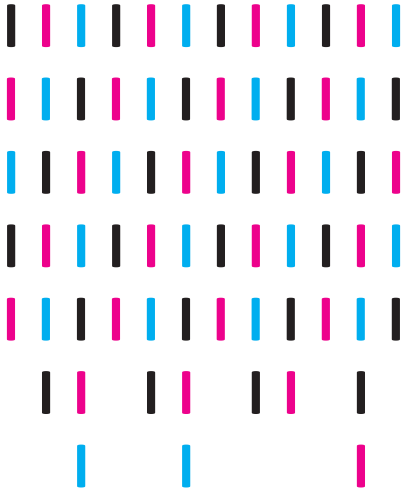

NEPS SURVEY PAPERS

Melanie Olczyk, Gisela Will, and Cornelia Kristen

IMMIGRANTS IN THE NEPS: IDENTIFYING GENERATION STATUS AND GROUP OF ORIGIN

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Immigrants in the NEPS:

Identifying generation status and group of origin

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Immigrants in the NEPS: Identifying generation status and group of origin

Abstract

The data collection of the German National Educational Panel Study (NEPS) allows us to describe educational careers of immigrants and their descendants across their life course. To consider educational patterns for different immigrant groups and generations, it is necessary to identify the immigrant population in an adequate way. The NEPS provides a wide range of measures that researchers may apply in ways consistent with their research interests. This contribution illustrates one possible approach to identifying different immigrant groups and generations. It is based on information on the country of birth of the target person and of her or his parents and grandparents. The generated variables are part of various NEPS data sets. In addition to describing their makeup, the paper includes descriptive results on the distributions for the first waves of three starting cohorts: Kindergarten, Grade 5, and Grade 9.

Keywords

immigrants, generation status, country of origin

1. Introduction

Educational inequality along ethnic lines is a widespread phenomenon. In Germany, too, numerous studies on the different stages of education have revealed pronounced differences between the immigrant and majority populations (e.g., Becker & Biedinger, 2006; Becker, Klein, & Biedinger, 2013; Beicht, 2012; Bundesinstitut für Berufsausbildung, 2009; Dollmann, 2010; Gebhardt, Rauch, Mang, Sälzer, & Stanat, 2013; Hunkler, 2010; Kristen, 2008; Kristen & Granato, 2007; Kristen, Reimer, & Kogan, 2008; Müller & Stanat, 2006; Segeritz, Walter, & Stanat, 2010; Statistisches Bundesamt, 2012). The ability to analyze such unequal educational patterns has improved considerably, not least of all in the course of establishing international student assessment studies. But, at the same time, these cross-sectional surveys tell us little about educational processes and trajectories. By using data from the National Educational Panel Study (NEPS), it will be possible in the midterm to delineate trends in ethnic educational inequalities for various immigrant groups across successive generations and to examine the underlying conditions (Kristen et al., 2011: 123).

One central requirement for taking full advantage of this potential is the suitable identification of the immigrant population (Kristen, Olczyk, & Will, 2014). NEPS data offer different characteristics that may be used depending on the research question. Accordingly, information about country of birth, citizenship, immigration and residence status, language of origin, and language usage is collected in the six starting cohorts. This distinguishes the NEPS study from other data sources in which the available information is often limited to few characteristics. (See Kuhnke (2006) for an overview of the potential for identification in other studies.)

The country of birth is one central indicator for assigning immigrant origin. In the National Education Panel, information on country of birth is gathered for the target person as well as for her or his parents and grandparents. The third generation can only be identified by considering grandparents. Consequently, the NEPS is the first German nationwide longitudinal study that facilitates an analysis of educational patterns for various immigrant groups across several stages throughout their educational career over successive generations.

For each starting cohort, users of NEPS data have access to various variables generated based on country of birth. These variables provide information about generation status and membership in a particular group of origin. This working paper introduces these variables and describes how they were created.[1] The treatment of cases with missing and contradictory information is addressed as well. In addition, preliminary descriptive results of the empirical distributions are presented. They provide information regarding sizes of the different immigrant groups and their generational composition. The analyses are based on data from three NEPS starting cohorts: Kindergarten, Grade 5, and Grade 9.

This second edition of the working paper informs about two central decisions which were taken more recently and which are not yet part of the original working paper 41a. These

[1] We would particularly like to thank Julian Seuring and Hanna-Rieke Baur for their active support in developing these variables. We are also very grateful to Daniel Bela for implementing these variables in the Scientific Use Files and to Maja Henrieke Lomb for creating the figures used in this working paper.

decisions are documented in this new version of the working paper. The first concerns the inclusion of three *additional* variables which will be part of the next Scientific Use Files. These variables refer to the origins of NEPS respondents (see Section 4). The second extension concerns the handling of the longitudinal data structure for the generated variables on generation status and origin (see Section 2.1).

2. Identifying generation status

2.1 Approach

The variable provided in the NEPS data for the target person's generation status[2] is created with regard to current operationalizations in which country-of-birth information is used (e.g., Gresch, 2012; Gresch & Kristen, 2011; Heath, Rothon, & Kilpi, 2008; Portes & Rumbaut, 2006; Rumbaut, 2004; Ryabov, 2009; Segeritz et al., 2010). Because details on country of birth are collected for the target person and her or his parents and grandparents, fine-grained distinctions are possible. (See Dollmann, Jakob, and Kalter (2014) for a similar approach and presentation based on CILS4EU data.)

It is important to note that the variables on origin, generation status and missing values have been generated based on information on the migration biography gathered at the time of the first interview. In the younger cohorts, where parents are interviewed repeatedly, changes in the underlying variables over time, for example as a result of changing partners, will not be considered.

First and 1.5th generation

An initial distinction can be made based on whether the target person was born abroad. Individuals who were born abroad are considered so-called first-generation immigrants, regardless of whether their parents or grandparents were also born abroad.[3]

The first generation can be further divided based on whether their school careers were spent mostly in the receiving country or in another country. Individuals who went to school in the receiving country are sometimes considered second generation, but sometimes they are also assigned to the 1.5th generation (see Dollmann et al., 2014; Gresch & Kristen, 2011; Segeritz et al., 2010). The NEPS uses the latter procedure by considering age at immigration.

[2] When information collected from the target person itself functions as a generating basis, variables are posted in the xTarget or pTarget data sets. In the Kindergarten cohort, where children have not yet been surveyed, information from the xParent or pParent data sets is used. In the Grade 5 and Grade 9 cohorts, information was obtained through both student and parental surveys, and the variables described are saved in xTarget or pTarget and xParent or pParent data sets (see Section 5.1) depending on the data basis used. The newly created generation status variable is labeled *t400500_g1* (xTarget or pTarget data set) or *p400500_g1* (xParent or pParent data set).

[3] Various problems are associated with this procedure. For example, children of emigrated Germans who have temporarily lived abroad might be classified as migrants. This group cannot be described in greater detail, however, because the NEPS lacks data on the length and purpose of the parents' time abroad. This is, incidentally, a numerically small group; in the Grade 5 and Grade 9 cohort, they constitute 10% (*n* = 23) and 5% (*n* = 47), respectively, of the children and youths born abroad (data from student interview). In the Kindergarten cohort, both parents were born in Germany for 37.5% (*n* = 12) of the children born abroad (data from parent interview). Comparably more significant, however, is the phenomenon of target persons born abroad with one parent born in Germany; in the Grade 5 and Grade 9 school cohorts, 17.8% (*n* = 41) and 16.3% (*n* = 153), respectively, of adolescents born abroad have one German-born parent (data from student interview). In the Kindergarten cohort, this share is 15.6% (*n* = 5) (data from parent interview).

Individuals who immigrated to Germany before the age of six and, consequently, usually before the start of formal schooling, are assigned to the 1.5th generation (see Figure 1; the charts are adapted from Dollmann et al., 2014: 9-13 and Espinosa & Massey, 1997: 149).

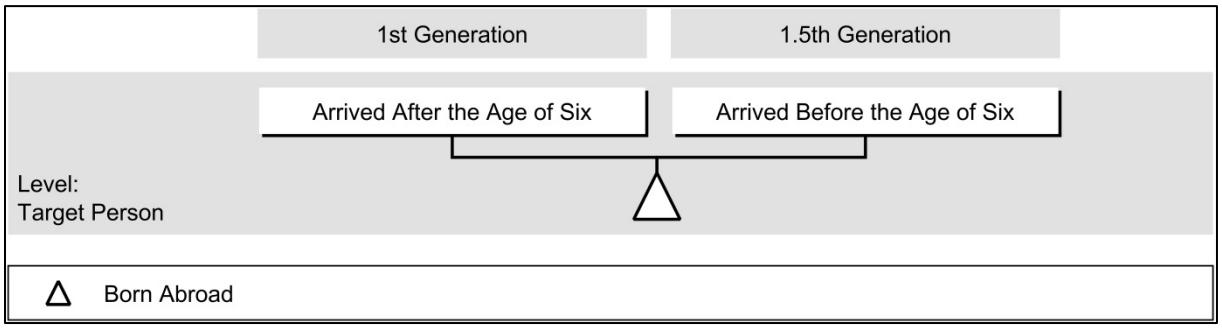

Figure 1. Identifying the 1st and 1.5th generation.

Second, 2.25th, 2.5th, and 2.75th generation

If the target person was born in Germany, but at least one parent was born abroad, then she or he is often described as second generation. This group can be subclassified further based on whether both parents or only one parent was born abroad; those with two parents born abroad belong to the second generation. If, by contrast, only one parent was born abroad, then the target person can be ascribed to the 2.5th generation.

Moreover, the 2.5th generation can be further differentiated (see Figure 2) using information recorded in the NEPS study concerning the grandparents' birth countries; if the parents of the German-born parent were born abroad, then the target person is categorized as a member of the 2.25th generation. If only one parent of the German-born parent was born abroad, then the target person is assigned to the 2.5th generation. If, on the other hand, the parents of the German-born parent were also born in Germany, then the target person is considered part of the 2.75th generation. The birth countries of the parents of the foreign-born parent are disregarded.

Incidentally, this procedure allows us to separately consider the descendants of an interethnic couple with one parent from the host country. In this case, one parent was born abroad and the other, as well as her or his own parents (or the grandparents of the target person), was born in Germany (2.75th generation).

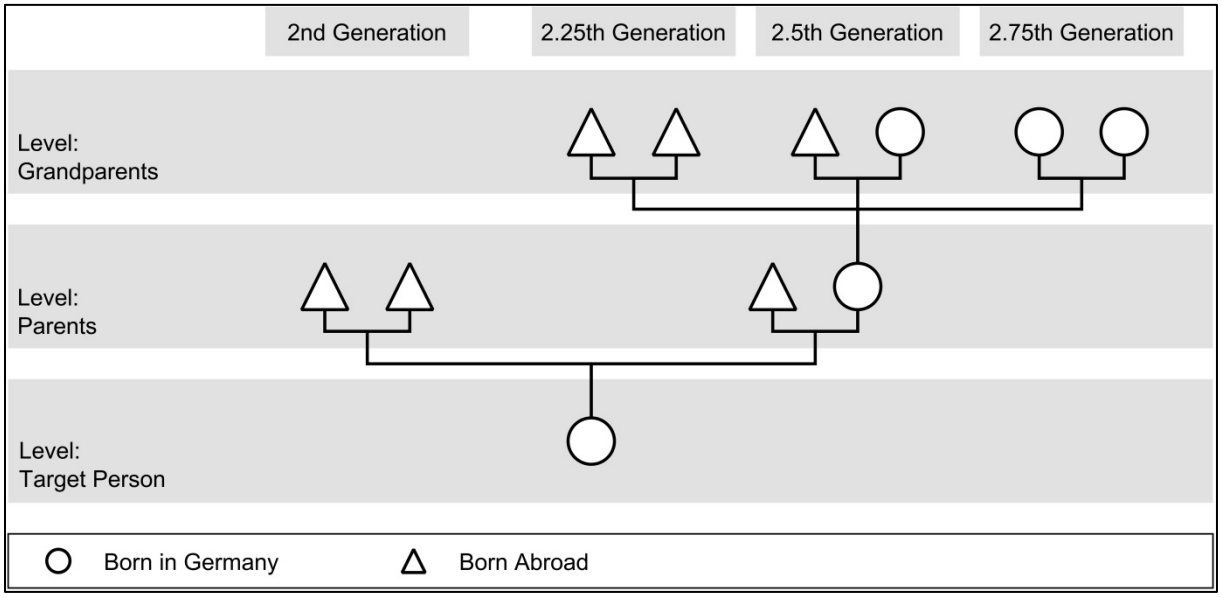

Figure 2. Identifying the 2nd, 2.25th, 2.5th, and 2.75th generation.

Third, 3.25th, and 3.5th generation

By considering the grandparents' countries of birth, it is also possible to identify third-generation migrants. These include individuals who were born in Germany and whose parents were born in Germany but whose grandparents were born abroad. This group can be further subdivided according to the number of foreign-born grandparents (see Figure 3). In this case, individuals with four foreign-born grandparents are considered third generation. People with three grandparents born abroad are part of the 3.25th generation. If two grandparents were born abroad, then the target person is assigned to the 3.5th generation. Finally, if only one grandparent was born abroad, then the target person is not considered an individual of immigrant origin according to the NEPS definition.[4]

[4] In other studies, individuals with only one foreign-born grandparent are assigned to the 3.75th generation (e.g., Dollmann et al., 2014: 12).

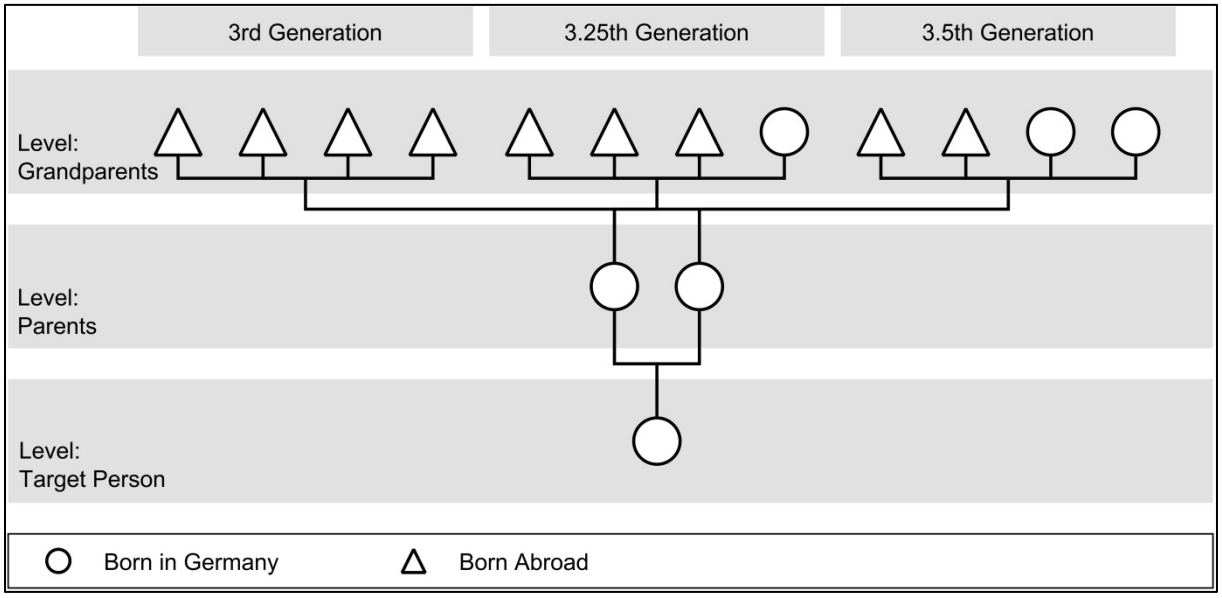

Figure 3. Identifying the 3rd, 3.25th, and 3.5th generation.

Majority population

Individuals who were born in Germany, whose parents were also born in Germany, and who had no more than one foreign-born grandparent, are assigned to the majority population.

Table 1 summarizes the various characteristics and values of the resulting generation status variable.

Table 1

Values of the generation status variable

Value	Label	Description
0	Majority	Target person and parents born in Germany, at most one grandparent (if any) born abroad
1	1st generation	Target person born abroad and immigrated after the age of six
2	1.5th generation	Target person born abroad and immigrated before the age of six
3	2nd generation	Target person born in Germany and both parents born abroad
4	2.25th generation	Target person born in Germany and one parent born abroad; other parent born in Germany and both of that parent's parents born abroad
5	2.5th generation	Target person born in Germany, one parent born abroad; other parent born in Germany and one of that parent's parents born abroad
6	2.75th generation	Target person born in Germany, one parent born abroad; other parent born in Germany and neither of that parent's parents born abroad
7	3rd generation	Target person and parents born in Germany; all four grandparents born abroad
8	3.25th generation	Target person and parents born in Germany; three grandparents born abroad
9	3.5th generation	Target person and parents born in Germany; two grandparents born abroad
-55	Not determinable	

2.2 Dealing with missing and contradictory information

Missing and contradictory country-of-birth and age-at-immigration information makes it difficult to assign subjects to the various generations. In some cases, it is impossible to identify them unambiguously.

Missing and contradictory information on country of birth

Two types of problematic information regarding the country of birth can be distinguished. These problem areas differ according to the type of values that are missing or that contradict each other.

On the one hand, it is possible to know that the target person, the parents, or the grandparents were born abroad without knowing specifically in what country because either

no information or multiple pieces of information are available. In this case, any existing information about the foreign birth is used without considering the particular country.

On the other hand, the data may include no or contradictory[5] information about the country of birth. Consequently, it is not possible to determine whether the person was born in Germany. In that case, there are three possible ways to proceed.

First, such cases can be excluded.[6] A second option is to use additional information that implies immigrant origin (e.g., citizenship or language of origin). This is only possible, however, if the problem of missing or contradictory values concerns the target person or the parents themselves (as opposed to the grandparents) because additional characteristics are collected only for them. At the same time, generation status cannot always be assigned in this way, particularly given that characteristics such as foreign citizenship or language of origin do not equate to the foreign birthplace of the target person. Third, the limited country-of-origin information that is available in these cases can be used to determine the status.

Because the third way is the one that is used to create the generation status variable, it will be illustrated through various examples below. At the same time, one should note that this approach is also fraught with problems and uncertainties.

If information about the target person's country of birth is missing or contradictory, the available information for the parents and grandparents is used instead. If, for example, information on the target person is missing but at least one parent was born in Germany, then the target person is designated as described in Section 2.1 (see Figure 4).

[5] Contradictory information may arise if a student indicates Germany and another country as her or his country of birth in the student surveys where PAPI instruments are used. In the recoded variables on country of birth, as presented in the Scientific Use Files, these cases are given a value of -21. Furthermore, contradictory information may arise from computer-assisted questionnaires; for example, if "born abroad" was indicated initially, but then Germany was named as the country of birth in the following question. The first-year student and adult cohorts present a somewhat different source of contradictory information. In these two cohorts, the target person's and the parent's countries of birth are not only recorded when "born abroad" was previously indicated but also when individuals were born before 1950 and were born in former Eastern territories of Germany. In the latter case, they are also asked in what country their location of birth currently lies. Although answers such as Poland, Russia, or the Baltic states are explicable and therefore Germany is designated as the country of birth, less plausible information, such as Italy, also exists. These individuals are coded as born abroad.

[6] This approach can create bias. Information about the parents' and grandparents' countries of birth may be missing more frequently, for example, among children of single parents who may know less about the origin of the parent who is not part of the household. Moreover, missing information due to filters in the preschool and school cohorts also have to be taken into consideration. This occurs when, among other things, data protection conditions are not met, such when a partner's informed consent or the existence of a joint household are not present.

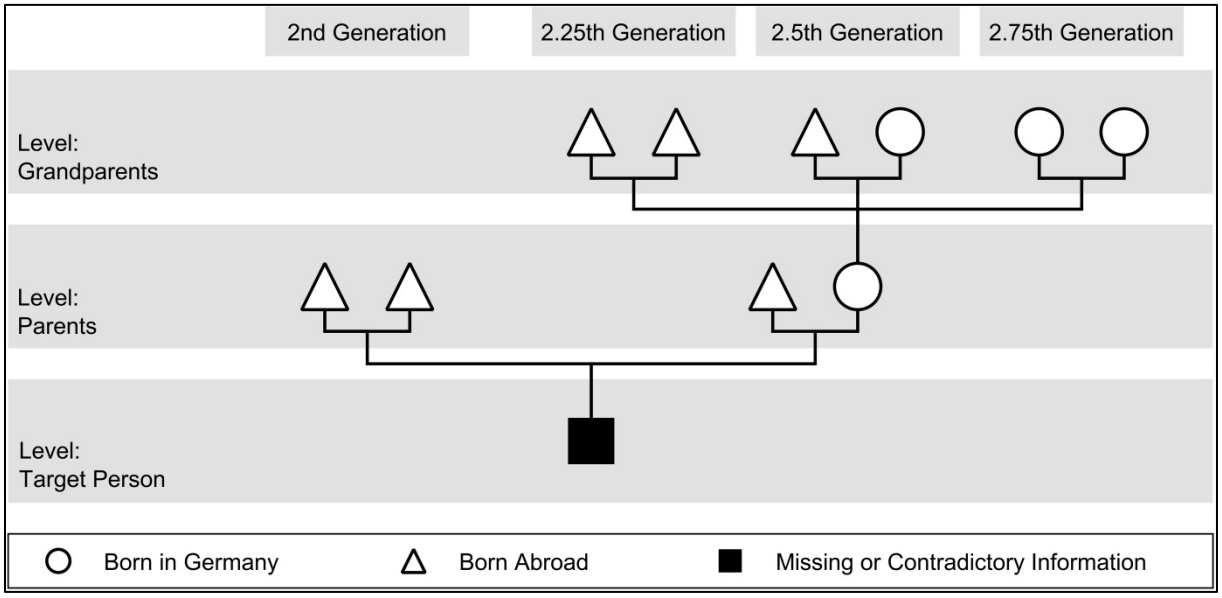

Figure 4. Example of identifying generation status in the case of missing and contradictory information about the target person's country of birth.

If unambiguous information is missing for either the target person or the parents, then the grandparents' information is used. The considerations described above can be applied correspondingly in these cases (see Figure 5).

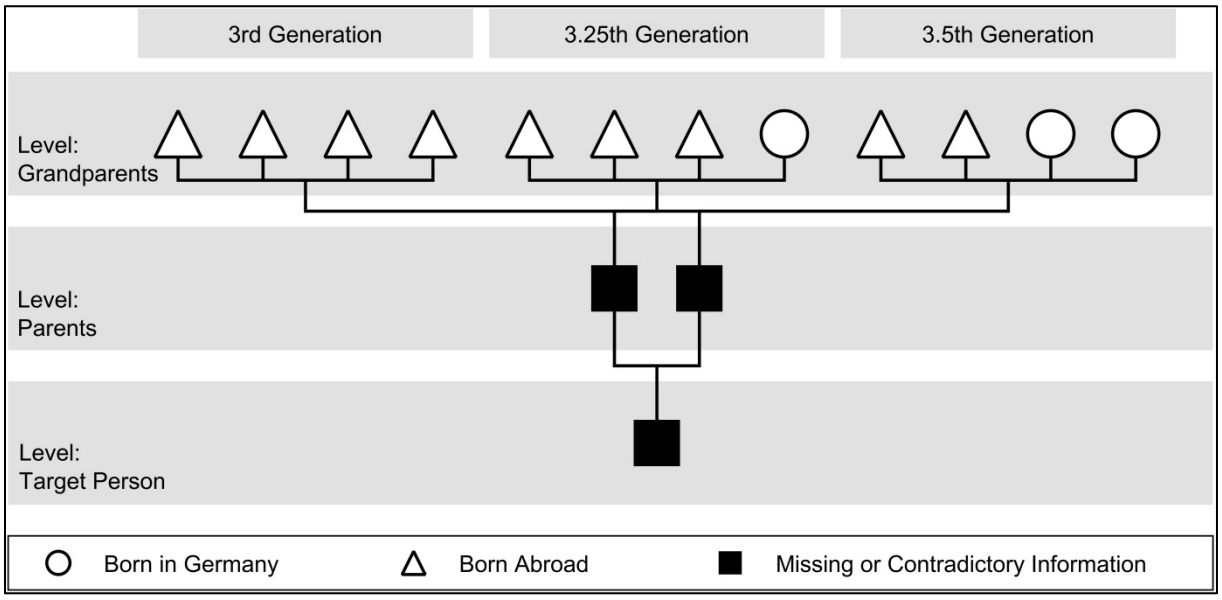

Figure 5. Example of identifying generation status in the case of missing and contradictory information about the country of birth of the target person and parents.

If information about country of birth is not available for the target person, for the parents, or for most of the grandparents, then a value of -55 ("not determinable") is applied in the generation-status variable. One generation can therefore always be categorized when the country of birth is known for at least two grandparents.

Missing information on age at immigration

Missing values are also an issue for age at immigration, which is a variable either directly gathered or calculated on the basis of the date of birth and the date of immigration (month and year for each date), depending on the survey mode. The age at immigration is necessary for assigning foreign-born target persons to either the first or the 1.5th generation (see Figure 1). If age at immigration is unknown or if the year is missing, then foreign-born target persons are assigned to the first generation. If, on the other hand, year details are known and only the month of birth and/or immigration is missing, then the usual procedure in the NEPS in such cases is to assign the value for the month of July and to calculate age at immigration on that basis.

How to address cases with missing or contradictory information

One has the option of integrating in her or his analyses the ascriptions described above inclusive of the way in which missing and contradictory information have been handled. The generation status variable thus created can be used for this purpose.

One has, furthermore, the option of excluding target persons whose values are missing or ambiguous. An additional variable to facilitate the identification of these cases is available for this purpose.[7] It indicates whether information on the country of birth of the target person, the parents, or one parent, or one or more grandparents is missing or contradictory in places that are relevant for determining generation status (see Table 2).

The values are assigned in accordance with the approach developed to identify generation status (see Section 2.1).

Whenever information about a target person's country of birth is missing or contradictory, this person is given a value of 2, "Information on target person not available.” If, on the other hand, it is known that the target person was born in Germany and one parent was born abroad, but there is no information about the other parent's country of birth, then a value of 3, "Information on one parent not available,” is given. The same applies to cases in which "Information on both parents [is] not available.” Finally, if it can be established that the target person and both parents were born in Germany and there is no unambiguous information about the grandparents' country of birth, then the corresponding values (5-8; see Table 2) are assigned.

[7] The variable is labeled *t400500_g2* (xTarget or pTarget data set) or *p400500_g2* (xParent or pParent data set) (see Footnote 2).

Table 2

Values of the variable indicating missing/contradictory information

Value	Label
1	Unambiguous identification possible
2	Information on target person not available
3	Information on one parent not available
4	Information on both parents not available
5	Information on one grandparent not available
6	Information on two grandparents not available
7	Information on three grandparents not available
8	Information on four grandparents not available
9	Assignment of generation status not possible

If no (unambiguous) information is available on multiple levels, then the lowest level is used, starting with the target person. If, for example, there is no information about the target person and the parents, or if the existing information is contradictory, then a value of 2, "Information on target person not available," is ascribed. Additionally, cases in which the necessary information is missing for the target person, for the parents, and for most of the grandparents are marked separately. In these cases, generation status cannot be determined, and they are given a value of 9 ("Assignment of generation status not possible"). Conversely, a value of 1 ("Unambiguous identification possible") is given to individuals for whom country-of-birth information is available at every level relevant to identifying generation status. Thus, people are given a value of 1 when information is missing or contradictory in places that are *not* relevant to assigning generation status. A value of 1 ("Unambiguous identification possible") is also attributed if the person was born abroad but it is not known in what country. In that case, although the group of origin cannot be identified (see Section 3), the generation status can be determined unequivocally.

Considering this additional variable, NEPS data users can see at a glance which generation status in how many cases and at what levels has been assigned despite missing or contradictory country-of-birth information. Consequently, it is possible to consider the affected cases in one's own analyses, to exclude them, or to handle them differently by, for example, consulting additional characteristics.

3. Identifying group of origin

In addition to the two variables pertaining to generation status, there is a third variable in the NEPS data that documents the target person's membership in a particular origin group.[8]

Variables about the country of birth, which are also included in the Scientific Use Files, lay the foundation for this additional variable. (See Will & Olczyk (2014) for more information on how to create these variables.) They entail a list of countries of origin that have significantly shaped and are still shaping the (contemporary) history of migration to Germany. The largest immigrant groups living in Germany originate from these countries. The remaining countries of origin are categorized according to geographical criteria (see Table 3). One of the consequences of this procedure based on country of origin is that specific immigrant groups—for example, the quantitatively significant group of ethnic German immigrants and repatriates—cannot be identified clearly. Where applicable, this requires additional information, for instance, about the parents' legal status.

A person can be assigned to a particular immigrant group based on information about the country of origin and with regard to generation status (see Section 2) as follows.

First, target persons classified as belonging to the majority population are given the value for Germany. This also applies to individuals with only one grandparent born abroad because, according to the standard NEPS approach, they are assigned to the majority population. The first and 1.5th generation receives the value of their own country of birth. The second generation takes the value of the parents' country of birth if both parents were born in the same country or in the same country group. If the parents were born in different countries or country groups, then they are given a value of 17, "Foreign, but not assignable to a specific group of origin."

[8] Groups of origin are represented by the variable *t400500_g3R* (xTarget or pTarget data set) or *p400500_g3R* (xParent or pParent data set) (see Footnote 2).

Table 3

Values of the origin group variable

Value	Label
1	Germany
2	Italy
3	Poland
4	Romania
5	Turkey
6	Former Yugoslavia
7	Former Soviet Union
8	Central and South America, Caribbean
9	Northern and Western Europe
10	North America
11	Oceania/Polynesia
12	Other Middle East and North Africa
13	Other Africa
14	Other Asia
15	Other Central and Eastern Europe
16	Other Southern Europe
17	Foreign, but not assignable to a specific group of origin
-55	Not determinable

Likewise, for the 2.25th and 2.5th generation, whether the country of the parent born abroad coincides with the country or countries where the parents of the German-born parent were born is considered. If they do coincide, then this country information is used. Otherwise, the value for "Foreign, but not assignable to a specific group of origin" is used. Target persons of the 2.75th generation are given the value for the country of birth of the foreign-born parent. The third generation assumes the value of the grandparents' country of birth. If the grandparents belong to the same migrant group, then this information is used. If the grandparents were born in different countries, then the case is in turn categorized as "Foreign, but not assignable to a specific group of origin.” Accordingly, all cases that fall

between the second and the 3.5th generation and in which the parents or grandparents were born in different countries outside of Germany are designated as "Foreign, but not assignable to a specific group of origin." Moreover, individuals who, due to a lack of country-of-origin information, cannot be clearly assigned to any country are also in this category (see Section 2.2).[9]

4. Important update: The 3.75th generation

In contrast to the already implemented variable on the generation status, cases in which the target person and the parents were born in Germany and only one grandparent was born abroad (3.75th generation) are separately categorized in the new variable (see table 4). In the already existing variable on the generation status (t400500_g1 and p400500_g1) these cases are assigned to the majority.

In consequence, the distributions of the variables on origin and missing values change. Therefore, additional variables are generated. While the new variable on generation status has an additional category, the categories of the new variables on origin group and missing values stay the same.

The three already existing variables, where the 3.75th generation is assigned to the majority, remain in the Scientific Use Files. In future, these variables will be marked by the suffix *v1* and are named as follows: t400500_g1v1, t400500_g2v1, t400500_g3Rv1 as well as p400500_g1v1, p400500_g2v1 und p400500_g3Rv1. In contrast, the newly generated variables will be named t400500_g1, t400500_g2, t400500_g3R as well as p400500_g1, p400500_g2 und p400500_g3R.

[9] The following examples should clarify the procedure: If the target person can be assigned to either the first or 1.5th generation, but details about her or his country of birth are missing, then she or he falls into the category "Foreign, but not assignable to a specific group of origin." If the target person is part of the second generation and country-of-birth information is missing for at least one grandparent, then the value for "Foreign, but not assignable to a specific group of origin" is also assigned. This implies that this value is allocated even if the country of birth is known for one parent and missing for the other.

Table 4

Values of the new generation status variable: t400500_g1 and p400500_g1

Value	Label	Description
0	Majority	Target person and parents born in Germany, at most one grandparent (if any) born abroad
1	1st generation	Target person born abroad and immigrated after the age of six
2	1.5th generation	Target person born abroad and immigrated before the age of six
3	2nd generation	Target person born in Germany and both parents born abroad
4	2.25th generation	Target person born in Germany and one parent born abroad; other parent born in Germany and both of that parent's parents born abroad
5	2.5th generation	Target person born in Germany, one parent born abroad; other parent born in Germany and one of that parent's parents born abroad
6	2.75th generation	Target person born in Germany, one parent born abroad; other parent born in Germany and neither of that parent's parents born abroad
7	3rd generation	Target person and parents born in Germany; all four grandparents born abroad
8	3.25th generation	Target person and parents born in Germany; three grandparents born abroad
9	3.5th generation	Target person and parents born in Germany; two grandparents born abroad
10	3.75th generation	Target person and parents born in Germany; one grandparent born abroad
-55	Not determinable	

5. Children and youths of immigrant origin in NEPS kindergartens and schools

Descriptive results of the variables introduced for generation status, group of origin, and the combination of generation status and group of origin are presented below. Please note that these results are based on the initially generated variables (see working paper 41a). As the newly generated variables are not yet included in most of the existing Scientific Use Files, it is not possible to provide descriptive results for them at this time.

5.1 Data

Scientific Use Files of the first wave of the NEPS Starting Cohorts Kindergarten (NEPS SC2, Version 2.0.0) and Grade 5 (NEPS SC3, Version 2.0.0) provide our data basis. Furthermore,

the Scientific Use File of Starting Cohort 4–Grade 9 is used;[10] it comprises data from the first two waves (NEPS SC4, Version 1.1.0).[11]

In both school cohorts, country-of-birth information gathered via student interview is used to create the generation-status and group-of-origin variables. In addition, information from the parent interview can be used. Information about the child's, the parent's, and the grandparents' countries of birth is collected from the surveyed parent. Additionally, information about the country of origin in relation to the current partner and her or his parents is gathered.[12] Consequently, two information sources can be used in the Grade 5 and Grade 9 cohorts. This is not possible for the Kindergarten cohort because the children have not yet been surveyed at this point. Thus, in this cohort only data from the parent interview can be used.

From the parent interviews, 2,340 cases are available in the Kindergarten cohort, 4,151 cases in Grade 5, and 9,173 cases in Grade 9. From the student interviews, 5,709 cases (Grade 5) and 16,165 cases (Grade 9) can be used. Excluded from student data are cases in which the PAPI instrument including the country-of-birth questions could not yet be administered (n = 44 in Grade 5 and n = 89 in Grade 9).

5.2 Distributions by generation status

In the Grade 5 and Grade 9 cohorts, approximately 30% of the target persons are of immigrant origin (see Table 5). The majority of these children and youths belong to the second and 2.75th generation. With 9.2% in Grade 9, the first generation is represented twice as frequently as in Grade 5 (4.5%). Approximately 8% of the fifth graders and approximately 10% of the ninth graders belong to the third or 3.5th generation.

[10] In the NEPS Starting Cohort 4–Grade 9, the SUF version 1.1.0 is used as a starting point for generating the variables presented here. These variables will become available to the scientific community as soon as the Scientific Use File is updated.

[11] doi:10.5157/NEPS:SC2:2.0.0; doi:10.5157/NEPS:SC3:2.0.0; doi:10.5157/NEPS:SC4:1.1.0

[12] In the NEPS, the biological or social parent has parental authority and is responsible for the target child's day-to-day and academic concerns that are being surveyed. Siblings, grandparents, housemasters in children's homes, and so on cannot be surveyed regardless of whether they have parental authority. Information is only gathered from the parent about the partner if that partner lives in the same household as the surveyed parent. Thus, the partner does not have to be the target person's biological parent. In creating the described variable, the nature of the relationship between the surveyed parent and partner to the target child is disregarded. The majority of the partners, however, are biological parents (84.6% in the Kindergarten cohort; 68.6% in the Grade 5 and 61.8% in the Grade 9 cohort).

Table 5

Children and youths of immigrant origin in the school cohorts (student interview)

	Grade 5		Grade 9	
	N	%	*N*	%
Immigrant origin				
Majority	4,090	71.7	11,396	70.7
Immigrant origin	1,612	28.3	4,719	29.3
Total	5,702	100.0	16,115	100.0
Generation status				
1st generation	73	4.5	436	9.2
1.5th generation	186	11.5	597	12.7
2nd generation	605	37.5	1,742	36.9
2.25th generation	94	5.8	223	4.7
2.5th generation	131	8.1	196	4.2
2.75th generation	391	24.3	1,039	22.0
3rd generation	27	1.7	38	0.8
3.25th generation	13	0.8	46	1.0
3.5th generation	92	5.7	402	8.5
Total	1,612	100.0	4,719	100.0

Note. Because of missing data, we have excluded *n* = 7 cases in Grade 5 and *n* = 50 cases in Grade 9.

In a second step, the parent interviews are used in lieu of the student interviews. Therefore, the Kindergarten cohort can be considered as well. Table 6 shows the corresponding results.

Table 6

Children and youths of immigrant origin in the Kindergarten and school cohorts (parent interview)

	Kindergarten		Grade 5		Grade 9	
	N	%	*N*	%	*N*	%
Immigrant origin						
Majority	1,623	69.4	3,242	78.1	7,362	80.3
Immigrant origin	717	30.6	909	21.9	1,811	19.7
Total	2,340	100.0	4,151	100.0	9,173	100.0
Generation status						
1st generation[a]	-	-	21	2.3	107	5.9
1.5th generation	33	4.6	95	10.5	195	10.8
2nd generation	298	41.6	260	28.6	430	23.7
2.25th generation	80	11.2	63	6.9	67	3.7
2.5th generation	22	3.1	27	3.0	43	2.4
2.75th generation	187	26.1	311	34.2	703	38.8
3rd generation	27	3.8	17	1.9	6	0.3
3.25th generation	7	1.0	10	1.1	29	1.6
3.5th generation	63	8.8	105	11.6	231	12.8
Total	717	100.0	909	100.0	1,811	100.0

Note. [a]Children of the Kindergarten cohort are on average 4 years old at the time of the survey. Thus, foreign-born children could only belong to the 1.5th generation (see Figure 1).

With a 30.6% share of target persons, immigrant origin is greatest in the Kindergarten cohort, followed by 21.9% in the Grade 5 and 19.7% in the Grade 9 cohorts. The 1.5th generation constitutes a solid 10% in both the Grade 5 and Grade 9 cohorts, although this group's share is only half the size of the Kindergarten cohort (4.6%). The second generation is well represented in all cohorts; however, its share of 41.6% is significantly higher in the Kindergarten cohort than in the older cohorts (28.6% in Grade 5 and 23.7% in Grade 9). Conversely, there is a higher share of children and youths in the 2.75th generation in Grades 5 and 9 (34.2% and 38.8%, respectively), although there is a lower proportion in NEPS Kindergartens (26.1%). The third generation is a minority in all cohorts (3.8% in Kindergarten, 1.9% in Grade 5, and 0.3% in Grade 9). The 3.5th generation, in contrast, has a significantly greater representation. Its ratios are 8.8% in the Kindergarten cohort, 11.6% in Grade 5, and 12.8% in Grade 9. These higher values may be attributable to the fact that many of these

individuals are descendants of refugees and displaced persons from the former Eastern territories of Germany. More extensive analyses support this assumption. They show, in particular, that the percentage of Poles in the 3.5th generation is comparatively high.

If we compare the distributions in both school cohorts based on information provided by the students with those compiled on the basis of data from the parents, we see various deviations (see Tables 5 and 6). What seems remarkable at first glance is the fact that the student surveys show significantly higher proportions of children and adolescents of immigrant origin than the parent surveys (28.3% vs. 21.9% in Grade 5 and 29.3% vs. 19.7% in Grade 9). Additionally, distributions of the various immigrant generations deviate from one another. The second-generation percentages are significantly lower in the parent surveys than in the student surveys (28.6% vs. 37.5% in Grade 5 and 23.7% vs. 36.9% in Grade 9). Conversely, the 2.75th generation is greater according to the information given by the parents than in the distributions based on the students' survey (34.2% vs. 24.3% in Grade 5 and 38.8% vs. 22.0% in Grade 9).

These deviations most likely are because parental interviews are more often lacking for those children and youths who were assigned to the immigrant population (on the basis of student data) than for children and youths of the majority population (calculations not shown). With a share of 42.2%, the share of children without a parent interview in Starting Cohort 3–Grade 5 is higher in the group of children of immigrant origin than among children in the majority population (26.7%). This difference is even more striking in Starting Cohort 4–Grade 9: For 56.1% of youths of immigrant origin a parent interview is not available, while among those youths assigned to the majority population, 38.6% of the target persons do not have a parent interview. When we limit our analysis to cases for which data from student as well as parental surveys are available, the generational composition in these two groups proves to be roughly identical. This supports the assumption that the observable deviations between student and parent data are due to missing interviews with parents of immigrant origin.

Nonetheless, there are still slight deviations in the distributions of these subsequent analyses. This may be caused by students referring to someone other than the surveyed parent when answering questions about the mother's or father's and grandparents' country of birth. These differences can be uncovered, however, by using additional information. The student surveys record whom the children and youths are referring to when they talk about their mothers or fathers. "My biological mother" and "my stepmother," for example, are possible response options. Because the surveyed parent also indicates the relationship that she or he, and her or his partner, have with the target child, it is quite possible to compare these details using NEPS data, thereby analyzing a possible cause for these inconsistencies.[13]

Another reason for these differences could be that, compared to the surveyed parents, students can give information of varying quality about birth countries at different levels. This is supported by analyses based on the variable for the missing and contradictory country-of-birth information (see Section 2.2). Comparing the levels at which student and parental

[13] A variable for the partner's relationship status is already implemented in the Scientific Use Files. Information on the surveyed parent's relationship to the target child is available in the Kindergarten, Grade 5, and Grade 9 cohorts as of the third wave.

information is missing or contradictory, we can observe clear differences. The values most frequently missing in student surveys are for grandparents' countries of birth (70.9% of cases in Grade 5 and 67.9% of cases in Grade 9 have missing or contradictory information). However, information on the parent who was not surveyed is particularly affected in parental surveys (94.8% of cases in Grade 5 and 95.7% of cases in Grade 9 have missing or contradictory information).

Each NEPS user can decide which of these generation status variables—those based on student data or those based on parental data—are appropriate for her or his individual analysis, depending on the issue at hand.

One advantage of the student surveys is certainly that the relevant information is available for (almost) all of the children and adolescents, whereas the pool of parent interviews is smaller. No parent interview is available for 31.1% of the surveyed fifth graders and for 43.8% of the ninth graders. At the same time, using this information is always problematic when students do not know in what country their parents or grandparents were born. In such cases, it might be possible to combine student and parental information.

5.3 Distributions by group of origin

In both school cohorts it can be shown that children and youths of Turkish origin (22.1% in Grade 5 and 19.2% in Grade 9) and those whose families are from the former Soviet Union (FSU; 16.3% in Grade 5 and 16.1% in Grade 9) represent the largest share among the immigrant population. These two groups are followed by children and youths who were themselves or whose parents or grandparents were born in Poland (7.5% in Grade 5 and 10.2% in Grade 9) or in countries of the former Yugoslavia (8.3% in Grade 5 and 8.7% in Grade 9; see Table 7).

Table 7

Origin groups in the school cohorts (student interview)

	Grade 5		Grade 9	
	N	%	*N*	%
Italy	59	3.7	210	4.5
Poland	121	7.5	480	10.2
Romania	32	2.0	97	2.1
Turkey	357	22.1	906	19.2
Former Yugoslavia	134	8.3	411	8.7
Former Soviet Union	262	16.3	759	16.1
Central and South America, Caribbean	31	1.9	93	2.0
Northern and Western Europe	107	6.6	290	6.1
North America	10	0.6	49	1.0
Oceania/Polynesia	4	0.2	9	0.2
Other Middle East and North Africa	70	4.3	261	5.5
Other Africa	29	1.8	87	1.8
Other Asia	85	5.3	220	4.7
Other Central and Eastern Europe	31	1.9	101	2.1
Other Southern Europe	84	5.2	197	4.2
Foreign, but not assignable to a specific group of origin	196	12.2	549	11.6
Total	1,612	100.0	4,719	100.0

Note. Because of missing data, we have excluded *n* = 7 cases in Grade 5 and *n* = 50 cases in Grade 9.

Taking parental data into consideration (see Table 8), results in both school cohorts are very similar to those presented based on student surveys. The percentages indicate only a few deviations, although significantly fewer cases are used in Table 8 than in Table 7 due to the relatively large number of unit nonresponses.

Table 8

Origin groups in the Kindergarten and school cohorts (parent interview)

	Kindergarten		Grade 5		Grade 9	
	N	%	*N*	%	*N*	%
Italy	11	1.5	34	3.7	62	3.4
Poland	51	7.1	72	7.9	202	11.2
Romania	13	1.8	24	2.6	57	3.1
Turkey	164	22.9	201	22.1	307	17.0
Former Yugoslavia	52	7.3	61	6.7	125	6.9
Former Soviet Union	149	20.8	157	17.3	302	16.7
Central and South America, Caribbean	10	1.4	25	2.8	55	3.0
Northern and Western Europe	43	6.0	68	7.5	161	8.9
North America	6	0.8	15	1.7	29	1.6
Oceania/Polynesia	0	0.0	4	0.4	4	0.2
Other Middle East and North Africa	52	7.3	31	3.4	79	4.4
Other Africa	19	2.6	15	1.7	27	1.5
Other Asia	26	3.6	28	3.1	56	3.1
Other Central and Eastern Europe	16	2.2	32	3.5	73	4.0
Other Southern Europe	23	3.2	33	3.6	72	4.0
Foreign, but not assignable to a specific group of origin	82	11.4	109	12.0	200	11.0
Total	717	100.0	909	100.0	1,811	100.0

The distributions in the Kindergarten cohort point toward a pattern similar to that of the Grade 5 and Grade 9 cohorts: Children of Turkish origin and children whose families are from the former Soviet Union make up the largest share, followed by children from the former Yugoslavia, other Middle Eastern countries and North Africa, and Poland.

In this regard, it should be noted that the group of children and youths of Eastern European origin also comprises descendants of refugees and displaced persons from former Eastern territories of Germany. Although within the NEPS, these individuals are usually not rated as survey participants of immigrant origin; it may nonetheless be the case that these individuals are assigned to the immigrant group due to imprecise or incorrect information.

5.4 Immigrant populations from Turkey and from the former Soviet Union by generation status

Finally, this chapter describes distributions for the two largest migrant groups in the German education system. We first turn to the student survey in Grade 5 and Grade 9 (see Table 9). To a certain degree, some rather pronounced differences in terms of generation status—between the two groups as well as between both school cohorts—are discernible.

The majority of adolescents of Turkish origin belong to the second generation (55.2% in Grade 5 and 61.8% in Grade 9), followed by the 2.25th and 2.75th generation (14.0% and 12.6%, respectively, in Grade 5, and 12.5% and 9.1%, respectively, in Grade 9). The first and third generations, by contrast, are represented by far fewer numbers. Consequently, analyses regarding educational patterns of the third generation Turkish are limited. The distribution for students of FSU origin differs, reflecting their relatively recent immigration waves—compared to the Turkish population—which occurred primarily in the 1990s. The first generation is of considerable size in the two school cohorts, with 51.0% in Grade 9 and 31.0% in Grade 5. The second generation is also well represented (50.4% in Grade 5 and 37.8% in Grade 9).

Table 9

Students of Turkish origin and from the former Soviet Union by generation status in the school cohorts (student interview)

	Grade 5		Grade 9	
	N	%	*N*	%
Turkish origin				
1st generation	9	2.5	62	6.8
1.5th generation	14	3.9	44	4.9
2nd generation	197	55.2	560	61.8
2.25th generation	50	14.0	113	12.5
2.5th generation	20	5.6	23	2.5
2.75th generation	45	12.6	82	9.1
3rd generation	12	3.4	11	1.2
3.25th generation	1	0.3	1	0.1
3.5th generation	9	2.5	10	1.1
Total	357	100.0	906	100.0
Former Soviet Union				
1st generation	13	5.0	150	19.8
1.5th generation	68	26.0	237	31.2
2nd generation	132	50.4	287	37.8
2.25th generation	4	1.5	2	0.3
2.5th generation	8	3.1	8	1.1
2.75th generation	30	11.5	65	8.6
3rd generation	2	0.8	1	0.1
3.25th generation	0	0.0	1	0.1
3.5th generation	5	1.9	8	1.1
Total	262	100.0	759	100.0

Similar patterns arise if we use the parents' information in lieu of the students' surveys (see Table 10). Similarly to the students' information, we see that, among children and youths of FSU origin, the first and 1.5th generations are represented by significantly higher numbers than the Turkish group (29.9% vs. 3.0% in Grade 5 and 43.7% vs. 5.9% in Grade 9). By contrast, second-generation migrant youths are a much stronger group within the Turkish population, at 47.8% in Grade 5 and 48.2% in Grade 9, whereas the corresponding proportions for the descendants of immigrants from the former Soviet Union are somewhat lower (39.5% and 27.2% in Grades 5 and 9, respectively). However, the rather high percentages for the 2.75th generation are remarkable when compared with the student information in both groups of origin (25.4% and 34.5%, respectively, among fifth and ninth graders of Turkish origin, and 29.3% and 27.2%, respectively, among students from the former Soviet Union). This is presumably attributable to the relatively high degree of missing information on partners in the parental surveys (see Section 5.2).

Table 10

Students of Turkish origin and from the former Soviet Union by generation status in the Kindergarten and school cohorts (parent interview)

	Kindergarten		Grade 5		Grade 9	
	N	%	*N*	%	*N*	%
Turkish origin						
1st generation[a]	-	-	1	0.5	7	2.3
1.5th generation	2	1.2	5	2.5	11	3.6
2nd generation	69	42.1	96	47.8	148	48.2
2.25 generation	53	32.3	33	16.4	24	7.8
2.5 generation	3	1.8	2	1.0	4	1.3
2.75 generation	9	5.5	51	25.4	106	34.5
3rd generation	18	11.0	6	3.0	1	0.3
3.25 generation	0	0.0	0	0.0	1	0.3
3.5 generation	10	6.1	7	3.5	5	1.6
Total	164	100.0	201	100.0	307	100.0
Former Soviet Union						
1st generation[a]	-	-	6	3.8	49	16.2
1.5th generation	5	3.4	41	26.1	83	27.5
2nd generation	96	64.4	62	39.5	82	27.2
2.25 generation	1	0.7	1	0.6	2	0.7
2.5 generation	0	0.0	0	0.0	0	0.0
2.75 generation	42	28.2	46	29.3	82	27.2
3rd generation	0	0.0	0	0.0	1	0.3
3.25 generation	0	0.0	0	0.0	0	0.0
3.5 generation	5	3.4	1	0.6	3	1.0
Total	149	100.0	157	100.0	302	100.0

Note. [a]Children of the Kindergarten cohort are on average 4 years old at the time of the survey. Thus, foreign-born children could only belong to the 1.5th generation (see Figure 1).

Significant differences between the cohorts appear if we also consider the kindergarteners. What seems striking at first is the comparatively high proportion of third-generation Turkish children in NEPS Kindergartens (11.0% versus 3.0% in Grade 5 and 0.3% in Grade 9). Additionally, there is an increase in the second generation among Turkish children and youths across the cohorts (42.1% in Kindergarten, 47.8% in Grade 5, and 48.2% in Grade 9). This pattern also applies to the 2.75th generation, which constitutes 5.5% among Kindergarten children, 25.4% in Grade 5, and 34.5% in Grade 9. By contrast, the share of the 2.25th generation declines throughout the cohorts, from 32.3% in the Kindergarten cohort to 16.4% in Grade 5 and 7.8% in Grade 9. On the other hand, the pattern for children and youths whose families are from the former Soviet Union partly run counter to this; whereas the majority of the Kindergarten children belong to the second generation (64.4%), this proportion decreases across the cohorts, comprising 39.5% in Grade 5 and 27.2% in Grade 9. By contrast, the share of the 1.5th generation is significantly higher in both school cohorts (26.1% and 27.5%, respectively) than in Kindergartens (3.4%).

6. Summary

A variety of variables is recorded in the NEPS Scientific Use Files, providing information about the generation status and group of origin for all starting cohorts. In case of missing or contradictory information about the target person's country of birth, a further variable can be used to determine which cases are affected and how. This working paper has described the approach to creating these variables. Additionally, it has presented empirical distributions for three starting cohorts. As such, it has referred to data collected as part of the first waves of the Kindergarten, Grade 5, and Grade 9 cohorts.

The variables concerning generation status and group of origin can be formed based on information given about the country of birth of the target person and of her or his parents and grandparents. In the Kindergarten cohort, where children have not yet been surveyed, we rely exclusively on information from the parent survey. In the Grade 5 and Grade 9 cohorts, where both students and parents were surveyed, both information sources can be used.

The empirical distributions by generation status and group of origin have been illustrated for the three NEPS cohorts. The percentage of children and youths of immigrant origin in these cohorts ranges between 20% and 31%; however, this share varies among cohorts and according to which information source is used. Children and youths of the second and 2.75th generations have the highest proportional representation in all cohorts. Considering groups of origin, the highest percentages are among children and youths of Turkish origin and children and youths whose families are from the former Soviet Union. Both of these groups in turn differ in their generational composition, whereby the various starting cohorts reveal additional differences. These patterns reflect past and present migration flows.

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