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Should I stay or should I go? migration intentions of teenagers with parents working abroad

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ABSTRACT

This paper investigates how having a parent working abroad affects subsequent intentions of teenagers to emigrate, using unique data for Poland. Results show that parental employment abroad is positively associated with children's intentions to emigrate, more so for males than females. The findings highlight the intergenerational nature of migratory trends within families. This is particularly important for a country like Poland, which alongside other Central and Eastern European economies, has been experiencing significant population outflows for almost two decades and is gradually turning towards a foreign-born workforce.

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Migration intentions; young people; migrant parents

1. Introduction

Do parental migration experiences make offspring more likely to emigrate too? This is an important question in light of increasing migratory flows within Europe over the past decades and the role networks play in migration decisions. There were 54.4 million foreign-born nationals living within the EU in 2015 (Eurostat, 2017). Countries which joined the European Union since 2004 have experienced particularly drastic population outflows, partly thanks to the freedom of movement of people within the organisation. This is also the case for Poland, the largest among the new EU joiners. At the point of the 2011 Census over 2 million Polish citizens – over 5% of the country's total population – were residing abroad, two and a half times as many as in 2002 CSO2003. The nature of these new movements is also important; frequently households send a member abroad instead of migrating as a unit. In some regions of Poland as many as 18% of households reported having at least one member abroad in 2011 (Central Statistical Office of Poland, 2013b). This significant population outflow, coupled with economic growth, meant that Poland is starting to turn to foreign-born workers, particularly from across its eastern border to fill labour market shortages in some sectors.¹

With an increase in migrant populations comes an increase in the number of children with migrant parents. If, as I hypothesise, having a parent working abroad determines children's future behaviours and country of residence choices, it is reasonable to expect

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¹In February 2020 over 1 million foreign-born citizens were paying work-related insurance contributions in Poland. Almost 73% of them were Ukrainian nationals (The Central Statistical Office of Poland, 2020).

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subsequent migratory flows of the offspring. This is important from a policy point of view; if children whose parents work abroad (henceforth PWA children) are more likely to migrate themselves as adults, then any retention policy in a sending country should target them. Similarly, any destination country hoping to attract young workforce should focus on groups which are more prone to migrate.

The role of networks has been studied at length, both from micro- and macro-perspectives (Beine, 2016). Yet, relatively little is known about the specific impact parental migration experiences have on children's realised migration, mostly because suitable data to analyse the relationship do not exist. Therefore, some (though still limited) research has considered how migration intentions – a proxy for eventual migration² – differ between children with and without migrant parents. This is also what this paper sets out to do.

To the best of my knowledge only two papers address this question directly. Kandel and Kao (2000) consider migration intentions of Mexican children whose parents work in the US. However, they do not correct for endogeneity of migration decisions; hence, the results they obtain are unlikely to be causal. Furthermore, I argue later that the case of Mexico–US migration differs significantly from the context studied here and, as such, the conclusions may differ. Ivlevs and King (2012) explore a unique setting that permits comparisons of migration intentions between first- and second-generation versus later-generation Russian-speaking residents of Latvia, controlling for many cultural, economic and institutional determinants of migration decisions. However, their work does not provide an insight into the decision-making of youth residing in their country of birth but whose parents engaged in employment abroad, a very common scenario in Europe. Mulder, Lundholm, and Malmberg (2020) focus on the role siblings, rather than parents play in migratory movements, and analyse internal migration of young adults within Sweden. Although the context differs significantly from that studied here, the authors make a similar argument for the underlying mechanism; they argue that older siblings “pave the way” for subsequent migration of their younger brothers and sisters.

In this paper, I investigate whether young people's stated migration intentions are shaped by their parents' experience of working abroad. To do so I use unique data I collected on almost 2000 Polish 16-year-olds in Opolskie region of Poland (henceforth MECP2012 data), which contain information on their socio-economic background, school performance, as well as migratory experiences of parents and their plans to emigrate, allowing me to explore the potential intergenerational link.

OLS and probit regression results suggest that having a parent working abroad and a child's intention to migrate are positively correlated. This relationship is likely biased because of potential omitted variables, endogeneity and measurement error. Firstly, despite inclusion of a set of controls, the regression may not account for all factors that simultaneously affect the parental decision to emigrate and the child's intention to follow. One such factor could be discrimination (Botezat & Pfeiffer, 2019), although I argue later

²Use of migration intentions rather than actual migration experience has its drawbacks as intentions do not always translate into specific behaviour (Manski, 1990). However, literature suggests that migration intentions are a good predictor of actual migration (Docquier, Peri, & Ruyssen, 2014; Tjaden, Auer, & Laczko, 2019) and are also driven by the same determinants as actual migration decisions (Huber & Nowotny, 2013). Specifically, Tjaden et al. (2019) find that for Europe the ratio between actual migrants and those declaring intentions to migrate is 4:10. As such declared intentions can be seen as a proxy for future migration.

that this is unlikely in the Polish case (See [Section 3](#)). Unobserved individual characteristics like cognitive ability, which can be correlated between parents and children, could also bias the results.

Secondly, parental decision whether to emigrate as a family or not may be affected by children themselves and whether the parents would like them to move abroad. Botezat and Pfeiffer (2019) also argue that children may be agents of change. They may respond to decisions the family took in the past, including one to join them abroad, driving endogeneity in the analysed relationship.

Lastly, since the analysis is based on self-reported intentions of pupils to migrate and reports of parental migration, one may be concerned about the reliability of these reports and the resultant measurement error.

All of these, except for mismeasurement of parental emigration, would bias the OLS and probit estimates upwards. I take various steps to minimise the extent of this bias and evaluate the robustness of resultant correlations. Firstly, the baseline regressions include an array of control variables as well as class-fixed effects to absorb any time-invariant unobserved factors at class (peer group) level, which affect both parental and children's migration decisions.

Next, concerned that unobserved factors may cause endogeneity, I follow the approach of Altonji, Elder, and Taber (2005) and show that the selection on unobservables would have to be significantly larger than the selection on observables in the OLS regression specification to nullify the effect obtained. Then I employ propensity score matching, inverse probability weighting and entropy balancing to accurately capture selection into migration on observed characteristics. Notably, these methods do not correct for measurement error in reporting.

All approaches consistently suggest that having a parent working abroad is positively associated with an intention to emigrate after finishing school. This impact is more pronounced for males, who constitute a much bigger proportion of Polish migrants, than for females and for pupils with below average school performance, as measured by their grades. I identify no differential effects depending on parental education level, despite the fact that migratory movements in this setting are predominantly low-skilled.

The contribution of this paper is as follows: Firstly, it relies on a unique data set, which permits an analysis of this kind. Data sets linking intended or realised migration across generations and containing socio-economic characteristics of respondents are rare. Secondly, it provides estimates of robust correlations, which further our understanding of how migratory movements are shaped. The analysis is also unique in its focus on an unexplored determinant of migration intentions – the migration experience of parents – and an often overlooked group of potential migrants – young individuals still in education and about to enter the labour market within the next 2–7 years. Importantly, it places the debate in the European context, where migration over the past two decades has been particularly dynamic and where, as I argue in more detail in [Section 2](#), the unprecedented nature of the European Union may shape decisions to migrate differently than in cases studied so far. Although I cannot eliminate all potential threats to causality, I show that the results are robust to various specifications and sensitivity checks, and also consider the extent of bias due to unobservable characteristics required to nullify them entirely.

Understanding what factors influence young people's choice of country of residence has policy implications in source as well as host countries, and particularly across subnational regions that experience high migration inflows or outflows. Countries whose labour markets are developing dynamically may want to encourage specific groups of immigrants, particularly young ones, to enter their labour market and targeted policy may be an effective way of doing so. On the other hand, whilst migration may be initially welcome by sending countries, those with a continued pattern of out-migration often face the risk of brain drain and the demographic consequences of population outflows, which can slow down economic development in times of economic prosperity (Black et al., 2010; Siemionczyk, 2017). Young people's departure from a country can have particularly lasting demographic and labour market consequences, especially if it not only decreases the workforce but also alters its skill composition. Therefore, some source countries adopt policies encouraging returns from migration. Take, for example, the Polish government's national campaign "Powroty (Returns)" and regional activities, such as "Opolskie – tutaj zostaje (Opolskie – I am staying here)" led by the Opolskie region of Poland. These efforts rarely focus on retention of people in the country, e.g., by creating attractive labour market conditions on entry, often failing to address the economic causes of migration. This is particularly important with respect to young individuals finishing school and planning their future – in the home country or abroad ((Newsweek 2016). Kolejna fala emigracji: 4 mln Polaków chce wyjechać [another migration wave: 4 million Poles would like to leave]. Original in Polish, 2017-). Upon completion of compulsory schooling, young people decide whether to continue their education or work. Frequently they make an additional choice to enter higher education or a labour market abroad rather than in the home country. This may be particularly appealing for youth who have been exposed to migration among family or friends and thus face lower costs of migration. At this stage parents frequently play a vital role in life decisions (Brooks, 2003). Their perceptions of what is best for their child, for example, migration versus further education, may at least partly determine the choices made. In this context, the parents' own work experience and impression of life abroad are crucial.

This paper is structured as follows: in [Section 2](#) I briefly position this work within the relevant literature and elaborate why the proposed analysis is interesting within the European context, [Section 3](#) contains description of data, followed by methods in [Section 4](#) and results in [Section 5](#). [Section 6](#) concludes.

2. Literature and background

This work contributes to economic literature on migration and intergenerational transmission. The factors behind individually realised or intended migration decisions have been evaluated by multiple empirical studies, using micro- (Zaiceva & Zimmerman, 2008) and macro-level data (Belot & Ederveen, 2012; Mayda, 2010). The most commonly studied determinants are economic (labour market opportunities, living standards, relative poverty), individual-specific, including personality traits such as risk aversion (Gibson & McKenzie, 2011; Huber & Nowotny, 2020), and cultural. Some studies considered the role of networks abroad (Epstein & Gang, 2006). However, none of them focus on young individuals. Analyses of impacts on the families left behind typically consider labour market outcomes, education or health of family members (Gibson, McKenzie, & Stillman, 2011), but not subsequent intentions to migrate.

Economic studies of intergenerational transmission focused predominantly on IQ (Black, Devereux, & Salvanes, 2009), educational attainment (Black, Devereux, & Salvanes, 2005; Holmlund, Lindahl, & Plug, 2011), labour market performance (Dearden, Machin, & Reed, 1997) or attitudes (Bjorklund, Lindahl, & Lindquist, 2010). The work on the transmission of attitudes has not considered attitudes towards migration as something parents may pass onto their offspring. If parental migration is successful in terms of increased income potential, cultural and economic assimilation and building a close network of friends abroad, then children may be encouraged to follow in their parents' footsteps. This is particularly the case if the economic situation in the home country or region has not improved and thus economic migration push-factors are also at play.

To the best of my knowledge only work by Kandel and Kao (2000) on Mexican pupils' plans to migrate to the US addressed this question directly. The Mexican-US migration differs significantly from the patterns observed in Europe. By considering Polish migration to other EU countries, I shed light on the dynamics of this relationship in a new context.

Polish migration over the last two decades is interesting to study in this context for two reasons. Firstly, Poland is the largest migrant-sending area among the new EU member states.³ Secondly, Polish migration exemplifies new migration trends in the enlarged European Union, which differ in many ways from those studied previously. The EU migrants typically enjoy a legal employment status in other EU member states. They can also frequently return home, thanks to the rapid expansion of cheap flights within Europe and geographic proximity of source and destination countries within Europe. As a result, since joining the European Union in 2004, Poles have increasingly engaged in circular, rather than permanent, migratory movements. The structure of the flows has also changed over the years with an increasingly more educated (Okólski & Salt, 2014) and relatively young (Kaczmarczyk & Okólski, 2008) workforce leaving Poland. The unprecedented scale of the movement and labour demand in destination countries have led to development and an increased role of employment agencies in Poland recruiting workers for specific occupations (Marks-Bielska, Lizińska, Bambuchowska, & Kaczmarczyk, 2015; Okólski & Salt, 2014).⁴ Improved access to internet and rapid growth of social media resulted in an increased role of support communities online, potentially replacing traditional networks abroad (Filipek, 2019). Some argue that the phenomenon, as well as the institutions and systems which emerged around it are so novel, they necessitate development of a new analytical framework (Okólski & Salt, 2014).

These differences between new European migration and migratory movements studied so far may have implications for the role of networks in migration decisions, and the role played by migrant parents in particular. Not only could the network effect differ in the current European context, but it may also differ for young individuals. Specifically, the network effect is likely weaker; Networks at destination typically reduce migration costs, but they tend to be concentrated in specific sectors of employment (Beine, 2016). The EU membership, employment agencies and online communities also lower the

³In 2018 over 2 million Poles were residing temporarily in other EU countries (The Central Statistical Office of Poland, 2019).

⁴Marks-Bielska et al. (2015) report that over 12% of Poles emigrating to Germany were helped by Polish job agencies in doing so.

migration costs and may replace the traditional networks in their role of facilitating migratory movements. Given the changes in the structure of migration, the diaspora may be of less significance for young individuals seeking employment in other sectors than before. Similarly, the role played by parents, who are likely working in jobs other than those which are of interest to their children, may be diminished. Peers (even if met online) may be more useful in facilitating migration and securing first jobs.

Ivlevs and King (2012) undertook a similar analysis to the one presented here for Latvia and found a positive correlation between past migration experiences of parents and declared migration intentions of their adult children. However, they focused on older individuals (aged 17–65) who themselves were second-generation immigrants in Latvia. Therefore, whilst analysing intergenerational transmission of attitudes towards migration, they considered a different scenario where the respondents were not natives of the country of residence. This has particular implications for migration intentions; for instance, second-generation immigrants are likely to be less attached than the native population to the country of residence and have already established strong links with their parents' country of origin.

3. Data

This paper uses novel data I collected – Migration and Education of Children in Poland 2012 (MECP2012)⁵ – containing administrative school information about the school and class attended and educational outcomes, as well as self-reported household situation, migration experience within the family and reported migration intentions of 16-year-old pupils in a final year of 52 lower secondary schools⁶ in 12 counties of Opolskie region of Poland, collected in June 2012. The unique feature of the data is that they contain information about pupils' intentions to emigrate and migration of family members in the last 3 years – who emigrated (mother, father or both), when and how long for. Pupils whose parent(s) worked abroad at any point in the 3 years prior to and including the date of survey are identified as children with parents working abroad (PWA).

3.1. Migration from Opolskie

3.1.1. Region and migratory movements

Opolskie voivodship is the smallest of 16 Polish voivodships and is located in southern Poland, along the border with the Czech Republic, as well as in close proximity with Germany, with a population reaching just over 1 million inhabitants. The registered unemployment rate in the area in 2012 was 14.4% (compared with 13.4% for Poland as a whole) and the region contributed 2.1% to the Polish GDP, with a GDP per capita in Opolskie equal to 80.1% of the Polish GDP per capita (The Central Statistical Office of Poland, 2012).

⁵For full details of the data set see <https://sites.google.com/site/joannacliftonsprigg/data>

⁶This is the last year in which education in Poland follows common curriculum and performance of pupils can be easily compared. After completion of this year, students apply to upper secondary schools based on their academic performance. Due to the strictly observed legal requirements in Poland of attending full-time education until the age of 18 these pupils remained in education for at least another 2 years.

Opolskie has been historically the highest out-migration region of Poland. According to the Polish Census there were 107,985 residents of Opolskie residing *temporarily abroad for at least 3 consecutive months* in 2011. Of them 94.5% emigrated to other EU countries, almost 62% to Germany (Central Statistical Office of Poland, 2013b). It is clear from Appendix Figure A.1 that Opolskie had the highest proportion of temporary emigrants per 1000 inhabitants in the entire country in 2011; this is also true of the region in the past.⁷ Resultantly, 17.8% of all households in the region had *at least one emigrant* at the time of the 2011 Census.

The 2011 Census estimates that 73% of temporary migrants have left Poland to work abroad, under 6% for education⁸ and under 16% to join family. Of those searching for work, almost a third were seeking better wages and 31% could not find employment in Poland prior to departure (Central Statistical Office of Poland, 2013b, 2019). Jończy and Rokita-Poskart (2013) estimate that in 2010 12% of the total population of Opolskie were working abroad and on average spent 3.9 months of the year away. They earned approximately PLN 5.9 billion abroad and remitted PLN 4.2 billion, of which PLN 3.7 billion was spent and rest allocated in banks.

3.1.2. Effect of parental migration on children

Based on data from educational institutions in the region and a survey of migrants, Walas, Goleński, Kijak, and Mesjasz (2013) report that 95% of children whose parents are employed abroad have only one parent working abroad. Departures of both parents are highly unusual. Furthermore, migrant parents frequently return home. 65% of migrants return to Poland at least once a month.⁹ As many as 40% of interviewed schools and preschools indicate that parental absence has not affected the child negatively and did not make working with the child in a school setting more difficult. 36% of migrant parents state that their absence does not adversely affect their children. Nonetheless, 29% of schools and almost two-thirds of migrant parents suggest that they experience some problems with children, likely stemming from parental migration. Unlike in Botezat and Pfeiffer (2019) study for Romania, Walas et al. (2013) find no evidence of children being bullied or discriminated against, in their interviews with schools and migrant parents in Opolskie. Furthermore, Clifton-Sprigg (2019) finds no negative effects of parental absence on school performance of children, as measured by school grades.

Focus on a region particularly affected by migration has implications for generalisation of the findings of this analysis. They will be relevant only in context of high regional population outflows, implying that migration intentions may be affected not only by family experiences but also the environmental factors, such as unemployment levels in the area. I consider it later.

⁷Note, however, that the gap in migration outflow between Opolskie and other regions of Poland has been closing following the entry of Poland to the European Union. Specifically, the migration levels remained relatively constant in Opolskie but other parts of Poland have experienced a migration shock following accession (Central Statistical Office of Poland, 2013b).

⁸According to OECD reports between 22,300 and 25,100 Poles were studying altogether in OECD countries in years 2013–2018 (Central Statistical Office of Poland, 2019).

⁹Similar patterns are found in MECP2012 data used in this paper.

3.2. Intentions of 16-year-olds

MECP2012 focused on 16-year-olds as the suitable target group to study. The respondents were still in compulsory full-time education, which followed common curriculum, making their academic progress comparable. At the same time, although they were not legally adults, they were of sufficient age to reliably express their views on migration and their own intentions to migrate following completion of school, i.e., not earlier than in 2 years' time. The age of 16 has been considered as an alternative threshold for adulthood to commonly adopted 18 years old. In some countries, a 16 year old can drink alcohol (Germany) and vote (Austria). In fact, a proposal to lower the voting age to 16 years old has been debated, but never introduced, at various points in time in Poland as well.¹⁰

3.3. Summary statistics

Basic summary statistics can be found in Table 1. After dropping the observations with incomplete information on family characteristics, the sample contains 1939 individuals observed in the final year of lower secondary school.¹¹ A fifth of pupils experienced parental migration in the 3 years prior to the survey. In over 80% of cases the fathers migrated, leaving the children back home with their mother.¹² The migratory movements were temporary with an average migration spell of 2 years for fathers and 1 year for mothers. This temporary and circular nature of migration is a typical and important feature of migratory movements from the region. It often results in just one household member engaging in employment abroad with no intention for the whole family to relocate (Walas et al., 2013)¹³ and is partly explained by the proximity of and ease of access to destination countries. Germany – the usual choice of low-skilled, temporary Polish migrants – was the main destination country.

The PWA pupils had on average lower grades than their peers,¹⁴ their mothers were younger and are less likely to work. A significantly higher proportion of PWA pupils also had friends or extended family members abroad, apart from the migrant parent.

These socio-economic and environmental differences between the two groups are in line with the literature on migration from Poland and are strongly related to different labour market opportunities faced by the two groups (Central Statistical Office of Poland, 2013a, 2019); they are also likely to be correlated with parental migration decisions as well as the child's intention to leave. Therefore, they will be explicitly accounted for in the

¹⁰See: Sobczyk (2018); Szubartowicz (2013)

¹¹I defer the analysis of the representativeness of this sample relative to the full cohort surveyed to the Appendix; It is clear from Table A.1 that the sample used in the analysis and the excluded observations differ on various observable characteristics, which could be concerning. However, having run basic OLS and probit regressions (without control variables) on the sample used, just excluded observations and a pooled sample of both, I conclude that the relationship between parental emigration and stated migration intentions remains unchanged, at least in qualitative terms.

¹²Only in 15% of cases both mother and father emigrated and then typically not at the same time.

¹³A survey of families in Opolskie by Walas et al. (2013) indicates that only 7% of temporary migrants surveyed in 2013 indicated firmly that they were not planning to return to Poland.

¹⁴The average grade is an average of all end-of-semester marks a pupil obtained in a given semester in courses which are compulsory within the common curriculum. This information comes from the school records. As discussed at length in Clifton-Sprigg (2019), average grades of PWA pupils are lower than those of their non-PWA peers. This is unsurprising given their different socio-economic background on average; in particular, they often come from low-skilled households.

Table 1. Sample summary statistics.

	Means PWA		Means non-PWA		
		Raw	PSM	EB	
	(n = 421)	(n = 1518)	(n = 1349)	(n = 1518)	
parent abroad	0.20				
intention to migrate	0.58	0.47			
female	0.57	0.53	0.56	0.54	
average grade	3.68	3.84	3.74	3.81	
mother abroad	0.34	0	0	0	
father abroad	0.82	0	0	0	
number of siblings	1.67	1.6	1.65	1.62	
mother's age	41.65	42.57	41.99	42.38	
mother works	0.68	0.74	0.68	0.72	
mother's education					
primary	0.06	0.12	0.066	0.1	
vocational	0.46	0.39	0.44	0.4	
secondary	0.38	0.4	0.39	0.39	
tertiary	0.14	0.13	0.15	0.11	
have friends or family abroad	0.96	0.89	0.94	0.9	

Data: MECP2012. Summary statistics for PWA and non-PWA pupils, raw and after PSM matching and entropy balancing. The first two columns present the means of selected variables before adjustment for PWA and non-PWA pupils. Third and fourth column show the means for the matched group based on propensity score (PSM) and reweighted according to entropy balancing (EB).

regression. Importantly, PWA and non-PWA pupils express different willingness to *emigrate for employment upon completion of school* with 58% of the former and 47% of the latter group stating their intention to live abroad.

3.4. Representativeness of the sample

In 2012, there were 140 lower secondary schools (*gimnazja*) in Opolskie.¹⁵ Due to financial and time constraints, the 114 largest schools were contacted and, of these, 52 schools participated in the study. Non-participant schools most often indicated timing of the project and, occasionally, sensitivity of the survey topic as obstacles to cooperation.

Schools were informed of the aim of the study and agreed on a suitable date for the survey to be conducted among the students. Respondents were unaware of the project in advance and were asked to participate on the day of the survey, with an option of refusing participation.

The representativeness of the sample is discussed at length in Clifton-Sprigg (2015, 2019). The collected sample is deemed representative of the population of interest – pupils in the region in lower secondary education with parents temporarily working abroad – based on observed characteristics of the sampled pupils relative to all migrant households in Opolskie. It is also argued that decisions of schools and, subsequently, pupils within participating schools to partake in the survey can be thought of as random; in particular, the participating and non-participating schools are equally geographically spread across the region and areas, which are comparable in terms of the local economy, they are also of comparable quality. The response rate of pupils within the participant schools is high (82.5%). All respondents provided an answer to the migration intention

¹⁵ After exclusion of schools for adults and special needs children.

question, though one cannot rule out untruthful responses. However, these will only be problematic if pupils with migrant parents systematically misreported their intentions relative to pupils without migrant parents.

4. Methods

4.1. OLS and probit

Given the binary nature of the dependent variable (*MigrationIntention_i*), I start the analysis by undertaking the following ordinary least squares and probit regressions¹⁶

$$MigrationIntention_i = \beta_0 + \beta_1 ParentAbroad_i + X_i\beta_2 + \gamma_c + \eta_i \quad (1)$$

where *MigrationIntention_i* is student *i*'s (in class *c*, school *s*, county *a*) stated intention to emigrate after completing high school measured in last semester of lower secondary school (i.e., at age 16),¹⁷ *ParentAbroad_i* is a dummy variable equal to one if student *i* experienced parental migration in the last 3 years,¹⁸ *X_i* is a vector of individual and family characteristics measured in the last semester of lower secondary high school (student's gender, average grades in school, number of siblings, mother's age, education level and employment status, whether they live in a two-parent family, whether they have friends and other extended family abroad) and γ_c are class dummies capturing characteristics of the class (and thus also school and county). Standard errors are bootstrapped.¹⁹

The inclusion of class dummies ensures that time-invariant unobserved characteristics related to the broader living environment, which may be affecting both the pupil's and their parents decisions to emigrate, such as the proportion of other pupils with parents abroad, local area characteristics, which affect employment, etc., are controlled for in the regression. This is particularly effective given that class composition does not change over time in case of Polish lower secondary schools; once a pupil is allocated to a particular class at the age of 13 (beginning of the lower secondary stage), he or she typically remains in the same class for the remaining 3 years, until entering upper secondary school.

The OLS and probit estimates will likely be biased, despite the inclusion of controls for various determinants of parental and teenagers' decisions to emigrate into the regression and the use of class-fixed effects. Endogeneity, omitted variable bias and measurement error pose key threats to causality of the results.

Firstly, many unobserved individual or family characteristics are likely to be correlated with the dependent variable and the main explanatory variable. Ability and personality traits are examples of such unobserved characteristics of pupils. One can argue that children and parents share many traits and their levels of ability are likely to be

¹⁶Note that logit regressions produce marginal effects comparable with those resulting from equivalent probit regressions. Details can be found in the Appendix D.

¹⁷Note the limitations of the definition of the dependent variable: this is based on the question about the intention to emigrate abroad for work after completion of school, i.e., not sooner than at 18 years of age. As I report in [Section 3.1](#) the majority of Polish migrants seek employment abroad and only a very small proportion leave to study. As such, by considering intentions to migrate for employment, the variable still likely captures the majority of intended migratory movements.

¹⁸The three year horizon is dictated by the conditions of the survey and maps the duration of the lower secondary schooling in Poland. Specifically, pupils were asked to map migratory movements of parents onto every semester spent in lower secondary school.

¹⁹I have also considered clustering the standard error at class level. The results are qualitatively comparable. Importantly, the statistical significance of coefficients is preserved when clustered standard errors are used.

correlated. At the same time, it is clear that PWA pupils in this sample perform worse academically than their non-PWA peers and thus may face different job prospects upon finishing school. Given that migration from the region is predominantly low-skilled, PWA pupils may be more willing than non-PWA pupils to emigrate irrespective of their parents' experiences, purely due to their own predispositions. This would suggest that OLS estimates may be biased upwards.

Furthermore, one may argue that PWA children may be more likely to state an intention to migrate due to some environmental factors, such as discrimination or bullying by others related to their parents' absence (Botezat & Pfeiffer, 2019). However, as I document in [Section 3.1](#), there is no evidence that parental migration leads to stigma in Poland. Endogeneity may also stem from the pupils' desire to be reunited with the family; I provide a check on the family reunification story in [Section 5.1](#).

Potential incorrect reporting of migration intentions or parental emigration by respondents constitutes another possible source of bias. The first worry is that PWA and non-PWA pupils systematically answered the question about their intentions to emigrate differently, perhaps in response to its framing or after considering the stated aims of the research project. If PWA pupils were systematically overstating their intention to leave relative to their peers or non-PWA pupils were understating their migration plans, then the relationship presented in [Section 5](#) will be biased upwards. On the other hand, if parental migration measure suffers from the classical error in variables problem, then OLS estimates will be attenuated.

For these reasons, I employ a range of alternative approaches to gauge the extent of bias in the results and demonstrate robustness of the relationships presented in this paper. Specifically, the methods are aimed at correcting for bias due to selection on observables or at assessing the extent of selection on unobservables required to cancel the effects obtained via OLS and probit regressions. Thus, they address concerns around the first source of bias. They cannot correct for measurement error in reporting. Nonetheless, the results should be interpreted as conditional correlations rather than causal effects. I discuss the various approaches in turn.

To start with, I adopt the approach of Altonji et al. (2005) and Oster (2019) to assess the degree of selection on unobservables, relative to the selection on observables, necessary to overturn the OLS results. I conclude that the selection on unobservables would have to be substantially stronger (three times or more, depending on specification) than selection on observables for the main result to be nullified (See Appendix E).

Then I use propensity score matching, inverse probability weighting and entropy balancing throughout the analysis to correct for endogeneity due to selection on observable characteristics.

4.2. Propensity score matching (PSM), doubly robust methods and entropy balancing

Given the visible differences in observable characteristics between PWA and non-PWA pupils, I employ three commonly used techniques, each with different advantages and limitations, to demonstrate that results are robust to alternative specifications.

Firstly, to correct for the systematic error related to selectivity, I apply propensity score matching. I match pupils to five nearest neighbours (with replacement) on the basis of all the observed characteristics used in the OLS and probit regressions.²⁰ Bootstrapped standard errors are used. As can be seen from the balancing table (Table 1) and the propensity score plots in the Appendix (Figures A.2- A.3), the matched sample is well balanced and the common support assumption holds.

The validity of the PSM estimates relies heavily on the assumption that any selection into treatment is based on observed characteristics and that there is no hidden bias. Furthermore, it hinges critically on correct specification of the propensity score and reduces bias at the expense of sample size.

Therefore, I also use inverse probability weighting regression (IPW) adjustment – a doubly robust estimator that models both the treatment (using a propensity score) and the outcome. The treatment model is used to assign a sampling probability for each observation. Its inverse is then used in a weighting adjustment in the outcome model.

The key advantage of this approach is that one can weaken the usual assumption of correct specification; it is sufficient to correctly specify either the treatment or outcome model to obtain valid estimates. The reward for obtaining correct models for both is the increased efficiency that can be gained. The doubly robust estimators can be used as a sensitivity analysis for assessing the standard statistical models used, because they should provide similar effect estimates if the standard models are correctly specified (Cattaneo, Drukker, & Holland, 2013; Lunceford & Davidian, 2004).

I include controls for parental education and employment status, family size and area characteristics in the specification of the propensity score and define the outcome model as in Equation (1). I bootstrap standard errors.

Lastly, I also rely on entropy balancing (Heinmueller, 2012). This method achieves the covariate balance through reweighting of the covariate distributions to satisfy a set of specified moment conditions. Specifically, one defines a desired level of covariate balance through a set of balance conditions (here: sample mean and variance) and the process then identifies weights, which satisfy these conditions. The weights remain as close as possible to base weights, which preserves sample size (See Table 1 for the balancing tests). These weights are then applied in a regression, which here is specified as in Equation (1) with bootstrapped standard errors. Entropy balancing does not alter the treatment effect as after weighting the treatment is mean-independent of all conditioning variables. However, the regression-adjustment decreases the standard errors of the treatment effect estimates because it reduces unexplained variance in the outcome. The process is more effective than propensity score matching as it improves the balance reached by common propensity score methods for all covariates. It also improves balance for all conditioning variables, which is not always the case for PSM.

Means for propensity score matched and entropy balanced samples are reported in Table 1. Both approaches improve the balance between treated and untreated samples relative to no adjustment. However, neither clearly outperforms the other. Which method produces more comparable groups depends on the covariate considered.

²⁰Alternative matching methods – such as using kernel matching – produce matches of similar quality (See Appendix C). Results using different matching processes can be made available upon request.

Table 2. The effect of parental migration on migration intentions.

Dependent variable	Declared intention to emigrate						
	OLS	OLS	PROBIT	PROBIT	PSM	IPW	ENTROPY
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
			dy/dx	dy/dx	5 NN		
	0.107***	0.085***	0.108***	0.094***	0.063**	0.080**	0.066***
	(0.032)	(0.025)	(0.032)	(0.036)	(0.029)	(0.037)	(0.025)
n	1939	1939	1939	1928	1939	1939	1939
full controls	no	yes	no	yes	yes	yes	yes

Data: MECP2012. The results of propensity score matching model presented are based on matching to five nearest neighbours. The entropy balancing is done on means and variances of covariates. Full controls include student's gender, average grades in school, number of siblings, mother's age, education level and employment status, whether child lives in a two-parent family, whether they have friends and other extended family abroad and class dummies. Bootstrapped standard errors are applied. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

5. Results

The baseline results are presented in Table 2. All approaches produce estimates indicative of parental migration positively affecting teenagers' migration intentions. Specifically, they indicate that parental migration experience is associated with a 6 to 10 percentage point increase in the intention to migrate. Although the OLS and probit coefficients are larger than those obtained through alternative methods, indicating, as hypothesised, existence of an upward bias, the differences are not quantitatively large and do not change the overall conclusions.

I subsequently consider a range of factors, which may contribute to the overall effect of parental employment abroad on the youth's intention to emigrate themselves. I do this by including an interaction term between PWA pupil status and chosen covariates into the probit regression and by splitting the sample in PSM, IPW and entropy balancing. I firstly consider gender; given the heavily male-dominated nature of migratory flows from the area, I expect females to be less likely to emigrate in general and for that reason to be also differently affected by parental migration.

Then, I also explore the role of parental education and a respondent's own school performance in forming of migration intentions. Given the low-skilled nature of the migratory movement, one may expect that pupils whose migrant parents have lower education levels are more likely to want to follow in their parents' footsteps. Similarly, pupils with lower school performance may reveal higher willingness to leave the country, potentially irrespective of their parents experiences, based on their observations of migratory patterns in the area. The results can be found in Table 3.

When I split the sample by gender, it emerges that the correlations are driven by links between parental migration experience and increased migration intentions among boys, not girls. This is expected given that migration from Poland is young- and male-dominated (Kaczmarczyk & Okólski, 2008). It is also in line with the findings by McKenzie and Rapoport (2011); they suggest that boys with migrant parents forego schooling to migrate or engage in paid employment at home, whilst girls may undertake more household-related tasks. At the same time, however, the results do not confirm the expectation that girls in general are less likely than boys to express willingness to leave the country.

Table 3. Heterogeneity analysis.

Dependent variable	Declared intention to emigrate						
Panel A	Role of gender						
	probit	PSM		IPW		ENTROPY	
	dy/dx	females	males	females	males	females	males
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
parent abroad	0.168*** (0.053)	0.005 (0.054)	0.139*** (0.052)	0.004 (0.046)	0.170** (0.075)	0.001 (0.031)	0.161*** (0.048)
parent abroad & female	−0.126** (0.061)						
female	−0.051 (0.033)						
n	1928	956	814	1045	894	1045	894
full controls	yes	yes	yes	yes	yes	yes	yes
Panel B	Father's education						
	probit	PSM		IPW		ENTROPY	
	dy/dx	above A-level	below A-level	above A-level	below A-level	above A-level	below A-level
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
parent abroad	0.097** (0.041)	0.075 (0.059)	0.064 (0.043)	0.105 (0.103)	0.120** (0.050)	0.073 (0.047)	0.077** (0.032)
parent abroad & A-level	0.025 (0.064)						
father has A-levels	0.018 (0.028)						
n	1827	636	1030	708	1128	708	1128
full controls	yes	yes	yes	yes	yes	yes	yes
Panel C	Respondent's school performance						
	probit	PSM		IPW		ENTROPY	
	dy/dx	above average	below average	above average	below average	above average	below average
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
parent abroad	0.118** (0.055)	0.047 (0.046)	0.134** (0.055)	−0.011 (0.030)	0.124** (0.052)	0.033 (0.035)	0.106** (0.044)
parent abroad & above average grade	−0.044 (0.069)						
child has above average grades	0.059 (0.047)						
n	1928	987	678	1141	798	1141	798
full controls	yes	yes	yes	yes	yes	yes	yes

Data: MECP2012. The entropy balancing is done on means and variances of covariates. Full controls include student's gender, average grades in school, number of siblings, mother's age, education level and employment status, whether child lives in a two-parent family, whether they have friends and other extended family abroad and class dummies. Bootstrapped standard errors are applied. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

I do not find strong evidence for the role of father's education in shaping of migration intentions. This is somewhat counter-intuitive and interesting in the light of findings by Clifton-Sprigg (2015, 2019) that education level of own parents as well as parents of PWA classmates positively affects school performance of PWA pupils. However, the link between parental migration and children's intention to emigrate is stronger among pupils with below average school performance, potentially reflecting the general pattern of low-skilled migration from the area.

5.1. Robustness checks: other factors affecting declared intentions

5.1.1. Family's prior decision to relocate

One may be concerned about the fact that the teenagers' declared intentions to emigrate are already pre-determined by the family's decision to emigrate as a unit once the child completes schooling in Poland. This is a possible but unlikely driver of the results discussed above. Given the high number of migrant-sending households, the small number of families with school-age children emigrating as a whole from the region and the reported high willingness to return to Poland by temporary migrants (Walas et al., 2013), I expect only a small proportion of respondents, if any, to have pre-determined their migration plans together with their family at the time of the survey. There is no information in the data which would allow to directly test for this possibility.

Nonetheless, I run two robustness checks to gauge the extent to which parental decisions with regard to family migration may be driving the results, using information regarding the timing of parental migration (whether a parent was abroad or in Poland at the time of the survey) and the family structure.

The first check involves rerunning the analysis allowing for the correlation between parental migration and stated intentions to migrate to differ, depending on whether the parent has already returned from abroad or not. It is justified by the following logic: if parents plan for the whole family to emigrate, then the correlation between parental migration experience and teenagers' intention to emigrate for pupils whose parents were still abroad at the time of the survey may capture both the effect of the planned move and the influence of perception of migration as transmitted by parents onto children. On the other hand, the same correlation for pupils whose parents have already returned home should not be confounded by the potential predetermined family move. This is because the likelihood of a family actually moving abroad is higher if the parent is residing abroad at a given point in time. Therefore, by running regressions on subsamples of respondents, I compare pupils whose parents never emigrated firstly to pupils with a parent abroad at the time of the survey and then to pupils whose parents returned from migration by the time of the survey. In line with the argument above, I expect to see stronger correlations for pupils with parents still abroad. The results are presented in Table 4. To the contrary, the probit, doubly robust and entropy balancing estimates suggest that the correlations are stronger for pupils whose parents already returned from emigration, whilst PSM results indicate similar effects for both groups.

The second check involves introduction of an interaction term between PWA status and the fact of having younger siblings. It is aimed at verifying whether it is possible that the family have already decided to move abroad but are waiting for the respondent to complete schooling first. If families followed this strategy, then respondents themselves are at the final stage of schooling and the move would only be delayed by a couple of years if the family were waiting for them to complete education. If, however, there are also younger children in the family, then it is less likely that potential movers would delay migration by several years. I do not find a stronger association between parental migration and migration intentions of teenagers in families with no younger children.

Table 4. Checks on alternative explanations of the effect.

Panel A							
Family reunification							
	probit	PSM		IPW		ENTROPY	
	dy/dx	returned	still abroad	returned	still abroad	returned	still abroad
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
parent returned	0.122* (0.070)	0.093* (0.048)		0.063 (0.065)		0.078* (0.045)	
parent still abroad	0.004 (0.073)		0.092* (0.049)		0.027 (0.057)		0.033 (0.057)
n	1840	1218	1257	1850	1939	1850	1939
full controls	yes	yes	yes	yes	yes	yes	yes
Panel B							
Whether the respondent has younger siblings							
	probit dy/dx	PSM		IPW		ENTROPY	
		younger sib	no younger sib	younger sib	no younger sib	younger sib	no younger sib
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
parent abroad	0.089* (0.046)	0.114** (0.052)	0.038 (0.045)	0.113** (0.045)	0.028 (0.060)	0.078 (0.049)	0.061 (0.039)
parent abroad & younger siblings	0.011 (0.063)						
younger siblings	−0.010 (0.035)						
n	1928	811	954	897	1042	897	1042
full controls	yes	yes	yes	yes	yes	yes	yes
Panel C							
Area unemployment							
	probit dy/dx	PSM		IPW		ENTROPY	
		below average	above average	below average	above average	below average	above average
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
parent abroad	0.092 (0.133)	0.096** (0.043)	0.047 (0.052)	0.103*** (0.037)	0.024 (0.051)	0.090** (0.039)	0.052 (0.059)
parent abroad & below av unem	0.0001 (0.010)						
below average unemployment	0.038*** (0.003)						
n	1928	990	780	1115	824	1115	824
full controls	yes	yes	yes	yes	yes	yes	yes

Data: MECP2012. The entropy balancing is done on means and variances of covariates. Full controls include student's gender, average grades in school, number of siblings, mother's age, education level and employment status, whether child lives in a two-parent family, whether they have friends and other extended family abroad and class dummies. Standard errors are bootstrapped. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

5.1.2. Local labour market

One may also argue that the uncovered associations are driven by the local labour market situation rather than parental migration experience abroad. Here is why: local labour market conditions are a strong push factor for migration in general. Therefore, any pupils residing in areas with poor labour market conditions may be more likely to plan a move abroad. However, the regional situation will affect differently people with different education levels and in different occupations. Migration from Opolskie is predominantly low skilled. Since education and occupational choices are strongly correlated across generations, it is likely that children of migrants will also be more strongly affected by

the local labour market than other respondents. To assess whether this is indeed the case, in probit regressions I control for the local unemployment in the county and add an interaction term between PWA status and unemployment level in the county. In PSM, DR and entropy balancing I split the sample by below and above mean unemployment level in the area. Results can be found in Panel C of [Table 4](#). Although there is a positive association between unemployment levels in the county and migration intentions of teenagers, I find no evidence of differential effect of local area labour market on the stated migration intentions of PWA pupils and their counterparts; In particular, in all specifications apart from probit regressions the coefficients on migration in areas with below average unemployment levels are larger in magnitude but they do not differ statistically from those in areas with above average unemployment.

6. Conclusion

This is the first analysis to provide evidence of robust correlations between parental employment abroad and youth's own plans to emigrate in the European context. Focusing on a high emigration region in Poland, I provide evidence based on a range of econometric approaches that suggests that having a migrant parent is positively correlated with teenagers' stated intention to migrate upon completion of schooling. This relationship is stronger for males, who constitute a much larger proportion of Polish migrants. Furthermore, I identify no differential correlations depending on parental education level, despite the fact that migratory movements in this case are predominantly low-skilled, and find some evidence that PWA pupils with weaker school performance are more responsive in terms of own migration intentions to parental work abroad.

Although obtaining causal relationships is left to future research, these are the first steps in uncovering yet another factor facilitating migration. The results highlight the need for policy to consider the intergenerational nature of migratory movements.

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Declarations of interest

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References

- Altonji, J., Elder, T., & Taber, C. (2005). Selection on observed and unobserved variables: Assessing the effectiveness of catholic schools. *Journal of Political Economy*, 113(1), 151–184.
- Beine, M. (2016). The role of networks for migration flows: An update. *International Journal of Manpower*, 37(7), 1154–1171.
- Belot, M., & Ederveen, S. (2012). Cultural barriers in migration between the OECD countries. *Journal of Population Economics*, 25(3), 1077–1105.
- Bjorklund, A., Lindahl, L., & Lindquist, M. (2010). What more than parental income, education and occupation? an exploration of what Swedish siblings get from their parents. *The B.E. Journal of Economic Policy and Analysis* 10(1), 1–40.
- Black, S., Devereux, P., & Salvanes, K. (2005). Why the apple doesn't fall far: Understanding intergenerational transmission of human capital. *American economic review*, 95, 437–449.
- Black, S., Devereux, P., & Salvanes, K. (2009). Like father, like son? a note on the intergenerational transmission of iq scores. *Economics Letters* 105, 138–140.
- Black, R., Engbersen, G., Okólski, M., & Pantiru, C. (2010). *A continent moving west? EU enlargement and labour migration from Central and Eastern Europe*. Amsterdam: IMISCOE Research.
- Botezat, A., & Pfeiffer, F. (2019). The impact of parental labour migration on left-behind children's educational and psychosocial outcomes: evidence from Romania. *Population, Space, Place*, 26, e2277.
- Brooks, R. (2003). Young people's higher education choices: The role of family and friends. *British Journal of Sociology of Education*, 24(3), 283–297.
- Cattaneo, M., Drukker, D. M., & Holland, A. D. (2013). Estimation of multivalued treatment effects under conditional Independence. *Stata Journal*, 13(3), 407–450.
- The Central Statistical Office of Poland. (2012). *Poland in figures* (Warsaw) 15 03 2022 <https://stat.gov.pl/en/topics/other-studies/other-aggregated-studies/poland-in-figures-2013,9,4.html>.
- Central Statistical Office of Poland (2013a). *Ludność. Stan i struktura demograficzno-społeczna. Narodowy Spis Powszechny Ludności i Mieszkań 2011*. [Population. State and socio-demographic structure. Census 2011.]. Original in Polish. Translation of the title in parenthesis. https://stat.gov.pl/cps/rde/xbcr/gus/LUD_ludnosc_stan_str_dem_spo_NSP2011.pdf accessed 2022January-19
- Central Statistical Office of Poland (2013b). *Migracje zagraniczne ludności. Narodowy Spis Powszechny Ludności i Mieszkań 2011* [international migration. Census 2011.]. Original in Polish. Translation of the title in parenthesis. <https://stat.gov.pl/obszary-tematyczne/ludnosc/migracje-zagraniczne-ludnosci/> accessed 2022-January19.

- The Central Statistical Office of Poland (2019). Informacja o rozmiarach i kierunkach czasowej emigracji z Polski w latach 2004-2018 [information about size and directions of temporary migrations from Poland in years 2004-2018]. Original in Polish. Translation of the title in parenthesis. <https://stat.gov.pl/obszary-tematyczne/ludnosc/migracje-zagraniczne-ludnosci/informacja-o-rozmiarach-i-kierunkach-czasowej-emigracji-z-polski-w-latach-2004-2018,2,12.html> accessed 2022-January-19.
- Central Statistical Office of Poland (2019). Sytuacja demograficzna Polski do 2019 r. Migracje zagraniczne ludności w latach 2000-2019. [Demographic situation of Poland before 2019. International migration in years 2000-2019]. Original in Polish. Translation of the title in parenthesis. <https://zws.stat.gov.pl/ludnosc-ruch-naturalny-migracje/sytuacja-demograficzna-polski-do-roku-2019-migracje-zagraniczne-ludnosci-w-latach-2000-2019,628.html> accessed 2022-January-19
- The Central Statistical Office of Poland (2020). Labour force survey in Poland - I quarter 2020. <https://stat.gov.pl/en/topics/labour-market/working-unemployed-economically-inactive-by-lfs/labour-force-survey-in-poland-i-quarter-2020,2,37.html> accessed 2022-January-19.
- Clifton-Sprigg, J. (2015). Educational spillovers and parental migration. *Labour Economics*, 34, 65–75.
- Clifton-Sprigg, J. (2019). Out of sight, out of mind? the education outcomes of children with parents working abroad. In *Oxford economic papers*, 71, 73–94.
- Dearden, L., Machin, S., & Reed, H. (1997). Intergenerational mobility in Britain. *The Economic Journal*, 107(440), 47–66.
- Docquier, F., Peri, G., & Ruysen, I. (2014). The cross-country determinants of potential and actual migration. *International Migration Review*, 48, 537–599.
- Epstein, G., & Gang, I. (2006). The influence of others on migration plans. In *Review of Development Economics*, 10, 652–665.
- Eurostat (2017). Table 2: Immigration by country of birth, 2015 in migration and migrant population statistics. http://ec.europa.eu/eurostat/statistics-explained/index.php/Migration_and_migrant_population_statistics accessed 2022-January19.
- Filipek, K. (2019). The meanings of sharing: on facebook sharing strategies among polish migrants in Germany and the uk. *Communications*, 45, 176–197.
- Gibson, J., & McKenzie, D. (2011). The microeconomic determinants of emigration and return migration of the best and brightest: evidence from the Pacific. *Journal of Development Economics*, 95(1), 18–29.
- Gibson, J., McKenzie, D., & Stillman, S. (2011). The impacts of international migration on remaining household members: Omnibus results from a migration lottery program. *The review of economics and statistics*, 93, 1297–1318.
- Heinmueller, J. (2012). Entropy balancing for causal effects: A multivariate reweighting method to produce balanced samples in observational studies. In *Political analysis* 20 (pp. 25–46).
- Holmlund, H., Lindahl, M., & Plug, E. (2011). The causal effect of parents' schooling on children's schooling: A comparison of estimation methods. *Journal of Economic Literature*, 49(3), 615–651.
- Huber, P., & Nowotny, K. (2013). Moving across borders: Who is willing to migrate or to commute? *Regional Studies*, 47(9), 1462–1481.
- Huber, P., & Nowotny, K. (2020). Risk aversion and the willingness to migrate in 30 transition countries. *Journal of Population Economics*, 33(4), 1463–1498.
- Ivlevs, A., & King, R. (2012). Family migration capital and migration intentions. *Journal of Family and Economic Issues*, 33(1), 118–129.
- Jończy, R., & Rokita-Poskart, D. (2013). Fiscal effects of migration as a factor increasing disparities in local and regional development - an example of the opole voivodship in Poland. In *Economic and environmental studies* 13 (pp. 9–21).
- Kaczmarczyk, P., & Okólski, J. (2008). Demographic and labour market impacts of migration on Poland. In *Oxford review of economic policy* 24 (pp. 599–624).
- Kandel, W., & Kao, G. (2000). Shifting orientations: How u.s. labor migration affects children's aspirations in Mexican migrant communities. *Social Science Quarterly*, 81, 16–32.

- Lunceford, J., & Davidian, M. (2004). Stratification and weighting via the propensity score in estimation of causal treatment effects: A comparative study. In *Statistics in Medicine* 23 (pp. 2937–2960).
- Manski, C. (1990). The use of intentions data to predict behaviour: A best-case analysis. *Journal of American Statistical Association*, 85(412), 934–940.
- Marks-Bielska, R., Lizińska, W., Bambuchowska, K., & Kaczmarczyk, M. (2015). *Conditions underlying migrations from Poland to Germany and the United Kingdom*. Olsztyn: Wydawnictwo Uniwersytetu Warmińsko-Mazurskiego w Olsztynie.
- Mayda, A. (2010). International migration: A panel data analysis of the determinants of bilateral flows. *Journal of Population Economics*, 23(4), 1249–1274.
- McKenzie, D., & Rapoport, H. (2011). Can migration reduce educational attainments? evidence from Mexico. *Journal of Population Economics*, 24(4), 1331–1358.
- Mulder, C. H., Lundholm, E., & Malmberg, G. (2020). Young adults' migration to cities in Sweden: do siblings pave the way? *Demography*, 57(6), 2221–2244.
- Newsweek (2016). Kolejna fala emigracji: 4 mln Polaków chce wyjechać [another migration wave: 4 million Poles would like to leave]. Original in Polish. Title translation in parenthesis. <http://www.newsweek.pl/polska/emigracja-ponad-4-mln-polakow-chce-wyjechac-na-zachod-raport,artykuly,385406,1.html> accessed 2017-November-21
- Okólski, M., & Salt, J. (2014). Polish emigration to the UK after 2004, why did so many come? *Central and Eastern European Migration Review*, 3, 11–37.
- Oster, E. (2019). Unobservable selection and coefficient stability: theory and evidence. *Journal of Business & Economic Statistics*, 37(2), 187–204.
- Siemionczyk, G. (2017). Brak rak do pracy spowolni gospodarkę [the lack of workforce will slow down the economy]. Original in Polish. Title translation in parenthesis. <http://www.rp.pl/Rynek-pracy/310199937-Brak-rak-do-pracy-spowolni-gospodarke.html> accessed 2018-February-24.
- Sobczyk, M. (2018). Czy 16-latkom powinno się przyznać prawo do głosowania? [should 16 year olds be given the right to vote?]. Original in Polish. Title translation in parenthesis. <https://www.tygodnikprzeglad.pl/16-latkom-powinno-sie-przyznac-prawo-glosowania/> accessed 2019-August-09.
- Szubartowicz, P. (2013). Prawo głosowania od 16 lat. czy młodzi tego chcą? [the right to vote from 16 years old. do the youth want this?]. Original in Polish. Title translation in parenthesis. <https://www.polskieradio.pl/7/473/Artykul/805541,Prawo-glosowania-od-16-lat-Czy-mlodzi-tego-chca> accessed 2019-August-09.
- Tjaden, J., Auer, D., & Laczko, F. (2019). Linking migration intentions with flows: Evidence and potential use. In *International Migration*, 57, 36–57.
- Walas, A., Goleński, W., Kijak, A., & Mesjasz, K. (2013). Eurosieroctwo w województwie opolskim - monitoring zjawiska [euroorphanhood in opolskie - monitoring report]. Original in Polish. Title translation in parenthesis. <https://ops.rops-opole.pl/wp-content/uploads/badania-regionalne/eurosieroctwo-dzieci-monitoring-zjawiska/Eurosieroctwo%20dzieci%20-%20monitoring%20zjawiska.pdf> accessed 2022-January-19.
- Zaiceva, A., & Zimmerman, K. (2008). Scale, diversity and determinants of labour migration in Europe. In *Oxford review of economic policy* 24, 427–451.