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Education and social support: do migrants benefit as much as natives?



Jana Brandt¹ and Kyra Selina Hagge^{2*} 

* Correspondence: Kyra.Hagge@wirtschaft.uni-giessen.de

²Faculty of Economics and Business Science, Justus Liebig University Giessen, Licher Strasse 64, 35394 Giessen, Germany
Full list of author information is available at the end of the article

Abstract

Education and having access to social support play a vital role in the human life. Integrated and better-educated people demonstrate an increased personal health and well-being. Social isolation, on the contrary, can affect not only the personal development, but also pertains to society. These topics are especially relevant in the current migration debate. Our paper examines the link between schooling and the individuals' probability to receive different types of social support, in particular emotional, instrumental, informational, and appraisal support. Using logit and ordinal logit regressions on cross-sectional micro-data provided by the SOEP, we distinguish between two subgroups, the native population and people who migrated to Germany. Our findings confirm that higher levels of education increase the probability to access social support as well as the number of support providers in the network. Migrants are disadvantaged when it comes to the access of social support. However, our results suggest no significant negative returns to education for people with migration experiences.

Keywords: Returns to education, Social support, Social networks, Migrants, Logit-regression, Interaction effects

JEL: Classification: I26, I14, C30

Introduction

Apart from monetary benefits, like increased chances of getting a job in the first place or a higher income, there are also non-monetary benefits from education. Increased levels of schooling are highly positively correlated with improved mental and physical health, including self-rated health, higher life expectancy and lower incidences of disease, among others (Herd et al. 2007; Link et al. 2008). One explanation is that education leads to denser social networks, which provide larger extents of social support. According to House (1981), the term social support refers to the content of social relationships, and the material and immaterial resources therein, like the provision of empathy, needed tangible aid, the sharing of useful information or suggestions and constructive feedback. House (1981) theoretically conceptualizes four types of social support according to their influence on health: emotional support, instrumental support, informational support, and appraisal support.



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In this study, we provide an empirical analysis of the link between level of education and two issues concerning social support: first the probability to have *access to social support*, and second the probability to have *access to a bigger support network*, which can provide a more diverse array of social support as well as exert less social pressure (Lewis and Rook 1999). We contribute to the literature in three ways: 1) Using cross-sectional micro-data provided by the German Socio-Economic Panel (G-SOEP) and employing logit and ordered logit regressions, we estimate the association of education and the four different types of social support as mentioned in House (1981). We thereby expand the body of studies, adding more dimensions to the mere existence of social support. 2) We include Germany as a target country to broaden the geographical extent of empirical studies, as most of the current studies focus on the US. Furthermore, we are focusing on a group less studied in social network research: the migrant community. 3) We address the paradoxical finding of several previously conducted studies that migrants seem to benefit less from education with regard to access of social support than their native counterparts do. Only a limited number of studies have tried to investigate the reasons for this phenomenon. Walton et al. (2009) explain the difference between the two groups by the fact that migrants oftentimes acquired their education abroad, which, according to their results, impedes the possibility to benefit from the education-health gradient. They also discovered that people with a foreign education exhibit a lower extent of positive social interaction than the native population. The inclusion of interaction effects of individuals' migrant background and their degree of education in our study enables us to estimate whether migrants actually receive less social support than natives based on data from the G-SOEP.

The remainder of this paper is organized as follows. Section 2 provides an overview of the related literature concerning the link between education and social support for migrants and natives. We also touch upon the topic of social isolation and related current developments. The data and methodological approach are described in Section 3, including a description of how the different types of social support are measured by the German-SOEP and a detailed specification of the empirical model. The results of the logit regressions estimating the probability to have access to the different types of social support –separately and simultaneously– are presented in Section 4. In addition, this section presents the result of the ordered logit regression regarding the probability to have a larger network of support giving persons. Section 5 concludes.

Related literature

Access to social support is related to a multitude of personal as well as societal benefits, as for example increased health and well-being. Some scholars argue, that higher levels of education also lead to an increased quality of social networks meaning that larger amounts of material and immaterial resources, like social support, are exchanged between the members of these networks (Mirowsky and Ross 2003a, 2003b). Lower education can harm personal well-being, as Stansfeld (2009) points out. Low education is often accompanied by stressful social networks, which affect individuals' mental and physical health status negatively. More educated individuals have larger discussion networks, and therefore have potentially access to a broader range of social support (McPherson et al. 2006).

Since the key terms of this study *social support* and *social networks* have been used in various connections, we want to clarify how they are used in our work within the following

paragraph. The term *social network* covers the whole web of an individual's social relationships. If we are looking at the analysis of egocentric networks, it consists of a person at the center of the research, the *ego*, and their contacts, the *alteri*. Following Granovetter (1973), the ties between the actors of a social network can be divided into strong ties, i.e. relationships to family members, close friends and significant other, and weak ties, which are the remaining social relationships to acquaintances, neighbors, and colleagues. One of the most important features of social relationships is the provision of social support, which can, in the form of material and immaterial resources, increase individuals' utility (Flap 2002). This increase of utility is often described using the term social capital, which stands for the resources embedded in social networks (Lin 2001). As for *social support*, House (1981, p. 22) argues in his seminal work that the concept of social support needs to address the question "Who gives what to whom regarding which problems?". Based on this question he defines four categories of social support: emotional support, appraisal support, informational support, and instrumental support. All types of support can be provided for by either informal/nonprofessional sources like family members or friends or professional support givers like childcare workers or financial advisors. Emotional support refers to actions like listening, showing empathy, trust, and caring. Appraisal support covers the provision of information that a person can use to evaluate his/her own behavior, e.g. affirmation, feedback, and social comparison. In contrast, informational support stands for the provision of information in order to help someone to solve problems, like advices or suggestions. The last category, instrumental support, comprises direct help given to a person in need including physical assistance, money or time. Social support therefore corresponds to the content of social relationships. Moreover, it is highly specialized according to the target. A person emptying my letterbox during my absence might not be the right place to go to obtain job related information. As noted by Heaney and Israel (2002), it is difficult to measure the different theoretical categories of social support empirically, because most of the available data rather provide information about the existence of social relationships than their content. We also usually rely on data based on information about the ego, but not on the reciprocal relationship from the alteri back to the ego or on the density of the network, the ties between the alteri. This study is therefore contributing to the current research regarding a more in-depth analysis of the content of social relationships. Since the four support types require different characteristics of individuals' social network and hence might be affected differently by the level of education, it is important to examine each of them individually.

Scholars have focused on researching the absence of social support especially after McPherson et al. (2006) released their seminal work in which they find an increase of the degree of social isolation within the US society over the last 25 years. Their discovery underlines previously published work from Putnam (2000), who also records a lower participation of Americans in social events and a decreasing number of active members in voluntary organizations and sports clubs. Social isolation therefore not only has negative effects on the individual, it also pertains to society as a whole. In an effort to transfer McPherson et al.'s (2006) results to Germany, documenting the state of social isolation, Wöhler and Hinz (2007) recreate their study setting. Germany, as Wöhler and Hinz (2007) find, does not suffer from a similar deterioration of social capital as the US, which they explain through the change of the value of family in each of the countries alongside with technological change in the communication sector. Although we, resulting from the underlying dataset, cannot make implications about the

evolution of access to social capital, we are still able to infer about social isolation as a current snapshot of Germany's society.

Only a limited number of studies have tried to investigate potentially differentiated influence of education on social support between migrants and natives. Heller et al. (2004) find a negative link between non-native origin and access to social resources beyond the family. Ryan et al. (2008) lay out the shortcomings of migration literature in disregarding the difference in social network ties, spatially as well as content-wise. Migrants, especially shortly after immigration, do not have the same possibilities to access social capital due to lack of trust (Putnam 2007), mastery of the local language (Walton et al. 2009), a lower socio-economic status (Lubbers et al. 2010) and a disruption in their original social networks (Ahmad et al. 2004; Carswell et al. 2011). The adjustment process, furthermore, is also associated with a lower level of social support: migrants need to accustom themselves with different forms of social norms and institutions, which inhibits their use of the host countries' social capital (Friesen 2011; Girard and Bauder 2007). Because of these and more migrant specific characteristics, we expect to find significantly different effects of education on the accessibility of social support for migrants and natives.

Data and methodological approach

Measurement of social support

Our analysis is based on the 2011 wave of the German Socio-Economic Panel (G-SOEP) (Goebel et al. 2018). The G-SOEP is a panel dataset providing representative household data for about 12.000 households and 21.000 individuals and has been sampled every year since 1984.¹ The question module of four items concerning the social network of individuals, which we use as the basis of our analysis, collects information about the received social support. It has been included into the questionnaire since 2006 and is part of the core questions every 5 years. Due to a change in question design, the 2006 wave and the subsequent 2011 wave cannot be combined, which forces us to do a cross-sectional analysis using the 2011 wave only.

Since we are interested in observing potential differences between the four dimensions of social support, we are approximating the dimensions by exploiting the following sub-questions of the SOEP questionnaire. The first item "With whom do you talk about personal thoughts and feelings, or things you wouldn't tell just anyone?" reflects emotional support (es). In the second item "Who supports your advancement in your career or educational training and fosters your progress?" informational support (ios) is investigated. The third item "Now a hypothetical question: If you were to need long-term care (for example, in the case of an accident), who would you ask for help?" aims to measure instrumental support (its). Finally, the last item of the module "Who can you tell the truth even if it is unpleasant?" refers to appraisal support (as). For each item, the respondent can name up to 5 people from a list of family members and other significant others or they can tick the box "nobody". Since these questions are only posed to the ego, not its network contacts, they can only be interpreted unidirectional. Furthermore, they do not reflect the full spectrum of social support in one of the dimensions, as for example instrumental support also comprises different actions such as monetary support and childcare. However, these questions can help to underline the

¹Details about the survey methodology and how the data has been collected can be found in Wagner et al. (2007).

concepts and already point towards variations according to the content of the social tie (Wöhler and Hinz 2007). We therefore derive the following information from the module: we know whether an individual receives a specific type of social support or not and reveal how many support persons are available in each support category. Receiving social support by more than one person can be beneficial, as a potential support giver can also become the source of stress and social pressure (Portes 1998). Consequently, it is problematic if a potential support giver is causing a conflict without other potential support givers available.

We use the information provided to construct two sets of dependent variables. The first set contains four binomial variables referring to the four types of social support (emotional, instrumental, informational, and appraisal support) which are one if the respondent has named at least one support giver for the specific support type and zero otherwise. Furthermore, we construct a fifth binomial variable which is one if the respondent has named at least one person in each of the four support categories and zero if she does not have access to all support categories simultaneously. The second set of dependent variables also contains four variables referring to the different support types and one variable referring to all support types simultaneously. In contrast to the binomial variables of the first set, the variables of the second set measure the number of support givers named in each support category. The resulting ordinal variable can take values between zero and five.² In addition to counting the number of alters mentioned in each support dimension, we also calculate the sum of persons mentioned in total. For this purpose, we add the number of the four items' unique entries.³ To differentiate between the access to support in general, as modelled by the first set of dependent variables, and the size of the support providing network, as being reflected in the second set of dependent variables, is important. There has been evidence that the number of alteri in a network and the mere access measure slightly different structural characteristics (Wöhler and Hinz 2007). The number of alteri in an egocentric network sheds a light on the potential support providers, albeit the quality of the support provided cannot be recorded, as the connections between the alteri or the density of the network is not known (Coleman 1994; Flap 2002). The first set of dependent variables provides insight into the phenomenon of social isolation, which has been the concern of various works in the field of social network analysis (McPherson et al. 2006; Putnam 2000; Wöhler and Hinz 2007).

Estimation strategy and model specification

Referring to the two different groups of outcome variables, we proceed in two steps. First, we investigate the category of binary outcome variables *Existence of Social Support (ESS)*. Second, we analyze the ordinal outcome variables for the category *Number of Persons Providing Social Support (NSS)*. We use logit regressions with interaction terms⁴ between respondents' migration background and their school-leaving certificate. If applicable, we furthermore use the respondents' university degree to test whether the probability of having

²We do not distinguish whether a person is mentioned uniquely or multiple times. E.g., if the code number 9 for daughter is entered twice in the first item, we count a network size of two, if the remaining entry fields stay empty. We do so because the respondent might think of two different daughters. Moreover, depending on the support type, only 1.5–4.9% of the respondents have mentioned a person more than once per item.

³Calculating the sum of all the items' entries would over-quantify the amount of accessible support: for example, if the father is mentioned in all four categories, calculating the sum of the entries would suggest that four persons offer social support even if it is, in fact, just one person.

⁴See Buis (2010) for an explanation of the interpretation of interaction effects in logit models.

access to a specific type of social support or all support types simultaneously is affected by the respondents' degree of general and higher education and whether these effects differ for natives and migrants. The empirical estimation strategy is given in Eqs. (1) and (2).

$$ESS_i = \beta_o + \beta_1 Migrant_j + \beta_2 Education_j + \beta_3 Migrant_j * Education_j + \theta X_j \quad (1)$$

$$NSS_i = \beta_o + \beta_1 Migrant_j + \beta_2 Education_j + \beta_3 Migrant_j * Education_j + \theta X_j \quad (2)$$

with $i \in \{es, ios, its, as, all\}$. The dummy variable $Migrant_j$ reflects the respondents' migration background and takes a value of one if the respondent has a direct, indirect, or no further specified migration background referring to the G-SOEP categorization⁵ and zero otherwise. $Education_j$ is a vector containing dummy variables that are one for respondents' highest school-leaving certificate and zero otherwise. The variable *University* corresponds to higher education. The categories of school-leaving degrees are: lowest general education (Hauptschule), intermediate general education (Realschule), technical college degree (Fachabitur), highest general education (Abitur), other school-leaving degree,⁶ and drop out. In Germany, compulsory schooling encompasses 10 years with a potential extension of 2 or 3 years to receive the highest general education certificate. Students, who have either completed the highest general education or obtained the technical college certificate, qualify for higher education such as university or technical college.⁷ Due to the lack of school-leaving certificate, we exclude observations of students that still attended school in 2010. X_j is a vector of covariates for respondent j . An overview of the covariates and their operationalization is given in Table 7 in the [Appendix](#). The results are presented in odds ratios to show the potential differences in the effect of education for migrants and natives in multiplicative terms.⁸ The odds ratio of $Migrant_j$, β_1 , represents the ratio of odds of migrants compared to their native counterparts for having the value one in the outcome variable: the odds of having $ESS_i = 1$ for migrants is β_1 times the odds of their native counterpart. For natives the change in odds compared to the odds of the corresponding reference group due to holding a specific degree of education is given by β_2 . The odds of having $ESS_i = 1$ are β_2 times higher for natives holding the corresponding degree of general education compared to natives holding the lowest degree of general education. For migrants the corresponding effect is β_3 times the effect for natives with the same level of education: $\beta_2 * \beta_3$.

Considering the family and partner as important social resources, we include control variables that reflect whether the respondent lives in a permanent relationship or not and the number of relatives in model 2, following the findings of Wöhler and Hinz (2007). They find the importance of the partner and close family members to be especially pronounced in Germany. In addition, we add the squared family size to take into account on the one hand the possibility of decreasing marginal effects of the family size

⁴See Buis (2010) for an explanation of the interpretation of interaction effects in logit models.

⁵People with direct migration background are born outside of Germany. The category "indirect migration background" refers to people born to at least one parent of non-German nationality but within Germany.

⁶Not further specified are people who, according to their family biography, have a migration background but the SOEP lacks complete information (see Scheller (2011)).

⁷The educational degrees covered by the term other degree are not further differentiated by the G-SOEP.

⁸The term technical college therefore is used to classify the school-leaving certificate, not the actual certificate obtained after a successful completion of technical college. Persons with a degree from technical college are accounted for within the variable *university*.

⁸We present the results in odds ratios and not in marginal effects because interaction effects in odds ratios refer to the baseline odds within their own category and therefore control for differences in the baseline odds between the group of natives and migrants (see Buis (2010) for more details regarding the interpretation of odds ratios).

on peoples' access to the social resources investigated, and on the other hand that migrants have comparatively larger families.⁹

The third extension –model 3– additionally includes four variables that contain information on the respondents' level of formal social participation: a dummy variable that is one if the respondent is employed and zero if not, and three ordinal variables reflecting the frequency of participation in voluntary work, local politics, and religious events. Individuals with higher levels of social participation have more social relationships at their disposal which are a potential source of social support (Putnam 2000; 1993; Wellman and Wortley 1990). Hence, the probability to have access to social support will potentially increase with the level of social participation.

Considering that the geographical distance between the respondents and their network members may determine the degree to which they expect to receive social support, we additionally control for the distance to other family members in model 4.¹⁰ We extend our model with dummy variables for the minimum spatial distance in which family members live, because the different dimensions of social support demand for other levels of physical presence of the supporting person.

Sample description

In 2011 the questions regarding the received social support were not asked to participants of the 2011 refreshment sample (5.161 persons) and to all respondents that are part of the youth population (267 persons).¹¹ Hence, we are only able to use a reduced sample size of about 16.000 observations. Moreover, we exclude 3.856 observations of respondents that are older than 65 years of age. We do so because one of the questions in the module (the one regarding help with advancement in career-related questions, which we use as a proxy for informational support) has only been given to people who are still part of the active working force according to legal standards. Since the retiring age in Germany is 65, this particular sub-question has only been posed to people below this age limit. Table 1 gives an overview of the sociodemographic composition of the sample.¹² About 49% of the respondents are male and 22.9% have a migration background, whereby 12.3% have a direct and 10.5% have an indirect migration background corresponding to the SOEP classification of migration backgrounds.¹³ Respondents' age range between 17 and 64 years and the average age is 42.4 years. Regarding the highest level of general education, 25.5% of the respondents hold the lowest level of general education, 34.1% the intermediate and 23.5% finished the highest level of general education. A smaller fraction of 6.2% obtained a technical school degree and 7.1% hold another degree, which is not further differentiated. 2.1% of the respondents dropped out

⁹For 2011 the average family size of migrants is about 20% higher than the average family size of natives.

¹⁰Due to the lack of information about the location of non-kin ties, we are constrained to control only for the location of family members.

¹¹The G-SOEP interviews all household members that are at least 16 years of age. For young respondents questioned the first time a special youth questionnaire is used. Seventy-four respondents are both, part of the youth population and the refreshment sample. Thus, the relevant question modules are not asked to 5.354 persons.

¹²We use the weighting factor for wave 2011 to calculate the mean and standard deviation of the variables presented in Tables 1 and 2.

¹³The G-SOEP differentiates between direct, indirect, and not further specified migration background. According to this classification, respondents have a direct migration background if they are not born in Germany, an indirect migration background if they are born in Germany but do not have the German citizenship or have at least one parent that is born outside Germany. The migration background is not further specified if the respondent's place of birth is not known.

Table 1 Sociodemographic composition

	N	Mean	SD	Min.	Max.
Sex (1 = male)	11,758	0,490	0,500	0	1
Age	11,758	42,422	13,093	17,112	64,975
Migration background	11,758	0,228	0,420	0	1

of school without any school-leaving certificate and 1.5% are currently in school. Beside the general education degree, 20.3% of the respondents hold a university degree.

The differences between migrants and natives according to their level of general and higher education are presented in Table 2. In all categories related to the German education system, low, intermediate and high degree of general education, technical school, and university degree, the share of migrants falls behind the share of natives. A huge intergroup difference can also be found in the category *no degree*, where 4.7% of the migrants dropped out of school with no school-leaving certificate whereas this only applies for 1.3% in the group of natives. The category *other degree* it is not as easy to interpret as the other school-leaving degrees, as it can include foreign degrees obtained outside of Germany as these degrees might not have an equivalent within the German education system. Migrants display a higher share of school-leaving certificates classified as *other*, which complicates the analysis in the later chapters of this paper. However, there remain enough observations to make inferences about the remaining school-leaving degrees.

As mentioned earlier, students who are still enrolled in school will not be part of the analysis, since they lack a school-leaving certificate and are therefore missing an important independent variable.

Results: education and social support

The analysis of our results follows the same strategy, presenting the results using the dependent variable “access to social support” first, followed by the analysis of the dependent variable “number of support providers”. In all the models, the group of native females that are 16–25 years old holding the lowest level of general education serves as the reference group. Model 0 starts with only including dependent variables such as sex, income, age and migrant background, model 1 introduces the degrees of education obtained. Model 2 adds several familial characteristics such as family size. In model 3 we add characteristics that demonstrate social commitment like employment

Table 2 Educational degrees: natives vs. migrants

	Natives					Migrants				
	N	Mean	SD	Min	Max	N	Mean	SD	Min	Max
Lowest general education	2190	0,255	0,436	0	1	466	0,256	0,436	0	1
Intermediate general education	3527	0,382	0,486	0	1	431	0,200	0,400	0	1
Highest general education	2587	0,255	0,436	0	1	361	0,161	0,368	0	1
Technical college	623	0,068	0,251	0	1	91	0,043	0,202	0	1
Other degree	102	0,013	0,115	0	1	479	0,272	0,445	0	1
Dropout, no degree	81	0,013	0,113	0	1	78	0,047	0,213	0	1
Currently in school	177	0,014	0,116	0	1	48	0,021	0,144	0	1
University degree	2331	0,210	0,408	0	1	417	0,178	0,382	0	1

Results are based on respondents younger than 65 years of age and that are not part of the refreshment sample or youth population in the 2011 wave

Table 3 Overview of the results

Dependent variable: Access to social support	Result can be found in Table
• Education has a moderating role on the access to social support between migrants and non-migrants.	6 (model 0 vs. models 1–4)
• Migrants benefit in the access to instrumental support.	4 (row 1)
• A higher degree of education increases the probability to have access to social support in all dimensions.	4 (rows 2–7)
• Education does not influence the probability to have access to all dimensions of social support for migrants, except for instrumental support.	4 (rows 8–12)
• For instrumental support: higher education decreases migrants' probability to receive instrumental support.	4 (column 2, rows 8 & 10)
Dependent variable: Number of support providers	Result can be found in Table
• A higher level of general education increases the probability of having access to a bigger network of support providers.	5 (rows 2–7)

or voluntary work. Model 4 finally represents the full model, additionally controlling for the physical distance of the potential support providers. The results are summarized in Table 3 and explained in detail in the following subsections.

Results Logit regression: access to social support

Using a very simple model specification without educational degrees leads to a skewed observation: as reported by model 0, which can be found in Table 7 in the Appendix, migrants are disadvantaged when it comes to access to social support. They can only access 74.8% of the social support in all dimensions as compared to their native counterparts. The only support dimension where they do not fall back is instrumental support, where the odds are not statistically significant. However, this result has to be viewed with caution as already implied: when adding school-leaving certificates, the resulting odds ratios become insignificant (models 1–4, Table 7 in the Appendix). This is one important finding, as it will also hold when we are using the number of potential support providers as independent variable, which is presented in Table 12 in the Appendix. We therefore infer a moderating role of education when it comes to the influence of migration background on access to social support.

From the results of model 4 (presented in Table 4), including all independent variables, migrants even benefit in the access to instrumental support. The odds of having access to instrumental support are 1.605 times higher than the odds of natives. For all other dimensions including the aggregation of all four support types simultaneously, having a migrant background does not statistically matter for the access to social support.

Having a higher degree of education increases the probability to have access to the different types of social support as the analysis shows. Compared to the reference group,¹⁴ native respondents' holding the highest degree of general education are in a superior position. Even so, the magnitude of the positive effect resulting from holding the highest degree of general education varies according to the different support types: with an odds ratio of 2.338 it is highest for emotional support and with 1.667 smallest for instrumental

¹⁴The reference group is native females who are between 16 and 25 years old holding the lowest degree of general education and did not obtain a university degree. Their odds of having access to all social support dimensions simultaneously are 2.098. This means that within the reference group we expect to find 2.098 females with access to all support dimensions for every female not having access to all dimensions simultaneously. For (i) emotional support, (ii) instrumental support, (iii) informational support, and (iv) appraisal support, the odds ratios of persons having access to persons not having access are (i) 16.209 to 1, (ii) 11.482 to 1, (iii) 4.698 to 1, and (iv) 6.759 to 1 respectively.

support. Moreover, the odds for native respondents holding an intermediate general education degree to have access to appraisal support and informational support are 1.385 times and 1.187 times the odds of the reference group respectively. In contrast, holding an intermediate level of general education does not affect the probability to receive emotional support. For natives holding a degree that allows them to enroll in technical college goes hand in hand with a larger and robust probability to have access to appraisal support, but to none of the other support dimensions. Getting a degree from secondary education also benefits with respect to access to informational support. The odds of obtaining support in terms of job related questions are 1.329 times higher for respondents with a university degree, as compared to their counterparts with a lower educational degree.

The advantage in obtaining informational support also drives the statistical significance of the access to all dimensions simultaneously, which is with an odds ratio of 1.394 almost as pronounced as the access to informational support for university graduates. Having access to all social support dimensions simultaneously is 1.254 times more likely for respondents with the intermediate level of general education and 1.232 times for respondents with a degree which allows to enroll in technical college compared to the reference group.

Our most staggering result, however, is the lack of significance in interaction effects between the respondents' school-leaving certificate and their migration background. In all support dimensions except in case of instrumental support, we do not find any significant effect of education and migration background on social support. Instrumental support – e.g. help in case of need for long-term care – is less likely to be provided for migrants who hold the highest degree of general education. They can only access 61% of the support which natives receive holding a similar degree. Which translates to: holding the highest level of general education as a migrant is leading to a reduction in odds for having access to instrumental support.¹⁵ The same pattern can be found for migrants holding an intermediate general education degree: the expected effect is only 64.5% of the expected effect for similarly educated natives. All other support dimensions do not show any significant effect resulting from migration background and education level.

To check for robustness of our results, we introduce various control variables, starting from model 2–4, which can be found in Tables 7, 8, 9, 10 and 11 in the [Appendix](#). The effects of education for both, natives and migrants, do not differ much in terms of magnitude and significance levels.

Results ordered Logit regression: number of support givers

In addition to the question whether a person has access to a certain kind of social support we also investigate the effect of education on the probability of having access to a larger number of support givers, as a diverse network can be associated with less social control and a larger variety of provided content. There are differences between the pure access, as described in Section 4.1 and the network extent measured in support providing alters. The most important deviation is that, even if we control for the degree of general and higher education, the odds for having a migrant background remain significant and lower than 1, as reported in Table 5. This means, migrants have, irrespective of their education, a lower probability to have a larger support network providing support of all dimensions

¹⁵Logit regressions in odds ratios provide multiplicative effects relative to the baseline odds in the group of migrants or natives.

Table 4 Results logit regression in odds ratios: access to social support by support dimension (model 4)

	Emotional Support		Instrumental Support		Informational Support		Appraisal Support		All Dimensions	
Migrant	0.793	(0.292)	1.605**	(0.042)	0.809*	(0.071)	0.774	(0.105)	0.816*	(0.094)
Intermed. gen. edu.	1.294*	(0.055)	1.255**	(0.036)	1.187***	(0.007)	1.385***	(0.001)	1.217***	(0.002)
Technical college	1.263	(0.369)	1.497*	(0.053)	1.189	(0.112)	1.870***	(0.002)	1.201*	(0.095)
Highest gen. edu.	2.338***	(0.000)	1.718***	(0.001)	1.667***	(0.000)	2.012***	(0.000)	1.686***	(0.000)
Other degree	1.057	(0.908)	1.221	(0.627)	1.155	(0.540)	0.775	(0.419)	1.068	(0.781)
Dropout	1.131	(0.802)	1.277	(0.582)	0.965	(0.897)	0.829	(0.584)	1.023	(0.918)
University	1.450*	(0.087)	1.206	(0.206)	1.329***	(0.000)	1.273*	(0.092)	1.394***	(0.000)
Mig.*Intermed. gen. edu.	1.009	(0.979)	0.514**	(0.029)	1.235	(0.202)	1.053	(0.829)	1.139	(0.461)
Mig.*Technical college	1.041	(0.948)	0.773	(0.670)	1.505	(0.166)	0.573	(0.178)	1.153	(0.573)
Mig.*Highest gen. edu.	0.707	(0.461)	0.355***	(0.006)	1.119	(0.587)	0.712	(0.263)	0.981	(0.874)
Mig.*Other degree	1.022	(0.970)	0.507	(0.180)	1.244	(0.436)	0.735	(0.404)	1.025	(0.949)
Mig.*Dropout	0.653	(0.535)	0.258**	(0.028)	0.550	(0.141)	0.769	(0.584)	0.485*	(0.072)
Migrant*University	1.031	(0.941)	1.115	(0.728)	0.918	(0.605)	1.054	(0.832)	0.870	(0.337)
Male	0.417***	(0.000)	0.762***	(0.001)	0.968	(0.475)	0.752***	(0.000)	0.900**	(0.016)
Age group 26–35	0.905	(0.654)	1.008	(0.965)	0.358***	(0.000)	1.164	(0.300)	0.551***	(0.000)
Age group 36–45	0.642**	(0.029)	0.785	(0.131)	0.174***	(0.000)	1.169	(0.262)	0.315***	(0.000)
Age group 46–55	0.613**	(0.014)	0.769*	(0.092)	0.120***	(0.000)	1.036	(0.795)	0.229***	(0.000)
Age group 56–64	0.434***	(0.000)	0.815	(0.218)	0.0647***	(0.000)	1.080	(0.588)	0.126***	(0.000)
Household income	1.017**	(0.017)	0.998	(0.658)	1.005**	(0.028)	1.003	(0.429)	1.003	(0.229)
Perm. relationship	4.225***	(0.000)	2.280***	(0.000)	1.398***	(0.000)	1.479***	(0.000)	1.657***	(0.000)
Family size	1.031***	(0.004)	1.037***	(0.000)	1.017***	(0.000)	1.056***	(0.000)	1.028***	(0.000)
Squared family size	1.000	(0.175)	1.000*	(0.083)	1.000**	(0.016)	1.000***	(0.000)	1.000***	(0.008)
Employed	1.126	(0.339)	0.948	(0.602)	1.556***	(0.000)	1.056	(0.532)	1.542***	(0.000)
Volunteer Work	0.952	(0.412)	0.937	(0.164)	0.927***	(0.002)	0.787***	(0.000)	0.890***	(0.000)

Table 4 Results logit regression in odds ratios: access to social support by support dimension (model 4) (Continued)

	Emotional Support	Instrumental Support	Informational Support	Appraisal Support	All Dimensions
Local politics	0.970 (0.819)	1.021 (0.838)	0.958 (0.407)	0.838 (0.109)	0.952 (0.298)
Religious events	0.874** (0.048)	0.796*** (0.000)	1.001 (0.961)	1.091** (0.043)	1.014 (0.722)
Family in neighborhood	1.075 (0.773)	0.758 (0.177)	0.778* (0.078)	0.958 (0.835)	0.744** (0.037)
Family (15 min by foot)	1.374 (0.161)	0.693** (0.031)	0.648*** (0.000)	0.942 (0.732)	0.744** (0.016)
Family (1 h drive)	1.071 (0.734)	0.561*** (0.000)	0.778** (0.028)	0.826 (0.218)	0.819* (0.075)
Family in Germany	1.310 (0.397)	0.896 (0.659)	0.769 (0.118)	1.336 (0.293)	0.945 (0.726)
Family abroad	0.958 (0.970)		0.135* (0.076)	0.812 (0.807)	0.244 (0.210)
N	10,331	10,295	10,041	10,284	10,045
Pseudo R-sq	0.107	0.056	0.120	0.060	0.101

Exponentiated coefficients (odds ratios); p-values in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5 Results ordered logit regression in odds ratios: Number of social support providers by support dimension (model 4)

	Emotional Support	Instrumental Support	Informational Support	Appraisal Support	All Dimensions
Migrant	0.797** (0.017)	0.858 (0.112)	0.779** (0.018)	0.699*** (0.000)	0.787** (0.013)
Intermed. gen. edu.	1.296*** (0.000)	1.164*** (0.003)	1.238*** (0.000)	1.400*** (0.000)	1.354*** (0.000)
Technical college	1.341*** (0.001)	1.396*** (0.000)	1.353*** (0.001)	1.685*** (0.000)	1.730*** (0.000)
Highest gen. edu.	1.943*** (0.000)	1.605*** (0.000)	2.057*** (0.000)	2.125*** (0.000)	2.217*** (0.000)
Other degree	1.067 (0.731)	1.024 (0.898)	1.074 (0.728)	0.829 (0.339)	1.005 (0.979)
Dropout, no degree	0.747 (0.189)	0.763 (0.222)	0.829 (0.453)	0.728 (0.156)	0.588** (0.016)
University	1.184*** (0.004)	1.039 (0.518)	1.263*** (0.000)	1.068 (0.254)	1.207*** (0.001)
Mig.*Intermed. gen. edu.	1.022 (0.869)	0.826 (0.158)	1.171 (0.274)	1.140 (0.333)	0.976 (0.855)
Mig.*Technical college	1.053 (0.824)	0.825 (0.397)	1.483* (0.095)	1.227 (0.378)	1.076 (0.747)
Mig.*Highest gen. edu.	0.880 (0.426)	0.816 (0.215)	1.012 (0.946)	0.996 (0.981)	0.831 (0.249)
Mig.*Other degree	0.826 (0.401)	0.945 (0.802)	1.278 (0.320)	0.922 (0.729)	0.849 (0.470)
Mig.*Dropout	0.730 (0.321)	0.708 (0.276)	0.668 (0.285)	0.805 (0.496)	0.783 (0.435)
Migrant*University	1.160 (0.256)	0.974 (0.840)	1.022 (0.873)	1.314** (0.042)	1.137 (0.327)
Male	0.618*** (0.000)	0.745*** (0.000)	0.950 (0.183)	0.830*** (0.000)	0.733*** (0.000)
Age group 26–35	0.855** (0.033)	0.725*** (0.000)	0.356*** (0.000)	0.944 (0.434)	0.693*** (0.000)
Age group 36–45	0.585*** (0.000)	0.462*** (0.000)	0.145*** (0.000)	0.807*** (0.003)	0.469*** (0.000)
Age group 46–55	0.559*** (0.000)	0.393*** (0.000)	0.102*** (0.000)	0.747*** (0.000)	0.381*** (0.000)
Age group 56–64	0.468*** (0.000)	0.372*** (0.000)	0.0531*** (0.000)	0.585*** (0.000)	0.261*** (0.000)
Household income	1.006*** (0.002)	1.003 (0.131)	1.002 (0.247)	1.005*** (0.004)	1.008*** (0.000)
Perm. relationship	1.473*** (0.000)	1.675*** (0.000)	1.263*** (0.000)	1.204*** (0.001)	1.218*** (0.000)
Family size	1.041*** (0.000)	1.045*** (0.000)	1.020*** (0.000)	1.044*** (0.000)	1.070*** (0.000)
Squared family size	1.000*** (0.000)	1.000*** (0.000)	1.000*** (0.002)	1.000*** (0.000)	0.999*** (0.000)
Employed	1.154*** (0.002)	1.103** (0.030)	1.404*** (0.000)	1.192*** (0.000)	1.359*** (0.000)
Volunteer Work	0.907*** (0.000)	0.868*** (0.000)	0.887*** (0.000)	0.862*** (0.000)	0.835*** (0.000)

Table 5 Results ordered logit regression in odds ratios: Number of social support providers by support dimension (model 4) (Continued)

	Emotional Support	Instrumental Support	Informational Support	Appraisal Support	All Dimensions
Local politics	0.932* (0.094)	0.915** (0.034)	0.895** (0.012)	0.906** (0.017)	0.922* (0.052)
Religious events	0.868*** (0.000)	0.875*** (0.000)	1.001 (0.964)	0.997 (0.879)	0.884*** (0.000)
Family in neighborhood	1.277** (0.035)	1.025 (0.829)	0.814 (0.105)	1.219* (0.084)	1.239* (0.054)
Family (in 15 min by foot)	1.395*** (0.001)	0.847* (0.092)	0.724*** (0.004)	1.246** (0.024)	1.124 (0.215)
Family (1 h drive)	0.974 (0.766)	0.688*** (0.000)	0.819** (0.044)	1.027 (0.760)	0.933 (0.428)
Family in Germany	1.008 (0.952)	0.936 (0.616)	0.908 (0.492)	1.055 (0.677)	1.121 (0.376)
Family abroad	1.931 (0.253)	0.826 (0.745)	0.134* (0.075)	1.177 (0.800)	0.870 (0.814)
N	10,331	10,303	10,041	10,284	10,337
Pseudo R-sq	0.035	0.035	0.088	0.031	0.052

Exponentiated coefficients (odds ratios); p-values in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

simultaneously (all models presented in Table 12 in the [Appendix](#)) as well as for emotional (Table 13 in the [Appendix](#)), informational (Table 15 in the [Appendix](#)) and appraisal support (Table 16 in the [Appendix](#)) The only exception is again instrumental support: For this type of social support the odds become insignificant once the variable for education has been introduced (model 1–4, Table 14 in the [Appendix](#)).

The impact of higher levels of general education on the probability of having access to a larger number of support givers is significantly positive for all support types. The odds of having access to a larger number of support persons is between 1.6 and 2.2 times the odds of the reference group for individuals holding the highest level of education. Similar results can be observed for graduates of intermediate general education or who obtained a certificate permitting them to study at a technical college. Following these results, the effect of education on the extent of the network is stronger than on the access to social support itself. Tertiary education, i.e. obtaining a university degree does only benefit in the dimensions of emotional and informational support. In these two dimensions, the odds are again significantly higher to have a larger support providing network measured in number of alters.

Similar to the presentation of the results in 4.1, we find no significant interaction effects of migrant background and school-leaving certificate on the number of support providing alters in the network. Again, with one exception: migrants with a university degree have a 1.40 higher probability of having a higher number of people providing appraisal support.

The remaining significant results do resemble the results already found in the first model, describing the access to social support.

Critical discussion of the empirical results

Our study explores the link between education and the access to social support, adding to the literature by distinguishing between four different dimensions as introduced by House (1981). Access to social support as well as the extent of the network demonstrate a positive education gradient within all dimensions, which means the results are in line with the theoretical argumentation that education has an additional beneficial impact through the channel of individuals' social networks.

We are partly able to confirm the hypothesis of a disadvantageous effect of migrant background on the number of social support providing people. Having a migrant background reduces the probability of having access to a larger number of support providers in almost all dimensions except for instrumental support. With respect to access in general, having a migrant background increases the probability to receive instrumental support, which is complementing the non-significant finding regarding the extent of the network within this dimension. However, the positive connection is dissolved once controlled for education: we find a negative impact of the interaction effect of education and migrant background. Following the underlying theoretical model, the results suggest a lower probability of having access to social support for migrants with a certain school-leaving certificate as compared to their native counterparts, but only regarding instrumental support.

Interpreting the lack of statistically significant odds ratios in the interaction variables of all other support dimensions, leads to concluding that there are no negative returns to education for migrants. Although migrants are worse off when it comes to the access to a larger support network, it does not seem to stem from a negative education effect. Migrants and natives alike benefit from a higher level of education, which increases

their access to social support as well as the number of support providing persons in their network. This finding is interesting and leaves room for further research.

Other control variables increase the access to social support as well. Having a permanent relationship, a larger household income and a larger family are all socio-demographic characteristics that lead to a higher probability to access social support as well as to a larger network providing all dimensions of social support. Our study, as a by-product, also confirms findings regarding the age of egos: having access to social support as well as being part of an extensive social network decreases over time. Social isolation therefore is more common with increasing age, as Fischer and Beresford (2015) find too. Furthermore, we find that men are less connected to their social networks. The gender dummy reports significant lower odds of having access to social support within all dimensions and of all dimensions simultaneously, except for informational support. This is in line with previous conducted research: Wöhler and Hinz (2007) also find that German men have fewer support providing persons in their network than women.

Additionally, we point out that the results of this study face the problem of endogeneity between education and social support. On the one hand, individuals who are equipped with a well-functioning social network will probably achieve higher levels of education because they are supported by their social ties. On the other hand education increases individuals' social capital by spreading social norms and responsibilities. Education therefore forms social skills and abilities that enable individuals to build up beneficial social relationships. The problem of endogeneity could have been circumvented by using panel regressions. Unfortunately, the information about individuals' social networks has just been collected in two waves of the G-SOEP, namely in 2006 and 2011, whereby the conception of the question module changed.¹⁶ Thus, it is difficult to combine the data collected in 2006 and 2011, which leaves us with a solely cross-sectional dataset.

Summary and conclusion

Education is one of the key determinants of personal development. Overall, individuals with higher levels of education benefit in terms of better mental and physical health, more risk-adverse behavior, increased lifespan and well-being. One channel through which education unfolds its positive influence is social networks. They provide material and immaterial resources like social support, which in turn are positively affected by an increase in education. However, the direction of the effect does not remain the same if the population is divided into groups according to their geographical and/or cultural background. Several studies find a significantly smaller effect of education on health for migrants as compared to natives (Gorman et al. 2010; Walton et al. 2009). This finding can theoretically be explained by the lower ability of migrants to make use of their education. Another channel through which personal well-being is influenced is social support: having access to social support is vital for a successful acculturation with the host society (Ryan et al. 2008). To the best of our knowledge, no empirical evidence exists which examines whether the returns to education in form of social support are actually smaller for migrants than for natives. To close this gap, we therefore analyze the effect of education on the probability of having access to social support.

¹⁶In 2006 respondents could name up to three support persons, whereas in 2011 this number has been increased to a total of five support persons, which renders the analysis inconclusive.

Our findings indicate a positive link between education and the probability of having access to all types of social support: the odds ratio of individuals holding the highest level of general education are higher than the odds of the baseline group of individuals holding the lowest level of general education irrespective of the dimension of social support.

Since we find a negative relationship of migrant background in accessing social support as well as regarding the size of the network, we conclude that migrants are disadvantaged when it comes to receiving social support in Germany. However, we do not find any negative returns to education for migrants, demonstrated by the mediating effect of education and migrant background on access to social support and extent of social network. The odds ratio of the interaction effects of education and migrant background are not significantly different for emotional, appraisal and informational support as well as for all support dimensions simultaneously.

The only exception is instrumental support, which is, in our study, approximated by the question on help in times of need for longtime care. For migrants, holding the highest level of general education goes hand in hand with a reduction in odds of having access to instrumental support. Migrants, by leaving their home country, lose their original support network and have to build new relationships in the host country. This experience can lead to a lower amount of social capital in form of social networks (Ryan et al. 2008). Especially in dimensions where the need for physical presence is high, migrants display a lower amount of providers of these services. As instrumental support is queried in terms of care within the SOEP questionnaire, this question implies geographical closeness of the care-giver and therefore cannot be provided by a network living outside of the ego's country of residence (Willmott 1987). This study therefore sheds some light on the question why migrants experience lower returns to education than natives in form of better mental and physical health as instrumental support is directly related to care giving in times of illness or need for long-term care.

As we are not entirely confident why migrants who hold the highest level of general education face a reduction in their probability to have access to instrumental support, we ask for additional theoretical and empirical research.

By basing our empirical estimations on the SOEP dataset, we broaden the literature on social network analysis and education regarding non-US studies. Being able to draw country comparisons in a further step, investigations on the cultural differences between countries regarding the evolution of society are made possible. Especially with respect to the development of social isolation and integration of migrant population into host societies, these analyses can provide valuable insights for policy makers. Integrating advancements in communication and transportation technologies enables to depict a more accurate current state of the state of a society's social capital.

Further research should also address the question of which types of how the different social support dimensions affect individuals and how they benefit from a higher amount of these.

Concluding, we want to answer the question posed in the title "Do migrants benefit as much as natives?" with a yes, as we do not find negative returns to education for migrants. However, there is still ample ground for research within the topic of benefits of education and migration, which will increase the understanding of the effect of migration experience on the personal and social outcomes of migrants.

Appendix

Table 6 Covariates

Variable	Type	Characteristics	Description
<i>Migrant</i>	Dummy variable	1=Migrant and 0=Native	The variable Migrant takes the value one if the respondent is not born in Germany, born in Germany but not having German citizenship or having at least one parent not born in Germany or not holding the German citizenship, or if his place of birth is not known. The variable is zero for respondents born in Germany and whose both parents are born in Germany and holding German citizenship.
<i>Education</i>	Six dummy variables	Intermediate general education; Technical college; Highest general education; Other school leaving degree; Drop out, no school leaving degree; University	The corresponding variable is one for the highest level of completed school degree or completed higher education and zero otherwise.
<i>Sex</i>	Dummy variable	1=male and 0=female	
<i>Age group</i>	Five dummy variables	1. Group: Age 16-25; 2. Group: Age 26-35; 3. Group: Age 36-45; 4. Group: Age 46-55; 5. Group: Age 56-64	The corresponding variable is one if the respondents' age is covered by the corresponding age group and zero otherwise.
<i>Household income</i>	Continuous variable	$Household\ income = \frac{Monthly\ household\ net\ income}{1 + 0.5 * Adults + 0.3 * Kids}$	The variable household income refers to the equivalent household income in 100 Euro and is calculated using modified OECD equivalence weights, with adults being the number of adults living in the household in addition to the respondent and kids being number of children younger age 14 living in the household.
<i>Permanent relationship</i>	Dummy variable	1=In permanent relationship and 0=Single	The takes the value one if the respondent is married, in a registered partnership and lives together with his spouse or partner or lives in a serious permanent relationship and zero otherwise.
<i>Family size</i>	Continuous variable		We adjust this number of named relatives if a family member is mentioned to be support giver in one of the four support dimensions but not as an existing family member. For these cases we increase the number of family members by one unit. We do not adjust the number of family members if question regarding the number of relatives is not answered.
<i>Squared family size</i>	Continuous variable	$Squared\ family\ size = (Family\ size)^2$	
<i>Employment status</i>	Dummy variable	1=Employed and 0=Unemployed	I just differentiate between employed, independent of working hours, and not employed by using a dummy variable that takes the value one if a person is employed and zero otherwise.
<i>Volunteer work</i>	Ordinal variable		The variables reflect the respondents' frequency of performance of volunteer work, participation in local politics, and attendance of church or other religious events. Each variable contains four characteristics: daily, at least once a week, at least once a month, and less frequently. Therefore, an increase in the value of one of these variables means a reduction in the frequency of participation in the corresponding activity.
<i>Local politics</i>	Ordinal variable	1= Dayly participation, 2=Participation at least once a week, 3= Participation at least once a month, 4= Participation less frequently	
<i>Religious events</i>	Ordinal variable		
<i>Minimum spatial distance of relatives</i>	Six dummy variables	Special distance categories: 1. Family in the same household or house, 2. Family in neighborhood, 3. Family in 15 minutes walking distance, 4. Family within one hour drive, 5. Family in Germany, 6. Family abroad	Each dummy variable is one if the respondent has a relative in the corresponding distance but not in a smaller distance category and zero otherwise.

Table 7 Results logit regression for access to social support in odds ratios (model 0–4), all types simultaneous

	Model 0	Model 1	Model 2	Model 3	Model 4
Access to all support					
Migrant	0.748*** (0.000)	0.819* (0.077)	0.803* (0.000)	0.824* (0.057)	0.816* (0.094)
Intermed. gen. edu.		1.254*** (0.000)	1.259*** (0.000)	1.220*** (0.000)	1.217*** (0.002)
Technical college		1.232** (0.045)	1.241** (0.041)	1.194* (0.041)	1.201* (0.095)
Highest gen. edu.		1.654*** (0.000)	1.711*** (0.000)	1.683*** (0.000)	1.686*** (0.000)
Other degree		0.999 (0.995)	1.033 (0.886)	1.066 (0.886)	1.068 (0.781)
Dropout		0.964 (0.888)	0.979 (0.937)	1.028 (0.918)	1.023 (0.918)
University		1.471*** (0.000)	1.455*** (0.000)	1.401*** (0.000)	1.394*** (0.000)
Mig.*Intermed. gen. edu.		1.057 (0.725)	1.127 (0.454)	1.126 (0.461)	1.139 (0.461)
Mig.*Technical college		1.098 (0.727)	1.159 (0.586)	1.166 (0.573)	1.153 (0.573)
Mig.*Highest gen. edu.		0.963 (0.847)	0.929 (0.707)	0.969 (0.874)	0.981 (0.874)
Mig.*Other degree		1.052 (0.848)	0.978 (0.935)	1.018 (0.949)	1.025 (0.949)
Mig.*Dropout		0.517 (0.103)	0.464* (0.061)	0.476* (0.061)	0.485* (0.072)
Migrant*University		0.876 (0.399)	0.888 (0.457)	0.858 (0.337)	0.870 (0.337)
Male	0.908** (0.018)	0.931* (0.089)	0.966 (0.415)	0.899** (0.016)	0.900** (0.016)
Age group 26–35	0.736*** (0.000)	0.671*** (0.000)	0.560*** (0.000)	0.534*** (0.000)	0.551*** (0.000)
Age group 36–45	0.409*** (0.000)	0.411*** (0.000)	0.331*** (0.000)	0.306*** (0.000)	0.315*** (0.000)
Age group 46–55	0.286*** (0.000)	0.290*** (0.000)	0.241*** (0.000)	0.221*** (0.000)	0.229*** (0.000)
Age group 56–64	0.136*** (0.000)	0.140*** (0.000)	0.119*** (0.000)	0.121*** (0.000)	0.126*** (0.000)
Household income	1.019*** (0.000)	1.008*** (0.000)	1.006*** (0.000)	1.003 (0.229)	1.003 (0.229)
Perm. relationship		1.856*** (0.000)	1.856*** (0.000)	1.810*** (0.000)	1.657*** (0.000)
Family size		1.031*** (0.000)	1.031*** (0.000)	1.029*** (0.000)	1.028*** (0.000)
Squared family size		1.000*** (0.008)	1.000*** (0.008)	1.000*** (0.008)	1.000*** (0.008)
Employed		1.536*** (0.000)	1.536*** (0.000)	1.536*** (0.000)	1.542*** (0.000)
Volunteer Work		0.890*** (0.000)	0.890*** (0.000)	0.890*** (0.000)	0.890*** (0.000)

Table 7 Results logit regression for access to social support in odds ratios (model 0–4), all types simultaneous (Continued)

	Model 0	Model 1	Model 2	Model 3	Model 4
Access to all support					
Local politics				0.949 (0.298)	0.952 (0.298)
Religious events				1.009 (0.722)	1.014 (0.722)
Family in neighborhood					0.744** (0.037)
Family (in 15 min by foot)					0.744** (0.016)
Family (1 h drive)					0.819* (0.075)
Family in Germany					0.945 (0.726)
Family abroad					0.244 (0.210)
N	10874	10,172	10,111	10,057	10,045
Pseudo R-sq	0.072	0.082	0.094	0.100	0.101

Exponentiated coefficients (odds ratios) reported; p-values in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8 Results logit regression for access to social support in odds ratios (model 0–4), emotional support

Access to emotional support	Model 0	Model 1	Model 2	Model 3	Model 4
Migrant	0.774** (0.026)	0.748 (0.158)	0.758 (0.198)	0.777 (0.198)	0.793 (0.249)
Intermed. gen. edu.		1.257* (0.079)	1.287* (0.059)	1.285* (0.059)	1.294* (0.061)
Technical college		1.244 (0.393)	1.280 (0.341)	1.266 (0.341)	1.263 (0.363)
Highest gen. edu.		2.177*** (0.000)	2.402*** (0.000)	2.381*** (0.000)	2.338*** (0.000)
Other degree		0.908 (0.839)	1.031 (0.949)	1.059 (0.949)	1.057 (0.906)
Dropout		0.978 (0.963)	1.108 (0.835)	1.136 (0.835)	0.131 (0.796)
University		1.529** (0.047)	1.473* (0.073)	1.449* (0.073)	1.450* (0.087)
Mig.*Intermed. gen. edu.		1.086 (0.797)	1.079 (0.819)	1.027 (0.819)	1.009 (0.936)
Mig.*Technical college		1.049 (0.937)	1.085 (0.895)	1.031 (0.895)	1.041 (0.961)
Mig.*Highest gen. edu.		0.820 (0.667)	0.738 (0.517)	0.702 (0.517)	0.707 (0.450)
Mig.*Other degree		1.573 (0.415)	1.126 (0.834)	1.032 (0.834)	1.022 (0.957)
Mig.*Dropout		1.052 (0.939)	0.696 (0.597)	0.670 (0.597)	0.653 (0.561)
Migrant*University		0.922 (0.843)	1.041 (0.923)	1.064 (0.923)	1.031 (0.882)
Male	0.423*** (0.000)	0.429*** (0.000)	0.426*** (0.000)	0.423*** (0.000)	0.417*** (0.000)
Age group 26–35	1.559** (0.017)	1.425* (0.091)	0.931 (0.743)	0.947 (0.743)	0.905 (0.803)
Age group 36–45	1.174 (0.316)	1.192 (0.346)	0.681* (0.051)	0.675** (0.051)	0.642 (0.048)
Age group 46–55	1.015 (0.921)	1.057 (0.761)	0.651** (0.024)	0.645** (0.024)	0.613 (0.022)
Age group 56–64	0.689** (0.013)	0.718 (0.071)	0.462*** (0.000)	0.465*** (0.000)	0.434*** (0.000)
Household income	1.049*** (0.000)	1.034*** (0.000)	1.019*** (0.000)	1.016** (0.006)	1.017** (0.021)
Perm. relationship			4.032*** (0.000)	3.910*** (0.000)	4.225*** (0.000)
Family size			1.034*** (0.001)	1.031*** (0.001)	1.031*** (0.004)
Squared family size			1.000*** (0.132)	1.000*** (0.168)	1.000*** (0.175)
Employed			1.120 (0.385)	1.120 (0.385)	1.126 (0.339)
Volunteer Work			0.951 (0.401)	0.951 (0.401)	0.952 (0.412)

Table 8 Results logit regression for access to social support in odds ratios (model 0–4), emotional support (Continued)

Access to emotional support	Model 0	Model 1	Model 2	Model 3	Model 4
Local politics				0.970 (0.822)	0.970 (0.819)
Religious events				0.878* (0.057)	0.874** (0.048)
Family in neighborhood					1.075 (0.773)
Family (in 15 min by foot)					1.374 (0.161)
Family (1 h drive)					1.071 (0.734)
Family in Germany					1.310 (0.397)
Family abroad					0.958 (0.970)
N	11,183	10,465	10,399	10,343	10,311
Pseudo R-sq	0.044	0.056	0.105	0.107	0.107

Exponentiated coefficients (odds ratios) reported; p-values in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 9 Results logit regression for access to social support in odds ratios (model 0–4), instrumental support

Access to instrumental support	Model 0	Model 1	Model 2	Model 3	Model 4
Migrant	1.058	1.552** (0.576)	1.668** (0.047)	1.630** (0.027)	1.605** (0.035)
Intermed. gen. edu.		1.206*	1.224*	1.275** (0.059)	1.255** (0.036)
Technical college		1.469*	1.493*	1.468*	1.497*
Highest gen. edu.		1.618*** (0.002)	1.761*** (0.002)	1.706*** (0.000)	1.718*** (0.001)
Other degree		1.099	1.189	1.199	1.221
Dropout		1.121	1.238	1.270	1.277
University		1.239	1.198	1.216	1.206
Mig.*Intermed. gen. edu.		0.537** (0.033)	0.523** (0.033)	0.502** (0.033)	0.514** (0.029)
Mig.*Technical college		0.792	0.797	0.793	0.773
Mig.*Highest gen. edu.		0.428** (0.020)	0.356*** (0.020)	0.348*** (0.006)	0.355*** (0.006)
Mig.*Other degree		0.730	0.558	0.531	0.507
Mig.*Dropout		0.399	0.272**	0.264**	0.258**
Migrant*University		1.031	1.091	1.121	1.115
Male	0.709*** (0.000)	0.719*** (0.000)	0.751*** (0.000)	0.760*** (0.000)	0.762*** (0.001)
Age group 26–35	1.146 (0.353)	1.187 (0.298)	0.892 (0.298)	0.934 (0.501)	1.008 (0.965)
Age group 36–45	0.931 (0.585)	1.025 (0.872)	0.711** (0.872)	0.720** (0.031)	0.785 (0.131)
Age group 46–55	0.826 (0.127)	0.926 (0.127)	0.683** (0.602)	0.691** (0.013)	0.769* (0.092)
Age group 56–64	0.820 (0.132)	0.950 (0.132)	0.738* (0.738)	0.713** (0.061)	0.815 (0.218)
Household income	1.013*** (0.001)	1.005 (0.001)	0.999 (0.236)	0.998** (0.724)	0.998 (0.658)
Perm. relationship			2.816*** (0.000)	2.750*** (0.000)	2.280*** (0.000)
Family size			1.042*** (0.000)	1.038*** (0.000)	1.037*** (0.000)
Squared family size			1.000*** (0.055)	1.000*** (0.055)	1.000*** (0.083)
Employed			0.951	0.951	0.948
Volunteer Work			0.934	0.934	0.937

Table 9 Results logit regression for access to social support in odds ratios (model 0–4), instrumental support (Continued)

Access to instrumental support	Model 0	Model 1	Model 2	Model 3	Model 4
Local politics				1.026 (0.798)	1.021 (0.838)
Religious events				0.788*** (0.000)	0.796** (0.000)
Family in neighborhood					0.758 (0.177)
Family (in 15 min by foot)					0.693** (0.031)
Family (1 h drive)					0.561*** (0.000)
Family in Germany					0.896 (0.659)
Family abroad					
N	11,149	10,435	10,371	10,315	10,295
Pseudo R-sq	0.007	0.013	0.047	0.053	0.056

Exponentiated coefficients (odds ratios) reported; p-values in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 10 Results logit regression for access to social support in odds ratios (model 0–4), informational support

	Model 0	Model 1	Model 2	Model 3	Model 4
Access to informational support					
Migrant	0.858*** (0.006)	0.814* 1.222***	0.809* 1.229***	0.821* 1.187***	0.809* 1.187***
Intermed. gen. edu.		1.211* 1.632***	1.222* 1.680***	1.181 1.649***	1.189 1.667***
Technical college		1.071	1.116	1.153	1.155
Highest gen. edu.		0.914	0.926	0.969	0.965
Other degree		1.392***	1.378***	1.336***	1.329***
Dropout		1.142	1.205**	1.215	1.235
University		1.461	1.499	1.516	1.505
Mig.*Intermed. gen. edu.		1.099	1.064	1.093	1.119
Mig.*Technical college		1.305	1.214	1.239	1.244
Mig.*Highest gen. edu.		0.564	0.522	0.536	0.550
Mig.*Other degree		0.923	0.937	0.920	0.918
Mig.*Dropout		1.002	1.025	0.965	0.968
Migrant*University	0.982 (0.664)				
Male					
Age group 26–35	0.445*** (0.000)	0.419*** (0.000)	0.361*** (0.000)	0.340*** (0.000)	0.358*** (0.000)
Age group 36–45	0.212*** (0.000)	0.218*** (0.000)	0.183*** (0.000)	0.166*** (0.000)	0.174*** (0.000)
Age group 46–55	0.141*** (0.000)	0.147*** (0.000)	0.126*** (0.000)	0.114*** (0.000)	0.120*** (0.000)
Age group 56–64	0.066*** (0.000)	0.0696*** (0.000)	0.0605*** (0.000)	0.0605*** (0.000)	0.0647*** (0.000)
Household income	1.022*** (0.000)	1.011*** (0.000)	1.009*** (0.000)	1.005** (0.000)	1.005** (0.028)
Perm. relationship			1.647*** (0.000)	1.608*** (0.000)	1.398*** (0.000)
Family size			1.019*** (0.000)	1.018*** (0.000)	1.017*** (0.000)
Squared family size			1.000** (0.013)	1.000** (0.016)	1.000** (0.016)
Employed			1.553*** (0.000)	1.553*** (0.000)	1.556*** (0.000)
Volunteer Work			0.926*** (0.001)	0.926*** (0.001)	0.927*** (0.002)

Table 10 Results logit regression for access to social support in odds ratios (model 0–4), informational support (Continued)

Access to informational support	Model 0	Model 1	Model 2	Model 3	Model 4
Local politics				0.956 (0.377)	0.958 (0.407)
Religious events				0.996 (0.894)	1.001 (0.961)
Family in neighborhood					0.778* (0.078)
Family (in 15 min by foot)					0.648*** (0.000)
Family (1 h drive)					0.778** (0.028)
Family in Germany					0.769 (0.118)
Family abroad					0.135* (0.076)
N	10,868	10,163	10,107	10,053	10,041
Pseudo R-sq	0.105	0.107	0.113	0.119	0.120

Exponentiated coefficients (odds ratios) reported; p-values in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 11 Results logit regression for access to social support in odds ratios (model 0–4), appraisal support

	Model 0	Model 1	Model 2	Model 3	Model 4
Access to appraisal support					
Migrant	0.543***	0.767*	0.745*	0.775	0.774
Intermed. gen. edu.		1.421***	1.417***	1.397***	1.385***
Technical college		1.978***	1.973***	1.876***	1.870***
Highest gen. edu.		2.108***	2.118***	2.046***	2.012***
Other degree		0.762	0.762	0.773	0.775
Dropout		0.768	0.789	0.830	0.829
University		1.333**	1.312*	1.279*	1.273*
Mig.*Intermed. gen. edu.		1.049	1.072	1.043	1.053
Mig.*Technical college		0.537	0.563	0.528	0.573
Mig.*Highest gen. edu.		0.720	0.682	0.715	0.712
Mig.*Other degree		0.760	0.689	0.724	0.735
Mig.*Dropout		0.941	0.753	0.766	0.769
Migrant*University		1.029	1.076	1.016	1.054
Male	0.743***	0.765***	0.800***	0.753***	0.752***
Age group 26–35	1.428***	1.296*	1.139	1.161	1.164
Age group 36–45	1.312**	1.335**	1.161	1.159	1.169
Age group 46–55	1.067	1.116	1.018	1.026	1.036
Age group 56–64	0.961	1.095	1.048	1.069	1.080
Household income	1.021***	1.006	1.004	1.002	1.003
Perm. relationship			1.525***	1.512***	1.479***
Family size			1.057***	1.056***	1.056***
Squared family size			1.000***	1.000***	1.000***
Employed			1054	1054	1056
Volunteer Work			0.792***	0.792***	0.787***

Table 11 Results logit regression for access to social support in odds ratios (model 0–4), appraisal support (Continued)

Access to appraisal support	Model 0	Model 1	Model 2	Model 3	Model 4
Local politics				0.833*	0.838 (0.109)
Religious events				1.086*	1.091** (0.043)
Family in neighborhood					0.958 (0.835)
Family (in 15 min by foot)					0.942 (0.732)
Family (1 h drive)					0.826 (0.218)
Family in Germany					1.336 (0.293)
Family abroad					0.812 (0.807)
N	11,129	10,416	10,353	10,296	10,284
Pseudo R-sq	0.020	0.035	0.052	0.059	0.060

Exponentiated coefficients (odds ratios) reported; p-values in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 12 Results ordered logit regression for number of social support providing people in odds ratios (model 0–4), all types simultaneous

Number of all types of support persons	Model 0	Model 1	Model 2	Model 3	Model 4
Migrant	0.680***	0.817**	0.775***	0.784**	0.787**
Intermed. gen. edu.		1.382***	1.386***	1.353***	1.354***
Technical college		1.779***	1.815*	1.735***	1.730
Highest gen. edu.		2.250***	2.295***	2.223***	2.217***
Other degree		0.952	0.992	1.008	1.005
Dropout		0.512***	0.554***	0.588**	0.588**
University		1.267***	1.263***	1.208***	1.207***
Mig.*Intermed. gen. edu.		0.941	0.994	0.979	0.976
Mig.*Technical college		0.994	1.083	1.072	1.076
Mig.*Highest gen. edu.		0.847	0.826	0.838	0.831
Mig.*Other degree		0.900	0.826	0.841	0.849
Mig.*Dropout		1.037	0.787	0.788	0.783
Migrant*University		1.150	1.144	1.136	1.137
Male	0.734***	0.733***	0.771***	0.734***	0.733***
Age group 26–35	0.445***	0.419***	0.361***	0.340***	0.358***
Age group 36–45	0.212***	0.218***	0.183***	0.166***	0.174***
Age group 46–55	0.141***	0.147***	0.126***	0.114***	0.120***
Age group 56–64	0.066***	0.0696***	0.0605***	0.0605***	0.0647***
Household income	1.022***	1.010***	1.011***	1.008**	1.008**
Perm. relationship		1.224***	1.224***	1.183***	1.218***
Family size		1.076***	1.076***	1.070***	1.070***
Squared family size		0.999**	0.999**	0.999**	0.999**
Employed				1.355***	1.359***
Volunteer Work				0.836***	0.835***

Table 12 Results ordered logit regression for number of social support providing people in odds ratios (model 0–4), all types simultaneous (Continued)

Number of all types of support persons	Model 0	Model 1	Model 2	Model 3	Model 4
Local politics				0.918** (0.042)	0.922* (0.052)
Religious events				0.884*** (0.000)	0.884*** (0.000)
Family in neighborhood					1.239* (0.054)
Family (in 15 min by foot)					1.124 (0.215)
Family (1 h drive)					0.933 (0.428)
Family in Germany					1.121 (0.376)
Family abroad					0.870 (0.814)
N	11,188	10,471	10,406	10,349	10,337
Pseudo R-sq	0.023	0.034	0.045	0.051	0.052

Exponentiated coefficients (odds ratios) reported; p-values in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 13 Results ordered logit regression for number of social support providing people in odds ratios (model 0–4), emotional support

	Model 0	Model 1	Model 2	Model 3	Model 4			
Migrant	0.748***	(0.000)	0.810**	(0.012)	0.792**	(0.014)	0.797**	(0.017)
Intermed. gen. edu.			1.297***	(0.000)	1.300***	(0.000)	1.292***	(0.000)
Technical college			1.379***	(0.000)	1.379***	(0.000)	1.344***	(0.001)
Highest gen. edu.			1.963***	(0.000)	2.008***	(0.000)	1.946***	(0.000)
Other degree		0.973	1.060	(0.760)	1.075	(0.705)	1.067	(0.731)
Dropout		0.628**	0.674*	(0.073)	0.741	(0.177)	0.747	(0.189)
University		1.218***	1.206***	(0.001)	1.181***	(0.004)	1.184***	(0.004)
Mig.*Intermed. gen. edu.		1.024	1.064	(0.641)	1.034	(0.802)	1.022	(0.869)
Mig.*Technical college		0.999	1.082	(0.732)	1.041	(0.862)	1.053	(0.824)
Mig.*Highest gen. edu.		0.930	0.898	(0.499)	0.892	(0.477)	0.880	(0.426)
Mig.*Other degree		0.951	0.845	(0.458)	0.825	(0.398)	0.826	(0.401)
Mig.*Dropout		0.985	0.806	(0.496)	0.754	(0.372)	0.730	(0.321)
Migrant*University		1.164	1.173	(0.222)	1.169	(0.232)	1.160	(0.256)
Male	0.619***	(0.000)	0.613***	(0.000)	0.620***	(0.000)	0.618***	(0.000)
Age group 26–35	0.979	(0.729)	0.859**	(0.035)	0.870*	(0.056)	0.855**	(0.033)
Age group 36–45	0.657***	(0.000)	0.617***	(0.000)	0.596***	(0.000)	0.585***	(0.000)
Age group 46–55	0.592***	(0.000)	0.595***	(0.000)	0.572***	(0.000)	0.559***	(0.000)
Age group 56–64	0.445***	(0.000)	0.492***	(0.000)	0.481***	(0.000)	0.468***	(0.000)
Household income	1.018***	(0.000)	1.006***	(0.000)	1.005***	(0.004)	1.006**	(0.002)
Perm. relationship			1.430***	(0.000)	1.391***	(0.000)	1.437***	(0.000)
Family size			1.045***	(0.000)	1.041***	(0.000)	1.041***	(0.000)
Squared family size			1.000***	(0.000)	1.000***	(0.000)	1.000***	(0.000)
Employed			1.153***	(0.002)	1.153***	(0.002)	1.154***	(0.002)
Volunteer Work			0.907***	(0.000)	0.907***	(0.000)	0.907***	(0.000)

Table 13 Results ordered logit regression for number of social support providing people in odds ratios (model 0–4), emotional support (Continued)

Number of emotional support persons	Model 0	Model 1	Model 2	Model 3	Model 4
Local politics				0.930* (0.084)	0.932* (0.094)
Religious events				0.869*** (0.000)	0.868*** (0.000)
Family in neighborhood					1.277** (0.035)
Family (in 15 min by foot)					1.395*** (0.001)
Family (1 h drive)					0.974 (0.766)
Family in Germany					1.008 (0.952)
Family abroad					1.931 (0.253)
N	11,183	10,465	10,399	10,343	10,311
Pseudo R-sq	0.016	0.025	0.031	0.035	0.035

Exponentiated coefficients (odds ratios) reported; p-values in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 14 Results ordered logit regression for number of social support providing people in odds ratios (model 0–4), instrumental support

	Model 0	Model 1	Model 2	Model 3	Model 4
Number of instrumental support persons					
Migrant	0.754*** (0.000)	0.880 (0.177)	0.864 (0.175***)	0.866 (0.169***)	0.858 (0.136)
Intermed. gen. edu.		1.172*** (0.002)	1.175*** (0.002)	1.169*** (0.002)	1.164*** (0.003)
Technical college		1.418*** (0.000)	1.444*** (0.000)	1.390*** (0.000)	1.396*** (0.000)
Highest gen. edu.		1.619*** (0.000)	1.672*** (0.000)	1.594*** (0.000)	1.605*** (0.000)
Other degree		0.959 (0.821)	1.008 (0.967)	1.016 (0.967)	1.024 (0.898)
Dropout		0.655* (0.050)	0.723 (0.138)	0.761 (0.138)	0.763 (0.222)
University		1.077 (0.205)	1.063 (0.205)	1.043 (0.299)	1.039 (0.518)
Mig.*Intermed. gen. edu.		0.806 (0.105)	0.837 (0.105)	0.815 (0.186)	0.826 (0.158)
Mig.*Technical college		0.765 (0.230)	0.801 (0.230)	0.823 (0.324)	0.825 (0.397)
Mig.*Highest gen. edu.		0.845 (0.296)	0.802 (0.296)	0.814 (0.174)	0.816 (0.215)
Mig.*Other degree		1.036 (0.876)	0.924 (0.876)	0.948 (0.725)	0.945 (0.802)
Mig.*Dropout		0.916 (0.777)	0.716 (0.777)	0.711 (0.288)	0.708 (0.276)
Migrant*University		0.975 (0.845)	0.976 (0.845)	0.967 (0.851)	0.974 (0.840)
Male	0.732*** (0.000)	0.729*** (0.000)	0.763*** (0.000)	0.745*** (0.000)	0.745*** (0.000)
Age group 26–35	0.858** (0.014)	0.824** (0.007)	0.695*** (0.007)	0.712*** (0.000)	0.725*** (0.000)
Age group 36–45	0.562*** (0.000)	0.577*** (0.000)	0.468*** (0.000)	0.455*** (0.000)	0.462*** (0.000)
Age group 46–55	0.448*** (0.000)	0.471*** (0.000)	0.400*** (0.000)	0.386*** (0.000)	0.393*** (0.000)
Age group 56–64	0.387*** (0.000)	0.417*** (0.000)	0.373*** (0.000)	0.316*** (0.000)	0.372*** (0.000)
Household income	1.012*** (0.000)	1.005*** (0.002)	1.004** (0.002)	1.003 (0.023)	1.003 (0.121)
Perm. relationship		1.846*** (0.000)	1.846*** (0.000)	1.801*** (0.000)	1.675*** (0.000)
Family size		1.051*** (0.000)	1.051*** (0.000)	1.045*** (0.000)	1.045*** (0.000)
Squared family size		1.000*** (0.000)	1.000*** (0.000)	1.000*** (0.000)	1.000*** (0.000)
Employed		1.103** (0.031)	1.103** (0.031)	1.103** (0.031)	1.103** (0.030)
Volunteer Work		0.867*** (0.000)	0.867*** (0.000)	0.867*** (0.000)	0.868*** (0.000)

Table 14 Results ordered logit regression for number of social support providing people in odds ratios (model 0–4), instrumental support (Continued)

Number of instrumental support persons	Model 0	Model 1	Model 2	Model 3	Model 4
Local politics				0.915** (0.036)	0.915** (0.034)
Religious events				0.871*** (0.000)	0.875*** (0.000)
Family in neighborhood					1.025 (0.829)
Family (in 15 min by foot)					0.847* (0.092)
Family (1 h drive)					0.688*** (0.000)
Family in Germany					0.936 (0.616)
Family abroad					0.826 (0.745)
N	11,149	10,435	10,371	10,315	10,303
Pseudo R-sq	0.014	0.018	0.030	0.034	0.035

Exponentiated coefficients (odds ratios) reported; p-values in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 15 Results ordered logit regression for number of social support providing people in odds ratios (model 0–4), informational support

	Model 0	Model 1	Model 2	Model 3	Model 4
Number of informational support persons					
Migrant	0.773*** (0.000)	0.781** (0.017)	0.775** (0.015)	0.789** (0.024)	0.779** (0.018)
Intermed. gen. edu.		1.270*** (0.000)	1.278*** (0.000)	1.240*** (0.000)	1.238*** (0.000)
Technical college		1.387*** (0.000)	1.399*** (0.000)	1.344*** (0.001)	1.353*** (0.001)
Highest gen. edu.		2.048*** (0.000)	2.089*** (0.000)	2.042*** (0.000)	2.057*** (0.000)
Other degree		0.980 (0.918)	1.023 (0.918)	1.071 (0.911)	1.074 (0.728)
Dropout		0.747 (0.226)	0.771 (0.226)	0.833 (0.289)	0.829 (0.453)
University		1.328*** (0.000)	1.317*** (0.000)	1.271*** (0.000)	1.263*** (0.000)
Mig.*Intermed. gen. edu.		1.101 (0.500)	1.155 (0.500)	1.158 (0.318)	1.171 (0.274)
Mig.*Technical college		1.407 (0.143)	1.470 (0.143)	1.490* (0.100)	1.483* (0.095)
Mig.*Highest gen. edu.		0.988 (0.940)	0.966 (0.940)	0.995 (0.839)	1.012 (0.946)
Mig.*Other degree		1.327 (0.214)	1.241 (0.214)	1.276 (0.378)	1.278 (0.320)
Mig.*Dropout		0.711 (0.359)	0.654 (0.359)	0.653 (0.257)	0.668 (0.285)
Migrant*University		1.039 (0.780)	1.041 (0.780)	1.021 (0.767)	1.022 (0.873)
Male	0.959 (0.236)	0.977 (0.539)	1.005 (0.539)	0.950 (0.897)	0.950 (0.183)
Age group 26–35	0.467*** (0.000)	0.400*** (0.000)	0.360*** (0.000)	0.348*** (0.000)	0.356*** (0.000)
Age group 36–45	0.181*** (0.000)	0.173*** (0.000)	0.153*** (0.000)	0.142*** (0.000)	0.145*** (0.000)
Age group 46–55	0.121*** (0.000)	0.119*** (0.000)	0.108*** (0.000)	0.0994*** (0.000)	0.102*** (0.000)
Age group 56–64	0.0563*** (0.000)	0.0566*** (0.000)	0.0522*** (0.000)	0.0513*** (0.000)	0.0531*** (0.000)
Household income	1.018*** (0.000)	1.006*** (0.002)	1.005** (0.002)	1.003 (0.008)	1.002 (0.247)
Perm. relationship		1.411*** (0.000)	1.411*** (0.000)	1.371*** (0.000)	1.263*** (0.000)
Family size		1.023*** (0.000)	1.023*** (0.000)	1.021*** (0.000)	1.020*** (0.000)
Squared family size		1.000*** (0.001)	1.000*** (0.001)	1.000*** (0.002)	1.000*** (0.002)
Employed		1.401*** (0.000)	1.401*** (0.000)	1.401*** (0.000)	1.404*** (0.000)
Volunteer Work		0.886*** (0.000)	0.886*** (0.000)	0.887*** (0.000)	0.887*** (0.000)

Table 15 Results ordered logit regression for number of social support providing people in odds ratios (model 0–4), informational support (Continued)

Number of informational support persons	Model 0	Model 1	Model 2	Model 3	Model 4
Local politics				0.894** (0.010)	0.895** (0.012)
Religious events				0.997 (0.905)	1.001 (0.964)
Family in neighborhood					0.814 (0.105)
Family (in 15 min by foot)					0.724*** (0.004)
Family (1 h drive)					0.819** (0.044)
Family in Germany					0.908 (0.492)
Family abroad					0.134* (0.075)
N	10,868	10,163	10,107	10,053	10,041
Pseudo R-sq	0.076	0.081	0.084	0.088	0.088

Exponentiated coefficients (odds ratios) reported; p-values in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 16 Results ordered logit regression for number of social support providing people in odds ratios (model 0–4), appraisal support

	Model 0	Model 1	Model 2	Model 3	Model 4
Number of appraisal support persons	0.616***	0.702***	0.680***	0.694***	0.699***
Migrant	(0.000)	(0.000)	(0.000)	(0.000)	(0.013)
Intermed. gen. edu.		1.430***	1.430***	1.397***	1.400***
Technical college		1.777***	1.776***	1.689***	1.685***
Highest gen. edu.		2.186***	2.206***	2.131***	2.125***
Other degree		0.838	0.832	0.830	0.829
Dropout		0.674*	0.706	0.725	0.728
University		1.113*	1.099*	1.067	1.068
Mig.*Intermed. gen. edu.		1.112	1.157	1.146	1.140
Mig.*Technical college		1.144	1.202	1.222	1.227
Mig.*Highest gen. edu.		1.001	0.973	1.006	0.996
Mig.*Other degree		0.908	0.881	0.921	0.922
Mig.*Dropout		0.946	0.792	0.819	0.805
Migrant*University		1.349**	1.350**	1.315**	1.314**
Male	0.822***	(0.000)	0.868***	0.831***	0.830***
Age group 26–35	1.096	(0.137)	0.952	0.960	0.944
Age group 36–45	0.879**	(0.026)	0.842**	0.819***	0.807***
Age group 46–55	0.753***	(0.000)	0.784***	0.760***	0.747***
Age group 56–64	0.513***	(0.000)	0.594***	0.598***	0.585***
Household income	1.018***	(0.000)	1.006***	1.005***	1.005**
Perm. relationship			1.162***	1.143***	1.204***
Family size			1.047***	1.044***	1.044***
Squared family size			1.000***	1.000***	1.000***
Employed			1.190***	1.190***	1.192***
Volunteer Work			0.864***	0.864***	0.862***

Table 16 Results ordered logit regression for number of social support providing people in odds ratios (model 0–4), appraisal support (Continued)

Number of appraisal support persons	Model 0	Model 1	Model 2	Model 3	Model 4
Local politics				0.903** (0.014)	0.906** (0.017)
Religious events				0.998 (0.921)	0.997 (0.879)
Family in neighborhood					1.219* (0.084)
Family (in 15 min by foot)					1.246** (0.024)
Family (1 h drive)					1.027 (0.760)
Family in Germany					1.055 (0.677)
Family abroad					1.177 (0.800)
N	11,129	10,416	10,353	10,296	10,284
Pseudo R-sq	0.012	0.022	0.028	0.031	0.031

Exponentiated coefficients (odds ratios) reported; p-values in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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Authors' contributions

Jana Brandt designed the model and the computational framework, analyzed the data and performed the calculations. Kyra Hagge wrote the manuscript. The author(s) read and approved the final manuscript.

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Availability of data and materials

The data is a property of the German Institute for Economic Research (DIW) and therefore cannot be made publicly available. The .do-files used to analyze the data can be obtained upon request.

Competing interests

The authors declare that they have no conflict of interest.

Author details

¹Department of Economics, Justus Liebig University Giessen, Licher Strasse 64, 35394 Giessen, Germany. ²Faculty of Economics and Business Science, Justus Liebig University Giessen, Licher Strasse 64, 35394 Giessen, Germany.

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