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Who benefits? Heterogeneous effects of international student mobility on occupational attainment

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WiSo-HH Working Paper Series
Working Paper No. 61
December 2020

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ISSN 2196-8128

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Abstract

It is well documented that students with favourable socio-economic and educational characteristics more often take advantage of international mobility opportunities. We explore whether the effect of ISM on professional success depends on selection into ISM (educational achievements, family background, etc.). Analyses are based on data from the German National Educational Panel Study (NEPS), which is a representative sample of the population living in Germany born between 1944 and 1986. Respondents who spent at least one month abroad during a higher education spell are considered internationally mobile. We use propensity score matching and stepwise stratification methods to analyse the potential heterogeneity of treatment effects. We find that higher education graduates with low propensity to be internationally mobile realize substantially greater occupational status benefits than graduates with higher propensity. This may work against social inequality in times of mass higher education.

Keywords

Study abroad, student mobility, occupational success, effect heterogeneity, social selectivity, propensity score matching

Introduction and assumptions

Until the sudden disruption caused by the COVID-19 pandemic, international student mobility (ISM) was on the rise globally. Notwithstanding the current pandemic situation and its significant short-term yet indeterminate long-term impact on global mobility,[1] ISM constitutes a significant part of highly skilled international migration (Smith & Favell, 2006). Worldwide the total number of higher education students studying in another country is estimated to have reached around 5.5 million in 2018, a noticeable increase from half a million in the 1970s (Kritz & Gurak, 2018, p. 223), 2 million around 2000 and close to 4 million around 2010 (data from UNESCO Institute for Statistics[2]).

Even outside the fierce commercialization of the international education industry (c.f., Baas, 2019; Liu-Farrer, 2019)[3], mobility programs with a genuine focus on cross-cultural exchange such as the EU Commission's ERASMUS+ program have started to advertise international experience as a boost to individual employability (e.g., Commission of the European Union, 2019). Recent studies offer empirical support to this claim at least for some countries (Spain, Italy, Germany, the Netherlands, Norway), showing that studying abroad during higher education moderately relates to better labour market outcomes a few years after graduation (Di Pietro, 2015; Kratz & Netz, 2018; Iriondo, 2020; Jacob et al., 2019; Messer & Wolter, 2007; Netz & Grüttner, 2020; Sorrenti, 2017; Van Mol et al., 2020; Waibel et al., 2018; Wiers-Jennsen & Støren, 2020) and the empirical literature on the returns to international student mobility is steadily increasing (for a literature review, see Waibel *et al.*, 2017). Various processes can explain the positive relation between ISM and socio-economic success: students have the chance to accumulate professionally valuable social, human, or 'transnational' capital through ISM (c.f., Gerhards & Hans, 2013; Nerlich, 2020); employers may use mobility experiences as a signalling device of a job candidate's future productivity (c.f., Petzold, 2017, 2020; Liwiński, 2018); or mobility may have relative value promising

[1] Several surveys have been launched meant to unravel the short-term impact of the COVID-19 pandemic on sustaining, realizing and planning study-related stays abroad (among others, QS, studyportals, educations.com, BridgeU, Erasmus Student Network, and various national academic exchange agencies such as DAAD, Nuffic, British Council, etc.). For example, a survey of around 22.000 students at European universities by the Erasmus Student Network in March 2020 found that 40 percent of exchange students decided to return home (Gabriels, & Benke-Åberg, 2020). Moreover, a large share of prospective international students has cancelled or postponed mobility plans due to either a lack of face-to-face teaching provision or travel restrictions (QS, 2020).

[2] http://data.uis.unesco.org/

[3] For example, providing international education is one of Australia's biggest services export industry (Baas, 2029, p. 226).

economic rents for those that have it, simply because it puts them in a better relative position compared to those that do not have it (on positional goods, see Brighouse & Swift, 2006).

In addition, the tendency towards self-selection – a well-known phenomenon in migration research (Borjas, 1991) – accounts for part of the positive relationship between ISM and post-graduation occupational success. Previous literature overwhelmingly agrees that students who are internationally mobile systematically differ from non-international students in several observed and unobserved characteristics predisposing them to occupational success. Those who are mobile tend to have privileged family backgrounds, higher educational achievement, and more financial resources, all of which are correlates of a persons' social and cultural capital as well as families and friends supportive of their mobility choices (c.f., Finn & Darmody, 2017; Lörz et al., 2016).

It remains unclear, however, whether the returns from ISM are distributed equally or whether they depend on selective characteristics of the mobile population itself. Existing research has produced mixed results on this question (c.f., Di Pietro, 2015; Netz & Grüttner, 2020; Waibel et al., 2018). In migration research, *positive and negative selection* respectively are two competing perspectives that can be used to assess how the benefits of migration are distributed conditionally on selection in observed and unobserved characteristics (Borjas, 1991; for positive and negative selection in the returns from higher education, see Hout, 2012 & Borgen, 2015). Pertaining to the case of ISM, positive selection means that the most resourced and able students are the most likely to select into mobility and the most likely to profit from it. This can be aligned with Bourdieu-inspired reproduction theory, in that those individuals most likely to participate in mobility programs are better equipped to capitalize on the advantages that ISM can provide since they are better prepared in terms of basic dispositions (habitus), social capital, financial support as well as academic ability (e.g., Savage & Egerton, 1997).

Negative selection has recently gained remarkable attention in research (e.g., c.f. Brand & Xie, 2010; Breinholt & Holm, 2020; Huntington-Klein, 2015; Pais, 2011) and can be aligned with differential selectivity and resource substitution theory (Schafer et al., 2013). Negative selection exists if students commonly excluded from ISM benefit more from it than high-propensity students. According to *differential selectivity* relatively less privileged groups of students must overcome higher obstacles in financial, social, and emotional terms when choosing international mobility (Beattie, 2002). Individuals with lower propensity to be mobile may therefore be especially motivated and talented which in turn influences their

professional careers positively. *Resource substitution* means that graduates who are least likely to be mobile benefit most from ISM, because they can gain human capital that they would otherwise not have had the chance to accumulate (e.g., Di Pietro, 2015).

This paper takes the example of German higher education graduates and studies whether the effect of international student mobility on occupational status three years after graduation depends on graduates' individual level propensity to be internationally mobile. To account for selection bias and effect heterogeneity in causal inference, we apply propensity score methods based on the potential outcomes framework (Rubin, 2005) using data from the German National Educational Panel Study (NEPS). The concluding section will consider potential effect heterogeneity in the light of social inequality. Whereas positive selection processes show the tendency to increase inequality, negative selection stresses compensatory leveling with the potential to reduce inequality between groups with different starting positions (Schafer et al., 2013).

Data, Variables, and Methods

Data and Variables

The analyses are based on data from the German National Educational Panel Study (NEPS), which is a representative sample of the population living in Germany born between 1944 and 1986 (Blossfeld et al., 2011). The analytical sample includes higher education graduates who completed higher education before the age of 36 and who were in employment three years after graduation. We ensured that there were no differences in selection into employment between graduates that were internationally mobile during higher education and those that were not. To keep the sample homogenous, migrants (as of generation 1.5) as well as individuals who studied for an entire degree abroad are excluded. We only consider graduates from unspecific fields of study, since the tight institutional coupling between education and work in specific study fields (e.g., law, medicine, and engineering) leads to very little variance in the outcome of interest, i.e. occupational status (for a concise representation of Germany's higher education to work transition regime, see Leuze, 2007). The empirically based classification into specific and unspecific fields of study follows the approach presented in Waibel et al. (2018). The total sample size comprises 1,749 observations.

The outcome, occupational status three years after graduation, is operationalized via Wegener's Magnitude-Prestige-Scale (MPS, scale range of 20.0 to 186.8, see Wegener, 1985) which has been developed exclusively for analyses on a national level and reflects the national specificities of the positional hierarchy of occupations. International student mobility is operationalized with a binary indicator. All survey respondents who spent at least one month abroad during a higher education spell are considered internationally mobile. Covariates in the models are selected based on various socio-demographic and status-relevant characteristics. We include a dummy for males, a categorical variable for birth cohort (1 = birthdate <1960; 2= birthdate >=1960 & <1970; 3= birthdate >=1970), a dummy for birth in East (as opposed to West) Germany, dummies for higher education degree of father, mother, or both, a dummy for finishing high school at A-level (Abitur), high school grade point average (GPA) (continuous), a dummy for higher education degree (1= Master university; 0=Bachelor level degree or degree from a vocationally oriented higher education institution), dummies for field of study (education, liberal arts, social sciences, business, health, and social work), duration of study course in months, dummies for completion of vocational training, and of a public service career track (in addition to higher education).

Methods

Propensity score matching (PSM) builds on an experimental treatment logic by controlling for self-selection (Morgan and Winship, 2015). It is based on the potential outcomes framework and the underlying conditional independence assumption (CIA): Given that students' mobility behaviour – our binary treatment indicator – is associated with several observed confounders X, after controlling for such X both ISM (denoted "treatment") and non-ISM (denoted "control") groups will vary randomly in their remaining characteristics *except* that some of them are mobile and others are not.

PSM reduces information in X to a single propensity score with ISM (the treatment) as the outcome in a simple logistic regression model with D_i denoting the treatment state (1= mobile, 0 = non-mobile):

$$\text{Propensity score} = p(D_i = 1|X_i) = \Phi(\sum_{K=0}^{K} \beta_k X_{ik})$$

The propensity p of becoming internationally mobile is subsequently used to match observations in ISM and non-ISM groups. Observations for which no comparable propensity scores in the other group exist are excluded from the analyses to avoid mismatches (so-called common support).

Based on matched observations, average treatment effects can be calculated. Treatment effects correspond to the difference in occupational status between treatment and control groups (the potential outcomes), where the respective comparison group observations of the outcome $y_{i,j}$ are weighed by weights w_{ij} that are derived from the propensity scores and the chosen matching algorithm (we compare nearest neighbour, local linear, and kernel matching). Matching estimates of the average treatment effect on the treated (ATT_M) can be distinguished from estimates of the average treatment effect on the untreated (ATU_M):

$$ATT_M = \frac{1}{n_{D_1}} \sum_{i \in D=1} \left[y_i^1 - \sum_{j \in D=0} w_{ij} y_j^0 \right]$$

$$ATU_M = \frac{1}{n_{D_0}} \sum_{j \in D=0} \left[\sum_{i \in D=1} w_{ij} y_i^1 - y_j^0 \right]$$

The ATT is the expected difference in occupational status if we could expose a randomly selected person from the ISM group (D=1) to both the ISM and the non-ISM condition. In contrast, the ATU estimates the average effect for units that did not receive treatment (D=0). The average of the ATT and the ATU, weighted by comparison group sizes, is the average treatment effect for the whole sample (ATE).

To identify potential heterogeneity of treatment effects, we apply a stepwise stratification method based on PSM, the non-parametric smoothing-differencing method (SD; illustrated in Xie et al., 2012) using the Stata-Module *HTE* (for applications, see Bauldry, 2015 and Schafer et al., 2013). The SD method estimates the PS, then fits two separate non-parametric local polynomial regression models for the outcome variable on the PS (one for the treatment and one for the control group), and finally takes the difference in the group-specific regression lines at different levels of the PS.

Results

Figure 1 shows the distribution of propensity scores (regressed on the covariates) for the treatment (mobile) and control (non-mobile) groups consisting of 217 and 1,532 observations, respectively. While the shape of the two distributions clearly differs, revealing considerable compositional differences in the two groups, the propensity scores also show enough overlap allowing for the estimation of treatment effects. Covariates in the two groups are at balance after matching by the propensity scores (Table 1; balancing tests are based on kernel weights; other weighting methods produced comparable results). Previous findings are reproduced in

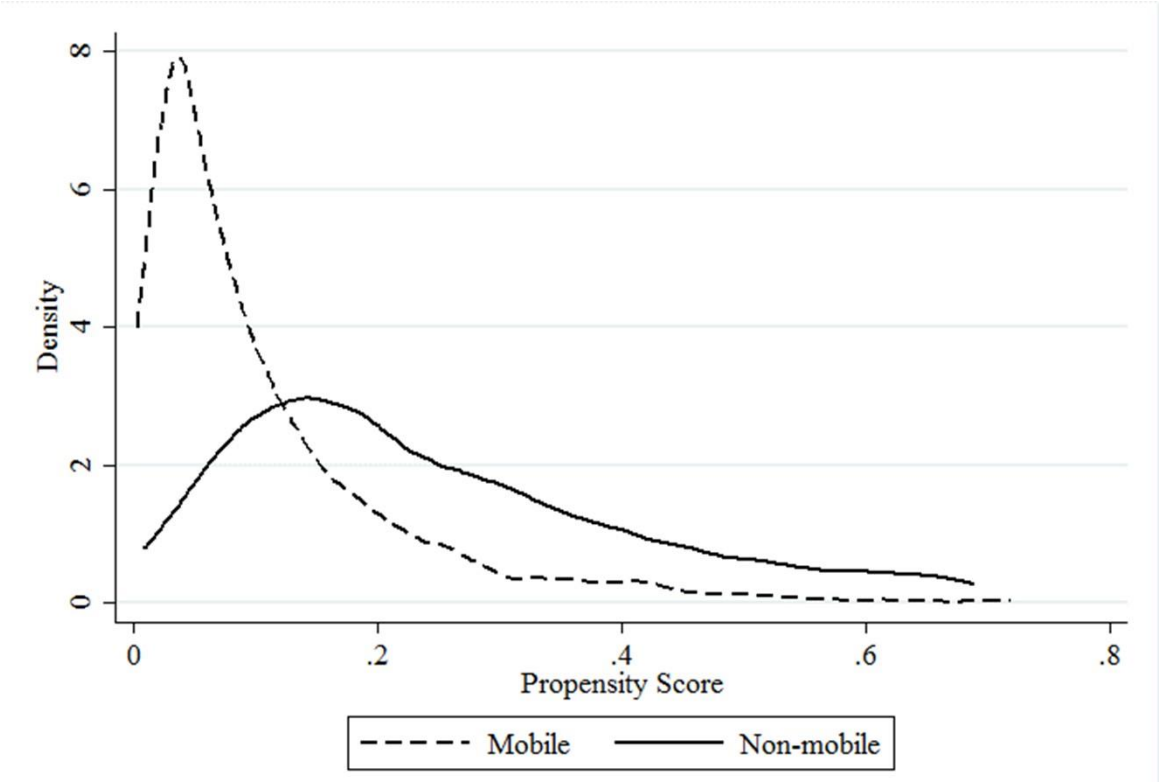
that observed characteristics that are representative of survey respondents' social and cultural capital (family background and educational achievement) drive selection into ISM. For example, only 8 percent of non-mobile graduates have parents with a higher education degree, whereas 18 percent of mobile graduates have an academic family background.

After kernel matching of observations, the original overall difference between the groups (mean bias = 28.8 percent) is levelled and no longer substantial (mean bias < 3 percent) so that selection bias with respect to observed characteristics is ruled out.

Table 1: Test of balancing of covariates before and after matching

Variable	Unmatched (U) Matched (M)	Mean Treated	Control	%bias*
Male	U	.55	.52	8.3
	M	.55	.55	.7
Birth in East Germany	U	.13	.22	32.9
	M	.13	.14	1.5
Birth cohort	U	2.64	.38	68.4
	M	2.64	.63	2.8
Mother & father HE degree	U	.18	.08	27.7
	M	.18	.16	5.6
School GPA	U	2.20	2.32	-20.8
	M	2.20	2.20	-1.4
Abitur	U	.86	.73	32.9
	M	.86	.86	1.5
University (Master-level)	U	.71	.50	43.5
	M	.71	.70	2.0
Vocational training	U	.34	.44	-20.0
	M	.34	.34	-.3
Public Service Career	U	.01	.02	-8.0
	M	.01	.01	.2
Study duration (months)	U	70.69	57.67	52.8
	M	70.69	70.79	-.4
Education	U	.04	.08	-19.9
	M	.04	.04	-.4
Liberal Arts	U	.29	.12	44.3
	M	.29	.28	4.8
Social science	U	.19	.11	20.9
	M	.19	.20	-3.4
Business	U	.19	.30	-25.4
	M	.19	.19	-.6
Health and social work	U	.05	.10	-18.1
	M	.05	.05	-.3
Sample	PS R2	LR chi2	p>chi2	mean bias
Unmatched	.17	217.20	.000	28.8
Matched	.002	.9	1.000	1.7

Figure 1: Propensity scores by treatment and control group



Note: N=1,749; Data=NEPS)

Table 1 presents matched estimates of the ATT and the ATU that are largely consistent across the different weighting methods, thus strengthening the reliability of the procedure. 19 cases were off of common support and thus excluded from the sample (resulting in N=1,730). The unmatched difference in occupational status between ISM and non-ISM graduates is 10.8 (s.e. = 2.39, not shown). Turning towards the matching estimates for the treated cases (ATT), we observe mean group differences in MPS three years after graduation of around 6 to 7 points (standard error around 3). For the untreated cases (ATU), this difference is substantially larger indicating effect heterogeneity. The non-mobile graduates would have had an MPS of about 12 to 13 points higher had they studied abroad during higher education. If the treatment effects are homogeneous across the population, ATT and the ATU should be identical and substantial differences between the two estimates are thus an indication for treatment effect heterogeneity (Xie et al., 2012).

Table 1: Matching estimates: effect of ISM on MPS three years after graduation (N = 1,749)

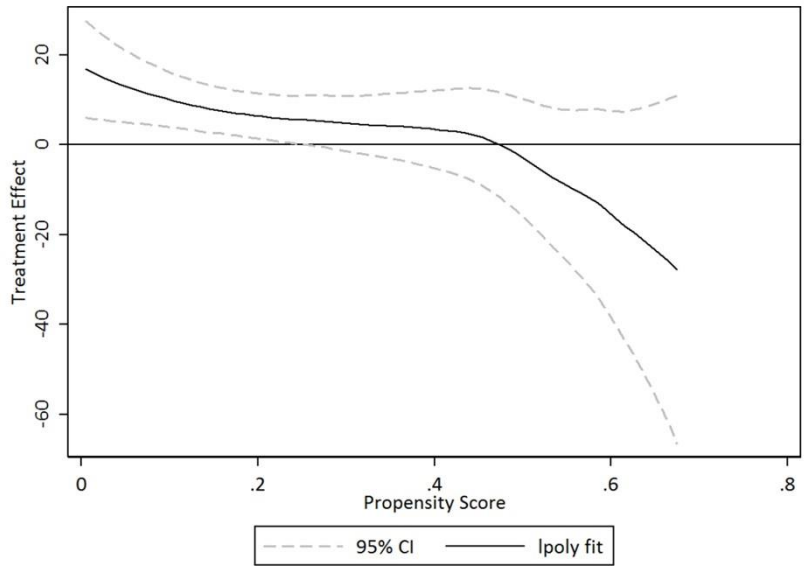
	ATT_M			ATU_M		
	Y_i^1	Y_i^0	δ_i	Y_i^1	Y_i^0	δ_i

NN matching, 5 controls	121.5	114.55	6.93† (2.75)	122.3	110.5	11.79** (3.92)
Kernel matching	121.5	114.9	6.60* (3.01)	123.4	110.5	12.90*** (3.14)
Local Linear matching	121.5	115.9	6.33* (2.88)	123.0	110.6	13.35*** (4.20)

Note: Bootstrapped standard errors (100 repl.) in parantheses; Data=NEPS
*†p<.10; *p<.05; **p<.01; ***p< .001; cases off support: 19; N=1,730, ATT_M = Matching estimate of average treatment effect on the treated , ATU_M = matching estimate of the average treatment effect on the untreated, Y_i^1 = potential outcomes given treatment, Y_i^0 potential outcomes given no treatment, δ_i = difference between Y_i^1 and Y_i^0 (= ATT_M, and ATU_M , respectively)*

Figure 2 shows the results of the stepwise smoothing-differencing (SD) method that confirms effect heterogeneity indicated by the differences between ATT and ATU. There is more certainty in the lower and middle range of the propensity scores and the estimates become more uncertain at the higher end of the propensity scores where case numbers decrease. Regardless of this uncertainty there is a clear downward sloping trend in average ISM effects on MPS with increasing propensity scores. In other words, individuals who are less likely to become internationally mobile during their studies are more likely to benefit from international mobility in terms of occupational status three years after graduation. This result is supportive of negative selection.

Figure 2: Heterogeneous treatment effects by smoothing-differencing method



(Note: N=1,730, Data=NEPS, lpoly = local polynomial regression)

Discussion

Self-selection plays a dominant role in international student mobility (ISM). Our analyses confirm previous findings that relatively favourable socio-economic and educational characteristics are associated with the propensity to study abroad during higher education. The results also show that after accounting for self-selection, international graduates on average had a higher occupational status three years after graduation than comparable graduates who gained no international experiences during their studies.

The major insight of this study is that the occupational value attached to ISM depends greatly on the selection that generates the international mobility of students. The overall picture is one of negative selection, i.e. higher education graduates with low propensity for being internationally mobile realize greater occupational status benefits than graduates with higher propensity. This reflects similar findings by Di Pietro (2015). Using instrumental variables estimation, he shows that the impact of studying abroad on employment prospects of Italian university graduates is highest for graduates from disadvantaged backgrounds. We propose that the negative selection pattern aligns with both resource substitution and differential selectivity theory. Social and human capital endowed by international student mobility may be most important for those who are likely to have less of such capital from the start. Moreover, higher education graduates who participated in ISM against the odds may represent an especially able group with high prospects for occupational success, regardless of their mobility. Thus, it may be that observed (e.g. previous educational attainment) or unobserved factors (e.g. ability), or both, drive effect heterogeneity implied by negative selection (Borjas, 1991). However, this cannot be tested here. Another limitation of this study is that mobile and immobile groups are matched based on the assumption that treatment assignment is conditionally independent of the outcome given the observed confounders. Thus, we cannot rule out that results are further distorted by unobserved differences between mobile and immobile groups.

In conclusion, although we confirm the strong self-selection into ISM based on family background and educational achievement, ISM may not exacerbate or reproduce existing social inequalities as is commonly assumed (Gerhards & Hans, 2013). Rather the finding of negative selection suggests that ISM may compensate for certain background disadvantages which otherwise predestine for a lower occupational status and thus contribute to levelling inequalities. While further research is needed and albite the indeterminate consequences of the COVID-19 pandemic on global, regional or national ISM patterns, this paper may stimulate

debates among educational policy makers and practitioners about the societal value of studying abroad in times of mass higher education (beyond its commercial value) and its accessibility especially for groups with less favourable social backgrounds.

Acknowledgement

This paper uses data from the National Educational Panel Study (NEPS): Starting Cohort 6 – Adults, doi:10.5157/NEPS:SC6:9.0.1 . From 2008 to 2013, NEPS data were collected as part of the Framework Programme for the Promotion of Empirical Educational Research funded by the German Federal Ministry of Education and Research (BMBF). As of 2014, the NEPS survey is carried out by the Leibniz Institute for Educational Trajectories (LIfBi) at the University of Bamberg in cooperation with a nationwide network.

References

Baas, M. (2019). The Education-Migration Industry: International Students, Migration Policy and the Question of Skills. *International Migration*, 57(3): 222–234.

Bauldry, S. (2015). Variation in the Protective Effect of Higher Education against Depression. *Society and Mental Health*, 5(2): 145–161.

Beattie, I.R. (2002). Are All "Adolescent Econometricians" Created Equal? Racial, Class, and Gender Differences in College Enrollment. *Sociology of Education*, 75(1): 19–43.

Blossfeld, H.-P., Roßbach, H.-G. & Maurice, J.v. (Eds.) (2011), *Education as a lifelong process: The German National Educational Panel Study (NEPS)*, Supplement 2, Vol. 14.

Borgen, N.T. (2015). College quality and the positive selection hypothesis: The 'second filter' on family background in high-paid jobs. *Research in Social Stratification and Mobility*, 39 (Supplement C,): 32–47.

Borjas, G.J. (1991). Immigration and self-selection. In J. M. Abowd, J.M. & R. B. Freeman (Eds.), *Immigration, trade, and the labor market* (pp. 29–76). University of Chicago Press.

Brand, J.E. and Xie, Y. (2010). Who benefits most from college? Evidence for negative selection in heterogeneous economic returns to higher education. *American sociological review*, 75(2): 273–302.

Breinholt, A. & Holm A. (2020), Heterogeneous effects of less educated mothers' further education during early childhood on children's educational performance in adolescence. *Research in Social Stratification and Mobility*, 68.

Brighouse, H. & Swift, A. (2006). Equality, priority, and positional goods. *Ethics*, 116(3): 471–497.

Commission of the European Union (2019). *Erasmus+ higher education impact study*, European Union.

Di Pietro, G. (2015). Do Study Abroad Programs Enhance the Employability of Graduates? *Education Finance and Policy*, 10(2): 223–243.

Finn, M. & Darmody, M. (2017). Examining student immobility: a study of Irish undergraduate students", *Journal of Higher Education Policy and Management*, 49(4): 423–434.

Gabriels, W. & Benke-Åberg, R. (2020). *Student Exchanges in Times of Crisis*. European Migration Network AISBL.

Gerhards, J. & Hans, S. (2013). Transnational Human Capital, Education, and Social Inequality. Analyses of International Student Exchange. *Zeitschrift für Soziologie*, 42(2): 99–117.

Hout, M. (2012). Social and economic returns to college education in the United States. *Annual Review of Sociology*, 38: 379–400.

Huntington-Klein, N. (2015). Subjective and projected returns to education. *Journal of Economic Behavior & Organization*, 177: 10–25.

Iriondo, I. (2020). Evaluation of the impact of Erasmus study mobility on salaries and employment of recent graduates in Spain. *Studies in Higher Education*, 45(4): 925–943.

Jacob, M., Kühhirt, M. & Rodrigues, M. (2019. Labour Market Returns to Graduates' International Experience: Exploring Cross-Country Variation in Europe. *European Sociological Review*, 35(4): 491–505.

Kratz, F. & Netz, N. (2018). Which mechanisms explain monetary returns to international student mobility?. *Studies in Higher Education*, 43(2): 375–400.

Kritz, M.M. & Gurak, D.T. (2018). International Student Mobility. In M. Czaika (Ed.), *High-Skilled Migration: Drivers and Policies* (pp. 222–245). Oxford University Press.

Leuze, K. (2007). What Makes for a Good Start? Consequences of Occupation-Specific Higher Education for Career Mobility: Germany and Great Britain Compared, *International Journal of Sociology*, 37(2): 29–53.

Liu-Farrer, G. & Tran, A. H. (2019). Bridging the Institutional Gaps: International Education as a Migration Industry. *International Migration*, 57(2): 235–249.

Liwiński, J. (2018). Does studying abroad enhance employability?, *Economics of Transition and Institutional Change*, 27: 409–423.

Lörz, M., Netz, N. & Quast, H. (2016. Why do students from underprivileged families less often intend to study abroad? *Higher Education*, 72(2): 153–174.

Nerlich, S. (2020). Outcomes-focused evaluation of study abroad experiences. *Journal of Higher Education Policy and Management*, Latest Articles.

Netz, N. & Grüttner, M. (2020). Does the effect of studying abroad on labour income vary by graduates' social origin? Evidence from Germany. *Higher Education.*

Messer, D. & Wolter, S.C. (2007). Are student exchange programs worth it? *Higher Education*, 54(5): 647–663.

Morgan, S.L. & Winship, C. (2015). *Counterfactuals and Causal Inference: Methods and Principles for Social Research*. Cambridge University Press.

Oosterbeek, H. & Webbink, D. (2006). *Asessing the Returns to Studying Abroad.* CPB Discussion Paper.

Pais, J. (2011). Socioeconomic background and racial earnings inequality. A propensity score analysis. *Social Science Research*, 40(1): 37–49.

Petzold, K. (2020). Heterogeneous effects of graduates' international mobility on employers' hiring intentions—experimental evidence from Germany. *Higher Education*.

Petzold, K. (2017). Studying Abroad as a Sorting Criterion in the Recruitment Process. *Journal of Studies in International Education*, 21(5): 412–430.

QS (2020). *Higher Education in 2020: How COVID-19 Shaped this Year*. Published in December 2020.

Rubin, D.B. (2005). Causal Inference Using Potential Outcomes. *Journal of the American Statistical Association*, 100(469): 322–331.

Savage, M. & Egerton, M. (1997). Social Mobility, Individual Ability and the Inheritance of Class Inequality. *Sociology*, 31(4): 645–672.

Schafer, M.H., Wilkinson, L.R. & Ferraro, K.F. (2013). Childhood (Mis)fortune, Educational Attainment, and Adult Health. Contingent Benefits of a College Degree? *Social forces*, 91(3): 1007–1034.

Smith, M.P. & Favell, A. (2006). *The human face of global mobility: International highly skilled migration in Europe, North America and the Asia-Pacific*. Transaction Publishers.

Sorrenti, G. (2017). The Spanish or the German Apartment? Study Abroad and the Acquisition of Permanent Skills. *Economics of Education Review*, 60(October): 142–158.

Waibel, S., Petzold, K. & Rüger, H. (2018). Occupational status benefits of studying abroad and the role of occupational specificity – a propensity score matching approach. *Social Science Research*, 74: 45–61.

Waibel, S., Rüger, H., Ette, A. & Sauer, L. (2017). Career consequences of transnational educational mobility: a systematic literature review. *Educational Research Review*, 20: 81–98.

Wegener, B. (1985). Is there social prestige? [Gibt es Sozialprestige?]. *Zeitschrift für Soziologie*, 14(3): 209–235.

Wiers-Jennsen, J. & Støren, L. A. (2020). International student mobility and the transition from higher education to work in Norway. *Higher Education*.

Van Mol, C., Caarls, K. & Souto-Otero, M. (2020). International student mobility and labour market outcomes: an investigation of the role of level of study, type of mobility, and international prestige hierarchies. *Higher Education.*

Xie, Y., Brand, J.E. & Jann, B. (2012). Estimating Heterogeneous Treatment Effects with Observational Data. *Sociological Methodology*, 42(1): 314–347.