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Is spatial mobility a reproduction mechanism of inequality?

by

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Is spatial mobility a reproduction mechanism of inequality?

An empirical analysis of the job search behavior and the international mobility of students and recent graduates

by

Fabian Kratz*

Abstract

Concentrating on the social origin, determinants of international mobility of students and recent graduates are identified, drawing on a combination of the microeconomic human capital model as well as the job-search-theory. The analysis is based on the Bavarian Graduate Study (*Bayerisches Absolventen Panel, BAP*), a representative data base for a wide array of fields of study at Bavarian universities and universities of applied sciences. Methods of multilevel modeling are employed to identify individual differences in the spatial mobility propensities of students and young graduates. First, analyzing the determinants of international mobility of students revealed the following associations. The younger the students, the higher the likelihood to study abroad. This propensity is also positively associated with parents' status. Apart from that, students from universities display a significantly higher migration propensity than students from universities of applied sciences. Second, considering differences in the emigration propensities after graduation, our results imply that the likelihood of working abroad is contingent on a high social origin, being a single, graduating at a lower age. Furthermore, migration experiences in the past and competencies in foreign languages show a positive impact. Consequently, international mobility both during the studies and upon entrance into the labor market is significantly influenced by the social origin. In addition to this direct effect, the higher likelihood of students and graduates with a favorable social background to experience mobility in early stages increases their propensity to go abroad again indirectly, too, as a mediator. The same holds true for the readiness to move for a job as indicated by the radius considered when searching for a job. As a result, the range of opportunities resulting from the combined effects of a high social origin and previous migration experiences resembles a sophisticated mechanism contributing to the reproduction of social inequality.

Key words: international mobility, students, graduates, social origin, inequality, job search

1 Introduction

Increasing the international mobility of students is one of the core objectives of the Bologna Process, which has made many researchers and policy-makers to concentrate on the determinants and consequences of the international mobility of students and graduates. In that vein, the aim of the paper is to shed some light on the aspects of international mobility during the course of studies and during the early working-career of young graduates. Thereby, the following research questions are being investigated:

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- What are the determinants of going to foreign countries during the course of study?
- What are the determinants of searching for a job internationally?
- What are the determinants of accepting a job offer abroad?
- What kind of relation exists between social origin, migration propensities and life-chances of graduates?

The paper is set out as follows. Section 2 is devoted to present the theoretical background of the empirical analysis. Concentrating on the social origin and mobility experiences, hypotheses on determinants of going abroad during the course of study, searching internationally for a job and accepting a job offer abroad are formulated. Section 3 describes the Data of the Bavarian Tracer Study and the methods employed. Section 4 reports the results of the logit estimates and discusses the findings in the light of the theoretical framework previously elaborated on. Finally, section 5 contains the concluding remarks.

2 Theory

When it comes to explaining different mobility patterns of students and recent graduates the two main approaches suggested by the literature are human capital theory and the spatial job-search model (Faggian/McCann 2009; Molho, 1986).

The human capital model treats:

„(...) migration as an investment increasing the productivity of human resources, an investment which has costs and which also renders returns“ (Sjaastad 1962: 83).

Geographic mobility can thus be interpreted as a mean to bring about higher expected returns to individual human capital investments (see also Faggian/McCann 2009: 32). The human capital model further postulates that a student or a graduate will migrate if the expected present value of benefits exceeds the costs of migration (see e.g. DaVanzo 1976; Speare 1971, 1974). Benefits can include pecuniary returns (increases in earnings) as well as nonpecuniary returns like being closer to relatives and friends (DaVanzo 1976; Sjaastad 1962).

Mobility costs are composed of pecuniary and non-pecuniary factors as well (DaVanzo 1976):

- Direct expenditures (e.g. for moving of belongings and transportation or a loan for financing the move)
- Opportunity costs incurred through moving and searching for work (especially foregone earnings)
- Information costs (e.g. costs associated with looking for a new job or learning about alternative destinations)
- Costs of leaving the partner, relatives or friends behind
- Decreases in location-specific capital (e.g. location specific knowledge, social ties)

These assumptions form the base for a wide array of migration studies not only in the field of students and graduates (see e.g. Boyle et al. 1998; DaVanzo 1981; Maier/Weiss 1991; Kalter 1997; Wagner 1992; Windzio 2004, 2007, 2008).

Search theory suggests that workers employ an optimal search practice, in that the length of search (the period of unemployment) depends on the wage distribution which the services of an individual can command as well as on the costs associated with generating job offers (Simpson, 1992). This approach postulates that a graduate will stop looking for a job when a wage offer either exceeds or equals her or his reservation wage (Faggian/McCann 2009). The reservation wage is formed by a job offer that equates the marginal costs of obtaining another job offer with the expected marginal return when continuing to look for a job (Herzog et al., 1985; Molho, 1986).

Combining the model of spatial job search with the human capital migration model suggests that reductions in relocation costs as well as reductions in search costs are associated with increasing search durations, increasing reservation wages and increasing net returns to migration (Faggian/McCann 2009: 32). Following this line of reasoning, a positive association between migration

experiences and subsequent on-migration will be – by lowering search and relocation costs – also positively correlated with the long-run real wages of a graduate (Faggian 2007b: 2513). This argument should still hold even when allowing for differences in local employment opportunities (Davanzo 1978) and human capital of the graduates (Becker 1964; Faggian et al. 2007b: 2513).

Applying these theoretical arguments to the case of the sequential migration behaviour of students and graduates several predictions can be formulated on differences in migration propensities (Faggian et al. 2006).

Considering characteristics related to the social background of students and recent graduates, at least five mechanisms can be distinguished predicting higher migration propensities by students and graduates with a favorable social background. These mechanisms are strongly interrelated and can only be separated on ideal-typical grounds.

Financial support

First, it can be assumed that the direct expenditures of moving of belongings and transportation are harder to finance by students and recent graduates who do not receive financial support from their parents. Financing such expenditures alone can be associated with additional costs (e.g. a loan) to finance the move.

Psychological costs

Furthermore there is empirical evidence that students and recent graduates with favorable social background characteristics receive more moral support from their parents to go abroad, which lowers the non-pecuniary costs of international mobility (Pineda 2008).

Migration experiences

Students and recent graduates whose parents exhibit a high status are more likely to have had migration experiences in their childhood. If we assume that any prior mobility experience lowers psychological costs of migration in the future, these experiences will be associated with higher migration propensities

Human capital: Knowledge of foreign languages

Students and recent graduates with favorable social background characteristics are more likely to have good knowledge in foreign languages, which increases returns to international mobility and lowers its costs.

Social capital:

Having friends at a potential destination lowers psychological costs of moving. On the contrary having almost all friends and relatives in the location of origin is associated with very high psychological costs of moving.

It is almost impossible to distinguish sharply between these mechanisms. For example, a good knowledge of foreign languages will be positively associated with international mobility experiences. Possible financial support and migration experiences will also highly correlate with moral support by the parents. An issue I will come back to later. However, the previous theoretical discussion can be clustered into the following associations:

H1a: A high socioeconomic status of the parents is associated with a higher likelihood to go abroad during the course of studies.

H1b: A high socioeconomic status of the parents is associated with a higher likelihood to search for a job internationally.

H1c: A high socioeconomic status of the parents is associated with a higher likelihood to go abroad when entering first employment.

Mobility experiences

Upon entrance to a university, a student has to decide whether to study in the home region, in another state (or *Bundesland*) or abroad. During the course of study, one can go abroad for an exchange semester, change the university nationally or stay. On leaving higher education, the graduates conduct a labor market search either in the location where their parents live, the place where they have studied or they extend their search area – nationally or internationally – to areas away

from both their educational institution and their original domicile (Faggian et al. 2007a: 522). Analogous, graduates can accept a job offer and entering first employment at the place where their parents live, where they studied or in a different area. Following the arguments of DaVanzo (1976, 1983) any previous migration will be expected to have positive effects on subsequent migration by lowering the psychological costs (see also Faggian et al. 2007a: 523). This leads us to the following empirically testable predictions:

- H2a:** Students who did not receive their university entrance examination from a Bavarian school (in another federal state or abroad) will exhibit a higher propensity to go abroad during the course of study.
- H2b:** Students who did not receive their university entrance examination from a Bavarian school (in another federal state or abroad) will display a higher likelihood to search internationally for a job.
- H2c:** Students who did not receive their university entrance examination from a Bavarian school (in another federal state or abroad) will display a higher likelihood of accepting a job offer abroad.
- H2d:** Having had experiences abroad during the course of study is associated with an increased likelihood of international job search.
- H2e:** Having had experiences abroad during the course of study is associated with an increased likelihood to accept a job offer abroad.

Human capital theory also suggests the following personal characteristics influencing international mobility. Age (see e.g. Speare 1974), relationship status (Mincer 1978), knowledge of foreign languages (Chiswick 1991) and nationality.

- H3:** Increasing age is associated with a decreasing likelihood to go abroad during the course of study, to search internationally and to accept an international job offer.
- H4:** Singles exhibit a greater propensity to search internationally for a job and to accept a job offer abroad.
- H5:** Graduates with a good knowledge of foreign languages will exhibit a greater propensity to search internationally for a job and to accept a job offer abroad.
- H6:** Graduates without a German passport will exhibit a greater propensity to search internationally for a job and to accept a job offer abroad.

3 Data and Methodology

To track mobility patterns, the analysis is based on the Bavarian Graduate Study (*Bayerisches Absolventen Panel, BAP*), a representative data base for a wide array of fields of study at Bavarian universities and Universities of Applied Sciences. The population comprises all graduates who received a diploma- or "magister"-degree in a course of study with more than 50 graduates in Bavaria in the selected cohort. The general aim of the project is to deliver information on the quality of the course of study, entry into the labor market and early career outcomes of graduates. The scientific coordination of the project is accomplished by the Bavarian State Institute for Higher Education Research and Planning (*IHF*).

The surveys are carried out in cooperation with the Bavarian Universities and Universities of Applied Sciences. Selected cohorts of graduates are interviewed via a full sample survey one and a half years after graduation and are re-interviewed again five years and nine years after graduation. Until now, the graduate cohort 2005 was interviewed the first time and the cohort of 2003 has been interviewed twice already in written form. The survey of the graduate cohort 2005 provides additional information on international mobility during the course of studies and the timing of international mobility after graduation. This forms a rich database to analyze the determinants of international mobility of students and recent graduates as well as their job-search behavior.

The empirical analyses use different numbers of cases. The analysis of the determinants of an experience abroad during the course of study will be based on 5566 observations while the study of the determinants of international mobility when entering the labor market uses the information on 4955 graduates. The difference can mainly be explained by the fact that I define international mobility of recent graduates as having a first job abroad. Therefore all unemployed graduates are excluded from the estimation.

The model analyzing the determinants of international job search contains information on 3849 observations. All graduates who never searched for a job are excluded from the analysis. Furthermore I restricted the samples to graduates aged 20 to 40 at the time of graduation. Furthermore, at the context-level 26 universities or universities of applied science enter the study.

The variables employed in our models are listed in Table 1. The dependent variables used in the analyses are defined as follows. In order to estimate the likelihood of having experienced a period abroad during the course of study we construct the variable 1 “experience abroad” 0 “no experience abroad”. In the same manner we define 1 as “international job-search” 0 “national job-search” and 1 “having a first job abroad” versus 0 “having a first job in Germany”.

The explanatory variables we employ are defined as follows. On the individual level a main focus lays in the examination of social background characteristics of the graduates. To construct a good proxy for the household income of parents, information of the vocational status of both mother and father is used. If both parents practice a profession a high social status is associated with, the parental status is defined as “high status”. If one of the parents holds a profession with a low social status while the partner is practicing a profession with a high social status the status variable is defined as “status mixed”. The variable „low status“ is an indicator for having parents a low status status is associated with.

To measure the effect of previous migration experiences we construct two dummy variables. “German UEA” represents a university entrance examination stemming from a German federal state (not Bavaria). “UEA abroad” indicates whether the university entrance examination comes from abroad. “Female=1” is a dummy variable representing female students or graduates. “Foreigner=1” represents graduates without a German passport. Furthermore age is included as a metrical explanatory variable in the models.

Estimating the determinants of an international job search and having a first job abroad “having experienced a period abroad during the course of study” is included in the analysis as a further mobility experience indicator. In these models, I also estimate the effects of being a single=1 and having knowledge of foreign languages when entering the labor market. To measure the effect of the knowledge of foreign languages we constructed the two following dummy variables with “bad knowledge of foreign languages” being the reference group. “Good knowledge of foreign languages”=1, “knowledge of foreign languages”=1. The influences of different subjects are controlled for by embodying different dummy variables in the models.

On the context-level we distinguish between students and graduates from universities and universities of applied sciences. This distinction is necessary because universities of applied sciences have a stronger focus on the regional labor markets (Venhorst et al. 2010). Such being the case we expect different migration and job search patterns for the students and graduates involved, with the university graduates exhibiting a stronger tendency towards international mobility.

Additionally, in the statistical models of job search behavior and international mobility when entering the labor market, we use a dummy variable to identify colleges lying in the border region to Switzerland or Austria. This variable helps to correct for bias through border effects (see also Lemistre und Moreau 2009).

Table1: Summary statistics of the employed variables

	Observations	Min.	Max.	Mean	Std.-Dev.	Median
Study abroad (1=yes)	6354	0	1	0,40	-	-
Job search (1=international, 0=only in Germany)	4380	0	1	0,16	-	-
First job abroad (1=yes)	5599	0	1	0,06	-	-
Status parents (Ref. low)						
Status high (1=ja)	5800	0	1	0,2	-	-
Status mixed (1=ja)	5800	0	1	0,47	-	-
Place of university entrance examination (Ref.: Bavaria)						
Germany (but not Bavaria)	6121	0	1	0,20	-	-
Abroad	6121	0	1	0,02	-	-
Relationship status (1=Single)	6179	0	1	0,32	-	-
Female (1=female)	6248	0	1	0,47	-	-
Age	6121	22	40	27,72	2.39	27
Knowledge of foreign languages (Ref.: bad knowledge)						
Good Knowledge (1=ja)	6247	0	1	0,15	-	-
Knowledge (1=ja)	6247	0	1	0,66	-	-
Foreigner (1=ja)	6199	0	1	0,03	-	-
University (1=University)	6366	0	1	0,52	-	-
University in border region (1=ja)	6345	0	1	0,12	-	-

When analyzing international mobility patterns one typically encounters the problem to catch the highly mobile. Therefore, it must be assumed that the highly mobile are underrepresented in the sample. The total number and the share of international mobile graduates will therefore surely be underestimated. These typical methodological imperfections of surveys dealing with the determinants of international mobility in general could lead to an underestimation of the differences between mobile and non-mobile students and graduates (Teichler/Jahr 2001). The estimated coefficients can therefore be interpreted as conservative estimates of the ‘true effects’.

In our statistical models, we estimate the odds of 1) having experiences abroad during the course of study 2) international job search 3) having a first job abroad as a function of a range of personal and contextual variables. In order to do this, we estimate logit regressions with random intercepts. This approach is particularly appealing because accounts for unobserved heterogeneity at the context-level (see e.g. Courgeau und Baccaini 1998; Goldstein 2003; Moulton 1990; Snijders und Bosker 1999; Windzio 2008). The random intercept is implemented to account for unobserved push and pull factors on the level of the regional context of the universities, and thus to get unbiased estimates of the effects standing in the focus of research interest (see also Greene 2003, Wooldridge 2003). Drawing on the variance measure of the random intercept allows us to calculate the intraclass correlation (ICC) as measure of similarity of students or graduates of the same college regarding their mobility patterns (for further details see e.g. Hox/Kreft 1994: 285; Blien/Wiedenbeck 2002: 317).

4 Results

In this chapter the empirical analysis is presented. First, attention is drawn to the mobility decision during the course of study. Then, the determinants of international job search are examined. Finally, we focus on the determinants of entering first employment abroad.

The modeling strategy is characterized as follows. In the first column of Table 2, 3 and 4 the bivariate correlation between the parental status and the dependent variables are presented (Model 1). In Model 2 (the second column) former mobility experiences are included in the analyses, as it is hypothesized that there is an indirect effect of the social status mainly working through mobility experiences in the past. Model 3 contains all the theoretically derived variables to check the robustness of the estimates when other important differences are being controlled for. The estimated coefficients are presented as odds ratios and indicate the multiplicative increase in the chance associated with a change in any of the explanatory variables.

4.1 Mobility experiences during the course of studies

Model 1 in Table 2 displays a significant effect of the parental status. Students with “High-status” parents and students with “Mixed-status” parents exhibit a significantly higher likelihood to go abroad during their studies compared to the reference group with a “low status”.

Controlling for mobility experiences in the past, the coefficients decrease but remain significant (Model 2). The significant coefficient of “German UEA” indicates that students having passed their university entrance examination in Germany but outside Bavaria exhibit a higher likelihood to go abroad during their course of study.

Finally, in terms of the effect of parental status on migration, the positive and significant coefficients on each of the dummy variables (“High status”, “Mixed status” with respect to the baseline category of “Low status” in Model 3 implies that after controlling for a range of personal and contextual observed as well as unobserved characteristics, the association remains robust. Increasing age is associated with a decreasing likelihood to go abroad while gender has no significant influence.

In terms of subjects studied, the results show that students enrolled in economics tend to exhibit the highest likelihood to go abroad during the course of study, followed by students in the domain of languages and cultural studies. The least migratory group is formed by students of social work.

On the context level, students of universities are more migratory than the reference group consisting of students from universities of applied sciences. Furthermore, to control for unobserved heterogeneity associated with regional and university characteristics, a random intercept that varies between universities is included in the analysis.

The ICC correlation indicates the fraction of the total variance of students’ international mobility that can be ascribed to the university level. The ICC can be interpreted also as measure of similarity of students from the same university concerning their mobility behavior. Model 1 shows a percentage of 6.4% of variance associated with the university level. Controlling for personal characteristics and subjects reduces the ICC to 2.9% in model 3.

Table 2. Logit regression with random intercepts, dependent variable: study abroad

	(1) Model 1	(2) Model 2	(3) Model 3
(Ref. Low status)			
High status	1.834*** (0.142)	1.782*** (0.139)	1.615*** (0.132)
Mixed status	1.292*** (0.0896)	1.282*** (0.0895)	1.184* (0.0860)
(Ref. UEA in Bavaria)			
German UEA		1.974*** (0.143)	1.751*** (0.132)
UEA abroad		0.803 (0.170)	0.802 (0.176)
(Ref. Male)			
Female			0.996 (0.0667)
Age			0.957*** (0.0129)
(Ref. Computer Science)			
Art, interior designer			2.634*** (0.550)
Languages, cultural studies			3.446*** (0.612)
Psychology, pedagogy, sociology, political science			1.417* (0.239)
Social work			0.638* (0.143)
Economics			4.810*** (0.626)
Mathematics, science			2.408*** (0.364)
Architecture, construction engineer			1.668* (0.353)
Electrical engineering, engineering			1.668*** (0.250)
Special engineering			2.188*** (0.427)
(Ref. University of Applied Science)			
University			2.021*** (0.296)
Observations	5566	5566	5566
Groups	26	26	26
sigma_u	0.476	0.434	0.318
ICC	0.0644***	0.0542***	0.0298***
Wald chi ²	62.30***	150.72***	503.18***

Exponentiated coefficients; Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

4.2 International job search

Personal and contextual variables that shape the individual's job search distance will now be discussed. Table 2 displays the estimated coefficients on the likelihood to search internationally for a first employment.

Note that students and graduates with favorable social background characteristics are more likely to search internationally for a job than the reference group. Even after controlling for all explanatory variables, the coefficient remains significant.

The dummy variables indicating former mobility experiences also show the expected effects. Mobility experiences when entering university is associated with an increased likelihood to exhibit

international job search. Having experienced a time period abroad during the course of studies also positively influences the likelihood of international job search.

Model 3 displays the estimated coefficients when all variables are included in the analysis. Note that the coefficients confirm theoretical predictions. Being a single is associated with a significantly increased willingness to look internationally for a job. An interesting result is also that women tend to exhibit a decreased likelihood of international job search. This effect needs further investigation taking into consideration the interplay of gender, relationship status, fertility and job search behavior. As expected, knowledge in foreign languages encourages international job search. The coefficients of age and not being German do not display significant effects.

In terms of the subject studied it can be noticed that architectures and construction engineers display the greatest willingness to search internationally for a job. This may be explained by the better economic opportunities especially in Switzerland for graduates of these subjects. Graduates with particular low willingness to look for a job internationally can be found in the field of computer science.

Drawing the attention to the context effects, it may be noticed that there is no significant difference between universities and universities of applied science. Furthermore students and graduates from a college in the border region to Switzerland or Austria exhibit an increased likelihood to look internationally for a job. However, the coefficient is not significant.

In terms of the ICC indicating unobserved heterogeneity at the context-level, it may be noticed that in model 1 there is a significant proportion of variance attributable to the regional and college specific context. When more explanatory variables are included in the analysis (model 2 and model 3) no significant context-level unobserved heterogeneity remains.

4.3 First employment abroad

Note that graduates with favorable socioeconomic background characteristics exhibit once again a significantly higher likelihood of international mobility than the reference group. The estimated coefficients remain significant if we control for a range of individual and contextual variables.

As theoretically expected, the effect loses strength when controlling for mobility experiences in the past, yet remains highly significant. As with the models computed above, previous mobility experiences confirm the theoretical assumptions: graduates who have experienced a stay abroad during the studies or who have received the university entrance examination outside of Bavaria display a significantly higher propensity to move abroad than the respective reference group (model 2). The effect of having a university entrance examination abroad is particularly strong perhaps reflecting a high proportion of “return migrants” (see also DaVanzo 1983).

Model 3 shows coefficients consistent with our theoretical predictions. Being older and being in a relationship both decrease the likelihood to enter the labor market abroad. Furthermore, being a foreigner increases the likelihood to go abroad after the course of study. However, the coefficient does not display a significant value. Having good knowledge of foreign languages at the time of graduation is associated with a significantly increased likelihood to find a first job abroad.

In terms of the subject studied, the most migratory graduates are those who studied architecture or construction engineering while the least migratory graduates are found in computer science.

Graduating at a university in the border region to Switzerland or Austria is associated with an increased but insignificant likelihood to enter the labor market abroad. The ICC in model 1 and model 3 is rather low but significant. If all explanatory variables are included in the analysis, no significant share of variance remains attributable to the context level.

Table 3. Logit regression with random intercepts, dependent variable: international job search

	(1) Model 1	(2) Model 2	(3) Model 3
Job search distance			
High status	1.818*** (0.230)	1.561*** (0.201)	1.470** (0.197)
Mixed status	1.501*** (0.158)	1.364** (0.146)	1.356** (0.150)
Study abroad		2.673*** (0.251)	2.247*** (0.237)
(Ref. UEA in Bavaria)			
German UEA		1.331** (0.141)	1.238 (0.138)
UEA abroad		1.976* (0.580)	1.510 (0.589)
(Ref. in a Relationship)			
Single			1.859*** (0.178)
(Ref. Male)			
Female			0.656*** (0.0707)
Age			1.004 (0.0215)
Good knowledge of foreign languages			2.991*** (0.541)
Knowledge of foreign languages			1.451* (0.221)
Foreigner			1.234 (0.434)
(Ref. Computer Science)			
Art, interior designer			3.876*** (1.220)
Languages, cultural studies			1.735 (0.501)
Psychology, pedagogy, sociology, political science			2.237** (0.594)
Social work			1.880* (0.599)
Economics			1.371 (0.301)
Mathematics, science			3.035*** (0.798)
Architecture, construction engineer			4.215*** (1.267)
Electrical engineering, engineering			1.104 (0.282)
Special engineering			2.482** (0.720)
University			0.996 (0.118)
(Ref. not in border region)			
Border			1.299 (0.179)
Observations	3849	3849	3849
Groups	26	26	26
sigma_u	0.223	0.0969	0.000634
ICC	0.0149**	0.00285	0.000000122
Wald chi2	24.62***	155.37***	292.87***

Exponentiated coefficients; Standard errors in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4: Logit regression with random intercepts, dependent variable: First job abroad

	(1) Model 1	(2) Model 2	(3) Model 3
(Ref. low status)			
High status	2.112*** (0.371)	1.665** (0.297)	1.537* (0.282)
Mixed status	1.392 (0.236)	1.286 (0.221)	1.255 (0.218)
(Ref. UEA in Bavaria)			
Study abroad		3.258*** (0.451)	2.773*** (0.424)
German UEA		1.639*** (0.232)	1.564** (0.227)
UEA abroad		3.980*** (1.217)	2.555* (1.100)
(Ref. in a Relationship)			
Single			1.493** (0.197)
(Ref. Male)			
Female			0.838 (0.121)
Age			0.884*** (0.0309)
Good knowledge of foreign languages			2.063** (0.506)
Knowledge of foreign languages			1.119 (0.240)
Foreigner			2.128 (0.837)
(Ref. Computer Science)			
Art, interior designer			4.022** (1.940)
Languages, cultural studies			2.618* (1.210)
Psychology, pedagogy, sociology, political science			3.602** (1.581)
Social work			2.310 (1.231)
Economics			1.869 (0.719)
Mathematics, science			4.562*** (1.843)
Architecture, construction engineer			6.045*** (2.794)
Electrical engineering, engineering			1.219 (0.550)
Special engineering			4.963*** (2.210)
(Ref. University of Applied Science)			
University			0.866 (0.150)
(Ref. not in border region)			
University in border-region			1.446* (0.270)
Observations	4955	4955	4955
Groups	26	26	26
sigma_u	0.289	0.238	0.00104
ICC	0.0247**	0.0169*	0.00000329
Wald chi2	19.65***	126.22***	209.86***

Exponentiated coefficients; Standard errors in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5 Discussion

A central focus of this paper was to provide further evidence on the impact of social background characteristics on international mobility during the course of study and when entering first employment. The positive and significant coefficients on the social background variables imply that individuals with favorable social background characteristics are more likely 1) to exhibit international experiences during the course of study 2) to search internationally for a job and 3) to accept a job offer abroad. These correlations are robust when subject-specific differences, personal characteristics, mobility experiences as well as observed and unobserved heterogeneity on the regional level are being controlled for. Furthermore, our findings suggest that migration behaviour of students and recent graduates is associated with the respective individual's previous migration history. These observations are consistent with previous findings and concur with theoretical predictions. In the next section some remarks on the causality of the correlations, the consequences for inequality and implications for policy-makers are discussed.

6 Financial support, moral support, human capital or mobility experiences

Parents of students and graduates from upper middle-class in educational and socioeconomic terms exhibit 1) more knowledge about the university environment and its opportunities (including information on mobility programs 2) a higher likelihood of having had experiences with international mobility in the past 3) and more financial resources. These characteristics are likely to correlate with 1) informational support 2) psychological support and 3) financial support. Furthermore students and graduates with favorable socioeconomic background characteristics itself exhibit a higher likelihood of 4) having better knowledge of foreign languages and 5) having had international mobility experiences in the past (Pineda 2008: 283). Further research should help to clarify to what extent these mechanisms contribute to explaining the increased international migration propensity of students and graduates with favorable social background characteristics.

If policy-makers want to reduce inequality when it comes to international mobility of students and recent graduates it would help to 1) deliver better information on structures of exchange programs and possible financial support 2) provide information on the potential returns to international mobility to students and to their parents 3) improve the financial support for exchange programs 4) provide institutional structures to learn foreign languages and 5) to promote international and intercultural exchange at school level as early as possible.

Reducing inequality when it comes to international mobility of students and recent graduates can also be expected to reduce inequality in earning- and life-chances. Reduced initial mobility may well have long-term implications for graduates as their job search area and subsequent migration propensities will be limited ultimately reducing long-term incomes relative to those who were more mobile at earlier stages of life (DaVanzo 1976, 1983; Faggian et al. 2006; Faggian et al 2007b; Newbold 1997). Furthermore, there is empirical evidence that mobility experiences serve employers as screening devices, thereby helping mobile students entering the labor force with higher earning profiles (Hillmer 2002: 22). Globalization and internationalization will make mobility experiences in general and international experiences in particular even more important for life-chances and as a mechanism to reproduce inequality.

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