show significant lower probabilities.

The richness of the NEPS starting cohort 6 data allows comparing developments over time by including different birth cohorts (Figure 3.7).⁸ The most striking effect can be found when looking at the probabilities for the *no-NEET*-group: older cohorts have a higher probability not to experience any NEET at all during the 10-year period after leaving school.⁹ This means that across time, school leavers increasingly are involved in NEET. For the two university clusters (*late HE* and *early HE*), the probabilities increase for the younger cohorts reflecting educational expansion. Younger cohorts are not more frequently in the three problematic NEET clusters, namely *late NEET*, *long NEET*, or *repeated NEET*. In a nutshell, we find increasing incidence of NEET for school leavers of younger cohorts, but no increasing incidence of explicitly problematic NEET trajectories. The regional effect – measured with an East/West-dummy variable – on the probabilities for

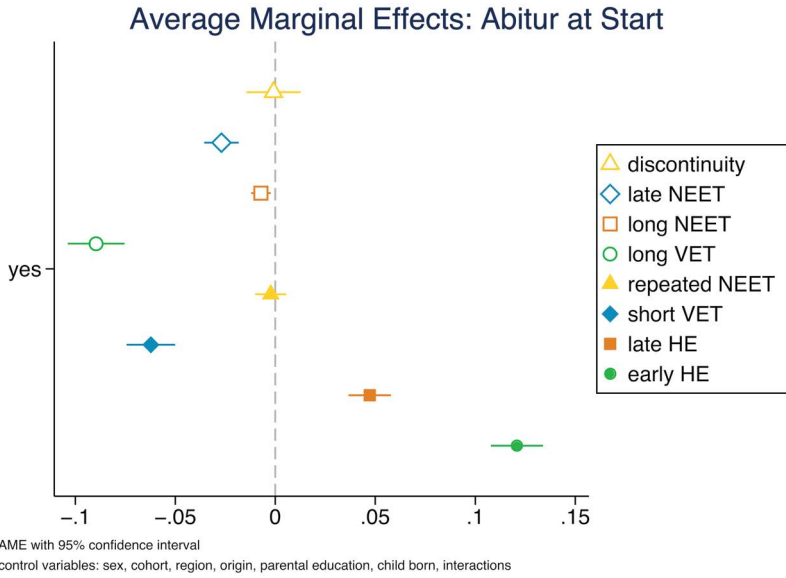


Figure 3.6 Average marginal effects for upper secondary degree (Abitur) at start.

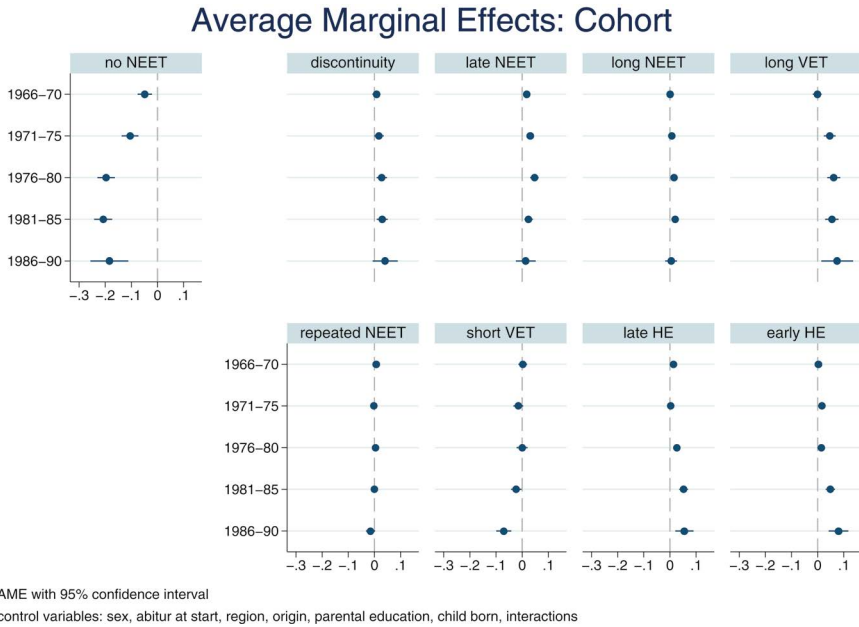


Figure 3.7 Average marginal effects for birth cohort.

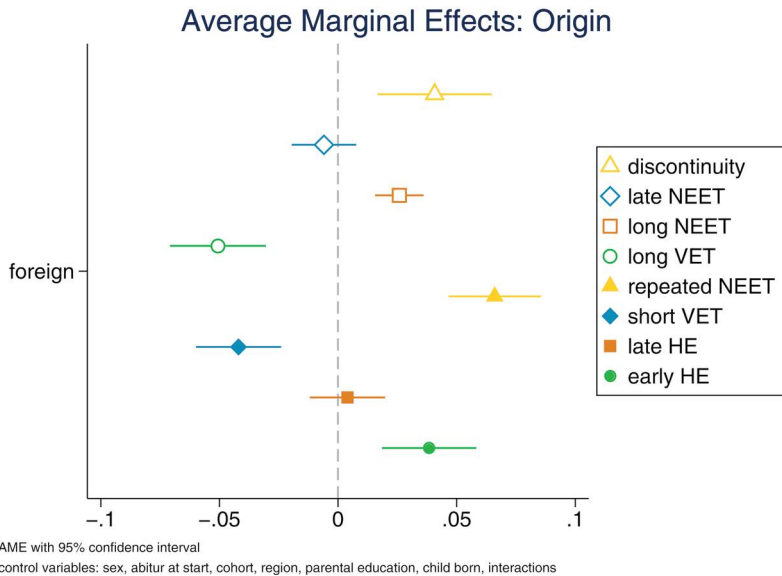


Figure 3.8 Average marginal effects for origin (born abroad).

a certain trajectory is not observable. The effect sizes are very tiny and in the full models slightly significant. The origin effect – measured as place of birth (Germany vs. abroad) with a dummy variable – shows some clear effects (Figure 3.8): first, their probability is higher for being in the *discontinuity* trajectory, which represents instable, but not necessarily unsuccessful trajectories. Second, the probability of foreign-born school leavers for doing the classical trajectories (*long VET*, *short VET*) is significantly lower than for natives. Third, school leavers born abroad have a higher probability to have a problematic NEET trajectory pattern (*long NEET*, *repeated NEET*). Foreign-born school leavers are therefore disadvantaged ones in a double sense, because they are more frequently in problematic situations (*long NEET*) and if they are successful in the end, they've reached their labour market integration via a quite unstable trajectory (*discontinuity* or *repeated NEET*) and not by classical institutionalized pathways (*long VET*, *short VET*). Finally, they have a higher chance for the university pathway (*early HE*), but this is most probably a selective group of students who come to Germany in order to study.

The social origin of the school leavers is measured by educational level of both parents. The coefficients of mother's education and father's education are pretty similar with regard to effect direction and do not show surprising results for the different clusters: school leavers with higher educated parents have a lower probability for having a NEET pathway (*long NEET*, *repeated NEET*); they also have a significantly lower probability

for the classical cluster (*short VET*). Higher parental education influences positively the probability for the two university clusters (*late HE, early HE*). As mentioned above, I introduced three interaction effects into the regression model, namely the interaction between gender and childbirth, the interaction between sex and origin, and the interaction between origin and childbirth. This was in order to test if either foreign-born males or females or foreign-born fathers or mothers drive the effects of gender and childbirth, respectively. Whereas the interaction between gender and childbirth shows very strong and significant positive effects for the clusters involving longer NEET periods, the other two interactions remain weak and/or insignificant in most of the cases.

To summarize, I find strong support for a gender effect on the pattern of the trajectory between school and the labour market, but this effect is moderated by childbirth. Young mothers show a much higher probability to have longer NEET periods in their trajectories. In the gendered German welfare system, the NEET problem is a problem of young mothers because of family formation. Additionally, the NEET situation for those women is characterized by one single labour market exit and a long-term NEET period as in the *late NEET* and *long NEET* pathway. Hypothesis H4 is therefore clearly confirmed. Apart from that, education and social origin show effects as expected from theory: school leavers with upper secondary degree (higher education entrance certificate) and school leavers with higher educated parents have a lower probability for the trajectories with long and frequent NEET periods, but a higher probability for the two university types. Migrants (born abroad) also have a higher probability to end up in the problematic NEET pathways (*long NEET, repeated NEET*) and a lower probability for VET pathways (*long VET, short VET*). Both findings confirm the hypotheses H3a, H3c, and H3d, i.e. that stratification of the German education system disadvantaged marginalized groups. We also find changes across time, namely an increase in all trajectories containing NEET over time. The traditional entry pattern (*short VET*) becomes less important, whereas educational expansion increases university pathways.

3.5.4 Further explorations of socio-economic context of NEET characteristics

The explorative analysis of NEET patterns during the school-to-work transition period created a typology of patterns, which is qualitative in nature. The value added of this approach has to be proven against quantifying indicators, which provide simplified and aggregated information and can be used as independent variables as well, such as cumulative number of NEET months (NEET length) or the number of NEET episodes within the 10-year observation period. These indicators provide aggregated information about the duration and the occurrence of NEET within this period while disregarding information about the concrete pattern.

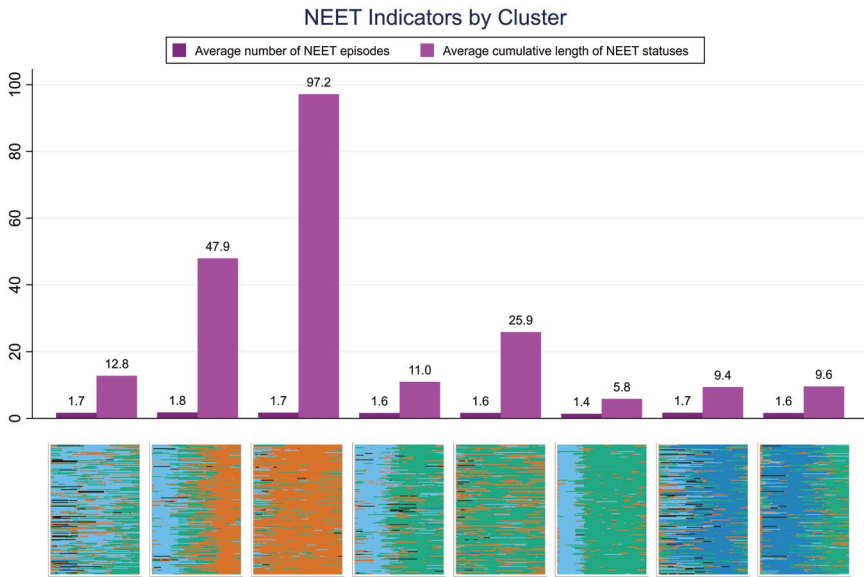


Figure 3.9 NEET length and NEET episodes for clusters.

Figure 3.9 shows two NEET indicators for the eight NEET trajectories we've extracted from the data. The small and dark bars show the average number of NEET episodes of all individuals with a certain trajectory type. Many episodes of NEET can be considered a very negative signal that deteriorates later employment chances. The overall distribution of NEET episodes reveals that 95% of the persons with at least 1 month of NEET have up to three NEET episodes during the 10-year-observation period. Therefore, the variation of this indicator is quite small: it ranges from 1.4 episodes (cluster 6, *short VET*) to 1.8 (cluster 2, *late NEET*). It seems that this indicator doesn't differentiate the clusters sufficiently enough, because it ignores the overall duration of the NEET status.

The second indicator is the cumulative number of months spent in NEET (NEET length). This indicator differentiates the clusters much better, because it shows high values for those trajectories, which have long NEET periods (cluster 2 and 3, *late NEET* and *long NEET*). However, this indicator is not able to detect differences in NEET patterns, because clusters 7 and 8 (*late HE* and *early HE*) have the same value but show a different location of the NEET episodes within the 10-year-period. It might be the case that the outcomes of both patterns differ from each other. The inclusion of NEET length as independent variable in a regression model that measures the effect of NEET on later outcomes will most probably have less statistical power. The same is true for the first indicator (NEET episodes), because we find similar values here for different clusters. Both indicators also have a different theoretical

meaning: while the incidence of NEET reflected by episodes fits better to the signalling theory, because a negative signal is induced by becoming NEET, the NEET duration can be captured by human capital approaches, because they usually refer to the devaluation of educational investments by long periods of unemployment or inactivity.

From this descriptive look on the quantitative indicators, we may test whether in regression models we will find results somewhat different from those in the multinomial models, where we had the patterns as dependent variables. Since the indicators have a metric scale level, I will use OLS regression models here.

Figure 3.10 presents the coefficients of the full model with NEET length as dependent variable.¹⁰ All independent socio-economic variables explain 20% of NEET length's variation. In addition to the independent variables from the multinomial regression model of NEET patterns I include interaction effects of gender and cohort in this model in order to find out if cohort moderates the gender effect. Since the interaction between origin and gender as well as those between origin and childbirth were not significant at all, they are not regarded here anymore. The strongest influence on the cumulative NEET length can be found for origin and for the interaction between gender and childbirth: people who are born abroad have on average 8.6 months more NEET during the 10-year-period after leaving school than people born in Germany. Women with children have even 15.8 months more NEET in that period. Again, it is remarkable that the effect of the gender variable and of the childbirth variable disappear completely as soon as the interaction between them is included in the model (see online supplement). This is again a strong indication that the exit from the labour market (or from further education spells) due to reproduction is mainly a women's subject in Germany. An upper secondary degree when leaving school leads to less NEET months in the 10-year-period. The region (East or West Germany) does not have a significant effect on the length of NEET after leaving school.

The social origin of school leavers is measured by the educational level of the father and the mother. Both are very similar with respect to effect direction and size, that is school leavers with higher educated parents have less NEET in the observation period after leaving school than those with lower educated parents: on average, school leavers with high educated parents have 3–4 months in NEET less during the 10 years after leaving school. This is not very much of a difference, but the effect is highly significant across all model specifications. When looking at the development over time (cohort variables), we find a quite clear trend: school leavers from younger birth cohorts have more NEET periods than those from older cohorts.¹¹ I assume that this effect is a composition of both increasing flexibilization of labour markets and the transition system as well as recall bias, which means that short unemployment episodes are less frequently remembered the larger the temporal distance is. Those individuals, who

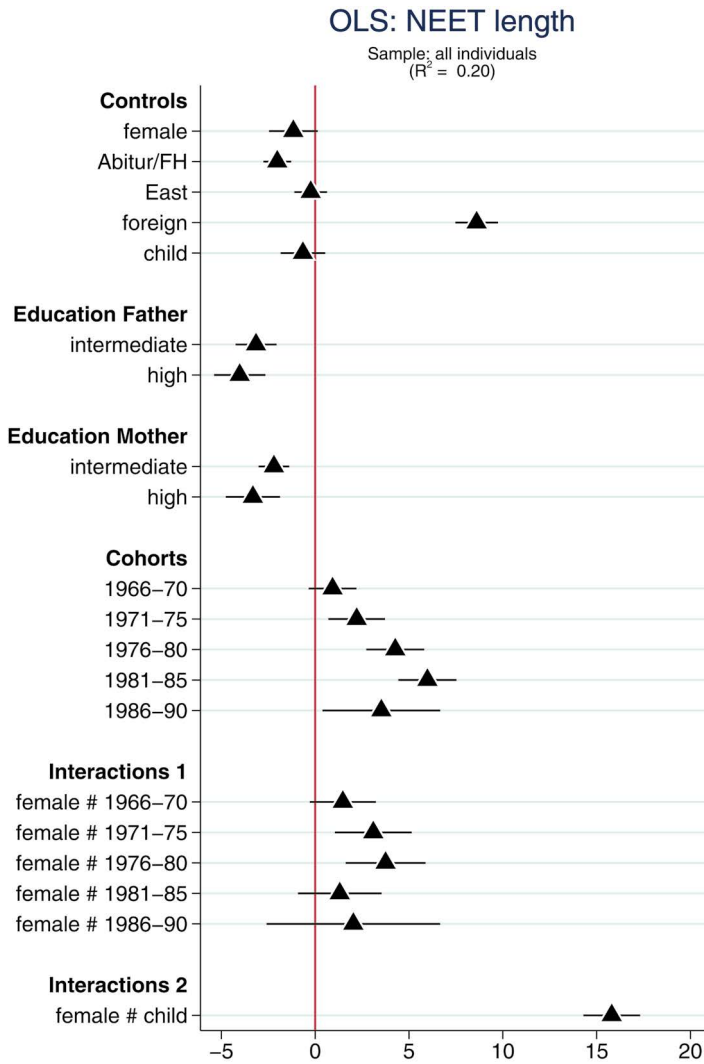


Figure 3.10 OLS model for cumulative NEET length.

were interviewed later in their lives (older cohorts), will underreport their early unemployment episodes, which partly explains the differences in the cohort coefficients. I introduced the interactions between gender and cohort in order to check whether labour market entry trajectories of women have changed across time. They show a somewhat unclear picture: until the fourth birth cohort (born between 1976 and 1980) the NEET length increases by 3.8 months compared to the oldest cohort. However, the two youngest cohorts show neither significant nor similar effects. However, the point estimates are

positive in comparison to the oldest cohort and might reflect the increasing integration of women in the labour market, but, on the other hand, one may argue that inactive family-caring women of the older cohorts are also covered by the NEET concept.

The OLS model results for NEET length comply well with those from the multinomial logit model: In the latter model, also origin and the interaction between gender and childbirth have got a strong effect on those clusters which involve long NEET periods (*late NEET*, *long NEET*, *repeated NEET*). In addition, we found a higher probability to have these trajectories for school leavers in the younger cohorts. In both models, higher social origin (measured as parents' educational level) leads to less NEET in the period or a lower probability for long-NEET-clusters respectively. Though the multinomial model with transition patterns as dependent variables provides a more detailed picture by considering the concrete pattern of the trajectory.

In addition to the duration of NEET, we also have a look on the incidence, which is measured by the number of NEET episodes here. [Figure 3.11](#) shows the results of the OLS model regressing number of NEET episodes on the same set of independent variables as in the model before. First, the explanatory power of the model is quite weak: only 7% of the dependent variable's variation can be explained by the variation in the independent variables. The confidence intervals are also larger than in the model before.

Among the control variables, only upper secondary certificate and origin are significant: While those holding an Abitur have on average 0.1 NEET episodes less than those without, school leavers born abroad have 0.1 episodes more. The point estimates of the parents' educational level are weaker but having the same effect direction than for the NEET length. However, they are hardly significant. The cohort variable shows the same pattern as for NEET length, whereas the interactions between gender and cohort are not significant. The interaction between gender and childbirth also shows a strong and significant effect, i.e. women with children have on average 0.4 more NEET episodes than men or women without children. Comparing the results to those from the multinomial model and the first OLS model, one sees more or less the same effects, but the explanatory power of the model examining the number of NEET episodes is lower and the confidence intervals are larger. These results suggest that the trajectory patterns and the cumulative number of months in NEET (NEET length) are most suitable for the analysis of conditions for becoming NEET. The pattern examination by sequence analysis reveals a qualitative dimension of the trajectories and considers the location of NEET episodes as well as the distribution across the observation period. The quantitative dimension is easier to measure and to model, but less informative. All models revealed two major socio-economic groups which are affected by long NEET episodes and therefore, risky school-to-work transitions: migrants and young mothers. Policies in Germany, which aim at reducing the risk becoming NEET should mainly target these two groups. So far, we automatically assumed that becoming

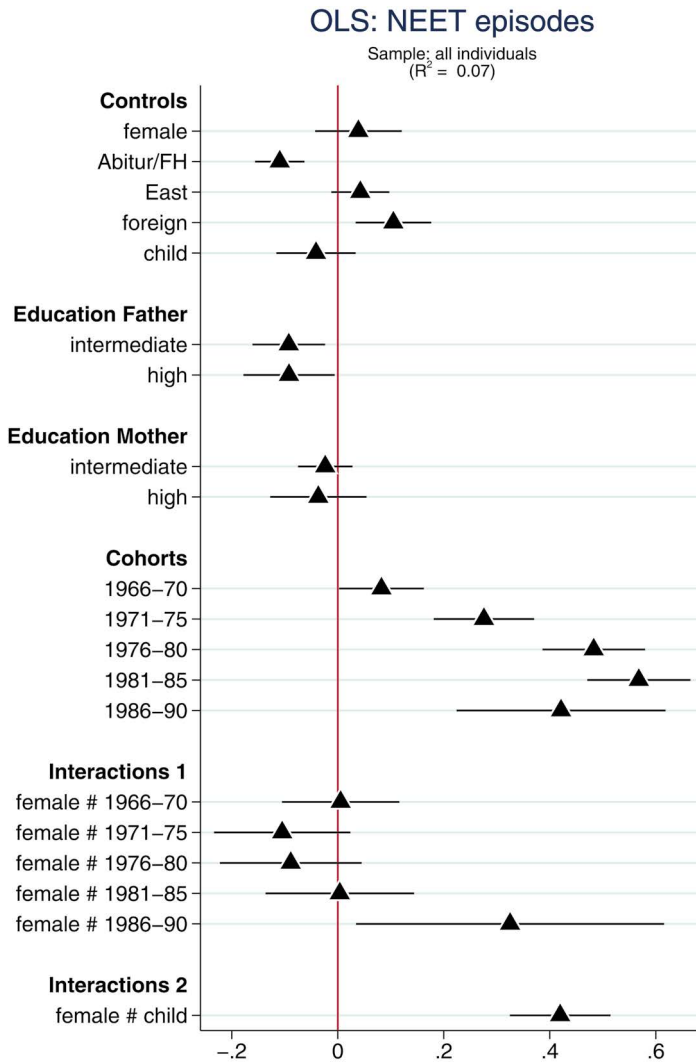


Figure 3.11 OLS model for NEET episodes.

NEET has negative consequences for the later employment career or labour market integration. However, in the next section, I will examine whether and if yes how different NEET patterns affect later outcomes.

3.5.5 Predictive analysis: Individual consequences of NEET

Being in NEET during the school-to-work transition interrupts career paths by a period where individuals neither gain work experience nor increase their educational level. Thus, it can be assumed that in their later employment

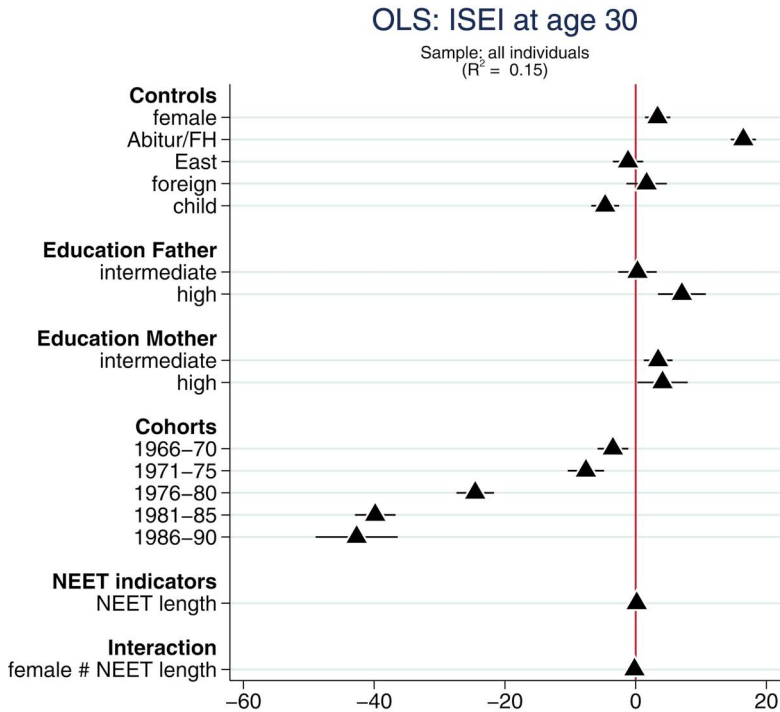


Figure 3.12 OLS regression model of ISEI at the age of 30 on NEET length.

career, those young people who have had a longer NEET period after school will face disadvantages with respect to their occupational status. In this section, I will present the results of a regression model of occupational status at the age of 30 on the socio-economic variables from the previous models. I use the cluster membership from the classificatory analysis and – as an alternative – NEET length as additional independent variables in order to find out whether and how particular trajectory patterns or NEET duration influence this outcome. In order to specify the gender effect, I interact the trajectory types with gender.

Figure 3.12 shows the results of the model for the occupational status at the age of 30 using the NEET length as predictor variables. All variables included in the model explain 15% of the variance of the dependent variable. We find that women surprisingly have a lightly higher occupational status (3.3 points) than men. As I also controlled for childbirth and the interaction of the trajectory type with gender, this coefficient reflects only women without longer NEET episodes. People with an upper secondary degree (Abitur/FH) have 16 points more on the ISEI scale, which is a quite remarkable difference, but also not too surprising, because the Abitur entitles for studying at university. Having a child leads for women and men

to a reduction of 4.7 points on the ISEI scale of occupational status. Better educated parents contribute to a higher occupational status of their children, but only to a small amount. Strong effects can be observed for the birth cohort: under control of all the other variables remarkable effect sizes can be observed here.

The youngest two cohorts have an occupational status of 40 scale points less than the oldest birth cohort. These effects have a couple of reasons, e.g. the educational expansion. Because educational careers become more prolonged, gaining higher occupational statuses takes more time beyond the age of 30 (cp Brzinsky-Fay and Solga, 2016). Younger cohorts may not have reached the same status as older have done. Additionally, the higher number of graduates from higher educational tracks may lead to more competition, and if the number of higher status jobs is not increasing in the same way, processes of overeducation may be induced. However, the fact that despite equal investment in education young people receive lower returns seems to be evident. The NEET length only has a small influence on the occupational status at the age of 30. Interestingly, the pure effect of NEET length (representing NEET length for males) is positive, where the effect of NEET length for women (the interaction) is negative. That means that women suffer from NEET, whereas men benefit from it.

Figure 3.13 shows the same OLS model but using the cluster variables from the sequence analysis instead NEET length. The coefficients of the socio-economic background variables are nearly the same regarding both strength and significance. Including the patterns of NEET provides a more differentiated picture. Since the interactions reflect women in the respective clusters, the preceding effects of the cluster variables refer only to males. Individuals who enter the labour market via the university clusters have a higher occupational status at the age of 30. Given that in these pathway types (*late HE* and *early HE*), NEET periods are also included and that we control for educational degree leads to the interpretation that higher educated people do not suffer from NEET periods. Interestingly, individuals who have gone through the *discontinuity* pathway also have a higher occupational status at the age of 30. The reason here might be that they were able to adjust their qualifications more often than people who continuously stay with the same job. The positive effect on occupational status could therefore be explained by search processes, which lead to a better matching in the long term. However, this effect is significant only on the 5%-level, and so is the negative effect of *long VET* pathway. From the interaction effects between gender and pathway, only one is significant also on the 5%-level: women with a *late NEET* pathway have 14.4 point lower occupational status. This clearly shows that exiting from the labour market in Germany is a quite high risk regarding later employment outcomes.

Comparing these two models, it is obvious that the integration of the pathways indeed provides a more differentiated picture than only considering the cumulative NEET length. The explained variance is not increased,

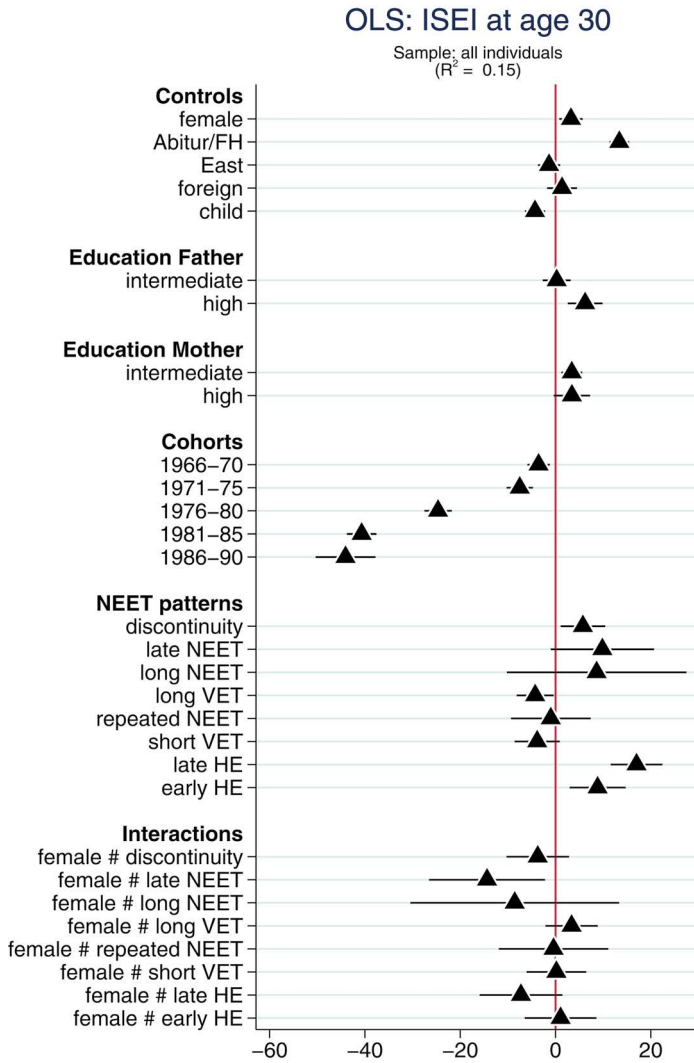


Figure 3.13 OLS regression model of ISEI at the age of 30 on trajectory types.

but the amount of information about the trajectories' effects is larger. Apart from that, I suppose that the effect of the NEET length is not linear.

3.6 Conclusion

In this chapter, I tried to explore the *occurrence*, the *duration*, and the *pattern* of NEET among school leavers in the school-to-work transition period in Germany and assess the consequences of NEET on the later employment career. Regarding the *occurrence* of NEET, I found that approximately 50%

of the individuals of the sample population have at least 1 month of NEET within 10 years after leaving school, which is relatively small proportion compared to other countries. Women with children have very high probability or risk to experience NEET within the first 10 years after leaving school. This is due to the traditional male-breadwinner model that is still part of the German welfare regime. In addition, we find significant effects for migrants and low-educated ones, who also had higher risks for experiencing NEET in this period. This confirmed the hypothesis that imposed that the stratification of the German general and vocation education system has negative consequences for disadvantaged groups. Additionally, younger cohorts also show a higher probability for experiencing NEET. The institutions of the education system, the labour market, and the transition system shape the NEET among youths as strongly as expected.

The analysis of the *patterns* of NEET in the period under observation reveals eight distinct NEET patterns, from which three can be seen as problematic: an exit pattern (*late NEET*), where people leave VET or employment and stay for a long time in NEET; a dropout pattern (*long NEET*), where school leavers not even start a labour market integration process; and a back-and-forth pattern (*discontinuity*), which comprises many changes between different activity statuses, including NEET. The size of the different pathway types shows the strong structuration of the German education and transition system, because ‘classical’ trajectories (*long VET*, *short VET*) account for 50% of the NEET trajectories. The multivariate analysis of the NEET patterns confirms the findings of the NEET occurrence but presents a more differentiated picture.

The analysis of the *duration* of NEET estimated the influence of socio-economic variables on the NEET length in comparison with the number of NEET episodes. The results from the analysis of the occurrence and the patterns could be confirmed here. It could be shown that the indicator ‘number of NEET episodes’ is not as appropriate as the patterns and the NEET length. The analysis of the consequences of NEET even showed that the consideration of NEET patterns allows a more differentiated analysis than only using the cumulative NEET length. With respect to the consequences of NEET, I examined the effect of NEET on the occupational status at the age of 30. Here, I found a very strong cohort effect indicating an increasing negative effect on occupational status across time. Younger generations are not only more affected by NEET but also have to invest more in education in order to gain the same occupational status than young people in the past.

NEET in Germany is female and strongly connected to family formation. While policy recommendations in international assessments of NEET are often oriented towards problematic groups such as school dropouts or young people with multiple social or psychological problems, the main target group for policy interventions in Germany is young mothers. The same is true for young people born abroad, which face difficulties regarding the integration

into the VET system. While the latter group clearly is in the focus of policymakers, the first group (young mothers) is not. Given the analyses above, it should be clear that young mothers should be in the centre of policy interventions that aim to reduce NEET in Germany.

Acknowledgement

This chapter uses data from the National Educational Panel Study (NEPS): Starting Cohort 6 – Adults, doi:10.5157/NEPS:SC6:1.0.0. From 2008 to 2013, NEPS data were collected as part of the Framework Programme for the Promotion of Empirical Educational Research funded by the German Federal Ministry of Education and Research (BMBF). As of 2014, the NEPS survey is carried out by the Leibniz Institute for Educational Trajectories (LIfBi) at the University of Bamberg in cooperation with a nationwide network.

Notes

1. Besides this tight definition used here, there is a wide definition of a transition system that includes the institutional framework, i.e. the education and employment system (cp. Raffé 2008, 2014).
2. For the first description, also individuals without any NEET experience were included, so that the number of cases is 9228 here. I excluded those without NEET experience from the sequence analysis in order to avoid that all persons with NEET experience of any kind are grouped in the same cluster. In this case, differences among different patterns of NEET would be blurred.
3. The complexity of these sequences can be illustrated by the theoretically possible number of sequences, which is given by the number of possible statuses to the power of the number of time points, that is in this example $6^{120} \approx 2.4 \times 10^{93}$.
4. Those individuals who do not have any NEET month within their 10-year observation period are now included. They constitute a new non-NEET cluster, which is taken as a reference category for the independent categorical cluster variable.
5. A comparison between school degree and childbirth at the beginning and at the end of the 10-year period is shown in the online supplement.
6. For the reason of sensitivity testing, this part of the analysis was conducted with both samples: first, only with those individuals who experienced at least 1 month of NEET and second, with all individuals in the sample. The results were very similar with respect to direction as well as to magnitude. Here are only the effects for the whole sample presented.
7. Since interaction effects cannot be calculated as average marginal effects, I use marginal effects at representative values (MER) here (cp. Williams 2012).
8. The diagram is switched by 90 degrees, because the cohort variable has more values and can easier be read vertically than the diagrams for the dummy variables.
9. The confidence interval for the youngest cohort is for all clusters larger, because this group is only very small.
10. The hierarchically constructed OLS model can be found in the online supplement.
11. The insignificant and deviating effect of the youngest cohort is most probable, because of its small size and should not be interpreted here.

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