Chapter 18 Gendered Occupational Aspirations: A Comparison of Young Native-Born and Turkish Minority Women



Manuel Siegert, Tobias Roth, and Irena Kogan

Abstract Declining birth rates, an ageing population and the goal to remain globally competitive and prosperous puts pressure on the German labour market and increases the demands for greater labour force participation of women. Women with a migration background constitute a growing share of the German population, but a disproportionally lower share of the total labour force. We focused on the gender-specific occupational preferences of female adolescents with a Turkish migration background compared to those without any migration background and related these preferences to the young women's interests, family orientations, normative gender role perceptions, and the socioeconomic status of the aspired profession in our analyses. Contrary to our expectations, our results indicate that Turkish girls less often aspire to female-dominated occupations than majority native-born girls. Instead, they prefer integrated occupations, which tend to be more prestigious and better paid. This might be mostly due to their ambitious occupational aspirations, because the gap between native-born and Turkish girls is reduced substantively after controlling for aspirations.

M. Siegert (⊠)

Federal Office for Migration and Refugees (BAMF), Nürnberg, Germany e-mail: manuel.siegert@bamf.bund.de

T. Roth

GESIS - Leibniz Institute for the Social Sciences, Mannheim, Germany

e-mail: Tobias.Roth@gesis.org

I. Kogan

University of Mannheim, Mannheim, Germany e-mail: irena.kogan@uni-mannheim.de

© The Author(s) 2023 403

S. Weinert et al. (eds.), *Education, Competence Development and Career Trajectories*, Methodology of Educational Measurement and Assessment, https://doi.org/10.1007/978-3-031-27007-9_18

18.1 Introduction

Declining birth rates, an ageing population, and the goal to remain globally competitive and prosperous is putting pressure on the German labour market and increasing the demand for a greater labour force participation of women. Women with a migration background constitute a growing share of the German population, but a disproportionally lower share of the total labour force. Compared to other women with or without a migration background, women with a Turkish migration background are even more likely to be either unemployed or employed in low-paid, low-status jobs (e.g., Salikutluk et al., 2020; Schührer, 2018, pp. 32–33; Stichs, 2008, p. 48). This weak labour market position of women with a Turkish migration background has been shown to result largely from a lack of human capital (e.g., Hunkler, 2014, pp. 11-12; Salikutluk et al., 2020). In particular, their lack of vocational qualifications brings considerable disadvantages in the German job market (Schührer, 2018, p. 30) that is well known for its strong credentialism (Konietzka, 1999; Müller & Kogan, 2010). Although the link between an individual's vocational training and future job has been weakening, it is still not easy to change a once-chosen career path (Dütsch et al., 2013).

Young women and men tend to choose different training occupations (Statistisches Bundesamt/Wissenschaftszentrum Berlin für Sozialforschung, 2016), and this perpetuates educational and occupational gender segregation. Particularly female adolescents with a Turkish migration background seem to be concentrated in a small number of female-dominated occupations such as medical/dental assistants or hairdressers (BMBF, 2019, p. 67; Siegert, 2009, p. 35). Such jobs are more likely to be low paid and offer limited career mobility compared to more gender-balanced occupations (e.g., journalists or customer service managers) (Cotter et al., 2004; Hakim, 1998; Magnusson, 2009, 2013). Young women with a Turkish migration background are also more likely to be employed in female-dominated jobs than young women with or without a migration background: whereas 67.1% of 30- to 34-year-old women with a Turkish migration background work in an occupation in which women make up 70% or more of the workforce (a so called female-dominated occupation), this applies to only 59.6% of women of the same age with another migration background and 51.6% of women of the same age without a migration background (own calculations based on the Scientific Use File of the German Microcensus 2011; data provided by Federal and State Statistical Offices, Research Data Centres).

Why would young women in general and women of Turkish descent in particular end up more often in female-dominated occupations? One possible explanation is that women *prefer* female-dominated occupations because these enable them to reconcile family obligations and career relatively easily, because they offer tasks and a professional environment that coincide with so called female interests and skills, and because they are considered appropriate for a woman (Achatz, 2008, p. 267; Becker, 1975, 1985; Busch, 2013, pp. 40–46; Polachek, 1981).

This explanation might apply particularly to women with origins in more traditional societies, including Turkey, because they tend to be oriented more towards family and motherhood than women from other migration backgrounds. On average, they marry and have children earlier, and they adhere more to the traditional gender roles than women without a migration background (e.g., Becher & El-Menouar, 2014, pp. 67–69, 101; Nauck, 1999, p. 52; Weiss & Wittmann-Roumi Rassouli, 2007, p. 160). However, research has also shown that students with a Turkish migration background tend to have quite ambitious educational (Salikutluk, 2016) and vocational aspirations (e.g., Diehl et al., 2009, p. 57; Wicht, 2016). The fact that female-dominated occupations are not very prestigious (Magnusson, 2009) may well be a decisive reason why young Turkish women do *not* strive for typical female professions.

This study focuses on preferences for female-dominated occupations as a possible reason for the over-representation of women with a Turkish migration background in female-dominated jobs. To this end, we compare the occupational aspirations of female majority native-born and Turkish 9th graders in general schooling using data from Starting Cohort 4 of the National Educational Panel Study (NEPS). We focus on occupational aspirations before entry into the labour market, because studying individuals who have already entered the labour market would increase the risk of hindsight biases and the likelihood that respondents have adapted their preferences and beliefs to their current labour market situation. The decision to focus on young women of Turkish descent is driven by their particular position in the German labour market together with their traditional gender-role perceptions and occupational aspirations, Furthermore, persons with a Turkish migration background represent the largest minority group in Germany (Statistisches Bundesamt, 2020, p. 68), and this enables us to draw meaningful comparisons with majority native-born German women. We seek to explain the differences in occupational aspirations between Turkish and majority native-born women in terms of their interest orientation, family orientation, normative gender roles, and the socio-economic status of their aspired profession.

Contrary to our expectations, we do not find any consistently pronounced differences in interests, family orientation, or normative gender-role perceptions between majority native-born and Turkish girls. Our results suggest that Turkish girls are *not* more interested in female-dominated occupations than majority native-born girls, but rather in the better-paid and more prestigious integrated occupations. However, results also show that they expect to face difficulties in realizing their aspirations and to end up in a female-dominated occupation.

The chapter is structured as follows. First, we describe the occupational and vocational situation of (young) women with a Turkish migration background in Germany. In the second section, we provide the theoretical basis, discussing why school-leavers choose gendered occupations. After having formulated our expectations, we introduce the data and variables used. We then present the analyses and results. The chapter closes with a summary and discussion of the findings.

18.2 The Occupational and Vocational Training Situation of (Young) Women in Germany: State of Research

In Germany, fewer young women than young men start vocational education, and young women with a migration background do so less often than their majority native-born counterparts (BMBF, 2019, p. 46). Young women with a Turkish migration background are even less likely to complete vocational education than young women from other immigrant groups or those without a migration background (Siegert, 2009, p. 31). In Germany in 2018, 86% of majority native-born women, 73% of women with a migration background, and only 56% of women with a Turkish migration background had a vocational qualification (Statistisches Bundesamt, 2019, pp. 201–202). Even 35% of women with a Turkish migration background who were born and raised in Germany lack vocational qualifications (Schührer, 2018, p. 30).

Both female apprentices with and without a migration background are concentrated in a few—largely female-dominated—occupations (BMBF, 2019, p. 67; Siegert, 2009, p. 35) such as medical assistants (proportion of women ca. 99%), dental assistants (ca. 100%), hairdressers (ca. 90%), and office clerks (ca. 72%) (Siegert, 2009, p. 35). Additionally, our findings from the Microcensus 2011 presented above show that young women with a Turkish migration background are more likely to be concentrated in female-dominated occupations than young women with or without a migration background. Because vocational qualifications are of crucial importance for a successful labour market career in Germany, this contributes to the lower labour market status of women with a Turkish migration background. Thus, in 2009, about 68% of women without and 53% of women with a migration background aged 15-65 were economically active, whereas the employment rate among women with a Turkish migration background was approximately 38% (Seebaß & Siegert, 2011, pp. 25, 27). The share of the economically active was markedly higher among women with a Turkish background who possessed a vocational qualification (Schührer, 2018, p. 34). When employed, women with a Turkish background were found more often in marginal or part-time employment, and they earned less than women without or with another migration background (Statistisches Bundesamt, 2019, pp. 443, 475–476).

One key reason for the lower uptake of apprenticeships and less smooth transitions from school to work among adolescents with a migration background is their poorer educational performance compared to adolescents without a migration background (Hunkler, 2014, p. 100). However, their grades, school-leaving qualifications, and social backgrounds cannot be the only reasons for their disadvantages in the transition to vocational education and training or to the labour market (Beicht, 2015, p. 60; Hunkler, 2014, pp. 99–100). One possible explanation for the remaining differences is that employers discriminate against the children of immigrants in their hiring decisions. Hunkler (2014, p. 253) showed that young women with a migration background—many of Turkish descent—had a much lower chance of entering more prestigious office jobs than young women without a migration background even

after controlling for a series of relevant background characteristics. Hunkler (2014, p. 254) assumes that this is due to statistical discrimination on the part of employers who probably expect young women with a migration background to start a family much earlier and take a longer career break than women without a migration background. Hunkler argues that employers might rationally prefer female adolescents without a migration background in order to maximize the returns on their investment in employee training.

To sum up, generally fewer young women than young men start an apprentice-ship in Germany, and the young women who do so are concentrated mostly in a few, mainly female-dominated occupations. Female adolescents with a Turkish migration background are less successful in Germany's vocational education and training system than female adolescents with another or no migration background. Difficulties in finding apprenticeship positions translate into weak labour market outcomes. There is also evidence that young Turkish women are more concentrated in a small number of female-dominated occupations than majority native-born young women. Although previous research suggests that external constraints might play a key role in this regard (Diehl et al., 2009, p. 64; Hunkler, 2014, p. 254), the extent to which this concentration is related to young women's own occupational aspirations is unknown.

18.3 Theoretical Background and Expectations

Educational and occupational aspirations have gained prominence in social mobility and inequality research particularly through the Wisconsin model developed by Sewell et al. (1969). In this model, occupational aspirations play a key role in occupational attainment alongside parental socio-economic status and an individual's mental abilities. According to the authors (Sewell & Hauser, 1972), a large part of parental influences occurs via parental aspirations that are subsequently transmitted to their offspring. Scholars tend to differentiate between idealistic and realistic aspirations—a distinction that will also be relevant in our analyses. Whereas idealistic aspirations refer to desired future occupational attainment, realistic aspirations refer to the actually expected future occupational attainment—that is, they take existing constraints into account (Becker, 2010; Haller, 1968).

Based on the idea of the Wisconsin model that aspirations play a paramount role in occupational attainment, we argue that the phenomenon of occupational gender typing could be caused by gender-specific idealistic occupational aspirations. Because women of Turkish migration background are over-represented in female-dominated jobs in Germany, we expect that they also strive for these occupations in early adulthood.

We further argue that gender typing of occupational preferences can be explained by the extent to which young women differ with respect to (1) their orientations towards either family or labour market, (2) gender-role perceptions, (3) the importance they attach to the specific aspects of certain occupations, (4) parental—and

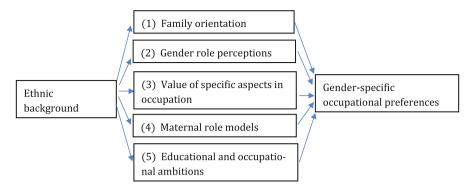


Fig. 18.1 Model to explain differences in gender-specific occupational aspirations between ethnic groups

particularly maternal—role models, and (5) the level of their occupational ambitions in general. We expect differences between young women with a Turkish migration background and those without a migration background in all these aspects. These differences should account for the variation in group-specific occupational aspirations (Fig. 18.1).

One of the most common explanations for why females and males are interested in different occupations is the gender-specific division of household tasks within families. It is argued that, because they do most of the household chores, women look for jobs that allow them to harmonize their employment with their family obligations (Becker, 1975, 1985; Polachek, 1981). This is why part-time jobs with flexible working hours are especially attractive to them (Busch, 2013, p. 38). Yet, although in Germany, employees in female-dominated occupations work on average fewer hours than employees in male-dominated or gender-integrated ones, employees in more male-dominated jobs have more flexible working schedules (Busch, 2013, p. 340).

What remains open in this approach, however, is, why women do most of the household chores. One explanation that takes this question into account is provided by gender-specific socialization theory (Eccles, 1987). Accordingly, normative gender-role perceptions are learned and internalized in the course of socialization, and these include, among other things, beliefs about gender-appropriate behaviour, the appropriate division of household duties between females and males, as well as appropriate occupations for women and men (Busch, 2013, pp. 44–46; Dunne, 1980).

Related to this are personal interest orientations. Socializing girls to be oriented towards family and household tasks generates specific values, orientations, and interests that are reflected in gender-specific occupational aspirations (see Achatz, 2008, p. 267; Busch, 2013, pp. 40–44). Indeed, especially occupational values that have a strong link to social aspects are considerably more pronounced among women than among men (e.g., Busch, 2013, p. 48), and this helps to explain genderspecific occupational aspirations (e.g., Busch, 2013, p. 338).

Furthermore, Eccles and Hoffman (1984) proposed that parents often serve as role models for their children who tend to align their occupational aspirations with their parents' occupations: boys look to their fathers and girls to their mothers. Whereas previous research has shown that parents' occupational positions, genderrole attitudes, and division of household roles influence their children's gender-role attitudes and occupational aspirations, this is less pronounced for girls than for boys (Busch, 2011, 2013, pp. 48–49; Helbig & Leuze, 2012; Moen et al., 1997).

The level of occupational aspirations is another factor to consider. Becker and Glauser (2015) argue that the motive of status maintenance influences not only school-related educational aspirations and decisions but also vocational aspirations and choices. The authors show empirically that the motive of status maintenance is important for gendered aspirations and decisions (Becker & Glauser, 2015). Because gender-integrated occupations are generally better paid (Cotter et al., 2004; Hakim, 1998; Magnusson, 2013) and more prestigious (Magnusson, 2009) than female- and male-dominated occupations, students from higher social classes can be expected to aspire primarily to integrated occupations. Indeed, Helbig and Leuze (2012) found that especially girls from upper social strata aspire less often than girls from lower social strata to female-dominated occupations.

With regard to young women with a Turkish migration background, previous research indicates that they are more family oriented than young women without a migration background (Weiss & Wittmann-Roumi Rassouli, 2007, p. 160) and that they do most of the family's household tasks (Becher & El-Menouar, 2014, p. 101). Furthermore, traditional gender-role perceptions are more prominent among adolescents with a Turkish migration background than among adolescents without a migration background (e.g., Becher & El-Menouar, 2014, pp. 67-69; Nauck, 1999, p. 52; Weiss & Wittmann-Roumi Rassouli, 2007, p. 160). With regard to role models, it has been shown that women with a Turkish migration background are less economically active than majority native-born women (Schührer, 2018, pp. 32–33; Stichs, 2008, p. 48); and, as already discussed, women with a Turkish migration background are also more likely to work in female-dominated occupations than women with another ethnic background. Consequently, it seems plausible to assume that female adolescents with a Turkish migration background are more likely to aspire to female-dominated occupations than their counterparts without a migration background, and that controlling for the above-discussed factors contributes to diminishing the gap between the two groups in the gender typing of their occupational preferences.

However, we must also take into account that students with a Turkish migration background have more ambitious educational (Salikutluk, 2016) as well as vocational and occupational aspirations than students without a migration background (e.g., Diehl et al., 2009, p. 57; Wicht, 2016). Because female- and even maledominated occupations are generally less well paid (Cotter et al., 2004; Hakim, 1998; Magnusson, 2013) and less prestigious (Magnusson, 2009) than genderintegrated occupations, it is thus possible that young Turkish women in fact do not strive more for female-dominated occupations than young women without a migration background but rather for gender-integrated professions.

In sum, all aspects assumed to increase the likelihood that young women will aim for female-dominated occupations—family orientation, social occupational values, traditional gender-role attitudes, and the mother's labour market position—are more prevalent among women with a Turkish migration background than among those without a migration background. Only the fact that female adolescents with a Turkish migration background have more ambitious career aspirations could reduce the probability that they will gravitate to female-dominated occupations. We therefore expect that:

- On average, female adolescents with a Turkish migration background aspire more
 often to female-dominated occupations and less often to integrated or maledominated occupations than female adolescents without a migration background.
- 2. After accounting for family orientation, social occupational values, traditional gender-role perceptions, and the mother's labour market position, female adolescents with a Turkish migration background no longer aspire more to female-dominated occupations than female adolescents without a migration background. Instead, Turkish women prefer gender-integrated occupations due to the higher occupational status of their aspired professions.
- 3. After also controlling for the occupational status of the aspired professions, we no longer find any differences between female adolescents with a Turkish migration background and those without a migration background with regard to the gender specificity of the aspired occupation.

18.4 Data and Variables

For the empirical analyses, we use the first three waves from Starting Cohort 4 of the German NEPS (Blossfeld et al., 2014). In this starting cohort, a representative sample of 9th graders in regular schools (mostly 15 years old) was selected via stratified cluster sampling (Skopek et al., 2013). Wave 1 was collected at the beginning of Grade 9 (autumn 2010); Wave 2, at the end of Grade 9 (spring 2011); and Wave 3, in spring 2012. The large number of cases in the NEPS data allows us to focus on two specific subgroups: majority native-born girls and girls with a Turkish migration background (i.e., who themselves or of whom at least one parent was born in Turkey). The data also provide refined information on the girls' occupational aspirations as well as their normative gender-role perceptions, family orientation, and interest orientation.

¹NEPS data were collected from 2008 to 2013 as part of the Framework Programme for the Promotion of Empirical Educational Research funded by the German Federal Ministry of Education and Research (BMBF). Since 2014, the NEPS survey has been carried out by the Leibniz Institute for Educational Trajectories (LIfBi) at the University of Bamberg in cooperation with a nationwide network. See https://doi.org/10.5157/NEPS:SC4:6.0.0

²We excluded students attending special needs schools.

To measure the gender specificity of the aspired occupation, we use information from a question about the students' idealistic occupational aspirations: in Wave 2 students were asked to indicate their favoured profession (coded using ISCO-08) if they could choose any profession they wished. Because we are interested in the young women's occupational preferences that are influenced as little as possible by perceived or anticipated constraints, we focus on idealistic rather than realistic aspirations. If we were to use realistic instead of idealistic aspirations, we would run the risk of capturing not young women's original and unconstrained preferences but their expectations instead, and these are likely to differ from their actual preferences.

We calculate the level of gender specificity of each occupation based on the share of women in the profession as recorded in the Microcensus 2011. This is an annual, official, mandatory, and representative survey of 1% of German households. To gain a sufficient number of cases to calculate the female share in an occupation, we use a 3-digit code of the ISCO-08 that combines similar professions (e.g., hotel managers and restaurant managers) into one category. We use this information to categorize professions into male-dominated (share of females $\leq 30\%$), integrated (share of females 30-70%), and female-dominated (share of females $\geq 70\%$) (Buchmann & Kriesi, 2012; Charles & Buchmann, 1994; Trappe, 2006). Although researchers often use this classification, it is not uncontested (Achatz, 2008; Becker & Glauser, 2015, p. 29). Therefore, we also test an alternative operationalization of the dependent variable in the form of a continuous variable indicating the overall share of women in the aspired occupations. The key results are similar.

To measure family orientation, we use information on how important it is for the respondents to have children sometime in the future measured on a scale from 1 (*very unimportant*) to 5 (*very important*) and the age at which they imagine having their first child (1 = 16-19 years old, 6 = never).

Interest orientation is measured with six variables indicating practical/technical, intellectual/researching, artistic/literary, social, entrepreneurial, and conventional interests. Each variable is a mean score of three single items that were measured on a scale from 1 (*very little interest*) to 5 (*very interested*).

Normative gender-role perceptions are assessed by the extent of respondents' agreement with three statements: 'The proportion of women in politics should be equal to that of men', 'It's the man's job to earn money and the woman's job to take care of the household and family', and 'Men are better suited for certain professions than women'. Answer categories range from 1 (*completely disagree*) to 4 (*completely agree*).

We use information on the employment status of mothers and the gender specificity of their occupations as a proxy for the maternal role model. We differentiate between mothers who are not employed at all, those who are employed at least part time in a female-dominated occupation (share of females \geq 70%), and those who are

³We used the Scientific Use File of the Microcensus 2011 that consists of a 70% subsample of the original survey (data provided by Federal and State Statistical Offices, Research Data Centres).

employed at least part time in an occupation that is not female dominated (share of females <70%).

The mothers' employment status was measured in Wave 1, and information on interest orientation and family orientation was gathered in Wave 2. Questions on normative gender-role perceptions were asked only in Wave 3, which means that they follow the dependent variable chronologically. Consequently, we run the multivariate analyses with and without the information on normative gender-role perceptions to check the robustness of our results. The key results remain unaltered independently of including the information from Wave 3.

The occupational status of the aspired professions is operationalized through applying the ISEI-08 to students' aspired occupations.

The multivariate analyses account for variables that could potentially affect students' occupational aspirations. We control for school achievement and attainment in two steps. In the first step, we differentiate between *Hauptschule* (lowest type of secondary school), *Realschule* (intermediate type of secondary school), and *Gymnasium* (highest type of secondary school). All students attending a comprehensive school or a school with more than one educational track are combined into a single fourth category. In the second step, we use the grades for mathematics and German from the previous school report card to measure school achievement (grades are rescaled so that higher values signify better school grades). Furthermore, we use detailed information about students' social background including the number of books in the household as well as the parents' highest educational attainment and highest occupational status (ISEI-08). The information for all control variables was collected in Wave 1.

We handle missing information in the data by means of multiple imputations in STATA (mi command) (StataCorp, 2013), creating 20 data sets in which missing information was multiply imputed. For this purpose, we first include all dependent and independent variables as well as panel weights for the imputations and then exclude cases with missing information on the dependent variables from our analyses (MID method; von Hippel, 2007). This procedure usually increases efficiency and produces the most accurate estimates. Our sample consists of 3758 majority native-born girls and 315 girls with a Turkish migration background. All results are based on multiply imputed data sets considering panel weights for Waves 1 and 2. In the multivariate analyses we run multinomial logistic regressions and report average marginal effects. Due to the stratified cluster sampling, we use clustered standard errors that allow for intragroup correlations within schools in the regression models.

⁴To measure parents' education and occupation, we use information from the parent questionnaire. If no information from the parents is available, information from the adolescents is used instead. If information on only one parent is available, this information is used.

18.5 Analyses and Results

18.5.1 Descriptive Evidence

We find that about two thirds of the girls—regardless of their migration background—aspire to an integrated occupation; about one quarter, to a female-dominated occupation; and only 11%, to a male-dominated one (see Table 18.1). Contrary to our expectations, Turkish girls are slightly less likely to aspire to female-dominated occupations and more likely to aspire to integrated ones than majority native-born girls. We find no differences between the two ethnic groups regarding aspirations for male-dominated occupations. This finding suggests that considerations of occupational status might have a stronger impact than socialization and gender-role attitudes on the gender specificity of the aspired occupation.

With regard to our key independent variables (Table 18.2), we find the expected large differences in mothers' employment status: more than 80% of majority nativeborn mothers are employed at least part time compared to only about one half of the Turkish mothers. Furthermore, among those mothers who are employed, the proportion of Turkish mothers working in female-dominated occupations is much higher. In line with expectations derived from socialization theory, we also find that Turkish girls have a stronger interest in occupational values related to social aspects than majority native-born girls. Whereas the differences in practical/technical and entrepreneurial interests are more pronounced between majority native-born and Turkish girls, ethnic differences are rather small overall. The results for family orientation are also less clear-cut than expected. Although Turkish girls wish to have children earlier than majority native-born girls, both groups attach the same level of importance to having children in general. Finally, even though we find that Turkish girls tend to have more traditional views than majority native-born girls, the two groups have similar views regarding whether men are better suited to certain professions than women. If traditional gender-role attitudes do indeed shape beliefs about appropriate occupations for females and males, which then influence occupational aspirations, we should have found differences between the groups here.

In sum, the differences between majority native-born and Turkish girls in terms of interest orientation, family orientation, and normative gender-role perceptions point

| Occupation | No migration background | Turkish migration background | Overall |
|------------------|-------------------------|------------------------------|---------|
| Male-dominated | 11.2% | 11.2% | 11.2% |
| Integrated | 62.4% | 67.4% ⁺ | 62.8% |
| Female-dominated | 26.4% | 21.4%+ | 26.0% |
| N | 3758 | 315 | 4073 |

Table 18.1 Gender specificity of aspired occupation

Sources: NEPS-SC4_R_6-0-0; own calculations and illustration

Missing data are handled using multiple imputation (MID method). Significance of the difference between majority native-born German girls and girls with a Turkish migration background: $^{+}$ p < 0.10, * p < 0.05, ** p < 0.01. Data weighted

Table 18.2 Key independent and control variables

| | No migration | Turkish migration |
|---|------------------------|-----------------------|
| | background | background |
| Family orientation (1 = very unimportant, $5 = very$ | ery important) | |
| Importance of having children | MV: 3.93 | MV: 3.94 |
| Aspired age to have first child $(1 = 16-19 \text{ years})$ old, 6 never) | MV: 2.98 | MV: 2.79** |
| Interest orientation (1 = very little interest, $5 = v$ | ery interested) | |
| Practical/technical | MV: 2.34 | MV: 2.45 ⁺ |
| Intellectual/research-related interests | MV: 2.49 | MV: 2.61 |
| Artistic/linguistic interests | MV: 2.91 | MV: 2.80 |
| Social | MV: 3.48 | MV: 3.60* |
| Entrepreneurial | MV: 2.99 | MV: 3.22** |
| Conventional | MV: 2.44 | MV: 2.78** |
| Normative gender role perceptions $(1 = complete)$ | ely disagree, 4 = comp | oletely agree) |
| Equal proportion of men and women in politics | MV: 3.59 | MV: 3.44* |
| Men should earn money, women should take care of household | MV: 1.53 | MV: 1.80** |
| Men better suited to certain professions | MV: 2.70 | MV: 2.73 |
| Mother's employment status | | |
| Not employed or only part time | 17.3% | 45.5%** |
| Employed in female-dominated job | 47.5% | 36.1%** |
| Employed in not female-dominated job | 35.2% | 18.4%** |
| Socioeconomic status (ISEI-08) of aspired profession | MV: 64.51 | MV: 69.21** |
| N | 3758 | 315 |

Sources: NEPS-SC4 R 6-0-0; own calculations and illustration

Missing data are handled using multiple imputation (MID method). Significance of the difference between native-born German girls and girls with a Turkish migration background: $^{*}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$; data weighted

in the expected direction, but they are less pronounced than expected. On the contrary, results confirm that Turkish girls have substantively higher idealistic occupational aspirations than majority native-born girls. These results may explain why we did not find the expected pattern of gender specificity of students' aspired occupations. The differences in interest orientation, family orientation, and normative gender-role attitudes between majority native-born and Turkish girls are possibly too weak to yield meaningful differences in the gender specificity of the aspired occupation. At the same time, the differences in the level of occupational aspirations might be strong enough to cancel the possible cumulative effects of the above-mentioned factors.

18.5.2 Multivariate Analyses

Figure 18.2 reports the average marginal effects from the multinomial regression models of the gender specificity of the aspired occupation on the ethnicity of the female students.⁵ In a first step, we run a model without control variables that replicates the bivariate findings: whereas majority native-born and Turkish girls are equally likely to aspire to a male-dominated job, the probability of aspiring to an integrated profession is about 5 percentage points higher for Turkish than for majority native-born girls, and the probability of aspiring to a female-dominated job is roughly 5 percentage points lower (Model 1). After controlling for school achievement and attainment and for family background, these initially unexpected differences substantially increase to about 15 and 14 percentage points respectively (Model 2).

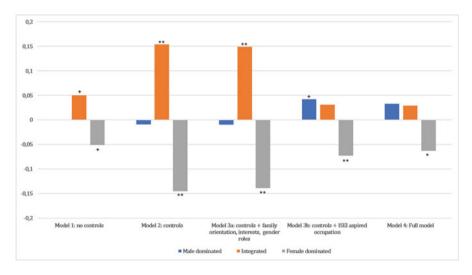


Fig. 18.2 Average marginal effects from multinomial regression models of the gender specificity of the aspired occupation on the ethnicity of the female students (Turkish vs. majority native-born girls)

Sources: NEPS-SC4_R_6-0-0; own calculation and illustration. Note: Results based on multinomial logit regressions. Average marginal effects shown. Significance: $^{\dagger}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$; data weighted. Missing data are handled using multiple imputation (MID method)

⁵Because we have no clear theoretical assumptions about differences in the effects of the independent variables between majority native-born and Turkish girls, we do not include interaction effects with ethnicity in our main models in order to keep them parsimonious. To check whether our results are not influenced substantially by this decision, we additionally run models in which we interact all control variables with ethnicity. The main results concerning differences between majority native-born and Turkish girls in the gender specificity of the aspired occupation (average marginal effects) are similar to our main specification (see Fig. 18.A1 in the appendix).

The effect sizes remain largely unchanged when adding our indicators of family orientation, interest orientation, normative gender-role perceptions, and mothers' employment status (Model 3).⁶ This does not mean that these variables themselves do not affect the gender specificity of the aspired professions. Indeed, only family orientation is largely irrelevant; most other indicators show significant coefficients in the expected direction. Yet, these indicators do not substantially alter the betweengroup differences in gender-specific occupational preferences (Table 18.A1 in the Appendix).

Finally, taking the socio-economic status of the aspired professions into account explains most of the ethnic differences in gender specificity between native-born and Turkish girls (Models 3b and 4). As a result, the sizes of the differences are again similar to the bivariate findings, but now the difference in the probability of aspiring to a female-dominated occupation is statistically significant on the 5% level, whereas no statistically significant differences in aspiring to an integrated occupation are found between the two groups. Differences in the probability of aspiring to male-dominated occupations between majority native-born and Turkish girls are substantially and statistically non-significant in all model specifications.

We can therefore conclude that, contrary to our expectations, Turkish girls do *not* aspire to female-dominated jobs more than majority native-born girls do, even though native-born girls are more likely to have employed mothers, better school achievement, and a higher-status family background. Our results suggest that this finding can be explained largely by the high career aspirations of young women of Turkish origin and the fact that gender-mixed occupations generally have a higher socio-economic status than female-dominated occupations.

18.6 Conclusions and Discussion

Women with a Turkish migration background are less likely to be economically active, more likely to be unemployed, and more likely to be employed in low-paid, low-status jobs than other women with or without a migration background (e.g., Schührer, 2018, pp. 32–33; Stichs, 2008, p. 48). Improving their labour market situation would require considerable efforts to enhance their human capital and particularly their vocational skills.

It seems problematic in this regard that comparatively few Turkish girls start apprenticeships, and that those who do tend to pursue apprenticeships in female-dominated occupations (BMBF, 2019, p. 67; Siegert, 2009, p. 35). The concentration in female-dominated occupations reinforces the relatively weak labour market position of women with a Turkish migration background in Germany, because

⁶ Additional analyses show that the main results do not change when we do not consider normative gender-role perceptions in our multivariate models.

female-dominated occupations are, on average, less well paid and offer limited career mobility (Cotter et al., 2004; Hakim, 1998; Magnusson, 2009, 2013).

Against this background, we investigated whether young women of Turkish descent tend to self-select into female-dominated occupations more than women without a migration background, because these occupations are more reconcilable with family obligations, offer tasks and a professional environment that coincide with so called female interests and skills, and are commonly considered appropriate for women.

We focused our analyses on comparing the gender-specific occupational preferences of female adolescents with a Turkish migration background to those of female adolescents without any migration background, and we related these preferences to the young women's interests, family orientations, normative gender-role perceptions, and the socio-economic status of the aspired profession.

Contrary to our expectations, results indicate that Turkish girls less often aspire to female-dominated occupations than majority native-born girls. Instead, they prefer integrated occupations that tend to be more prestigious and better paid. This might be due mostly to their ambitious occupational aspirations, because the gap between native-born and Turkish girls is reduced substantively after controlling for aspirations.

In contrast, ethnic differences in the gender typicality of occupational aspirations are largely unaffected once the gender specificity of interests, family orientation, and normative gender-role perceptions are accounted for in the multivariate analyses. This indicates that the motive to maintain or improve one's status is indeed very important for gender-specific occupational aspirations and decisions (see Becker & Glauser, 2015). However, we must also consider that the gender typicality of the gender-specific socialization factors did not differ substantially between the groups.

The question remains, however, why female adolescents with a Turkish migration background are so often in disadvantaged labour market positions, even though they start out with high aspirations and generally do *not* aspire more to work in female-dominated occupations. The most obvious explanation is that external constraints prevent Turkish girls from obtaining their desired professions. Diehl et al. (2009, p. 58) show that adolescents with a migration background have much lower chances of securing their desired apprenticeship than those without a migration background. Hunkler (2014, p. 253) likewise finds that young women with a migration background have lower chances of obtaining a more prestigious office job than young women without this background.

Because integrated occupations normally require better school-leaving qualifications than female-dominated jobs do, it seems obvious that the discrepancy between aspirations and reality is due largely to the rather weak educational performance of Turkish girls that fails to match their career aspirations. Our finding that the ethnic gap is explained strongly by the high career aspirations of young women of Turkish origin also points in this direction.

Because NEPS data provide information on both idealistic and realistic occupational aspirations of 9th graders (both measured in Wave 2), we can investigate this

| | No migration b | No migration background | | Turkish migration background | |
|----------------------|--------------------|-------------------------|--------------------|------------------------------|--|
| Occupation | Desired occupation | Expected occupation | Desired occupation | Expected occupation | |
| Male- dominated | 11.2% | 10.4% | 11.2% | 7.1% | |
| Integrated | 62.4% | 48.2% | 67.4% | 47.4% | |
| Female- dominated | 26.4% | 41.4% | 21.4% | 45.5% | |
| N | 3758 | 3758 | | 315 | |

Table 18.3 Gender specificity of aspired vs. expected occupation

Sources: NEPS-SC4_R_6-0-0; own calculations and illustration

Note: Missing data are handled using multiple imputation (MID method)

question further by contrasting *desired*—that is, idealistic aspirations—with *expected* reality—that is, realistic aspirations.⁷

Both native-born German and Turkish young women clearly tend to expect that they will end up in a female-dominated occupation, although this is not what they want (Table 18.3). This is in line with Kleinert and Schels (2020), who find that occupational aspirations and the final occupational placement become increasingly gendered in the course of the transition from school to work, especially for young women. Yet, this discrepancy between idealistic and realistic aspirations is substantively larger for Turkish girls (about 24 percentage points) than for majority native-born girls (about 15 percentage points). Thus, already at this young age, a substantive share of girls with a Turkish migration background seem to anticipate that they will not attain their goals.

It also becomes clear that, whereas majority native-born girls are more likely to aspire to female-dominated occupations than Turkish girls, the opposite is true when it comes to expected occupations. This underlines the importance of focusing on the idealistic aspirations to answer our main research question: had we used the realistic aspirations, we would have come to the conclusion that young women with a Turkish migration background not only end up more often in female-dominated occupations than young women without a migration background but also more often aspire to do so.

With regard to the question why young women of Turkish descent are more likely to end up in female-dominated occupations than women without a migration background, we have shown that this cannot be attributed to their original preferences. Our results rather suggest that the actual labour market placement of young Turkish women is strongly affected by external conditions pushing them into female-dominated occupations. In light of this, there is a need for more research that takes a life-course perspective and identifies critical transitions and events that push (Turkish) women into female-dominated occupations.

⁷The question measuring realistic occupational aspirations was: 'Based on everything you currently know, what profession will you most likely have later on?'

Appendix

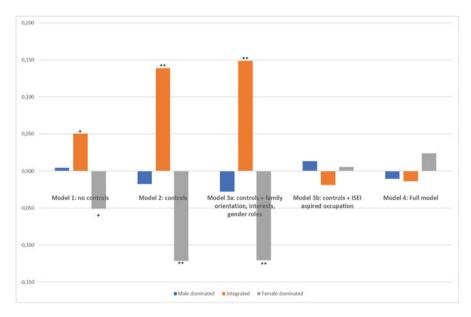


Fig. 18.A1 Average marginal effects from multinomial regression models of the gender specificity of the aspired occupation on the ethnicity of the female students (Turkish vs. majority native-born girls)—full interaction model

Sources: NEPS-SC4_R_6-0-0; own calculation and illustration. Note: Results based on multinomial logit regressions. Average marginal effects shown. Significance: +p < 0.10, *p < 0.05, **p < 0.01; data weighted. Missing data are handled using multiple imputation (MID method)

Table 18.A1 multinomial regression model of the gender specificity of the aspired occupation on the ethnicity of the female students (Turkish vs. majority native-born girls)

| | Male- dominated | Integrated | Female- dominated |
|--|---------------------------------|------------|----------------------|
| | | | |
| Turkish (Ref: Native) | 0.033 | 0.029 | -0.063* |
| Type of school (Ref: Gymnasium) | Type of school (Ref: Gymnasium) | | |
| Hauptschule | -0.005 | -0.104** | 0.109** |
| Comprehensive school | -0.008 | -0.098** | 0.106** |
| Realschule | -0.019 | -0.059** | 0.078** |
| Grade German | -0.004 | 0.010 | -0.006 |
| Grade mathematics | 0.004 | 0.007 | -0.011 |
| Highest occupational status parents (ISEI-08) | 0.000 | -0.000 | 0.000 |
| Highest qualification parents (Ref: Lower sec. degree with apprenticeship or less) | | | |
| Intermediate sec. degree (with apprenticeship) | 0.035* | -0.021 | -0.014 |
| At least Abitur | 0.040* | -0.013 | -0.027 |

(continued)

Table 18.A1 (continued)

| | Male- dominated | Integrated | Female- dominated |
|--|--------------------|------------|----------------------|
| Books in household | 0.001 | 0.010 | -0.011* |
| Practical/technical interests | 0.043** | -0.019* | -0.024** |
| Intellectual/research related interests | 0.010 | -0.016* | 0.005 |
| Artistical/linguistical interests | -0.021** | 0.044** | -0.023** |
| Social interests | -0.028** | -0.052** | 0.081** |
| Entrepreneurial interests | 0.032** | 0.023* | -0.055** |
| Conventional interests | -0.018* | 0.011 | 0.008 |
| Importance to have children | -0.000 | 0.001 | -0.000 |
| Aspired age first child | 0.003 | 0.006 | -0.010 |
| Equal proportion men and women in politics | -0.009 | 0.011 | -0.002 |
| Men should earn money, women should take care of household | -0.021* | -0.002 | 0.023* |
| Men better suited for certain professions | 0.008 | 0.008 | -0.016* |
| Mother's employment status (Ref: Not employed of | it least part time | ?) | |
| Employed in female-dominated job | -0.006 | 0.027 | -0.021 |
| Employed in not female-dominated job | 0.002 | 0.036+ | -0.038* |
| Socioeconomic status (ISEI-08) of aspired profession | -0.003** | 0.010** | -0.007** |
| N | | 4073 | |

Sources: NEPS-SC4_R_6-0-0; own calculations and illustration

Note: Results based on multinomial logit regressions. Average marginal effects shown

Significance: +p < 0.10, *p < 0.05, **p < 0.01; data weighted. Missing data are handled using multiple imputation (MID method)

References

- Achatz, J. (2008). Geschlechtersegregation im Arbeitsmarkt. In M. Abraham & T. Hinz (Eds.), Arbeitsmarktsoziologie. Probleme, Theorien, empirische Befunde (pp. 263–302). VS Verlag für Sozialwissenschaften.
- Becher, I., & El-Menouar, Y. (2014). Geschlechterrollen bei Deutschen und Zuwanderern christlicher und muslimischer Religionszugehörigkeit (Forschungsbericht des Bundesamtes für Migration und Flüchtlinge No. 21). Bundesamt für Migration und Flüchtlinge.
- Becker, G. S. (1975). *Human capital: A theoretical and empirical analysis with special reference to education*. Columbia University Press.
- Becker, G. S. (1985). Human capital, effort, and the sexual division of labor. *Journal of Labor Economics*, 3, 33–58.
- Becker, B. (2010). Bildungsaspirationen von Migranten—Determinanten und Umsetzung in Bildungsergebnisse (Working Paper No. 137, 210). Mannheimer Zentrum für Europäische Sozialforschung.
- Becker, R., & Glauser, D. (2015). Geschlechtsspezifische Berufswünsche und Ausbildungsentscheidungen. In K. Häfeli, M. P. Neuenschwander, & S. Schumann (Eds.), Berufliche Passagen im Lebenslauf (pp. 21–47). Springer VS.

- Beicht, U. (2015). Berufliche Orientierung junger Menschen mit Migrationshintergrund und ihre Erfolgschancen beim Übergang in betriebliche Berufsausbildung. Überblick über Ergebnisse quantitativer Forschung der letzten zehn Jahre in Deutschland sowie vergleichende Analysen auf Basis der BIBB-Übergangsstudien und der BA/BIBB-Bewerberbefragungen (Wissenschaftliches Diskussionspapier des Bundesinstituts für Berufsbildung No. 163). Bundesinstituts für Berufsbildung.
- Blossfeld, H.-P., Rossbach, H.-G., & von Maurice, J. (2014). Education as a lifelong process: The German National Educational Panel Study (NEPS) (Second revised edition). Springer VS.
- Buchmann, M., & Kriesi, I. (2012). Geschlechtstypische Berufswahl: Begabungszuschreibungen, Aspirationen und Institutionen. In R. Becker & H. Solga (Eds.), Soziologische Bildungsforschung. Sonderheft 52 der Kölner Zeitschrift für Soziologie und Sozialpsychologie (pp. 256–280). Verlag für Sozialwissenschaften.
- Bundesministerium für Bildung und Forschung (Ed.). (2019). Berufsbildungsbericht 2019. BMBF. Busch, A. (2011). Determinants of occupational gender segregation: Work values and gender (A) typical occupational preferences of adolescents (SFB 882 Working Paper Series No. 2).
- Busch, A. (2013). Die berufliche Geschlechtersegregation in Deutschland. Ursachen, Reproduktion, Folgen. Springer VS.
- Charles, M., & Buchmann, M. (1994). Assessing micro-level explanations of occupational sex segregation: Human-capital development and labour market opportunities in Switzerland. *Schweizerische Zeitschrift für Soziologie*, 20, 595–620.
- Cotter, D. A., Hermsen, J. M., & Vanneman, R. (2004). *Gender inequality at work*. Russell Sage Foundation.
- Diehl, C., Friedrich, M., & Hall, A. (2009). Jugendliche ausländischer Herkunft beim Übergang in die Berufsausbildung: Vom Wollen, Können und Dürfen. Zeitschrift für Soziologie, 38(1), 48–67.
- Dunne, F. (1980). Occupational sex-stereotyping among rural young women and men. Rural Sociology, 45, 396–415.
- Dütsch, M., Liebig, V., & Struck, O. (2013). Erosion oder Stabilität der Beruflichkeit? Eine Analyse der Entwicklung und Determinanten beruflicher Mobilität. Kölner Zeitschrift für Soziologie und Sozialpsychologie, 65, 505–531.
- Eccles, J. (1987). Gender roles and women's achievement-related decisions. Psychology of Women Quarterly, 11, 135–172.
- Eccles, J. S., & Hoffman, L. W. (1984). Sex roles, socialization, and occupational behavior. In H. W. Stevenson & A. E. Siegel (Eds.), *Child development research and social policy* (Vol. 1, pp. 367–420). University of Chicago Press.
- Hakim, C. (1998). Social change and innovation in the labour market: Evidence from the census SARs on occupational segregation and labour mobility, part-time working and student jobs. Oxford University Press.
- Haller, A. O. (1968). On the concept of aspiration. Rural Sociology, 33, 484-487.
- Helbig, M., & Leuze, K. (2012). Ich will Feuerwehrmann werden! Wie Eltern, individuelle Leistungen und schulische Fördermaßnahmen geschlechts(un-)typische Berufsaspirationen prägen. Kölner Zeitschrift für Soziologie und Sozialpsychologie, 69, 91–122.
- Hunkler, C. (2014). Ethnische Ungleichheit beim Zugang zu Ausbildungsplätzen im dualen System. Springer VS.
- Kleinert, C., & Schels, B. (2020). Zurück zur Norm? Kompromissbildung zwischen geschlechtstypischen und –untypischen Berufsaspirationen, Bewerbungs- und Ausbildungsberufen. Kölner Zeitschrift für Soziologie und Sozialpsychologie, 72(Suppl 1), 229–260.
- Konietzka, D. (1999). Ausbildung und Beruf. Die Geburtsjahrgänge 1919–1961 auf dem Weg von der Schule in das Erwerbsleben. VS Verlag für Sozialwissenschaften.
- Magnusson, C. (2009). Gender, occupational prestige, and wages: A test of devaluation theory. *European Sociological Review*, 25(1), 87–101.

Magnusson, C. (2013). More women, lower pay? Occupational sex composition, wages and wage growth. *Acta Sociologica*, 56(3), 227–245.

- Moen, P., Erickson, M. A., & Dempster-McClain, D. (1997). Their mother's daughters? The intergenerational transmission of gender attitudes in a world of changing roles. *Journal of Marriage and Family*, 59(2), 281–293.
- Müller, W., & Kogan, I. (2010). Education. In S. Immerfall & T. Göran (Eds.), *Handbook of European societies. Social transformations in the 21st century* (pp. 217–290). Springer.
- Nauck, B. (1999). Sozialer und intergenerativer Wandel in Migrantenfamilien in Deutschland. In R. Buchegger (Ed.), Migranten und Flüchtlinge: Eine familienwissenschaftliche Annäherung (pp. 13–69). Österreichisches Institut für Familienforschung.
- Polachek, S. W. (1981). Occupational self-selection: A human capital approach to sex differences in occupational structure. *Review of Economics and Statistics*, 63, 60–69.
- Salikutluk, Z. (2016). Why do immigrant students aim high? Explaining the aspiration-achievement paradox of immigrants in Germany. *European Sociological Review*, 32(5), 581–592.
- Salikutluk, Z., Giesecke, J., & Kroh, M. (2020). The situation of female immigrants on the German labour market: A multi-perspective approach (SOEP papers on Multidisciplinary Panel Data Research No. 1072).
- Schührer, S. (2018). Türkeistämmige Personen in Deutschland. Erkenntnisse aus der Repräsentativuntersuchung "Ausgewählte Migrantengruppen in Deutschland 2015" (RAM) (Working Paper des Forschungszentrums des Bundesamtes für Migration und Flüchtlinge No. 81). Bundesamt für Migration und Flüchtlinge.
- Seebaß, K., & Siegert, M. (2011). *Migranten am Arbeitsmarkt in Deutschland* (Working Paper 36 der Forschungsgruppe des Bundesamtes, aus der Reihe "Integrationsreport", No. 9). Bundesamt für Migration und Flüchtlinge.
- Sewell, W., & Hauser, R. (1972). Causes and consequences of higher education: Models of the status attainment process. *American Journal of Agricultural Economics*, 54(5), 851–861.
- Sewell, W. H., Archibald, O. H., & Portes, A. (1969). The educational and early occupational attainment process. *American Sociological Review*, *34*, 82–92.
- Siegert, M. (2009). Berufliche und akademische Ausbildung von Migranten in Deutschland (Working Paper 22 der Forschungsgruppe des Bundesamtes, aus der Reihe "Integrationsreport", No. 5). Bundesamt für Migration und Flüchtlinge.
- Skopek, J., Pink, S., & Bela, D. (2013). Starting cohort 4: 9th grade (SC4) SUF version 1.1.0 data manual—National Educational Panel Study (NEPS). University of Bamberg.
- StataCorp. (2013). Stata multiple-imputation reference manual—Release 13. Stata Press.
- Statistisches Bundesamt. (2019). Bevölkerung und Erwerbstätigkeit. Bevölkerung mit Migrationshintergrund—Ergebnisse des Mikrozensus 2018 (Fachserie 1 Reihe 2.2).
- Statistisches Bundesamt. (2020). Bevölkerung und Erwerbstätigkeit. Bevölkerung mit Migrationshintergrund—Ergebnisse des Mikrozensus 2019 (Fachserie 1 Reihe 2.2).
- Statistisches Bundesamt/Wissenschaftszentrum Berlin für Sozialforschung. (2016). Datenreport 2016. Ein Sozialbericht für die Bundesrepublik Deutschland. In Zusammenarbeit mit: Das Sozio-oekonomische Panel (SOEP) am Deutschen Institut für Wirtschaftsforschung (DIW Berlin). Bundeszentrale für politische Bildung (bpb).
- Stichs, A. (2008). Arbeitsmarktintegration von Frauen ausländischer Nationalität in Deutschland. Eine vergleichende Analyse über türkische, italienische, griechische und polnische Frauen sowie Frauen aus den Nachfolgestaaten des ehemaligen Jugoslawiens (Working Paper der Forschungsgruppe des Bundesamtes für Migration und Flüchtlinge No. 20). Bundesamt für Migration und Flüchtlinge.
- Trappe, H. (2006). Berufliche Segregation im Kontext. Über einige Folgen geschlechtstypischer Berufsentscheidungen in Ost- und Westdeutschland. Kölner Zeitschrift für Soziologie und Sozialpsychologie, 58(1), 50–78.
- von Hippel, P. T. (2007). Regression with missing Ys: An improved strategy for analyzing multiply imputed data. *Sociological Methodology*, *37*, 83–117.

Weiss, H., & Wittmann-Roumi Rassouli, M. (2007). Ethnische Traditionen, religiöse Bindungen und "civic identity". In H. Weiss (Ed.), Leben in zwei Welten. Zur sozialen Integration ausländischer Jugendlicher der zweiten Generation (pp. 155–188). VS Verlag für Sozialwissenschaften.

Wicht, A. (2016). Occupational aspirations and ethnic school segregation: Social contagion effects among native German and immigrant youths. *Journal of Ethnic and Migration Studies*, 42, 1825–1845.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

