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Left Behind? The impact of geographical mobility on children's educational attainment in Finland and Germany.

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Abstract

It is often assumed that families migrate to improve their economic and social prospects, and that these additional resources can benefit the whole family. However, existing research suggests that many children who have experienced (internal) migration underperform compared to their non-migrating peers in terms of different socioeconomic outcomes. In this paper, we study the effects of geographical mobility on children's educational attainment in Finland and Germany using Finnish register data and the National Educational Panel Study (NEPS) respectively.

Our findings indicate that moving during childhood is associated with the risk of not attaining any secondary degree in both countries. In Finland, this is mostly explained by negative selection into moving, (i.e. those who move are more likely to be disadvantaged). For Germany however, an independent association between moving and educational attainment remains after taking into account various reasons why families move. Furthermore, for both Germany and Finland, any labour force status or earning gains parents make, after a move, do not seem to compensate for the negative influence of internal migration on children's educational attainment. Overall, we conclude that that when children move something remains behind, therefore schools have an important role to play in integrating internal migrants – as well as international migrants – into the social networks of the schools they arrive in.

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Introduction

It is often assumed that families migrate to improve their economic and social prospects, and that these additional resources can benefit the whole family (Massey et al 1993). However, existing research suggests that many children who have experienced (internal) migration underperform compared to their non-migrating peers in terms of different socioeconomic outcomes (Tonnessen et al. 2016; Verropoulou et al. 2002). Migration is often preceded by potentially disruptive life course events, such as parents' unemployment or separation, and these are likely to have an influence on children as well. Furthermore, when families move, something often remains in the location of origin, for instance important relationships, information sources, and networks that guide positive behaviour. In other words, migration is likely to lead to a loss of social capital for children, independently of the coinciding events within the family.

While the impact of parental unemployment and separation on children's educational attainment has been examined extensively in social stratification research, the role that internal migration plays as a mechanism enhancing or moderating these effects has rarely been considered. A main reason for this is that the data requirements for studying the role of geographical mobility in intergenerational inequality transmission processes are high (cf. Tonnessen et al. 2016). Institutional settings may also play an important role in determining the long-term outcomes for moving children. Welfare state support and labour market regulations are likely to influence migration decisions whereas education systems are likely to influence how moving affects children's educational outcomes.

In this paper, we study the effects of geographical mobility on children's educational attainment in Finland and Germany using Finnish register data and the National Educational Panel Study (NEPS) respectively. As will be shown below, the occurrence of and reasons for family migration differ between the two countries. In Germany, (internal) migration with children seems to be more commonplace. In Finland, moving with children seems to occur more often because of disruptions in either employment or partnerships. Thus we may expect a more strongly negative association between migration and child's education in Finland but one that is also more often the result of disruptive life course events. On the other hand, migration is likely to lead to a loss of extra-familial social capital in both countries, and the question thus arises whether resources within the family can compensate for these losses.

We consider selection into migration, the potential motivation for relocation and whether the gains from moving or the existing resources of the parents can compensate for the possible negative impact of geographical mobility on children's educational attainment. By doing this, the paper aims to develop the prevailing understanding of the mechanisms that underlie social inequalities in childhood and the intergenerational transmission of inequality from a cross-national comparative perspective.

Background and Hypotheses

Among Europeans, around half believe that migrating to a new region or a country is a good thing for individuals but only approximately one third believe that it is good for families (Special Eurobarometer 337, 2009). Internal migration is also commonplace, for instance 5% of Finns move from one municipality to another every year (Statistics Finland, 2018). However, the typical reasons for why people move are less clear. We may assume that for families with children, moving would typically be motivated by

changes in employment and family structure, either because of difficulties at the location of origin, because of the opportunities elsewhere, or some combination of these.

Studies of geographical mobility can typically be divided into those studies that focus on residential mobility assumed to be motivated by family factors, and studies of migration considered to be motivated by economic opportunities (Geist & McManus,2008). Separately, the social stratification literature indicates that parental unemployment is associated with lower self-esteem and well-being, higher school dropout rates, lower academic expectations, less educational success and poorer health among children (for a review, see Brand 2015).

Mobility may also be motivated by family dynamics, such as separations, repartnering, deaths, or simply having more children (e.g., Feijten & van Ham 2007). Union dissolution has been shown to have a negative impact on children's educational attainment although the exact mechanisms behind this continue to be debated (e.g., Bernardi & Boertien; 2017, 2016). Union dissolution often leads to a loss in available financial resources, particularly due to the loss of economies of scale. Thus, despite likely efforts to minimise the disruption to children, it is possible that financial reasons in particular mean that children will have to move. If the move is over a larger distance then children are also likely to lose daily contact with one parent and possibly also siblings. On other hand, in the case of strong family conflicts, children may also benefit from the separation and the geographical mobility.

Thus, both parental unemployment and separation are often described as disruptive life course events for children, and both of these are commonly associated with moving. Therefore it is perhaps not surprising that when controlling for various pre-existing differences related to these aspects between movers and non-movers the evidence for the negative consequences for the children of mobile families is more mixed, or often missing entirely (Tönnesen et al 2016). Consequently, our first hypothesis is:

1. *Negative effects of internal migration are attributable to parental unemployment or separation before moving rather than the move itself (disruption hypothesis).*

Nevertheless, area mobility in itself can also have a negative impact on children in the long run. Previous studies have shown that residential mobility is negatively related to child outcomes (e.g., Tönnessen et al. 2016; Astone & McLanahan, 1994). These negative effects can be at least partially explained by the loss of social capital. Social capital is defined by Coleman (1988) as relations of commitment and trust between parents and other adults in their communities, which, like economic or human capital, may foster the skills and capabilities of children. The loss of social capital can at least partially explain negative outcomes linked to geographical mobility for children because a large part of movers' social networks (peers, neighbours and school friends) remain behind. Independently of the reason behind mobility, moving is likely to result in reduced social capital for children, leading to our second hypothesis:

2. *Negative effects associated with internal migration cannot be attributed to parental unemployment or separation alone (social capital hypothesis).*

Some of this loss in social capital may be compensated if families remain intact as in the case of moving for re-employment only – or if parents move to find support from kin after a relationship breaks down. In this sense, we can distinguish between "inter-

family" networks (networks between families and community members) and "intra-family" networks (relationships within the family). Moving always disrupts inter-family networks – even if new ones are waiting or built in the area of settlement – but it may or may not disrupt intra-family networks. If families remain intact during or after a move then intra-familial social capital (in terms of parental support) can help compensate for the loss of extra-familial social capital that the child may face (Hagan et al. 1996).

3. *Parents remaining together after moving can compensate the negative effects of internal migration (intrafamily resilience hypothesis)*

Moving may take place because of better opportunities in a new location and thus families may gain from mobility in terms of income and status, sometimes also improved employment security. However, children from socio-economically disadvantaged families may experience more unplanned moves due to financial crises or threats (see Webb et al. 2016). If moving occurs because of re-employment, these children are also likely to benefit because of increased socioeconomic resources. Nevertheless, if the quality of the new job is low, in a field with high geographical ubiquity, or short term, the family may be forced to relocate often.

Smits (2001) argues that men and women who migrate over a long distance in the Netherlands are a favourably self-selected group both with regard to their measured and unmeasured characteristics. Most important of the measured characteristics are human capital variables such as age and education. The more educated have more opportunities to move but they are also likely to have the opportunity to stay as they are more attractive to employers – and may also choose to take jobs below their education level. On the flip side, migration may be motivated by future or lifetime utility gains rather than immediate utility gains and therefore leads to an initial or temporary decrease in income (Smits, 2001). Thus, we may assume the following:

4. *Socioeconomic gains from internal migration can compensate the negative effects (moving for opportunity hypothesis)*

However, the relationship is not so straightforward if we consider gender dynamics within the family: whether or not parents migrate for re-employment can also be related to bargaining power between spouses. The role that gender plays in family mobility has been studied for some time (Mulder and Malmberg 2011, 2014; Bielby and Bielby, 1992; Smits et al., 2003). Women have generally been described as 'tied movers' (they move because their partner has an opportunity elsewhere) with the result of negative consequences for her career and potentially for the relationship (Smits, 2001). After migrating, it is possible that parents experience significant stress especially if one partner is a 'tied mover'. Moving may thus act as a triggering mechanism for further disruptive events, in particular parental separation.

In addition, the research on parental socioeconomic mobility during their child's childhood indicates that the adult outcomes of children of socially mobile parents are between those whose parents were socially stable (Byrne et al., 2018; Plewis & Bartley, 2014). This means that the social mobility gains made by parents do not fully compensate for the lower socioeconomic position they held earlier in the child's life. This is also likely to mean that even if migration leads to an increase in parental socioeconomic status, a long-lasting influence of earlier socioeconomic disadvantages remains.

Cross-national differences

In order to consider how institutional differences may impact internal migration and its consequences for the children of movers, this paper analyses Germany and Finland. Until recently, cross-national comparisons of migration propensities are "not extensively documented" although some specialised literature does exist (Bernard, 2017; Bell et al. 2002; Rees and Kupiszewski, 1999; Greenwood, 1997) with certain developed countries (specifically the US and Canada) considered to have somewhat higher rates than others (Nam et al. 1990). The size and shape of spatial areas are not uniform across countries; migration is known to decline as distance increases and migration patterns are sensitive to national economic and demographic conditions (Greenwood, 1997). Nevertheless, some patterns do exist. For example, countries demonstrate a positive rank pattern between geographical size and mobility rate (the larger the country the greater the mobility). Moreover, independently of the size of the country, the primacy of the largest urban areas can be important (Greenwood, 1997). Rees and Kupiszewski (1999) are credited with the first systematic study of internal migration levels in Europe. Their research identified a spatial pattern of high mobility in Northern and Western Europe and lower mobility in the South and East.

In Finland, the population is small and the spatial areas are large with greater distances between urban areas than in many other Western European countries. Geographical mobility in Finland in the 1990s concentrated on the five biggest urban regions, especially the Helsinki metropolitan area (Pekkala 2003). The geographical mobility patterns show both better educated individuals moving to these urban regions and older and less educated people relocating back to their regions of origin (Pekkala 2003). Especially in the case of long distance moves, more educated and unemployed people are more likely to move (Nivalainen, 2004).

In Germany, migration patterns are more complex simply because it isn't equally one-directional as in the case of Finland. The federalised system of Länder as well as more dispersed urban centres can, on the one hand, encourage commuting to the nearest city and, on the other, there are more options to migrate for opportunities in more distant cities. This is likely to create differences in why and what kind of families tend to move. Declining family size, women's increasing labour force participation, the growing dependence of families on childcare facilities, increasing costs of commuting, and new-build residential development may also go some way in explaining the growing attractiveness of the core regions as places to live in Germany (Sander, 2014).

Two waves of East/West migration have been observed during our study period. The first one, 1989–1990, was triggered by the opportunities and uncertainties before Reunification; the second one, since 1997, coincides with economic stagnation in the East and improving job prospects in the West (Heiland 2004). Migration numbers and rates between East and West Germany were not evenly spread over age groups, the departure of persons in the family building age (between 30-49 years), together with their children, was especially characteristic of the first wave until 1993. This was counterbalanced by a high eastward flow of young professionals and civil servants in the age group 25–29 following the governmental move from Bonn to Berlin (Glorius, B. 2010).

Welfare state policies may also play a particularly salient role in family migration. One relevant aspect is childcare provision and costs, which influence women's labour market

participation as well as parental mobility decisions. There has been a subjective right to public daycare for children of all ages in Finland during the time period relevant to our study, and costs are heavily subsidised (see OECD, 2000). This enables mothers' employment while at the same time limiting the need to stay near (or move closer to) extended family members for childcare support. With simulations using German data, Garcia-Moran and Kuehn (2017) show that if out of pocket childcare costs were lowered (to Swedish levels), fertility, mothers' labour force participation, and geographical mobility would increase. On the other hand, if more households had access to grandparent-provided care, fertility and mothers' labour force participation would also increase but geographical mobility would be reduced.

Another relevant aspect of the welfare state for migration is the redistributive impact of the welfare state, the decommodification of work and whether benefits are related to the employer. Finland can be considered representative of the social democratic welfare regime whereas Germany is representative of the conservative welfare regime (Esping-Andersen, 1990). Due to unemployment being less consequential for (economic) wellbeing in the Finnish case and the relatively compressed income structure, the incentives for migration for economic reasons (either unemployment or better opportunities elsewhere) may be smaller in Finland compared to Germany.

While welfare state policies are likely to influence the motivations of people – in particular those with children – to move, it is likely that the structure of the education system is more consequential when it comes to the effects of moving for children. Germany and Finland differ substantially in terms of the stratification of their education systems. Finland can be considered part of the Nordic inclusive model of education (Blossfeld, 2016) whereas the German educational system is known for being highly stratified (Allmendinger 1989). Formal tracking does not take place until children are around the age of 16 in Finland at which point young people continue to either academic or vocational (upper) secondary schools, both of which take approximately three years to complete and give access to higher education. Selection at this stage is mainly based on educational achievement and young people's own preferences (Kilpi-Jakonen et al. 2016). In Germany, students are selected after four to six years of initial primary schooling (at ages 10–12) into three different tracks of secondary schooling: lower secondary school (Hauptschule), middle secondary school (Realschule) and upper secondary school (Gymnasium). At the end of primary schooling teachers make recommendations on which secondary school track is most suitable for each child based on pupils average grades in German and Math, in some Federal States these are binding while in others they are recommendations (Buchholz et al. 2016).

There are two competing arguments for the effect of the education system. On the one hand, the relative rigidity of the German education system and the greater influence of social origin on educational attainment may mean that factors other than internal migration are more influential in Germany than in Finland. Also the fact that tracking decisions are made at a relatively early age may mean that moving itself, particularly after tracking, is not as influential for children's educational decisions. On the other hand, small differences between schools in Finland (OECD, 2018) may mean that migration does not change the young person's educational environment much, in particular as contrasted with Germany migration between Länder may also involve a change to an education system where the type of school that the young person attended does not exist. The relative openness of the Finnish educational system may also mean

that there is always a chance to catch up even if migration leads to a temporary falling behind.

Data and Methods

Previous evidence comes largely from sample surveys, where "selection, attrition and/or selective reporting may introduce interpretational problems" (Tonnessen, 2016 p.2). In this case it is important to introduce large scale register data that is less prone to problems of attrition or selection to disentangle what effect, if any, moving has in mitigating/accumulating negative effects on the children of mobile families above and beyond other life-course events. We use high-quality Finnish register data, including reliable annual indicators for employment, parental education, and other family-related variables to examine the role that geographical mobility during childhood plays in educational attainment for a recent cohort of Finnish children born from 1984 to 1992. We use approximately 15 percent sample of the cohorts excluding the children dying before age 22. We further exclude children with missing information on geographical mobility (3.1 percent) and control variables (1.6 percent). In further models for the children experiencing geographical mobility and analyzing the childhood family's situation two years before and after the moves we have to exclude 7.5 percent of the sample with missing information on childhood conditions on these exact years. In the case of our first models our final analytical sample consists of 101 028 children and for our further analysis for children experiencing geographical mobility we have 7 750 children.

For our German analysis, the National Educational Panel Study (NEPS) Starting Cohort 6/Adults provides longitudinal data on educational processes and competence development. The adult survey 2007/08 was conducted by the Institute for Employment Research (IAB) under the name of "Working and Learning in a Changing World" (ALWA) and included 6 778 valid analysable cases willing to participate in NEPS and with a realized interview in wave 2 (first NEPS-wave). The data contains retrospective information on the educational and professional biography of the survey participants and their places of residence. Our analyses focus on children (of sample members) born between 1977–1996.

Modelling strategy

To analyze the association between moves and educational attainment we use standard logistic regression models and average marginal effects. Our first model controls parental education and the gender of the child. Our second model includes controls for events that occur within the family (parental divorce/separation, unemployment, and income levels) before children reach age 5 in the Germany case and age 6 in the Finnish case. Our final model looks at both changes in the parental situation before age 5 and during/at age 15 to account for changes that coincide with or occur after a move. In addition to looking at family situation changes, the final models for Germany also includes the difference in ISEI score between ages 5 and 15. In examining the role of parental resources in compensating for a loss of social capital during a move we add interactions between moving and family situation (parental separation, employment status and education level) (age 5/age15). We further check the family situation two years before and two years after a move to ascertain if parental gains or losses (in terms of occupational status, income levels, differences in family situation) had an impact on children's educational attainment.

Primary explanatory variable

We focus on moves between economic regions to ensure that migration leads to a loss of direct daily contact with social networks in the location of origin. In the Finnish Data, we have yearly observations of place of residence based on population registers. In the case of missing information we have imputed the geographical information from one year before and one year after, but excluded the children with longer missing spells (3.1 percent). This missingness is mostly due to spells of residence outside Finland. We study mobility between the 70 economic regions of Finland (*seutukunnat*). These economic regions are defined by Statistics Finland based on the cooperation between the municipalities and employment regions. Slightly over 8 percent of our Finnish sample moved during the ages of 6–15.

In the German data, mobility is defined as a move between place of residence at the administrative district level-(Nomenclature of Territorial Units for Statistics- NUTS3). The dataset shows the retrospectively surveyed places of residence of the respondents. The data not only reflects the current residence (at the time of the interview), but also the individual relocation history. Due to its retrospective nature the German data is more vulnerable to recall bias than the Finnish register dataset. In addition, although the original NEPS data is quite sizeable, because we have to limit our sample to parents with adult children in order to measure the child's educational attainment, we are left with a substantially reduced number of cases in total 2,532. Approximately 18 percent of the German (child) sample experienced mobility during the ages of 5–15.

It is also important to acknowledge the role that reunification played in the geographical mobility of Germans during the time period under observation therefore our sample was restricted to mobility within West Germany to see if our results were mainly due to relocating East Germans. We found that results restricted to West Germans were similar to our full population (see table A6 in the appendix).

Main dependent variable

We are interested in whether someone obtains a full secondary level qualification or leaves education without a secondary qualification (or delays substantially). In other words, our dependent variable is a threshold variable that examines the role that geographical mobility plays in what is often termed as 'early school leaving'.

In Finland, we define the outcome as attainment of any upper secondary degree, whether vocational or academic, by the age of 22. Roughly 85 percent of the population in our cohorts obtain a secondary degree by the age 22 (Kilpi-Jakonen et al. 2016). All the educational information is obtained from the educational registers through Statistics Finland. In the very few cases where someone had a higher education degree, but not a secondary one, we have defined them in the group of secondary degree holders. This is because the educational registers mostly refer to qualifications obtained in Finland.

In the German case, full secondary education refers to basic vocational education (vocational beyond compulsory education or intermediate vocational qualification), a general maturity certificate (*abitur*) and beyond. In contrast, failure to complete this level of education includes both incomplete or elementary school education as well as intermediate general secondary education.

In the NEPS, the age that the child obtained their qualifications is not asked in the survey. In order to increase our sample size as much as possible, we include parental reports on their child's educational attainment until as late as possible. This also means that some children in our sample have more time to obtain their highest level of education than others (to illustrate: those born in 1996 have a much shorter timeframe to reach their highest level of education in 2015 than someone born in 1981). In order to mitigate the effect of this, we also control for year of birth. Overall, we include only those who have reached the typical age that students complete their abitur/general secondary education (19 years of age).

Control variables

In the Finnish case, we use parental education, household income in childhood, parental divorce and separation and parental unemployment as control variables. Parental education is measured at age 15. We use the CASMIN-classification (König, Lüttinger & Muller 1988) with three categories: basic education, upper secondary education and higher education. The household income is equivalized using the modified OECD scale and divided into income quintiles. Parental separation or divorce is defined through the household identification in the data. If the biological parents are living apart two consecutive years, we define them as separated or divorced. Both mothers and fathers are defined yearly as being unemployed if they are unemployed for over four months. This is to filter out seasonal and transitory unemployment spells.

In the case of household income we measure it first at age 5 at the beginning of our observation window for migration and later as an average when a child is age 6 to 15. Parental unemployment and separation or divorce are measured before age 5 and then again between age 6 to 15. In the case of parental unemployment, parents are defined as unemployed if they have been unemployed for over four months in at least one year. For our birth cohorts (1984–1992) the population registers in Finland have information on the year 1985 and then yearly from 1987 onwards. As the registers are missing the years 1984 and 1986 and some of the sample children are already born on or before those years, we are missing the unemployment for these years. The bias is however expected to be small as the unemployment rate was low on those years and especially low for families with children (Karhula et al. 2017), and in the Finnish case we also control for year of birth which should further mitigate this problem.

In the German case we use information from the main respondent of NEPS to construct our family background variables.We use parental education, family situation (whether or not a partner moved out and divorce), parental unemployment and occupational status as control variables. Parental education is measured up to age 5 using the CASMIN-classification with three categories: basic education (incl. basic vocational), general/vocational intermediate secondary level and abitur and beyond. Parental occupational status is measured using the International Standard Classification of Occupations 2008, which have been converted to ISEI-08 (ISO, 2012). Occupational change is measured as the difference in parental ISEI-08 between the year their child turned 5 and 15. Parental employment histories are constructed and episodes split according to the recommendations of Rompczyk & Kleinert, (2017). The unemployment are defined as those who experienced any unemployment spell or interruption of greater than 2 months, whereas the reference group consists of those consistently employed up to when their child was age 5 (to measure selection) and

similarly between age 5 and age 15 (to measure what happens during the period when we also measure migration).

Results: Movers and non-movers in Finland and Germany

There is a negative association between moving during childhood and educational outcomes in Finland (Table 1). This is potentially due to negative selection into moving (i.e. those who move are more likely to be disadvantaged). The children experiencing area mobility during school age are from poorer families: almost a third are in the lowest quintile of family income in both early and later childhood. In mobile families, fathers and mothers have experienced unemployment more often. Rates of parental divorce or separation are greater at ages 5 and 15 in mobile families, and the growth in the proportion who separated between these ages is also higher in mobile families. When it comes to parental education, mobile families are slightly more highly educated: 30% of families have at least one parent with higher education compared to 24% among non-movers. This is most likely due to some higher education occupations having incentives to move for career opportunities.

Table 1: Descriptive statistics based on experience of area mobility in childhood (age 6–15) in Finland.

	Non-mobile (%)	Mobile (%)
Secondary degree (age 22)	86.3	78.8
Parental education		
Primary	6.9	7.1
Secondary or post-secondary non-HE	69.2	62.8
Higher education (polytechnic or university)	23.8	.30.1
Family income before age 5		
1. quintile (lowest)	18.3	31.0
2. quintile	20.0	20.9
3. quintile	20.5	16.7
4. quintile	20.7	14.9
5. quintile (highest)	20.4	16.5
Parental divorce or separation before age 5	12.4	27.4
Father's unemployment before age 5	21.1	3.1.3
Mother's unemployment before age 5	23.7	37.0
Family income between age 6 to 15		
1. quintile (lowest)	18.5	31.5
2. quintile	20.2	19.2
3. quintile	20.6	15.9
4. quintile	20.7	14.8
5. quintile (highest)	20.1	18.6
Parental divorce or separation before age 15	29.3	58.4
Father's unemployment between age 6 to 15	24.3	37.0
Mother's unemployment between age 6 to 15	33.1	58.1

N=101,028 (92,652 non-movers, 8,376 movers).

In our German sample, the majority of individuals manage to complete secondary level education with non-movers doing slightly better 86-83% respectively (Table 2). Parental education levels seem to be similar for movers and stayers in almost all categories. In contrast to Finland, the highly educated are slightly more likely to stay in place than move (less than 2p.p.). The percentage of individuals who experience a parental divorce or separation is much lower in the German case than the Finnish case both before the age of 5 and between ages 5-15, however, similar to Finland those who are geographically mobile are more often divorced/separated. Movers are also more at risk of experiencing parental unemployment and also more likely to experience either positive 27% or negative 23% parental occupational mobility than those who stay in the German case.

Table 2: Descriptive statistics based on experience of area mobility in childhood (age 5–15) in Germany

	Non-mobile (%)	Mobile (%)
Full secondary qualification (age 19 and older)	86.19	83.16
Parental education		
Primary/basic education	14.2	14.7
Secondary or post-secondary non-HE	38.6	39.7
Higher education (polytechnic, bachelor, master or higher)	47.2	45.6
Parental occupational mobility between age 5-15		
No change	66.0	49.9
Downward mobility	17.6	23.1
Upward mobility	16.3	27.0
Parental partner moved out before age 5	4.8	8.7
Parental unemployment before age 5	11.7	12.3
Parental partner moved out age 5-15	9.9	17.7
Parental unemployment between age 5 to 15	17.8	27.3

N=2,532 (2,063 non-movers, 469 movers)

When looking at parental divorce and unemployment combined during the period when mobility is measured (Appendix Table A1), we can again see that these kinds of disruptions are more likely among mobile families than non-mobile ones in both Germany and in Finland. The difference between movers and non-movers is greater in both absolute and relative terms in Finland than in Germany. Thus we may expect these factors to explain more of the potential negative effects of moving in Finland than in Germany.

Results: The association between residential moves at school ages and educational attainment

In Table 3 we present four logistic regression models of association between geographic mobility and attaining any secondary degree (abitur) in Finland. When controlling for sex and birth year of the child we can observe the negative association between moving and achieving the secondary degree that could be expected based on the descriptive

statistics in table 2. When controlling for parental education in M1 this association remains equally strong. However, when controlling for parental union dissolution, parental employment status, and parental household income before children reach school age, we can see that the association is significantly reduced, but still clear and statistically significant: children were 5 percentage points less likely to obtain secondary degree (M2). Our final model (M3) controls for the changes that occur during or after mobility takes place. This controls for reasons for the move as well as immediate consequences of the move. We can see that the AME of the move is reduced to 2 percentage points. This indicates that even after extensive controls we do observe a negative association between parental moves and attainment of any secondary degree.

Table 3: Logistic regression model with AMEs for the association between moves at school ages and secondary degree at age 22 in Finland

	M0. Mobility + gender and year of birth	M1. M0 + parental education	M2. M1 + family control variables before age 5	M3. M2 + family control variables between ages 6 to 15
Residential mobility	-0.077***	-0.085***	-0.046***	-0.025***
	(0.005)	(0.005)	(0.004)	(0.004)
Parental education (ref. Primary)				
Secondary or post-secondary non-HE		0.150***	0.106***	0.093***
		(0.006)	(0.005)	(0.005)
Higher education (polytechnic, bachelor, master or higher)		0.240***	0.176***	0.155***
		(0.006)	(0.005)	(0.005)
Family income before age 5 (ref. 1 quintile (lowest))				
2. quintile			0.032***	0.022***
			(0.003)	(0.003)
3. quintile			0.042***	0.026***
			(0.004)	(0.004)
4. quintile			0.056***	0.036***
			(0.004)	(0.004)
5. quintile (highest)			0.065***	0.042***
			(0.004)	(0.004)
Parental divorce or separation before age 5 (ref. Together)			-0.074***	-0.018***
			(0.004)	(0.003)
Father's unemployment before age 5			-0.043***	-0.023***
			(0.003)	(0.003)
Mother's unemployment before age 5			-0.034***	-0.019***
			(0.003)	(0.003)
Family income between age 6 to 15 (ref. 1 quintile (lowest))				
2. quintile				0.024***
				(0.003)
3. quintile				0.034***
				(0.004)
4. quintile				0.031***
				(0.004)
5. quintile (highest)				0.039***
				(0.004)

Parental divorce or separation before age 15 (ref. Together)	-0.070***
	(0.003)
Father's unemployment between age 6 to 15	-0.024***
	(0.003)
Mother's unemployment between age 6 to 15	-0.020***
	(0.003)

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, controlling for year of birth, sex. N=101,028

The results for Germany (Table 4) indicate that there is a negative association between moving during childhood and educational outcomes. When controlling for parental education, year of birth and sex of the child the association between childhood geographical mobility and attainment of any secondary education was strongest (M5). AMEs indicate that the association remains relatively stable at approximately 5 percentage points when parental union dissolution, parental employment status, and parental household income before children reach school age (M6) is considered and when familial situation during/after a move is taken into account (M7). This indicates that the role that geographical mobility is less related to the reasons why families move, in other words there is more of an independent association between moving and educational outcomes in the German case.

We also carried out similar analyses as a robustness check for Germany using smaller regional boundaries (Kreis). While approximately 18% of the German sample experienced regional mobility between municipalities, 27% of our sample moved between Kreis. Results were similar with a slightly weaker negative effect if we look at moves over a shorter distance. This seems to be consistent with the argument that social capital is driving some of the effects (see Table A4 and Table A5 in the appendix).

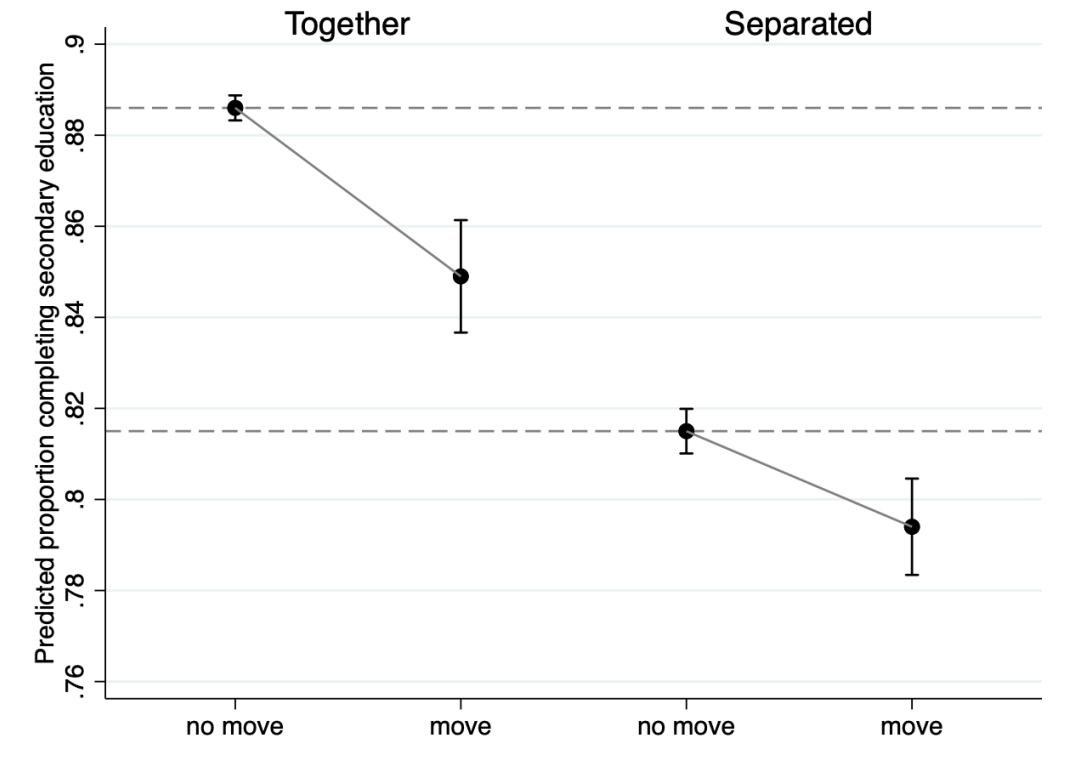
Table 4: Logistic regression model with AMEs for the association between moves at school age and attainment of secondary education in Germany

	M4. Mobility + gender and year of birth	M5. M4 + parental education	M6. M5 + family control variables before age 5	M7. M6 + family control variables between ages 6 to 15
Residential mobility	-0.056***	-0.059***	-0.055***	-0.050***
	(0.018)	(0.017)	(0.017)	(0.017)
Parental education level (ref. Basic education incl. basic vocational)				
Intermediate/vocational		0.113***	0.099***	0.093***
		(0.029)	(0.028)	(0.027)
abitur and above)		0.203***	0.182***	0.168***
		(0.026)	(0.030)	(0.029)
Partner moved out (Div/sep) before age 5			-0.128***	-0.118***
			(0.036)	(0.035)
Parental unemployment before age 5			-0.007	0.012
			(0.020)	(0.019)
Family situation age 5-15				
Partner moved out (Div/sep)				-0.039*
				(0.022)
Parental unemployment between age 5-15				-0.045**
				(0.019)
Parental occupational status (ISEI08)			0.006	0.009**
			(0.004)	(0.005)
Difference in parental occupational status between age 5-15				0.002*
				(0.006)

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, controlling for year of birth, sex, N = 2,532.

In order to test if intra-family capital (whether or not a family remains intact) protects to some degree the children of the geographically mobile from the negative consequences of relocation we examine the interaction between parental union dissolution and moving between economic regions at school age controlling for gender and year of birth of the child as well as various socio-economic differences between families (parental education, employment status and income). We find contrary to our expectations that the penalty from moving is greater for those families who remain together after a move. The result for Finland is displayed in Figure 1.

Figure 1: Interaction between divorce or separation and moving between economic regions at school age- Finland



Source: Own calculations based on Finnish register data

Results: Changes in parental status 2 years before and two years after a move

In order to further disentangle the effects of geographical mobility from selection and to establish if a move can in certain circumstances have a positive impact, we look at the situation two years before and two years after a move in terms of parental employment status, earnings and partnership status in Finland and parental occupational and labour force status in Germany.

For Finland our descriptive analyses (Appendix Table A2) show that the majority of children experience stability in parental employment/unemployment and family status, and almost half in earnings. In terms of improvements, 19% experience their parents moving from non-employment to employment (16% from unemployment to not being unemployed) and 22% experience parental earnings increasing by at least 50 %. On the other hand, almost equal numbers experience a deterioration: 16% experience parents moving from employment to non-employment (almost equal numbers from not being unemployed to unemployed), 20% experience parental earnings dropping by more than 20 % and 17 % see their parents separate during this period. For 10 % of children, their parents' earnings develop in completely different directions, with one experiencing a substantial upward change and the other a substantial drop, perhaps indicative of tied migrants.

For Germany there is also a great deal of stability in parental occupational status and labour force status (Appendix Table A3). Nevertheless, 14 % see their parents gaining

in terms of occupational status (an increase of more than 5 ISEI points) and 11% experience their parents move from being inactive to active in the labour force.[1] However, 18 % see their parents move down in terms of occupational status (more than 5 ISEI points) and 9 % experience their parents becoming inactive between these two time points.

How these changes are related to the child's educational attainment is studied in Table 5 for Finland and Table 6 for Germany. What these results tend to show us is that improvements do not significantly improve educational attainment in comparison with stability in a good situation. However, changes (whether improvements or deterioration) tend to be associated with higher educational attainment in comparison with stability in a bad situation, at least in Finland.

Table 5: Logistic regression of the change in unemployment, employment, earnings or family status from two years before to two years after the move on obtaining any secondary education in Finland: results as average marginal effects

		Unemploy-ment	Employ-ment	Earnings	Divorce or separation
Change in unemployment (*ref. Not unemployed)*	Not unemployed before, but unemployed after the move	-0.072*** (0.013)			
	Unemployed before the move, but not after	-0.073*** (0.013)			
	Unemployed both before and after the move	-0.108*** (0.014)			
Change in employment *(ref. Employed)*	Employed before, but not after the move		-0.044*** (0.014)		
	Not employed before the move, but employed after		-0.034*** (0.013)		
	Not employed before or after the move		-0.089*** (0.012)		
Change in earnings *(ref. No change)*	Downward change (at least 20 percent)			-0.038*** (0.012)	
	Upward change (at least 50 percent)			0.016 (0.012)	
	Upward change (at least 50 percent) of one parent and downward change (at least 20 percent) of the other			0.002 (0.015)	

[1] Active includes training, employment, military or any other labour force/school related activity). Inactive includes unemployment, parental leave or a gap (including an interruption-n=17 cases)

Parental Earnings	Mother's earnings before move			0.000*** (0.000)	
	Father's earnings before move			0.000*** (0.000)	
Change in family status *(ref. Together)*	Divorced or separated, but move together again				-0.060 (0.037)
	Together before, but divorced or separated after the move				-0.049*** (0.013)
	Divorced or separated				-0.100*** (0.011)
	N	7,750	7,750	7,750	7,750

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1, controlling for sex and year of birth, parental education

Table 6: Logistic regression of change in occupational and LFS from two years before to two years after a move on chances to obtain any education: Germany (results as average marginal effects)

	ISEI	LFS
Parental occupational Status		
Ref: No change		
Downward mobility	-0.0065 (0.051)	
Upward mobility	0.015 (0.052)	
ISEI 2years before a move	-0.000 (0.010)	0.002 (0.010)
Parental Labour Market status		
Ref: active to active		
Active to inactive		-0.19* (0.077)
Inactive to active		-0.018 (0.053)
Inactive to inactive		0.011 (0.058)
N	440	437

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1, controlling for sex, year of birth, parental education

More specifically in Finland (Table 5), the educational attainment of those children whose parents are mobile on the labour market (in addition to being geographically mobile) are in-between those whose parents are continuously employed/not unemployed and those whose parents are continuously not employed/unemployed (the difference between these latter groups are 9 percentage points and 11 percentage points respectively). Upward changes in earnings and mixed changes in earnings are associated with equal educational attainment in comparison with earnings stability, whereas a drop

in parental earnings is associated with lower educational attainment (3 percentage points). Parents' separation over the course of this period is associated with lower educational attainment in comparison with those whose parents remain together (5 percentage points), but this negative effect is not as large as for those whose parents were already separated two years prior to mobility (10 percentage points). Interestingly, the outcomes of the few young people whose parents move together again over this period are almost equal to those of young people whose parents remain separated.

In the German case (Table 6), the differences are by and large not significant, though most of the coefficients are in the expected direction. What does seem to be clear is that a parent's change from being active on the labour market to being inactive is associated with a substantial reduction in the child's educational attainment in comparison with stability either in terms of being active (difference of 18 percentage points) or inactive. Interestingly, remaining inactive is not associated with worse outcomes compared with remaining active – though this may have something to do with the relatively heterogeneous categories of active and inactive that we have had to use due to small case numbers.

Overall, what we can conclude is that there does not appear to be a situation where the gains for children would outweigh the losses associated with moving between regions in either country.

Discussion

In this paper, we study the effects of geographical mobility on children's education attainment in Finland and Germany. Childhood mobility seems to be somewhat more common in Germany than in Finland and, possibly as a consequence, mobile families seem to be somewhat more negatively selected in Finland than in Germany. In assessing the role that mobility itself plays for educational attainment, we consider the selection into moving, the potential motivation for relocation, the gains from moving and the existing resources of the parents. Since moving can be hypothesised to have a negative impact on educational attainment, we wanted to examine whether some of these factors could either explain these negative effects or even to compensate for them. The paper aimed to develop the prevailing understanding of the mechanisms that underlie social inequalities in childhood and the intergenerational transmission of inequality and also to go beyond traditional approaches to geographical mobility by introducing an international comparative perspective.

We hypothesised that negative effects could be attributable to parental unemployment or separation before moving (disruption hypothesis) on the one hand, while on the other, socioeconomic gains from moving could compensate for these negative effects (moving for opportunity hypothesis). Overall our findings indicate that even after controlling for parental education and economic status as well as family situation in terms of parental divorce or separation, moving during childhood was associated with the risk of not attaining any secondary degree in both Finland and Germany. We found that in Finland selection into moving accounted for much of the impact of geographical mobility in educational attainment, supporting the disruption hypothesis. However, for Germany selection failed to account for the negative impact of geographical mobility for children.

We speculate that this may be related to the loss of extra-familial social capital. We did not find the gains from moving to outweigh the negative effects in either country.

The rate of parental divorce/separation is almost double among mobile families than immobile ones in both Germany and Finland, though the absolute rate is substantially higher in Finland. We hypothesised that parents remaining together during childhood could somewhat compensate for the negative influence of mobility (intrafamily resilience hypothesis). This was not found to be the case. Indeed, in Finland the opposite was the case: children in separated families were not as negatively affected by the move compared to intact ones. However, it should also be remembered that among movers, children whose parents remained together did have the highest educational attainment – and the lowest level of attainment was for those who were already living with only one of their biological parents before the move. Therefore, experiencing parental separation during the mobility period (from two years prior to the move to two years after it) did not lead to lowered educational attainment in comparison with experiencing it before the move.

We found no interactions between parental education and geographical mobility in either the Finnish or German case. A well-off background does not seem to protect from the negative effects. We supposed that differences in the education systems could have consequences for how influential internal migration is for educational attainment. At face value, our results suggest that all other things considered, mobility is more harmful in Germany than in Finland. However, our results come from very different kinds of datasets (one retrospective and the other based on registers) and we control for slightly different parental characteristics in each country. This conclusion therefore remains rather tentative. Nevertheless, this result could be explained by the relative openness and equality of the Finnish educational system and the fact that internal migrants within Germany sometimes have to adapt to a different educational system in the case of moves between some Länder.

Despite internal migration being considered advantageous for labour market opportunities, the result for children is that it does more harm than good. Moreover, there seem to be few compensatory effects for children who move. Our results thus underline the importance of support for families to remain in the regions they are living in whenever they would prefer to do so. Since parental separation seems to be a strong precursor for moving, particularly in Finland, one potential reason for this may be related to the lack of affordable housing. Therefore housing policy aiming for affordable housing for families with children is essential. Single parents may also be moving closer to kin in order to get more support in terms of child care. Although daycare in Finland is widely available and relatively inexpensive, the structures for providing parents affordable childcare outside of daycare or school hours could be developed.

Our overall conclusion is that when children move something remains behind. There is thus also an important role for schools to play in integrating internal migrants – as well as international migrants – into the social networks of the schools they arrive in.

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Appendices:

Table A1. Proportion of population experiencing parental divorce and/or unemployment during childhood (ages 6-15) by area mobility

Finland	Non-mobile (%)	Mobile (%)
Not divorced or unemployed	42.8	17.2
Divorced, but not unemployed	11.4	13.9
Unemployed, but not divorced	27.9	24.4
Divorced and unemployed	17.9	44.5
N	92652	8376
Germany	Non-mobile (%)	Mobile (%)
Not separated or unemployed	75,5	61,9
Separated, but not unemployed	6,8	13,5
Unemployed, but not separated	15,6	20,0
Separated and unemployed	2,1	4,6
N	1,861	675

Table A2. Changes in parental circumstances from two years before a move to two years after a move in Finland

Change in parental employment two years before and two years after	%
Employed before and after move	33.6
Employed before, but not after the move	16.1
Not employed before the move, but employed after	19.1
Not employed before or after the move	31.1
N	7750
Change in parental unemployment two years before and two years after	
Not unemployed before or after move	53.8
Not unemployed before, but unemployed after the move	16.0
Unemployed before the move, but not after	15.4

Unemployed both before and after the move	14.8
N	7750
Change in parental earnings two years before and two years after	
No change	47.7
Downward change (at least 20 percent)	19.9
Upward change (at least 50 percent)	22.3
Upward change (at least 50 percent) of one parent and downward change (at least 20 percent) of the other	10.2
N	7750
Change in family status two years before and two years after	
Parents together	49.6
Divorced or separated, but move together again	1.5
Together before, but divorced or separated after the move	17.1
Divorced or separated	31.7
N	7750

Table A3. Change in occupational status and labour force status two years before to two years after a move Germany

Change in occupational status two years before to two years after a move Germany (occupational mobility > 5 points on ISEI scale)	
No change	68.4
Upward move	13.9
Downward move	17.7
N	440
Change in labour force status (active vs inactive): two years before to two years after a move in Germany	
Active to active	69.1
Active to inactive	9.2
Inactive to active	10.8
Inactive to inactive	11.0
N	437

Table A4. Area mobility in childhood by region and by Kreis

	No Area mobility in childhood		Area mobility in childhood	
	%	N	%	N
Moved Region	81,5	2,067	18,5	469
Moved Kreis	73,4	1,861	26,6	675

Table A5. Association between Moving Kries at school age and attainment of any general secondary education (ref. incomplete or basic education), results as average marginal effects

Moved Kries (ref: non-movers)	-0.054***	-0.057***	-0.051***	-0.046***
	(0.016)	(0.015)	(0.015)	(0.015)
Parental education (Ref. basic education)				
Intermediate/vocational		0.110***	0.096***	0.091***
		(0.029)	(0.028)	(0.027)
abitur and above		0.207***	0.181***	0.167***
		(0.026)	(0.029)	(0.029)
Family situation before age 5				
Partner moved out (Div/sep)			-0.121***	-0.112***
			(0.036)	(0.035)
parental unemployment			-0.006	0.013
			(0.020)	(0.019)
Occupational status (ISEI08)			0.006	0.009**
			(0.004)	(0.005)
Family situation age 5-15				
Partner moved out (Div/sep)				-0.036
				(0.022)
parental unemployment				-0.046**
				(0.019)
Occupational status(ISEI08) 5-15				0.012*
				(0.006)

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1, controlling for sex and year of birth, parental education
N = 2,532

Table A6: logistic regression: The association between moves (*)at school age and attainment of any general secondary qualification(ref:incomplete or basic education) results as average marginal effects (West German residency spells only)

Moves level 3 (ref: non-movers)	-0.054**
	(0.022)
Parental education level (ref: basic education)	
Intermediate/vocational	0.102***
	(0.033)
Abitur and above	0.183***
	(0.035)

Family situation before age 5	
Partner moved out (Div/sep)	-0.095**
	(0.044)
parental unemployment	0.006
	(0.026)
Occupational status (ISEI08)	0.011*
	(0.006)
Family situation age 5-15	
Partner moved out (Div/sep)	-0.012
	(0.027)
parental unemployment	-0.069***
	(0.026)
Difference in occupational status between age5-15	0.008
	(0.008)

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1, controlling for sex and year of birth, parental education
N = 1,755