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Reasons for and consequences of ethnic differences in parental support during the transition to apprenticeship training in Germany

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Reasons for and consequences of ethnic differences in parental support during the transition to apprenticeship training in Germany

In this paper, we examined reasons for ethnic differences in parental support at the transition to apprenticeship training in Germany and their consequences for the likelihood of finding a training position and the likelihood of premature training termination. We extended previous research by focusing on three different types of parental support: help with writing applications, information about open training positions, and efforts towards getting their children a position. Using longitudinal data from Starting Cohort 4 (SC4) of the German National Educational Panel Study (NEPS), we show that part of ethnic differences in these types of support can be explained by measures of ethnicity-related background characteristics. Moreover, the relations of receiving-country-specific resources to parental support propensities seem to be domain specific. Furthermore, we find that only minority trainees benefit from writing support in terms of finding training and training success. In contrast, if parents made efforts to get their children a position, both minority and majority school-leavers are less likely to start training and, in the case of majority trainees, to finish training successfully. These are important findings as they give new insights into the reasons for ethnic disadvantages in parental support during the transition to apprenticeships and into the relation of different types of parental support to the training search success and premature termination risks.

Keywords: Premature termination of apprenticeship training; parental support; ethnic differences; school-to-work transition; vocational training

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Introduction[1] [2]

The transition from school to the labour market is a crucial period in a young person's life (Unt et al., 2021), and a growing body of research underscores the importance of parental support during this time (Manzoni, 2018; Meo et al., 2021; Unt et al., 2021). Such support might include financial assistance, emotional support, or providing housing (Manzoni, 2018; Manzoni and Gebel, 2024), but also direct assistance at the transition to first employment, such as information on open positions, help during the application phase, or referring their children to vocational training positions (Flohr and Protsch, 2023; Hoenig, 2019; Lindemann and Gangl, 2019; Roth, 2014; Roth and Weißmann, 2023).

At the same time, such parental support is not equally available for ethnic minority and majority adolescents alike, even when considering differences in socioeconomic status (Flohr and Protsch, 2023; Roth and Weißmann, 2023; Verhaeghe et al., 2013). In addition, there are good reasons to assume that the effectiveness of support differs between immigrant and native parents (Baalbergen and Jaspers, 2023; Esser, 2004; Friedberg, 2000; Kanas et al., 2012; Kretschmer, 2019). However, even though studies from different European countries consistently show that ethnic minorities are disadvantaged at the transition from school to the labour market (e.g., Beicht and Walden, 2019; De Vries and Wolbers, 2004; Helland and Støren, 2006; Silberman et al., 2007), research on

[1] This paper uses data from the German National Educational Panel Study (NEPS; see Blossfeld and Roßbach, 2019). NEPS is carried out by the Leibniz Institute for Educational Trajectories (LIfBi) in cooperation with a nationwide network.
The NEPS study is conducted under the supervision of the German Federal Commissioner for Data Protection and Freedom of Information (BfDI) and in coordination with the German Standing Conference of the Ministers of Education and Cultural Affairs (KMK) and – in the case of surveys at schools – the Educational Ministries of the respective Federal States. All data collection procedures, instruments and documents were checked by the data protection unit of the Leibniz Institute for Educational Trajectories (LIfBi). The necessary steps are taken to protect participants' confidentiality according to national and international regulations of data security. Participation in the NEPS study is voluntary and based on the informed consent of participants. This consent to participate in the NEPS study can be revoked at any time.
[2] Disclosure statement: The authors report there are no competing interests to declare.

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how differences in parental support contributes to ethnic differences in this transition is still developing (e.g., Roth and Weißmann, 2022).

Social support at the transition to first employment should not only affect the chances of finding *any* position, but should also increase the chances of entering an employment relation with a *fitting* position with a lower risk of a quick termination of these employment relations (Schlachter and Pieper, 2019). Nonetheless, the relation between parental support and first employment stability remains largely understudied in general. For Sweden, Kramarz and Skans (2014) show that graduates who enter their parents' company for their first job find that position faster and remain in this job longer than others. For Germany, in contrast, where the apprenticeship training system is a major gateway for the transition to the labour market and where the apprenticeship position often also turns into the first regular job in the same company (BMBF–Federal Ministry of Education and Research, 2022), Flohr and Protsch (2023) show little evidence that referrals from parents are related to their children's risk of premature apprenticeship termination. Effects of other means of involvement that encompass different forms of support, however, remain untested.

Using longitudinal data from Starting Cohort 4 (Grade 9 students) of the German National Educational Panel Study (NEPS), we examine three research questions. First, we ask why majority and minority apprentices differ in the amount of different types of parental support. Second, we ask how different types of parental support influence the chances of finding a training position and, for those who were successful, training termination risks. And third, we examine ethnic-specific effects of parental support on search success and termination risks. In doing so, we aim at closing several research gaps.

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First, previous research either relied on the indirect measurement of parental support, such as parents' endowment with labour market contacts (e.g., Roth, 2018; Roth and Weißmann, 2022), or examined only a single indictor. For instance, Flohr and Protsch (2023) analyze the relation of parental referrals to training termination. Lindemann and Gangl (2019) test whether (expected) information on open positions from parents can mediate the relation between parental unemployment and starting an apprenticeship instead of vocational preparation courses. In contrast, Hoenig (2019) considers both parental information and parental efforts to get a position, however, with a focus on further training or education paths of all lower secondary school-leavers rather than those who actually apply for vocational training. In this study, we will extend current quantitative research and focus on three support types of parents that are directly related to help during the transition to vocational training: information on open training positions, help with writing applications, and making an effort to get their child a training position. In doing so, we shed more light on different ways parents can support their children at this transition and on the extent to which this assistance pays off.

Second, while previous research has documented ethnic differences in different types of parental support also after controlling for socioeconomic background indicators (Beicht and Granato, 2010; Flohr and Protsch, 2023; Roth and Weißmann, 2023), an attempt to explain these ethnic residuals has yet to be made. In our study, we will include several receiving-country-specific human capital indicators of parents that are theoretically related to their support abilities and investigate the extent to which they are able to explain ethnic residuals in parental support.

Third, we will assess the effect of parental support on both the transition to training and on subsequent training success. In doing so, we present a more holistic picture of the role

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of parental support in the longer process of school-to-work transitions. This also allows for the detection of potentially differentiated effects of parental support at different stages of the transition process. With the exception of Kramarz and Skans (2014), we are not aware of any study that takes on this perspective, let alone regarding ethnic differences.

Lastly, analyzing the nexus between parental support, training success, and ethnicity allows for the incorporation of domain-specific support abilities of parents from different backgrounds. We thus attempt to further close in on the mechanisms through which parents do or do not influence youth labour market success in general, and how such support shapes training success of minority and majority adolescents differently in particular.

On a societal level, our results can contribute to a better understanding of the role of social embeddedness for training outcomes and thus later labour market success and advances research on social and ethnic stratification on the labour market. This is a highly relevant question as parental support represents a non-ability related factor that is basically acquired by birth, and its influence on labour market success challenges common perceptions of fairness in meritocratically oriented systems.

Our paper starts with an overview of the German apprenticeship system, its relevance for labour market success, and the reasons for success and failure within the system. We then proceed with theoretical assumptions about the role of parental support for training success in general, and ethnic differences herein in particular. After describing the data source and our analytical strategy, we present our findings. The paper closes with a discussion of the results and their relevance for the research field.

Success and failure in the German apprenticeship system

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In Germany, fully qualifying, non-tertiary vocational training is either organised as apprenticeship training in the so-called "dual system" (around two thirds of trainees) or as school-based vocational training (around one third of trainees; BMBF–Federal Ministry of Education and Research, 2022; Solga et al., 2014). Both types of training lead to fully qualifying vocational certificates if completed successfully, however, in largely separate occupations and within different institutional configurations (Solga et al., 2014). Trainees in the dual system work as apprentices full-time in companies for three to four days a week and attend vocational schools on the remaining one to two days. Companies provide practical training and pay their trainees a small salary. Trainees in full-time schools also have substantive workplace training, usually via internships (Solga et al., 2014). To start an apprenticeship, school-leavers must apply for a position with companies that provide training and who are free to choose between applicants which means that the selection into training positions in the dual system is comparable to other matching processes on the general labour market, and apprenticeship training largely consists of practical work (Roth, 2018). Trainees in school-based programmes usually do not receive remuneration or even have to pay fees, and selection processes might be more standardised and less dependent on individual decisions if school-leavers apply with vocational schools (see Granato and Ulrich, 2014: 209f.).

Around half of an age cohort starts training in the dual system, and more than three out of four successful apprentices are employed in their training company after apprenticeship completion (BMBF–Federal Ministry of Education and Research, 2022). Thus, apprenticeship training represents not only the first steps in the labour market, but for many, it is also the transition to the first employment. However, not all school-leavers who have obtained an apprenticeship position necessarily remain there until the end: Around 25 percent of all apprenticeship training contracts are terminated prematurely,

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and while around 64 percent of those continue with any type of qualifying education and training, only around 20 percent do so seamlessly (BMBF–Federal Ministry of Education and Research, 2022, p. 78; Uhly, 2015). There are no centralised registers on training termination outside of the dual system, but survey research suggests that training termination here is equally high during the first year and even higher afterwards (Beicht and Ulrich, 2008; also see Supplementary Table S7 in Holtmann and Solga, 2023).

Research consistently shows disadvantages of ethnic minorities at the transition to apprenticeships, also after controlling for socioeconomic and human capital indicators (e.g., Beicht and Walden, 2019, 2013). In contrast, differences between ethnic minority and majority apprentices in the likelihood of premature training termination seems to be either small or non-existent (e.g., Beicht and Walden, 2013; Flohr and Protsch, 2023; Holtmann and Solga, 2023; Rohrbach-Schmidt and Uhly, 2015). To the best of our knowledge, no study exists to date that investigates termination risks of different immigrant generations. However, given that immigrant parents differ in how long they have lived in Germany and thus differ in the time they had to acquire receiving-country-specific capital, we can expect differences in their ability to support their children during education and training.

Regarding the reasons for premature training terminations, both prospective and retrospective studies show that mismatches in terms of occupational preferences or mismatches between apprentices' ability and positions' requirements are among the main reasons for unsuccessful training episodes (Ahrens et al., 2021; Beckmann et al., 2023; Beicht and Ulrich, 2008; Beicht and Walden, 2013; Rohrbach-Schmidt and Uhly, 2015). Research on general labour markets suggest that such mismatches might be reduced through information and support from social contacts before starting employment (see

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Fernandez et al., 2000). Since school-leavers usually do not possess labour market relevant social connections, parents can work as a substitution: They usually have labour market experience themselves, are comparatively easily available and should be motivated to support their children (Moerbeek and Flap, 2008; Roth, 2018). Consequently, to obtain a training position, young school-leavers largely draw on help from their parents, either for vocational orientation, information, or direct support (Beicht and Granato, 2010; Hoenig, 2019; Roth, 2014).

In the following, we will first delineate how parental support can increase the likelihood of finding a training position and decrease the likelihood of premature training termination, before we turn to the reasons for ethnic differences in availability and effectiveness of such support.

Theoretical considerations

Parental support and apprenticeship training success

Parents can support their children during the transition to vocational training in numerous ways (Beicht and Granato, 2010; Flohr and Protsch, 2023; Hoenig, 2019; Roth, 2014; Roth and Weißmann, 2023): During the orientation phase, parents can provide information about the vocational training system as well as about training occupations and companies and can help searching for open training positions, which broadens the choice set of types of occupations and companies for apprenticeship seekers. Parents can also try to improve their children's chances to obtain their desired training position. During the application process, they can support school-leavers by helping with writing applications, or during the preparation for interviews. Moreover, parents can help their children to get into contact with training companies or directly refer them to employers and training companies.

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As a result, school-leavers who have experienced parental support during vocational training search should have had more diverse information about occupations, companies, and the application process. They can be expected to have sent out better-crafted applications and should have been better prepared for interviews. Lastly, it is more likely that they had been referred to companies. Therefore, we expect that school-leavers who have experienced support from their parents during the vocational training search are more likely to find a vocational training position ("finding" Hypothesis F1).

Potential benefits of parental support can be expected to not only be visible during the search for a training position, but also among those who started training. We can assume that trainees who have experienced social support during vocational training search should have made better-informed decisions, should have been better prepared for the application process and consequently should be more likely to have found a training position that matches both their abilities and their desires (Dustmann et al., 2016; Fernandez et al., 2000; Fernandez and Weinberg, 1997; Schlachter and Pieper, 2019). Trainees should consequently be less likely to be disappointed with or over- or underwhelmed by the working conditions and should be more satisfied with their training. Parental support can thus not only increase the chance of finding *any* training position, but also to find a *fitting* training position. At the same time, if parents have put effort into getting a training position for their children, they might feel especially obligated towards their parents to perform well on the training and to continue training in the company, even if they are not satisfied with the position (Dhillon et al., 2020; Fernandez et al., 2000). Therefore, we expect that trainees who have experienced support from their parents during the transition to the vocational training system are less likely to prematurely drop out of training compared to trainees who have not experienced such support from their parents ("premature termination" Hypothesis PT1).

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Apart from these beneficial aspects, it might also be that school-leavers who receive help from their parents do so because they need help more strongly (Flohr and Protsch, 2023; Kramarz and Skans, 2014). However, while turning to parents for help during the transition to vocational training is quite common (Beicht and Granato, 2010; Hoenig, 2019; Roth and Weißmann, 2023), especially direct referral efforts might be an indicator that school-leavers' chances of finding training through other, formal channels where they have to compete with other applicants are low ("limited choices"; Loury, 2006; Oesch and Von Ow, 2017). School-leavers with lower levels of human capital or otherwise unfavourable apprenticeship chances might especially rely on such means of getting training positions (Flohr and Protsch, 2023; Kramarz and Skans, 2014; Loury, 2006; Oesch and Von Ow, 2017). Parental efforts to get a position might then be an indicator of negatively selected school-leavers and beneficial outcomes of parental efforts might be visible only when this negative selection is accounted for.

Ethnic differences in parental support

Majority and minority school-leavers can be expected to differ in how much parental support shapes their success in the vocational training system, either because minority school-leavers are not able to access support from their parents, or because this support is less effective ("capital deficit" and "return deficit"; Lin, 2004; see for instance Baalbergen and Jaspers, 2023).

For one, differences between native and immigrant parents in their ability to support their offspring might stem from reasons coupled with their socioeconomic position (Roth and Weißmann, 2023). We can expect that employed parents or parents in structurally stronger positions on the labour market are more likely to be able to provide their children with helpful information about vacancies or hiring procedures and might have better

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connections for referring them to employers (Lin, 2004; Lindemann and Gangl, 2019). Ethnic minorities, however, less often occupy favourable positions on the labour market and are more often unemployed (Kalter and Granato, 2007).

Furthermore, other labour market relevant resources such as language competency, knowledge about educational institutions, or social networks, are largely country-specific, and the value of such resources might be diminished or entirely lost if acquired abroad (Esser, 2004; Friedberg, 2000; Kalter, 2006). Since foreign-born immigrants are mostly socialized outside of the destination country, their social and cultural resources are often origin-country specific, thus limiting their ability to support their children during the vocational training search: They have on average fewer information about the apprenticeship system, possess poorer receiving-country language skills, and have fewer native labour market contacts compared to native parents (Kanas et al., 2012; Kretschmer, 2019; Roth and Weißmann, 2022). This should especially the case for immigrant parents that have lived in the receiving country for a shorter time or that do not have native partners. Overall, we expect that ethnic disadvantages regarding parental support that exist after controlling for measures of socioeconomic background can at least partly be explained by measures of social and cultural integration ("ethnic differences" Hypothesis ED).

At the same time, we expect certain types of capital to be especially important for certain types of support abilities: To be able to help their children with writing applications, parents need to have a sufficient command of the receiving-country language (here: German). Likewise, parents with a poorer command of the German language should have a harder time to contact training companies or schools and recommend their child for a training position. Thus, we expect that parents with poorer language abilities less often

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help their children with crafting their applications ("language" Hypothesis L1) and less often directly engage in efforts to get them a training positions ("language" Hypothesis L2).

Moreover, helping one's children with writing convincing applications or gathering information about relevant training positions requires a certain degree of knowledge about the vocational training system. Parents that have not acquired their vocational degree in Germany consequently lack familiarity and knowledge (Kretschmer, 2019) and should be less able to provide such support for their children. Thus, we expect that parents that have not gone through the vocational training system themselves are less likely to help their children with writing applications ("knowledge" Hypothesis K1) and are less likely to provide relevant information about open training positions ("knowledge" Hypothesis K2).

Lastly, parents can be assumed to use their social contacts on the labour market to broaden their knowledge about open training positions or to make contact with training companies (Roth, 2018) and it is argued that especially native contacts are helpful for that (Roth and Weißmann, 2022). Thus, we expect that parents that have more German contacts on the labour market are more likely to provide their children with information about open training positions ("contacts" Hypothesis C1) and are more likely to directly engage in efforts to get them a training position ("contacts" Hypothesis C2).

Ethnic differences in the effectiveness of parental support for premature training termination

However, even if native and immigrant parents of school-leavers would have equally supported their children, their support might have differed in its effectiveness in increasing chances of finding a position and in reducing the risk of premature training

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termination ("return deficit"; Lin, 2004; see also Baalbergen and Jaspers, 2023). As described above, labour market relevant resources that are important when supporting ones children at the transition to vocational training, such as language competency or knowledge about the vocational training system, are context specific, their value might not be easily transferred to the other country contexts (Esser, 2004; Friedberg, 2000). This means that support from parents who lack the receiving-country-specific aspects of such resources might less often lead to success in terms of finding a position or keeping such a position, for instance, because applications are not better if parents helped of information on positions is limited.

Clearly, help with applications can be expected to be subpar in the case of language barriers or when parents have fewer information about the training system. This also means that information from parents about open positions might be limited and less helpful if they do not know the German apprenticeship system well. This should also be the case if the parents' command of the German language is poorer, and their social network consists of fever native contacts. Thus, parental support from immigrant parents should be less effective in finding a training position as well as in reducing the risk of premature training termination compared to that of native parents. Therefore, we expect that parental support increases the likelihood of finding a training position to a stronger degree for majority than minority training applicants ("finding" Hypothesis F2). Moreover, we expect that for those who found a training position, parental support decreases the likelihood of premature training termination to a stronger degree for majority than for minority trainees ("premature termination" Hypothesis PT2).

Data and analytical approach

Data source and sample selection

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To test our assumptions, we use data from Starting Cohort 4 (SC4) of the German National Educational Panel Study (NEPS Network, 2021), a panel sample of Grade 9 students in Germany. The nationally representative sample of school classes was first interviewed in school year 2010/11, and respondents were subsequently interviewed over the course of their educational careers. In addition to interviews with pupils, also parents were interviewed in Wave 1. The data set comprises information on general and vocational education and training trajectories from the age of 14 or 15 onwards, as well as important information about the socioeconomic and ethnic origin of the young adults.

In the NEPS survey, respondents that have left the general education system were asked if they have applied for a vocational training position in the past. For our analyses, we focus on the first time respondents reported that they have applied for such a training position (N=8,534; in the following, we will refer to this date as 'anchor date'). Since we included results from ability tests in Grade 9 in our analyses (see below), we excluded students from schools for special needs as their tests differed from those for the rest (N=621). We furthermore excluded school-leavers who reported in the same wave that they have applied for a university position (N=642).

Finding a vocational training position and premature training termination

We first defined whether vocational training applicants found a vocational training position. We defined training applicants as successful if they started vocational training between the time of the anchor date and the time of the last survey participation before this date (value '1'). For interviews that were conducted between October and March, we also considered vocational training episodes that started until the next April to also capture those trainees who were initially unsuccessful but filled in remaining open

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training positions later in the same training year.[3] Since trainees might also apply for positions more than twelve months in advance, the first reported application might refer to the next training year rather than the current. Thus, we also included training episodes that started until April one year after the anchor date if respondents were not successful in the past but at the same time indicated that they did not want to start training in the current year (214 out of 4,746 respondents).[4] The remaining training applicants were defined as unsuccessful (value '0'; N=2,367).

For those who found a vocational training position (N=4,757), we defined whether trainees prematurely terminated their training. For this, we created a dummy variable that took on the value '1' if they acquired a vocational degree from this training episode and the value '0' if they terminated their training without a degree. If respondents reported more than one episode during the time frame, we considered the first observed training episode.[5]

Measures of parental support

To measure parental support, we rely on answers of apprentices on three different questions. First, school-leavers who reported that they applied for vocational training were asked if they received information about interesting open apprenticeship positions from their parents during their search. Second, they were asked whether parents actively

[3] We excluded respondents who started university education either instead of vocational training (N=115) or before they started training (N=28).
[4] We used additional survey information for this definition, such as on their reported initial plans, their plans in the preceding interview, and the application behaviour in the following wave. More information on the definition of successful transition can be found in the Supplementary Description S1 in the Appendix.
[5] We excluded N=37 respondents who reported having acquired tertiary vocational degrees or degrees not from dual training or full-time vocational schooling.

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engaged in efforts towards getting their children a training position.[6] Both measurements were included as dummy variables ('1': respondents received the support and '0' otherwise). In addition to this retrospective information, we include prospective information on expected help for those not (yet) in vocational training. Respondents were asked how likely it was that someone from their social circle would help them with writing an application for an apprenticeship position ("very unlikely, "rather unlikely", "rather likely", "very likely"). Respondents for which this was "rather" or "very" likely could indicate from what group of persons this help might come from. We created a dummy variable that took on the value '1' if respondents mentioned their parents and was coded '0' if parents were not mentioned or if such support was "rather" or "very" unlikely. Here, we used the last information available before the training episode of interest started.

Measures of socioeconomic and ethnic background

To assess differences between majority and minority apprentices, we differentiate German-born respondents with two German-born parents (majority respondents), foreign-born respondents (first generation), German-born respondents with two foreign-born parents (second generation), and German-born respondents with one foreign-born and one German-born parent (2.5 generation). To get a better understanding of whether possible differences between majority and minority school-leavers in amount and effectiveness of support are due to socioeconomic or migration-related differences, we consider several measures that are related to their socioeconomic and ethnic background (measured in Grade 9, i.e., before any transition has taken place):

[6] As respondents in vocational training during the interview were explicitly asked about parental efforts to get them their *current* position, we set this information to missing for respondents for which the current training episode was not the first observed training episode (N=96).

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As measures for socioeconomic background, we include parents' highest education degree (from lower secondary school; from intermediate secondary school; from upper secondary school; from university), parents' highest score of the International Socio-Economic Index of Occupational Status (ISEI), whether two-parents lived in the household, and the employment status of parents (no parent is employed; one parent is employed; both parents are employed). We derived these characteristics from the interviewed parent's answers about themselves and their partner. If information about one or two actors was not available from the parent interviews, we replaced it with information from the student interviews if available.

As measures for migration-related characteristics, we included three different indicators. First, we included a dummy variable that indicates whether respondents mostly or exclusively speak another language than German with at least one parent at home as a proxy for parents' language competencies and thus their ability to help their children. This information was taken from the student interview in Grade 9. Second, as an indicator for parents' knowledge about the vocational training system, we included a dummy that indicates whether at least one parent has received a German vocational training certificate. And third, to approximate parents' labour market relevant networks, we made use of information from a position generator (Lin and Dumin, 1986) administered during the parent interviews. The interviewed parent was asked whether they knew a person working in one of thirteen occupations. The position generator in NEPS includes six occupations that require university education (engineer, social worker, legal practitioner, medical doctor, translator, teacher) and seven occupations requiring non-university vocational education (nurse, warehouse/transport worker, salespersons, police officer, banker, motor mechanic, optician). If parents knew a person in one of the occupations, they were additionally asked whether this person was from Germany or abroad. For our network

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indicator, we used two indices: the sum of occupations in which parents knew a German person and the sum of occupations in which parents knew someone born abroad (each potentially ranging from 0 to 13 occupations). Information about the German vocational training degree and about parents' labour-market contacts were taken from parent interviews in Wave 1.

Control variables

To account for possible spurious correlations, we included several further variables also collected during Grade 9 and at the beginning of vocational training. Aside from standard demographic variables such as sex and year of birth (before 1995; 1995; after 1995), we considered several measures of respondents' academic ability. We controlled for the type of sampling school, their grades in math and German in Grade 9, as well as respondents' highest school leaving certificate at the time of the anchor date (for successful applicants: at the start of their vocational training; basic secondary school leaving certificate/no secondary school leaving certificate; intermediate school leaving certificate; upper secondary school leaving certificate). Moreover, we included the results from six different ability tests administered in Grade 9. Including these ability related indicators is necessary to factor out negative selection in the use of parental support.

For those in training, we controlled whether it was a dual training ('1') or school-based training ('0') and included dummy variables for the training occupation on the first-digit level (occupational area) of the 2010 German Classification of Occupations (KldB). Lastly, to account for regional differences in training opportunities, we included a dummy that indicates whether respondents lived in a small town or village area,[7] dummies for the

[7] RegioStar7 (Combined Regional Statistical Spatial Type) codes 74 and 77, taken from the RegioStaR data base (BMVI–Bundesministerium für Verkehr und digitale Infrastruktur, 2018).

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federal state, and the unemployment rate at the level of employment agency districts.[8] Regional information refers to the residence at the anchor date.

Analytical approach

We first estimated differences between majority and minority school-leavers in parental support. While it is a unique feature of the NEPS data to provide information from interviews with parents, only about 60 percent of parents participated in these interviews, which produced a non-negligible amount of missing information for variables that are only available from parents. Therefore, as a robustness check, we re-ran models in which we test the relation of receiving-country-specific variables to parental support measures, including only respondents with parent interviews in Wave 1 in our analyses and applied the parent weight as provided by NEPS to correct for unequal participation probabilities of parents.

To understand the relation of parental support during apprenticeship search to training outcomes, we assessed the relation of the three indicators of parental support to the likelihood of finding a training position and, for those who were successful, on the likelihood of premature training discontinuation.[9]

Since all dependent variables are of dichotomous nature, we apply binary logistic regression models and report average marginal effects. We also applied clustered standard errors, where the cluster variable was the employment agency district.

[8] Information on unemployment rates for Berlin refer to county-level information of the three agency districts. We obtained these data from the statistics web site of the German Federal Employment Agency (https://statistik.arbeitsagentur.de/DE/Navigation/Statistiken/Interaktive-Statistiken/Zeitreihen/Lange-Zeitreihen-Nav.html; retrieved 07.02.2023). Data refer to the area status of the districts in January 2023. Changes in the districts' areas in the past were coded accordingly.
[9] These models do not contain information on receiving-country-specific variables.

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To account for missing information on one or more variables due to item non-response, we applied multiple imputation using chained equations (mi impute, StataCorp, 2019), creating 20 multiply imputed data sets. Since we are interested in ethnic differences, we imputed missing values separately by migration background.[10] Cases with missing values on our dependent variables were included in the imputation models, but excluded in the respective analyses (MID, Von Hippel, 2007). We applied sampling weights in all analyses.[11]

Results

Descriptive results

We start with an overview of our variables of interest. Table 1 presents distributions of our sample across parental support, training search outcome, training termination, socioeconomic indicators, and receiving-country-specific background information. Minority school-leavers received less support from their parents during the transition to vocational training compared to their majority peers. This is apparent especially regarding help with writing applications, but also regarding information about interesting apprenticeship positions from their parents. Ethnic differences regarding parental effort towards getting them their position are least pronounced. Regarding differences between

[10] We therefore had to drop 61 cases without information on this variable. We ran separate imputation models for the training termination sample, only including trainees. Imputation models included three additional predictor variables: the regional classification of the school (rural, semi-urban, urban), information on parents' university aspirations for their children (as reported by respondents) and, only for the training termination sample, information on satisfaction with training. Occupational area and federal state were not part of the imputation models. Due to missingness on several variables and resulting problems during the imputation, we had to exclude observations with missing information on the employment agency district (N=15), on the federal state (N=6), on the rurality of the residence (N=4), on the year of birth (N=15), and (for the training termination sample), on the occupational area (N=72). Due to low case numbers among migrants, we merged Brandenburg and Mecklenburg-Vorpommern in the training termination models.

[11] The code of all data preparation steps and analyses can be found at https://osf.io/ndbst/?view_only=5c6e32feec60482a951f258bed921614

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immigrant generations, it is apparent that first-generation migrants received the least amount of parental support, while German-born minorities with one German-born and one foreign-born parent (2.5 generation) received the most support of all three minority groups. All three immigrant generations are less likely than their majority peers to have found a training position and are more likely to terminate their training prematurely compared to their majority peers.

[Table 1 about here]

Moreover, minority school-leavers less often live in two-parent-households and their parents more often only have the lowest education credentials. Moreover, children of immigrants more often have one or two unemployed parents, and their parents occupy occupations with a lower socioeconomic status. At the same time, minority school-leavers with two foreign-born parents mostly speak another language than German with at least one of their parents. Moreover, immigrant parents are less likely to possess a German vocational training degree and their labour market networks less often consist of German contacts and consist more often of foreign contacts. Values of receiving-country-specific variables for school-leavers with one German-born and one foreign-born parent come closest to those of majority school-leavers, but differences are still pronounced.

Overall, in line with previous research, we observe substantial differences both in parental support and socioeconomic and receiving-country-specific resources. In a next step, we will see how they relate to each other and affect the likelihood finding vocational training and the likelihood of premature training termination.

Ethnic differences in parental support

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We first start with attempting to explain ethnic differences in parental support. Table 2 shows average marginal effects of immigrant generation and social background indicators on the probability of receiving parental support during apprenticeship search (logit coefficients of the full models can be found in Table A1 Appendix). For each parental support measure, Models 1 shows average marginal effects of immigrant generation on parental support alongside controls for socioeconomic background indicators, while Models 2 additionally include our indicators for receiving-country-specific resources. All models additionally include all control variables as described above except for occupational area and type of the vocational training position.

[Table 2 about here]

[Figure 1 about here]

Models 1 and 2 of Table 2 and Figure 1 show a reduction of ethnic differences once ethnicity related background characteristics are controlled for (results from models that include only respondents with parent interviews in wave 1 can be found in Table A3 in the Appendix). These characteristics have a comparatively large impact on ethnic differences of first-generation migrants in parental help with applications, but also for the second generation. The reduction of ethnic residuals in receiving information about apprenticeship positions especially for the second and 2.5 generation is also comparatively large. Estimated differences in terms of effort of parents towards getting their children the vocational training position were lowest to begin with and are now statistically significant only at the ten percent level for the first generation and were rendered insignificant for the second generation. For the 2.5 generation, we could not find any differences to majority school-leavers to begin with. Overall, these results lend

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support for our Hypothesis ED. However, immigrant-specific reductions are statistically significant only regarding help with writing applications.[12]

A closer look at the coefficients of the receiving-country-specific characteristics reveals domain-specific correlations. Supporting our Hypothesis L1, foreign language use with parents as proxy for parents' language competency decreases the likelihood of receiving help with writing applications by around nine percentage points, which is around two thirds of the remaining estimate of first-generation migrants. In contrast, there are no significant correlations with the likelihood of receiving any of the other two types of parental support. Thus, our Hypothesis L2 about the negative relation of foreign language use at home and parental efforts to secure their children a position is not corroborated.[13]

Looking at the number of parents' labour market contacts, we find that the more German contacts parents have, the higher the likelihood is that they have passed on information about apprenticeship positions to their children or that they made efforts towards securing positions for them. However, both relations are statistically significant at the ten percent level. Nonetheless, estimate sizes are comparatively large: Knowing a native labour market contact in all of the 13 occupations of position generator would increase the likelihood of passing on information by around 12 percentage points and the likelihood of efforts to get a position by around nine percentage points. Estimates are even larger and statistically significant in the Models that include only parent interviews. Nonetheless, Hypotheses C1 and C2 are not fully corroborated.

[12] Results from testing the equality of estimates of parental support measures between models from seemingly unrelated estimations for different immigrant generations can be found in Table A2 in the Appendix.
[13] This estimate is twice as large and statistically significant in the models that only include respondents with parent interviews. However, since the measure stems from respondent interviews, we do not interpret this as corroboration of Hypothesis L2

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Lastly, having at least one parent that possess a German apprenticeship degree increases the likelihood of receiving help with writing applications by ten percentage points which is almost 80 percent of the remaining estimate for first-generation migrants. This corroborates our Hypothesis K1. In contrast, there is no relation to the likelihood of efforts towards securing positions or receiving information about open positions, thereby not corroborating Hypothesis K2.

In the next part, we will test how parental support relates to the likelihood of finding a vocational training position and, for those who were successful, on the likelihood of premature training termination.

Parental support and vocational training outcomes

Table 3 shows average marginal effects of immigrant generation and parental support indicators on the likelihood of finding a vocational training position and, for those who started training, on the likelihood of terminating training prematurely (logit coefficients of the full models can be found in Table A4 in the Appendix). It is apparent that neither indicator for parental support is positively related to the likelihood of finding a training position.[14] Thus, Hypothesis F1 is not corroborated. In contrast, school-leavers whose parents underwent efforts to get their children a training position are even *less* likely to obtain a training position. This might hint at a negative selection of school-leavers who have to rely on their parents' active involvement during the training position search

[14] Using the same data, Lindemann and Gangl (2019) find a positive relation of information from parents on being in dual vocational training instead of vocational preparation programmes for school-leavers without higher education entrance qualifications. However, in addition to analysing a different sample, they use a prospective, hypothetical measure. Comparing the findings might indicate that prospective indicators also measure general parental involvement that helps school-leavers and that actually providing information is not as relevant after all. The comparison of prospective and retrospective indicators, however, is beyond the scope of this paper.

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because their chances of finding employment via regular application channels are low (under "limited choices", Loury, 2006; see also Flohr and Protsch, 2023; Oesch and Von Ow, 2017). The estimate is also substantive, considering it is around half the remaining estimate of second-generation migrants compared to the native majority.

[Table 3 about here]

Moreover, results also do not support Hypothesis PT1: No parental support measure is statistically significantly or substantively related to the likelihood of premature training termination. Thus, once having acquired a training position, it does not seem to be relevant for remaining in training whether trainees have experienced one of the support measures tested here. Overall, direct parental support during the search for training positions is not crucial for either finding or succeeding in vocational training in Germany. It rather seems that those who rely on parental help for securing a position are disadvantaged to begin with. In a last step, we will take a closer look at potential ethnicity-specific relationships of parental support and vocational training outcomes.

Ethnicity-specific relationship of parental support and vocational training outcomes

Table 4 shows the average marginal effects of parental support measures on the likelihood of finding a training position and the likelihood of terminating training prematurely, each separately for majority and minority respondents (logit coefficients of the full models can be found in Table A5 in the Appendix).

[Table 4 about here]

We first focus on reports of (potential) help from parents with writing applications. While majority respondents who have reported such support are neither more likely to find a training position nor less likely to terminate their found training prematurely, we find that

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minority respondents profit from such help: They are around eight percentage points more likely to find a training position and around eleven percentage points less likely to terminate their training prematurely. Differences between estimates of majority and minority respondents are statistically significant for finding a training position, and not statistically significant for premature training termination.[15] Nonetheless, estimate sizes are substantive and low case numbers among minority respondents in the termination sample might render these estimates of differences insignificant. Overall, while help with writing applications seems irrelevant for majority school-leavers, it seems that such parental help can improve chances for minority school-leavers. This contrasts with our expectations, and we can only speculate about the reasons behind this pattern. One possible explanation might be that the prospective and hypothetical measurement might discriminate better between potential and actual help for ethnic minorities for which part of parents might definitely not be able to help due to missing, unmeasured resources.

Regarding information from parents about open positions, we also do not find any statistically significantly relations to search success or premature training termination for either minority or majority school-leavers. There is a slight tendency that information from parents is less helpful for minority compared to majority trainees, but differences between estimates are not statistically significant (finding training) or statistically significant only at the ten percent level (premature training termination). Nonetheless, the estimate size of six percentage points for migrant trainees is comparatively large and might fail to reach statistical significance due to lower case numbers.

[15] Results from testing the equality of estimates of the three parental support measures between majority and minority respondents using seemingly unrelated estimations can be found in Table A6 in the Appendix.

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Lastly, the negative relation between parental efforts towards getting their children a training position and them actually finding a training position is comparable for minority and majority school-leavers and statistically significant for both. In addition, majority trainees that have received such support tend to be *more* likely to terminate their training prematurely. This would also speak for some sort of negative selection of trainees that found for training under "limited choices". For minority trainees we cannot find such an estimate. However, differences between estimates are not statistically significant.

Overall, neither relation between the three parental support measures and the two training outcomes are statistically significantly lower for minority compared to majority respondents. Thus, our ethnicity-specific Hypothesis F2 (finding a training position) and Hypothesis PT2 (premature termination of training) are not corroborated.

To sum up, we can conclude that minority and majority apprentices differ in the amount of support they have received during their transition to training, and these differences are partly due to socioeconomic and receiving-country-specific resources. In addition, our results show domain-specific importance of parents' social and cultural capital: While language resources and destination-country specific vocational education seem to increase parents' ability to help their children with writing applications and to make efforts towards securing them apprenticeship positions, their connection into native labour market networks tend to increase their children's pool of promising apprenticeship options and their ability to make efforts to get their children a position. When it comes to the likelihood finding training and of terminating training prematurely, however, it seems that parental support received at the transition to training is not related to search success, and parental efforts to get their children a position is related to lower transition likelihoods. Differentiated analyses for minority and majority respondents reveal that in

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contrast to our expectations, minority school-leavers do not profit less from parental support. We will discuss these results and their relevance for ethnic differences in vocational training in Germany in the last section.

Conclusion and discussion

In this paper, we investigated ethnic differences in the availability and effectivity of parental support at the transition to apprenticeship training in Germany. We focused on three different types of support by parents: help with writing applications, information about interesting open positions, and efforts towards getting their children a training position. While previous research has shown that ethnic minorities less often receive such support, it remained unclear to what degree these disadvantages were due to receiving-country-specific resources of parents. Moreover, their relation to success or failure of vocational training search and success for majority and minority apprentices has only partly been researched. To answer these questions, we analysed longitudinal data from the German National Educational Panel Study (NEPS) on vocational training applicants and their parents.

Our results show that differences between native and immigrant parents in terms receiving-country-specific labour market resources reduce ethnic gaps in parental support partly, albeit reductions are only significant for help in writing applications. Moreover, while language use in the family and parents' own experience with the German training system seem to be relevant for support in writing applications, there is some indications that parents' German labour market contacts increase the possibility to provide their children with information about interesting positions and to make efforts towards getting them a position. However, in contrast to our expectations, only minority school-leavers profit from parental help with writing applications in terms of finding a position and

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training success. Moreover, neither majority nor minority apprentices show a higher likelihood of finding a training position or a lower likelihood of premature training termination when they have received information about open positions from their parents during the transition to training. In contrast, both groups are less likely to find a training position if their parents tried to get them a position, hinting that the use of certain parental support actions might also be an indicator of negative selection. For majority apprentices, this potentially negative selection of those whose parents made efforts to get them a position is also visible in a higher likelihood of training termination.

To some degree, these findings contradict previous research on the role of parents during this transition (Lindemann and Gangl, 2019; Roth, 2018; Roth and Weißmann, 2022). One explanation might be that parental influence is not visible in direct, specific support actions, but rather relates to other, more general aspects of parental background that are not available in the data (see also Lindemann and Gangl, 2019). A second explanation might be that school-leavers who have drawn on support from parents actually needed this support and thus were negatively selected. This is especially visible for those whose parents got actively involved in getting their children a training position. Even though our comprehensive controls (regional factors, scholastic indicators, and objective ability tests, as well as socioeconomic background indicators) should factor out such need for and selective use of support, we cannot rule out selectivity due to other unmeasured factors.

The counterintuitive finding that only ethnic minorities profit from parental help with writing applications might be due to the prospective nature of the measure used in the analyses which might discriminate better between hypothetic and actual support for ethnic minorities for which part of parents might definitely not be able to help due to

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missing, unmeasured resources. Unfortunately, the data does not provide retrospective information on this type of support.

Overall, even though we are able to reduce ethnic residuals in parental support, ethnic minorities are still substantively less likely to receive writing help or information about open position. The fact that these differences persist after controlling for receiving-country-specific indicators, raises the question what drives the remaining differences. For one, our measures, especially language ability and knowledge about the training system, represent only proxy indicators. More refined and direct measures might further reduce ethnic differences in parental support. Moreover, selective use of parental help by school-leavers might contribute to such differences: If children of immigrants anticipate that their parents are not or less able to help, they might not ask for help in the first place. Thus, a closer investigation of further reasons for these differences should be the focus of further research.

Our results must be interpreted in the light of some data limitations. While NEPS SC4 as a large-scale, representative, and longitudinal study represents a data source that is best suited for our research questions, some aspects might affect our results.

First, as in any longitudinal study, panel attrition also plays a role here. Reduced sample sizes and thus reduced statistical power might supress otherwise statistically significant estimates – especially in the case of smaller groups such as ethnic minorities. As a result, our findings of ethnicity-specific estimates for parental support in terms of information about open positions and help with writing applications might have been statistically significant in larger samples and thus, ethnicity-specific interpretations of how parental support might affect training success cannot be ruled out completely. In addition, selective survey dropout might bias our results. The fact that termination rates in our

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sample do not differ substantially from that in other sources, however, lets us cautiously assume that selective panel attrition does not play a major role in this study.

Second, even though the data include comparatively many detailed measures about parental involvement, some details remain unclear: More detailed accounts for what type of information and help respondents received from their parents and how this helped them in the apprenticeship search might result in more precise and reliable estimates. The same issues arise regarding our measures of receiving-country-specific resources. For instance, we can only rely on an indirect proxy measure of language competencies of parents, and we have no information if parents actually mobilized their contacts to support their children during the transition period. However, estimates of destination-specific capital and their reduction effect on ethnic differences are indicators for the relevance of these resources and might be even stronger with better measures.

As a third limitation, it must be noted that causal claims are not possible with our data at hand. Even though we were able to include many important factors in our models, endogeneity of our results cannot be ruled out, as is the case in all non-experimental studies. We therefore try to refrain from causal language in the interpretation of our results.

Keeping these limitations in mind, we believe that our results improve the literature on the role of parental support during the transition to vocational training. While they show that part of the disadvantages can be explained by our measures, remaining ethnic residuals call for further research in this topic. At the same time, further research might focus on other outcomes of vocational training. These might include other training characteristics such as satisfaction with or quality of training which would allow a closer investigation of the exact “matching” mechanisms, but also outcomes such as permanent

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employment in the company after training completion. Moreover, further research should not only investigate parental support at the transition to training, but also during vocational training itself.

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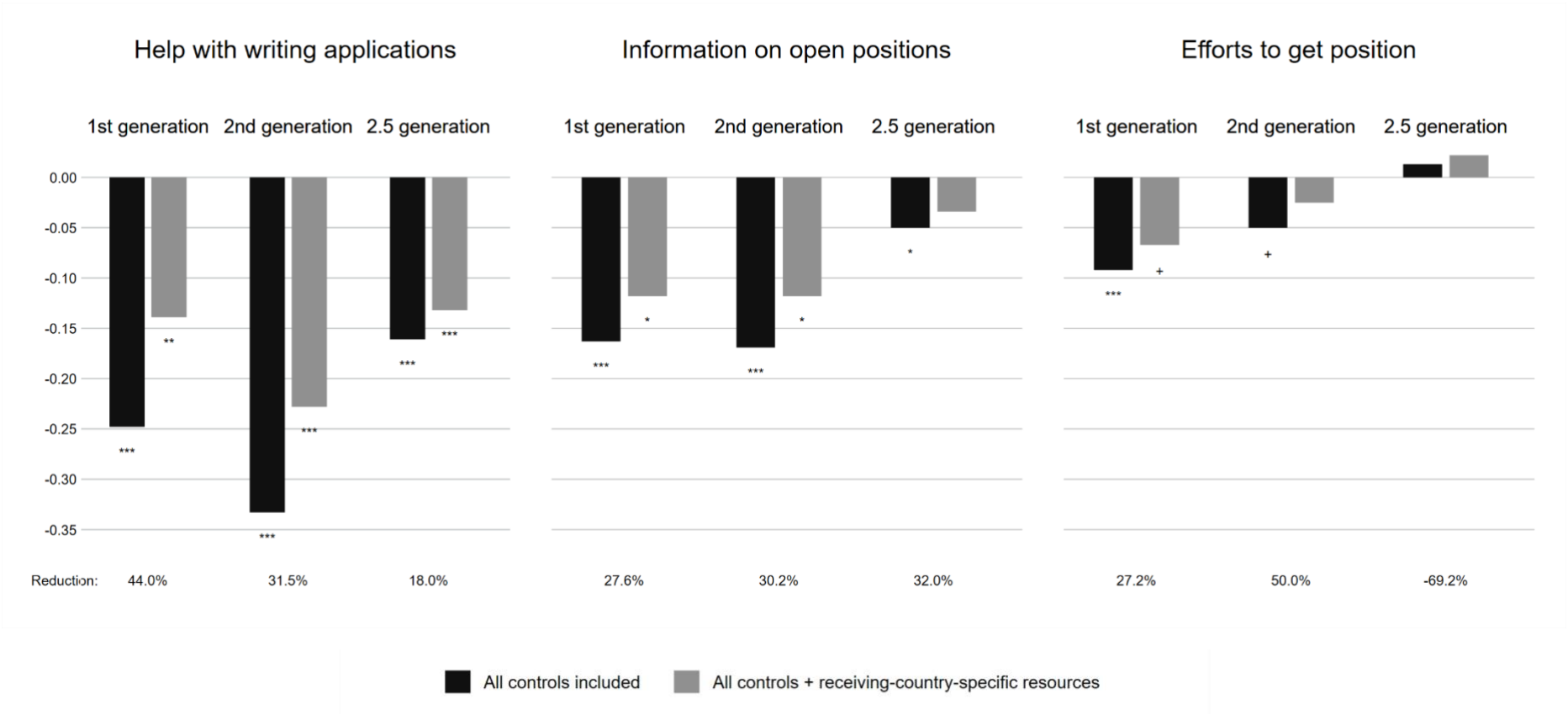
Figures And Tables

Figure 1. Majority-minority gaps in parental support and their reduction by including measures of receiving-country-specific resources



Source: German National Educational Panel Study (NEPS): Starting Cohort 4, authors' own calculations.
Notes: Missing data were multiply imputed ("multiple imputation, then deletion" [MID] method); results were design-weighted. Clustered standard errors.
Reductions were calculated from the average marginal effects displayed in Table 2 (e.g., for second generation and help with writing applications: (1-(-0.228/-0.333)*100=31.5%).
Significance levels: + p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001.

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Table1. Descriptive statistics

	All	Majority	All Minorities	1st generation	2nd generation	2.5 generation
Parental support						
Help with writing applications (%)						
No	0.31	0.24	0.56	0.60	0.65	0.42
Yes	0.69	0.76	0.44	0.40	0.35	0.58
Information on apprenticeship positions (%)						
No	0.35	0.31	0.46	0.51	0.50	0.38
Yes	0.65	0.69	0.54	0.49	0.50	0.62
Efforts towards getting position (%)						
No	0.57	0.56	0.59	0.65	0.60	0.55
Yes	0.43	0.44	0.41	0.35	0.40	0.45
Training outcomes						
Found training position (%)						
No	0.33	0.29	0.44	0.46	0.48	0.36
Yes	0.67	0.71	0.56	0.54	0.52	0.64
Premature training termination (%)						
No	0.77	0.79	0.68	0.57	0.71	0.71
Yes	0.23	0.21	0.32	0.43	0.29	0.29
Socioeconomic background indicators						
Two parents in household (%)						
No	0.19	0.18	0.22	0.24	0.16	0.27
Yes	0.81	0.82	0.78	0.76	0.84	0.73
Parents' highest education degree (%)						
Basic secondary or below	0.22	0.20	0.29	0.28	0.32	0.25
Intermediate secondary	0.46	0.49	0.37	0.37	0.33	0.41
Upper secondary academic	0.18	0.16	0.24	0.23	0.26	0.22
University	0.14	0.16	0.11	0.12	0.09	0.12
Parents' employment status (%)						
No parent employed	0.04	0.03	0.08	0.11	0.07	0.07
One parent employed	0.24	0.23	0.29	0.31	0.29	0.28
Both parents employed	0.72	0.75	0.63	0.58	0.64	0.65
Parents' HISEI (mean value)	45.63	48.07	38.42	37.12	35.35	43.31

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Receiving-country specific background characteristics						
Language with at least on parent mostly/only not German (ref.: only/mostly German) (%)						
No	0.89	0.99	0.60	0.46	0.50	0.82
Yes	0.11	0.01	0.40	0.54	0.50	0.18
At least on parent has German vocational training degree (%)						
No	0.17	0.07	0.48	0.64	0.59	0.22
Yes	0.83	0.93	0.52	0.36	0.41	0.78
Number of labour market contacts (mean value)						
Native contacts	6.69	7.54	4.20	3.69	3.11	5.97
Migrant contacts	0.95	0.27	2.95	3.01	4.15	1.37
Number of cases	6,901	5,104	1,797	454	752	591

Source: German National Educational Panel Study (NEPS): Starting Cohort 4, authors' own calculations.
Notes: Missing data were multiply imputed; outcome variables from the analyses include only non-missing cases (parental support and training outcomes; "multiple imputation, then deletion" [MID] method); results were design-weighted.

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Table 2. Average marginal effects of receiving help from parents

	Help with writing applications		Information on open positions		Efforts to get position	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Immigrant generation (ref.: Native majority)						0.000
1st generation	-0.248***	-0.139**	-0.163***	-0.118*	-0.092***	-0.067+
	(0.041)	(0.053)	(0.035)	(0.052)	(0.027)	(0.039)
2nd generation	-0.333***	-0.228***	-0.169***	-0.118*	-0.050+	-0.025
	(0.028)	(0.048)	(0.032)	(0.051)	(0.028)	(0.044)
2.5 generation	-0.161***	-0.132***	-0.050*	-0.034	0.013	0.022
	(0.031)	(0.033)	(0.022)	(0.025)	(0.025)	(0.027)
Language with at least on parent mostly/only not German		-0.091*		-0.034		-0.043
		(0.042)		(0.042)		(0.035)
Number of native labour market contacts		-0.004		0.009+		0.007+
		(0.004)		(0.005)		(0.004)
Number of migrant labour market contacts		-0.002		-0.001		0.004
		(0.008)		(0.008)		(0.009)
Parent has German vocational training degree		0.109**		-0.009		-0.014
		(0.040)		(0.038)		(0.033)
Number of cases	4,949	4,949	6,893	6,893	6,792	6,792

Source: German National Educational Panel Study (NEPS): Starting Cohort 4, authors' own calculations.
Notes: Missing data were multiply imputed ("multiple imputation, then deletion" [MID] method); results were design-weighted.
Clustered standard errors in parentheses.
All Models include control variables and federal state fixed effects.
Significance levels: + p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001.

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Table 3. Average marginal effects of parental support on the likelihood of finding a training position and the likelihood of premature training termination

	Finding training position	Premature training termination
Immigrant generation (ref.: Native majority)		
1st generation	-0.122***	0.082+
	(0.033)	(0.044)
2nd generation	-0.153***	0.027
	(0.034)	(0.034)
2.5 generation	-0.019	0.015
	(0.021)	(0.036)
Help with writing applications	0.017	-0.025
	(0.021)	(0.028)
Information on open positions	-0.020	-0.016
	(0.020)	(0.018)
Efforts to get position	-0.077***	0.034
	(0.018)	(0.022)
Number of cases	6,901	2,908

Source: German National Educational Panel Study (NEPS): Starting Cohort 4, authors' own calculations.
Notes: Missing data were multiply imputed ("multiple imputation, then deletion" [MID] method); results were design-weighted.
Clustered standard errors in parentheses.
All Models include control variables and federal state fixed effects. Receiving-country-specific resources are not controlled for.
Significance levels: + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

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Table 4. Average marginal effects of parental support on the likelihood of finding a training position and the likelihood of premature training termination (separately by migration background)

	Finding training position		Premature training termination	
	Majority	Minorities	Majority	Minorities
Immigrant generation (ref..: 2.5 generation)				
1st generation		-0.098**		0.050
		(0.038)		(0.061)
2nd generation		-0.128***		0.025
		(0.033)		(0.049)
Help with writing applications	-0.007	0.083*	-0.003	-0.112*
	(0.023)	(0.035)	(0.033)	(0.049)
Information on open positions	-0.010	-0.036	-0.028	0.061
	(0.024)	(0.030)	(0.023)	(0.043)
Efforts to get position	-0.079***	-0.079*	0.046*	-0.030
	(0.020)	(0.036)	(0.023)	(0.049)
Number of cases	5,104	1,797	2,306	602

Source: German National Educational Panel Study (NEPS): Starting Cohort 4, authors' own calculations.
Notes: Missing data were multiply imputed ("multiple imputation, then deletion" [MID] method); results were design-weighted.
Clustered standard errors in parentheses.
All Models include control variables and federal state fixed effects. Receiving-country-specific resources are not controlled for.
Significance levels: + p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001.

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Appendix

Table A1. Coefficients from logistic regressions of receiving help from parents

	Help with writing applications		Information on open positions		Efforts to get position	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Immigrant generation (ref.: Native majority)						
1st generation	-1.183***	-0.697**	-0.717***	-0.527*	-0.403***	-0.292+
	(0.182)	(0.247)	(0.151)	(0.225)	(0.122)	(0.174)
2nd generation	-1.558***	-1.100***	-0.743***	-0.526*	-0.214+	-0.109
	(0.126)	(0.213)	(0.136)	(0.221)	(0.124)	(0.189)
2.5 generation	-0.796***	-0.664***	-0.231*	-0.161	0.057	0.095
	(0.142)	(0.155)	(0.101)	(0.116)	(0.107)	(0.113)
Language with at least on parent mostly/only not German (ref.: only/mostly German)		-0.471*		-0.156		-0.186
		(0.201)		(0.191)		(0.151)
Number of native labour market contacts		-0.020		0.043+		0.031
		(0.022)		(0.023)		(0.018)
Number of migrant labour market contacts		-0.013		-0.005		0.016
		(0.047)		(0.036)		(0.039)
Parent has German vocational training degree		0.558**		-0.045		-0.061
		(0.195)		(0.182)		(0.140)
Parents' highest education degree (ref.: tertiary)						
Lower secondary or below	-0.515**	-0.706***	0.029	0.066	-0.209	-0.171
	(0.162)	(0.163)	(0.173)	(0.188)	(0.131)	(0.144)
Intermediate secondary	-0.008	-0.207	0.177	0.183	-0.002	0.012
	(0.124)	(0.132)	(0.137)	(0.151)	(0.099)	(0.110)
Upper secondary academic	0.067	-0.121	0.076	0.068	-0.034	-0.035
	(0.141)	(0.153)	(0.140)	(0.149)	(0.109)	(0.121)
Parents' employment status (ref.: both parents employed)						
No parent employed	-0.338	-0.245	-0.641**	-0.623**	-0.112	-0.108
	(0.211)	(0.216)	(0.201)	(0.204)	(0.182)	(0.189)
One parent employed	-0.120	-0.113	-0.259*	-0.236*	0.048	0.067
	(0.087)	(0.089)	(0.111)	(0.109)	(0.095)	(0.096)
Parents' HISEI	0.010***	0.010***	0.005+	0.003	0.005*	0.004+
	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
Two parents in household	0.420***	0.378***	0.266*	0.276*	0.144+	0.151+
	(0.098)	(0.104)	(0.117)	(0.116)	(0.086)	(0.086)
Unemployment rate in employment agency	0.024	0.022	0.020	0.025	0.022	0.024

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district						
	(0.019)	(0.019)	(0.021)	(0.021)	(0.021)	(0.021)
Lives in small town or village area	-0.048	-0.068	0.062	0.038	0.108	0.091
	(0.084)	(0.085)	(0.086)	(0.086)	(0.067)	(0.069)
Female	0.259**	0.248**	-0.344***	-0.346***	-0.233*	-0.230*
	(0.087)	(0.089)	(0.086)	(0.087)	(0.091)	(0.091)
Year of birth (ref.: 1995)						
before 1995	-0.007	0.021	0.005	0.023	-0.251**	-0.237*
	(0.110)	(0.111)	(0.148)	(0.146)	(0.096)	(0.095)
after 1995	0.123	0.123	-0.002	-0.004	0.039	0.040
	(0.089)	(0.089)	(0.087)	(0.086)	(0.060)	(0.061)
General education degree (ref.: intermediate secondary)						
No degree/lower secondary	-0.028	-0.051	-0.052	-0.042	0.052	0.058
	(0.136)	(0.137)	(0.113)	(0.112)	(0.097)	(0.096)
Upper secondary	0.192	0.204+	-0.306**	-0.316**	-0.619***	-0.628***
	(0.117)	(0.119)	(0.098)	(0.099)	(0.110)	(0.110)
School type in Grade 9 (ref.: intermediate secondary school)						
Basic secondary school	-0.025	-0.030	-0.149	-0.138	0.170+	0.179+
	(0.123)	(0.124)	(0.120)	(0.118)	(0.096)	(0.095)
Combined tracks	-0.349	-0.378	0.103	0.118	0.157	0.168
	(0.256)	(0.255)	(0.223)	(0.225)	(0.203)	(0.204)
Integrated comprehensive school	0.067	0.048	0.161	0.176	0.081	0.096
	(0.120)	(0.126)	(0.135)	(0.135)	(0.095)	(0.095)
Upper secondary school	0.106	0.121	0.216	0.216	0.257+	0.257+
	(0.151)	(0.150)	(0.138)	(0.140)	(0.141)	(0.143)
Grades in German (Grade 9)	0.021	0.023	-0.098+	-0.092+	0.042	0.045
	(0.058)	(0.058)	(0.054)	(0.053)	(0.047)	(0.047)
Grades in math (Grade 9)	-0.024	-0.023	-0.015	-0.012	0.042	0.044
	(0.044)	(0.044)	(0.048)	(0.047)	(0.040)	(0.040)
ICT literacy: WLE	0.116	0.114	-0.117	-0.112	-0.100	-0.095
	(0.080)	(0.083)	(0.083)	(0.083)	(0.068)	(0.068)
Natural sciences: WLE	-0.060	-0.055	0.051	0.043	-0.018	-0.023
	(0.075)	(0.075)	(0.090)	(0.089)	(0.067)	(0.067)
Mathematics: WLE (corrected)	-0.088+	-0.088+	-0.079	-0.083	-0.030	-0.034
	(0.051)	(0.052)	(0.071)	(0.070)	(0.059)	(0.059)
Reading competence: WLE	0.091+	0.096+	0.018	0.019	-0.049	-0.049
	(0.052)	(0.053)	(0.051)	(0.052)	(0.061)	(0.061)
Vocabulary: sum score	0.007	0.004	-0.004	-0.005	0.004	0.004

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	(0.005)	(0.005)	(0.006)	(0.006)	(0.005)	(0.005)
Reading speed: sum score	0.015**	0.014*	-0.000	0.000	-0.002	-0.002
	(0.005)	(0.005)	(0.006)	(0.006)	(0.005)	(0.005)
Intercept	-0.948+	-0.916+	0.866	0.620	-0.913*	-1.094*
	(0.504)	(0.528)	(0.538)	(0.561)	(0.461)	(0.504)
Number of cases	4,949	4,949	6,893	6,893	6,792	6,792

Source: German National Educational Panel Study (NEPS): Starting Cohort 4, authors' own calculations.
Notes: Missing data were multiply imputed ("multiple imputation, then deletion" [MID] method); results were design-weighted.
Clustered standard errors in parentheses.
All Models include federal state fixed effects.
HISEI = highest International Socio-Economic Index of Occupational Status (ISEI) score. WLE = weighted likelihood estimates; ICT = information and communication technology.
Significance levels: + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

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Table A2. Results from testing the equality of estimates of parental support measures for different immigrant generations using seemingly unrelated estimations

	Help with writing applications	Information on open positions	Efforts to get position
1st generation	F(1, 111.7) = 5.26	F(1, 93.0) = 2.06	F(1, 68.8) = 0.62
	Prob > F = 0.0237	Prob > F = 0.1550	Prob > F = 0.4328
2nd generation	F(1, 122.8) = 10.00	F(1, 90.0) = 1.51	F(1, 100.6) = 0.65
	Prob > F = 0.0020	Prob > F = 0.2224	Prob > F = 0.4226
2.5 generation	F(1, 86.0) = 6.24	F(1, 74.3) = 1.53	F(1, 70.5) = 0.35
	Prob > F = 0.0144	Prob > F = 0.2201	Prob > F = 0.5553

Source: German National Educational Panel Study (NEPS): Starting Cohort 4, authors' own calculations.
Notes: Missing data were multiply imputed ("multiple imputation, then deletion" [MID] method); results were design-weighted. Clustered standard errors. All Models include control variables and federal state fixed effects.

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Table A3. Average marginal effects of receiving help from parents (only parent interviews)

	Help with writing applications		Information on open positions		Efforts to get position	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Immigrant generation (ref. native)						
1st generation	-0.229***	-0.099	-0.151**	-0.086	0.039	0.089
	(0.064)	(0.062)	(0.049)	(0.057)	(0.050)	(0.060)
2nd generation	-0.305***	-0.181***	-0.125**	-0.055	-0.009	0.040
	(0.044)	(0.052)	(0.042)	(0.053)	(0.039)	(0.049)
2.5 generation	-0.133***	-0.098**	-0.059+	-0.037	-0.015	0.004
	(0.035)	(0.037)	(0.035)	(0.035)	(0.034)	(0.034)
Language with at least on parent mostly/only not German		-0.168**		-0.054		-0.092*
		(0.052)		(0.046)		(0.043)
Number of native labour market contacts		-0.001		0.013***		0.010**
		(0.004)		(0.003)		(0.003)
Number of migrant labour market contacts		0.003		0.000		0.006
		(0.008)		(0.007)		(0.008)
Parent has German vocational training degree		0.079*		-0.006		-0.023
		(0.038)		(0.030)		(0.034)
Number of cases	2,904	2,904	3,765	3,765	3,718	3,718

Source: German National Educational Panel Study (NEPS): Starting Cohort 4, authors' own calculations.
Notes: Missing data were multiply imputed ("multiple imputation, then deletion" [MID] method); results were design-weighted.
Clustered standard errors in parentheses.
All Models include control variables and federal state fixed effects.
Significance levels: + p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001.

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Table A4. Coefficients from logistic regressions of the likelihood of finding a training position and the likelihood of premature training termination

	Finding training position	Premature training termination
Immigrant generation (ref.: Native majority)		
1st generation	-0.572***	0.504*
	(0.146)	(0.248)
2nd generation	-0.710***	0.175
	(0.150)	(0.216)
2.5 generation	-0.096	0.100
	(0.106)	(0.234)
Help with writing applications	0.085	-0.165
	(0.104)	(0.185)
Information on open positions	-0.101	-0.109
	(0.102)	(0.121)
Efforts to get position	-0.378***	0.222
	(0.086)	(0.145)
Parents' highest education degree (ref.: tertiary)		
Lower secondary or below	0.186	-0.181
	(0.175)	(0.261)
Intermediate secondary	0.161	-0.167
	(0.124)	(0.190)
Upper secondary academic	0.152	-0.273
	(0.142)	(0.204)
Parents' employment status (ref.: both parents employed)		
No parent employed	-0.445*	0.373
	(0.180)	(0.265)
One parent employed	-0.212*	0.221
	(0.101)	(0.147)
Parents' HISEI	0.002	0.005
	(0.003)	(0.005)
Two parents in household	0.327**	-0.244+
	(0.105)	(0.130)
Unemployment rate in employment agency district	-0.012	0.053
	(0.019)	(0.043)
Lives in small town or village area	0.259***	-0.164
	(0.076)	(0.124)
Female	0.004	0.212
	(0.090)	(0.214)
Year of birth (ref.: 1995)		
before 1995	-0.232+	0.604***
	(0.134)	(0.157)
after 1995	-0.146*	-0.134
	(0.074)	(0.127)
General degree at VET start (ref.: intermediate secondary)		
No degree/lower secondary	-0.568***	0.263
	(0.105)	(0.174)
Upper secondary	0.344***	-0.062
	(0.102)	(0.201)
School type in Grade 9 (ref.: intermediate secondary school)		

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Basic secondary school	0.130	0.684***
	(0.107)	(0.180)
Combined tracks	-0.277	0.885***
	(0.216)	(0.258)
Integrated comprehensive school	-0.168	0.271
	(0.128)	(0.190)
Upper secondary school	-0.050	0.011
	(0.138)	(0.190)
Grades in German (Grade 9)	0.013	0.109
	(0.050)	(0.092)
Grades in math (Grade 9)	-0.103*	0.312***
	(0.043)	(0.072)
ICT literacy: WLE	-0.091	0.082
	(0.068)	(0.110)
Natural sciences: WLE	0.111	-0.092
	(0.074)	(0.114)
Mathematics: WLE (corrected)	0.038	-0.184+
	(0.056)	(0.100)
Reading competence: WLE	-0.094*	0.051
	(0.047)	(0.095)
Vocabulary: sum score	-0.002	0.005
	(0.005)	(0.010)
Reading speed: sum score	-0.012*	0.000
	(0.006)	(0.009)
Occupational are of KldB (ref.: occupational area 1)		
Occupational area 2		0.861+
		(0.480)
Occupational area 3		1.065*
		(0.511)
Occupational area 4		1.033+
		(0.561)
Occupational area 5		0.210
		(0.592)
Occupational area 6		1.170*
		(0.509)
Occupational area 7		0.835
		(0.540)
Occupational area 8		1.072*
		(0.510)
Occupational area 9		0.867
		(0.662)
Dual vocational training (ref.: school-based vocational training)		-0.247
		(0.188)
Intercept	1.370**	-4.110***
	(0.433)	(0.988)
Number of cases	6,901	2,908

Source: German National Educational Panel Study (NEPS): Starting Cohort 4, authors' own calculations.
Notes: Missing data were multiply imputed ("multiple imputation, then deletion" [MID] method); results were design-weighted.
Clustered standard errors in parentheses.
All Models include federal state fixed effects.
HISEI = highest International Socio-Economic Index of Occupational Status (ISEI) score. WLE = weighted likelihood estimates; ICT = information and communication technology.
Significance levels: + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

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Table A5. Coefficients from logistic regressions of the likelihood of finding a training position and the likelihood of premature training termination (separately by migration background)

	Finding training position		Premature training termination	
	Majority	Minorities	Majority	Minorities
Immigrant generation (ref.: 2.5 generation)				
1st generation		-0.454**		0.293
		(0.174)		(0.354)
2nd generation		-0.586***		0.147
		(0.151)		(0.294)
Help with writing applications	-0.035	0.376*	-0.022	-0.666*
	(0.123)	(0.163)	(0.244)	(0.305)
Information on open positions	-0.052	-0.165	-0.203	0.366
	(0.125)	(0.139)	(0.160)	(0.262)
Efforts to get position	-0.407***	-0.355*	0.333*	-0.178
	(0.099)	(0.165)	(0.165)	(0.296)
Parents' highest education degree (ref.: tertiary)				
Lower secondary or below	0.371*	-0.211	-0.318	-0.111
	(0.187)	(0.309)	(0.295)	(0.499)
Intermediate secondary	0.345*	-0.371	-0.332	0.169
	(0.137)	(0.274)	(0.215)	(0.441)
Upper secondary academic	0.119	0.066	-0.296	-0.217
	(0.155)	(0.293)	(0.238)	(0.402)
Parents' employment status (ref.: both parents employed)				
No parent employed	-0.563*	-0.342	0.266	0.592
	(0.219)	(0.249)	(0.394)	(0.423)
One parent employed	-0.243*	-0.139	0.201	0.283
	(0.117)	(0.164)	(0.197)	(0.250)
Parents' HISEI	0.005+	-0.007	-0.002	0.027**
	(0.003)	(0.004)	(0.005)	(0.009)
Two parents in household	0.361**	0.191	-0.196	-0.401
	(0.130)	(0.170)	(0.171)	(0.248)
Unemployment rate in employment agency district	-0.004	-0.015	0.055	0.044
	(0.024)	(0.033)	(0.043)	(0.071)
Lives in small town or village area	0.183*	0.474*	-0.315*	0.526+
	(0.082)	(0.200)	(0.138)	(0.297)
Female	-0.036	0.114	0.385	-0.566+
	(0.105)	(0.132)	(0.235)	(0.341)
Year of birth (ref.: 1995)				
before 1995	-0.232	-0.114	0.825***	0.362
	(0.188)	(0.162)	(0.192)	(0.306)
after 1995	-0.169+	-0.067	0.011	-0.536+
	(0.089)	(0.150)	(0.140)	(0.305)
General degree at VET start (ref.: intermediate secondary)				
No degree/lower secondary	-0.687***	-0.368*	0.418*	0.064
	(0.109)	(0.181)	(0.192)	(0.271)
Upper secondary	0.327**	0.341	-0.100	0.091
	(0.106)	(0.231)	(0.222)	(0.413)
School type in Grade 9 (ref.: intermediate secondary school)				
Basic secondary school	0.283*	-0.179	0.620**	0.752+

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	(0.115)	(0.194)	(0.193)	(0.434)
Combined tracks	-0.166	-0.552	1.000**	0.734
	(0.234)	(0.350)	(0.311)	(0.758)
Integrated comprehensive school	-0.083	-0.465*	0.290	0.158
	(0.144)	(0.209)	(0.233)	(0.497)
Upper secondary school	0.025	-0.263	0.002	-0.159
	(0.145)	(0.288)	(0.222)	(0.641)
Grades in German (Grade 9)	0.033	-0.063	0.039	0.377*
	(0.058)	(0.105)	(0.106)	(0.178)
Grades in math (Grade 9)	-0.111*	-0.086	0.394***	0.101
	(0.053)	(0.073)	(0.082)	(0.144)
ICT literacy: WLE	-0.128	0.031	0.147	-0.227
	(0.078)	(0.125)	(0.122)	(0.213)
Natural sciences: WLE	0.098	0.150	-0.099	0.012
	(0.087)	(0.122)	(0.135)	(0.181)
Mathematics: WLE (corrected)	0.085	-0.092	-0.147	-0.207
	(0.066)	(0.101)	(0.119)	(0.156)
Reading competence: WLE	-0.108+	-0.054	-0.001	0.251
	(0.057)	(0.076)	(0.109)	(0.170)
Vocabulary: sum score	-0.004	-0.004	-0.002	0.011
	(0.006)	(0.009)	(0.012)	(0.015)
Reading speed: sum score	-0.010+	-0.016+	0.007	-0.020
	(0.006)	(0.009)	(0.012)	(0.016)
Occupational are of KldB (ref.: occupational area 1)				
Occupational area 2			0.925+	-0.707
			(0.528)	(1.057)
Occupational area 3			0.817	0.548
			(0.563)	(1.090)
Occupational area 4			1.012+	0.200
			(0.604)	(1.177)
Occupational area 5			0.235	-0.677
			(0.637)	(1.288)
Occupational area 6			1.100*	0.758
			(0.559)	(1.138)
Occupational area 7			0.601	0.967
			(0.602)	(1.107)
Occupational area 8			0.852	1.012
			(0.569)	(1.086)
Occupational area 9			0.740	1.035
			(0.771)	(1.366)
Dual vocational training (ref.: school-based vocational training)			-0.250	-0.115
			(0.225)	(0.280)
Intercept	1.076*	2.241**	-3.654**	-3.912*
	(0.539)	(0.768)	(1.123)	(1.971)
Number of cases	5,104	1,797	2,306	602

Source: German National Educational Panel Study (NEPS): Starting Cohort 4, authors' own calculations.
Notes: Missing data were multiply imputed ("multiple imputation, then deletion" [MID] method); results were design-weighted.
Clustered standard errors in parentheses.
All Models include federal state fixed effects.
HISEI = highest International Socio-Economic Index of Occupational Status (ISEI) score. WLE = weighted likelihood estimates; ICT = information and communication technology.
Significance levels: + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

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Table A6. Results from testing the equality of estimates of parental support measures between majority and minority respondents using seemingly unrelated estimations

	Finding training position	Premature training termination
Help with applications	F(1, 204.6) = 4.94	F(1, 78.3) = 2.63
	Prob > F = 0.0274	Prob > F = 0.1091
Information on positions	F(1, 6649.8) = 0.64	F(1, 11050.6) = 3.67
	Prob > F = 0.4222	Prob > F = 0.0553
Efforts to get position	F(1, 629.7) = 0.25	F(1, 860.2) = 2.57
	Prob > F = 0.6191	Prob > F = 0.1095

Source: German National Educational Panel Study (NEPS): Starting Cohort 4, authors' own calculations.
Notes: Missing data were multiply imputed ("multiple imputation, then deletion" [MID] method); results were design-weighted.
Clustered standard errors. All Models include control variables and federal state fixed effects.