

# Moving Up or Falling Behind? Intergenerational Socioeconomic Transmission among Children of Immigrants in Norway

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## Abstract

Using Norwegian registry data, I study the intergenerational transmission of educational attainment and adult earnings from immigrant parents to their second-generation children. Generational progress is documented by strongly reduced native-immigrant gaps in completed education and relative earnings position among the immigrant offspring compared to the gaps found in the parental generation. The level of intergenerational gains is highest within the ethnic minority groups characterized by the lowest parental statuses. The overall child-by-parent gradients in education and earnings are broadly similar among immigrants and natives, suggesting comparable rates of upward mobility among children of immigrants and children of natives with disadvantaged family background. Children of immigrants in several non-European ethnic minorities actually achieve higher educational attainment and earnings as adults when compared to their native counterparts with similar parental socio-economic status and neighbourhood of residence in adolescence. The role of neighbourhood segregation appears to be considerably less important in accounting for the native-immigrant socio-economic attainment gaps than observed parental characteristics. The results suggest substantial intergenerational convergence in socio-economic life chances between the children of immigrants and the children of the native-born in the egalitarian Norwegian welfare state setting.

## Introduction

Mass immigration since the second half of the 20th century has introduced new and salient dimensions of ethnic stratification in Europe's rich, liberal democracies. Low-skilled immigrants from developing countries tend to be overrepresented in social welfare programmes, work in precarious low-wage jobs, and live in residential areas characterized by relative social deprivation and ethnic segregation (Coleman, 2006; Heath and Cheung, 2007; Dustmann and Frattini, 2013; Alba and Foner, 2015). Yet the ultimate benchmark of incorporation of disadvantaged immigrant minorities is not so much how

the adult immigrants themselves fare. Instead, the central question is whether the immigrants' descendants achieve intergenerational progress which enable them to rise out of poverty and the low socio-economic origins inherited from their parents (Duncan and Trejo, 2015). Proponents of optimistic neo-assimilation perspectives argue that the passage of generations entails upward mobility for all immigrant groups, albeit at varying paces, and gradual socio-economic convergence towards natives (Perlmann and Waldinger, 1997; Alba and Nee, 2003). Segmented assimilation theorists, by contrast, argue that the experience of second-generation

immigrants will entail various intergenerational trajectories. Importantly, a key concern is whether structural barriers, such as ethnic discrimination and residential segregation, put immigrant descendants of low-status origins at risk of experiencing ‘downward assimilation’ into a racialized bottom of the socio-economic hierarchy (Portes and Zhou, 1993).

This article provides the first comprehensive evidence on how children of immigrants in Norway fare in terms of educational attainment and adult earnings relative to both their immigrant parents and the children of the native-born with comparable socio-economic family background and neighbourhood context while growing up.<sup>1</sup> The study benefits from population-wide data from administrative registries that enable direct linkage between children and their parents as well the inclusion of information on children’s detailed residential location in adolescence. Before moving to the empirical part, I briefly discuss theoretical perspectives, previous research, and the Norwegian setting.

### Socioeconomic Transmission across Immigrant Generations

Research on intergenerational mobility addresses the relationship between the socio-economic standing of parents and their children’s standing as adults (Breen and Jonsson, 2005; Björklund and Jäntti, 2009). To assess the degree of persistence in ethnic stratification among second-generation immigrants, it is crucial to examine how their adult outcomes are linked to parental origin and whether the process of intergenerational socio-economic transmission differ relative to natives (Heath, Rothon and Kilpi, 2008; White and Glick, 2009; Duncan and Trejo, 2015). However, there are several reasons why ethnic differentials in educational attainment and adult economic success may persist among second-generation immigrants beyond between-group differences in childhood socio-economic circumstances.

To begin with, second-generation ethnic disadvantages may arise through various pathways. For example, immigrant parents’ lack of linguistic fluency and country-specific knowhow may prevent their children from taking advantage of the opportunities available to them in the host-society educational system on par with their native peers (Bleakley and Chin, 2008; Dustmann and Glitz, 2011). In the labour market, second-generation immigrants of ‘visible minority status’ often face ethnic discrimination which limit access to entry-level jobs and hinders subsequent career progression (Heath, Liebig and Simon, 2013; for Norwegian evidence, see Midtbøen, 2015). Moreover, the local ethnic

environment in which children of immigrants grow up is likely to matter for their adult outcomes. Borjas (1992, 1995) introduced the term ‘ethnic capital’ to summarize adult immigrants’ function as role models, the transmittance of norms and aspirations between ethnic minority peers, and other community-level factors important for second-generation achievement. Disillusioned migrant youth may, for example, lower their ambitions and devalue the importance of formal education if neighbourhood-level poverty and unemployment among adult immigrants and older peers is widespread. Schools in immigrant-dense neighbourhoods may also be of low quality, with fewer academic resources and less-qualified teachers, thus hampering the educational opportunities of their predominantly immigrant-origin students (Schwartz and Stiefel, 2011). Moreover, ethnic segregation could directly affect the career opportunities of second-generation immigrants, by limiting access to job-relevant social networks found in more integrated neighbourhoods (Ioannides and Loury, 2004). In line with ‘downward assimilation’ trajectories, second-generation ethnic disadvantages in socio-economic outcomes relative to natives may therefore extend beyond their low socio-economic family background. Moreover, taking ethnic residential segregation into account should reduce these net ethnic disadvantages substantially.

By contrast, structural barriers faced by many second-generation minorities may be counteracted by the ‘immigrant optimism’ (Kao and Tienda, 1995) often exhibited by their parents, which make their children more inclined to hold higher educational and career ambitions than their native peers. Research also shows that immigrant parents often are ‘positively selected’ relative to the population in their countries of origin by, for example, having completed more education than their non-migrant counterparts (Lessard-Phillips, Fleischmann and Van Elsas, 2014). As reported in studies from the United States (Feliciano, 2005; Luthra and Waldinger, 2013) and Europe (Ichou, 2014; Van de Werfhorst, van Elsas and Heath, 2014), the degree of ‘positive selection’ in the migrant generation is related to higher socio-economic achievements among their second-generation children. At the neighbourhood-level, mobilization of social capital within tightly knit immigrant communities could insulate immigrants’ children against detrimental consequences of low-status origins and spatial segregation (Zhou, 1997; Lauglo, 2000). Strong extrafamilial supervision in ethnic enclaves may help preserve cultural values and group solidarity that foster upward socio-economic mobility, while high ambitions disseminate further within in local immigrant youth friendship networks. Research document how the

presence of ethnic minority peers in neighbourhoods and schools in some cases positively influence later-life outcomes among second-generation immigrants (Bygren and Szulkin, 2010; Fleischmann *et al.*, 2013; Hermansen and Birkelund, 2015). Due to mechanisms like these, second-generation minorities may actually reach higher adult socio-economic attainments when compared to their native counterparts with similar family background. Moreover, the potentially beneficial effects of growing up in cohesive immigrant communities may reduce or cancel out any adverse neighbourhood effects confronting spatially segregated children of immigrants.

Given these considerations, the article has three goals. First, I assess the level of intergenerational progress in education and earnings achieved by the children of immigrants relative to their parents. Secondly, I compare the second-generation immigrants' adult attainments to those of their native peers with comparable parental socio-economic status and neighbourhood of residence in adolescence. Thirdly, I gauge the relative role of observed parental characteristics and neighbourhood segregation for the native-immigrant gaps in adult socio-economic attainments.

## Previous Research

While the US literature shows gradual intergenerational socio-economic progress among recent cohorts of immigrant descendants of Hispanic ancestry and other disadvantaged origins (White and Glick, 2009; Luthra and Waldinger, 2013; Duncan and Trejo, 2015; Waters and Pineau, 2015), there is still less research on the intergenerational dynamics of ethnic stratification within Europe's immigrant communities. Prior studies find that ethnic disadvantages experienced by immigrant offspring as they progress through the educational system often reflect parental human capital and labour market status (Heath *et al.*, 2008; Dustmann and Glitz, 2011; Heath and Brinbaum, 2014). Research on second-generation immigrants' labour market outcomes shows considerable variation in their relative position compared to equally qualified natives across different immigrant groups and host societies. However, second-generation immigrants of non-European origins often experience substantial ethnic disadvantages in access to employment, earnings, and occupational attainment (Heath and Cheung, 2007; Heath *et al.*, 2008; Algan *et al.*, 2010; Ballarino and Panichella, 2015).

Nevertheless, most studies showing improvement in adult educational and economic outcomes across immigrant generations rely on cross-sectional data where the outcomes in the adult offspring generation are not

compared to those of their actual immigrant parents (Heath and Cheung, 2007; Algan *et al.*, 2010). Instead, comparisons are usually based on information on the socio-economic status of second-generation immigrants and members of the contemporary first generation measured at the same point in time. However, cross-sectional comparisons may provide biased results to the extent that immigrant flows become more or less selective over time and the achievements of adult immigrants reflect changes in the business cycle.

In Sweden, Hammarstedt and Palme (2012) use linked parent-child data to document overall convergence in earnings between immigrants and natives across generations. This pattern is, however, not uniform for all immigrant minorities as the earnings gaps relative to natives are larger among second-generation immigrants than among their parents in groups originating in Africa and the Middle East. Using a research design similar to this study, Hällsten and Szulkin (2009) show that neighbourhood segregation in adolescence is of minor importance compared to family background in accounting for the disadvantages that second-generation immigrants experience relative to native Swedes in education and the labour market.

## Immigration to Norway

The empirical setting in Norway provides an interesting case due to the combination of a diverse immigrant population and the presence of strong welfare state institutions, with low economic inequality and high intergenerational mobility among natives (Esping-Andersen, 1999; Breen and Jonsson, 2005; Björklund and Jäntti, 2009). Norway is representative of Europe's multi-ethnic host societies, as immigrants and their native-born children currently constitute approximately 16 per cent of the total Norwegian population (OECD, 2015; Statistics Norway, 2016). Large-scale immigration to Norway began with the arrival of unskilled labour migrants from Pakistan, Turkey, and Morocco in the late 1960s (Brochmann and Kjeldstadli, 2008). In 1975, a moratorium on unskilled labour immigration limited further inflow from the migrant workers' origin countries to family reunifications for kin of the initial arrivals. Beginning in the late 1970s, a growing number of refugees and asylum seekers started arriving from recent conflict areas, such as Vietnam and Chile. Regardless of entry criteria, immigrants in these various national-origin groups experienced declining employment rates and increasing dependency of social welfare assistance over the life cycle (Bratsberg, Raaum and Røed, 2010, 2014). Despite Norway's generous welfare provisions,

the immigrants' children faced substantially heightened risks of persistent childhood poverty compared to children of the native-born and often grew up in neighbourhoods characterized by relative ethnic segregation (Galloway *et al.*, 2009; Wessel *et al.*, 2016).

Nevertheless, previous research shows that most second-generation immigrant minorities surpass the educational attainment of their own parents although the focus is solely on completion of upper-secondary education (Bratsberg, Raaum and Røed, 2012: Figure 3). Turning to the labour market, some studies report second-generation employment gaps conditional on similar educational qualifications, but there is limited evidence of cumulative disadvantages in earnings and occupational attainment relative to natives among Norwegian-born children of immigrants (Hermansen, 2013; Bratsberg *et al.*, 2014; Brekke, 2014). Recently, Bratsberg *et al.* (2014) also show intergenerational convergence among the adult children of the early labour migrants from Pakistan and Turkey; insofar that gaps relative to natives in education, employment, and earnings are markedly reduced among the immigrant offspring relative to the parental generation.

## Data and Methods

The data used emanate from administrative records covering the entire resident population in Norway. Information on socio-economic and demographic characteristics of children and their parents, as well as detailed information on children's residential location in adolescence, were matched across several registries using a system of unique personal identifiers. For the current purposes, I restrict the sample to all Norwegian-born children with two native-born parents and all children of two foreign-born parents, who themselves were either born in Norway or immigrated before school-starting age at 7, in birth cohorts 1973–1982 who were current Norwegian residents in 2012. Thus, the sample of children with foreign-born parents both includes both Norwegian-born members of the 'true' second-generation and childhood immigrants in the '1.5 generation' arriving before school-starting age.<sup>2</sup> Moreover, individuals with 'mixed origin' (i.e. one foreign-born and one native-born parent) were excluded from the sample. Finally, a small number of observations with no information registered on educational attainment or residential location in adolescence were also excluded. This provides an analytic sample of 484,872 observations.

## Variable Definitions

Table 1 presents summary statistics on the variables used in the empirical analysis separately for the children of immigrants ( $n=8,694$ ) and the children of natives ( $n=476,178$ ).

The key independent variable in the analyses is the *ethnic origin* of the children, defined on the basis of the country of birth of their parents.<sup>3</sup> Those with two Norwegian-born parents are assigned to the majority group and will be referred to as 'native Norwegians' in the following, while those with two foreign-born parents make up the 'children of immigrants'. Within this group, I differentiate between nine ethnic minority origin groups: Nordic; West; Eastern Europe; Pakistan; Vietnam; Asia; Middle East; Africa; and South America (Table A1). In cases where the parents come from different origin countries, children are classified according to the mother's country of birth.

To capture the socio-economic status of children and their parents, I rely on information on educational attainment and annual earnings. *Child education* refers to the highest level of educational attainment reached by age 30 using the Norwegian version of the International standard Classification of Education, ISCED-97. I then re-calculate this educational attainment level into years of completed education. *Parental education* refers to the attainment level of the parent with the highest level of education when the child was 16 years old using the same classification. For different purposes, I treat parental education either as five different levels of attainment or recalculated in terms of parental years of completed education.<sup>4</sup>

*Child earnings* refer to pre-tax annual wages and income from self-employment (capital income and social welfare transfers are not included), which is taken from tax files that include annual gross income subject to taxation in various forms and is captured with high accuracy. For the analyses, all earnings in Norwegian kroner are inflated to 2012 levels using the Norwegian consumer price index. Annual earnings are then averaged over the years when the child is observed between ages 30 and 34 years.<sup>5</sup> Then, I rank children based on their earnings relative to other children in the same birth cohort, irrespective of gender and including those with zero earnings.<sup>6</sup> *Parental earnings* is a composite measure of parents' pre-tax annual wages and income from self-employment. I start by averaging each parent's pre-tax annual earnings over the years the child was aged 13–20 years. Then, I summarize the mother's and the father's average earnings for this period. Finally, I rank the parents' earnings position relative to other parents with

**Table 1.** Descriptive statistics for children of immigrants and children of natives

Variable	Range	Children of immigrants		Children of natives	
		Mean	SD	Mean	SD
Children's adult outcomes					
Years of education	9–20	13.10	2.60	13.56	2.42
Earnings rank	0.00–100.00	44.34	31.09	50.10	28.82
Parents' earnings rank	0.00–100.00	24.16	27.03	50.47	28.68
Parents' highest education					
Compulsory education	0–1	0.372		0.124	
Some upper secondary	0–1	0.072		0.330	
Full upper secondary	0–1	0.168		0.237	
Lower tertiary	0–1	0.203		0.225	
Higher tertiary	0–1	0.082		0.083	
No education registered	0–1	0.104		0.002	
Female	0–1	0.482		0.489	
Mother's age at birth	15–45	26.52	5.21	26.32	5.02
First-born child of mother	0–1	0.401		0.428	
Number of siblings	0–17	2.12	1.60	1.45	1.02
Birth cohort	1973–1982	1978.5	2.7	1977.3	2.9
Observations		8,694		476,178	

Note: Standard deviations are not presented for discrete variables, as the full distribution of responses is shown. See [Supplementary Tables S1 and S2](#) for the full educational and earnings distribution of parents and their children by ethnic origin.

Source: Author's calculations based on administrative registry data from Statistics Norway.

children in their child's birth cohort, irrespective of the child's gender and including parents with zero earnings. For both children and their parents, this yields a symmetric variable that capture earnings ranks measured as the cohort-specific *percentile in the earnings distribution* (Mastekaasa, 2011), which ranges from 0 (lowest) to 100 (highest).

Furthermore, I also use information on child *gender*, whether the child was the *first-born child* of his or her mother, the *number of siblings*, and the *mother's age at birth*.

Finally, I use detailed information on children's residential location in adolescence. In baseline specifications, I include a set of 19 dummy indicators referring to children's *county of residence* at age 16 years to account for regional variation in educational opportunities and local labour markets. To further gauge the role of neighbourhood segregation at the same age, I use detailed information on children's local *neighbourhood of residence* as a set of fixed effects. These neighbourhood units are measured on the basis of Statistics Norway's detailed 'basic statistical unit' classification (*'grunnkretser'*), which are designed to resemble genuine neighbourhoods and are relatively homogeneous with respect to location and type of housing (Statistics Norway, 1999). There are about 13,700 basic statistical units in

Norway and each is populated by about 350 individuals on average.

### Empirical Analysis

The first part of the empirical analysis documents the intergenerational changes in the distribution of socio-economic attainments between the immigrant parents and their adult second-generation children. I also estimate the degree of intergenerational persistence in earnings and education within the immigrant population. To do this, I use a standard regression to the mean model of generational mobility where the child's socio-economic status is regressed on the parents' status (Björklund and Jäntti, 2009; Duncan and Trejo, 2015) using Ordinary Least Squares (OLS) models:

$$Y_i = \alpha + \beta X_i + \varepsilon_i, \quad (1)$$

where  $Y_i$  is the level of education or earnings of child  $i$ , while  $X_i$  is the level of education or earnings of the child's parents. In this regression to the mean framework of intergenerational mobility, the 'intergenerational assimilation rate' is given by  $1 - \beta$ . This is given by the fact that if the parent-child slope,  $\beta$ , equals 1, then there is no intergenerational assimilation, as any differences in outcomes between the parents and the underlying population will be reproduced among their children. More

generally, if  $0 < \beta < 1$ , then a fraction  $1 - \beta$  of the difference between the parents' outcome and the population mean for the parental generation is closed in the second generation.<sup>7</sup> Thus, the magnitude of  $\beta$  determines the speed of intergenerational convergence between natives and immigrants (for a technical discussion, see [Dustmann and Glitz, 2011](#): pp. 399–401).

In the second part of the analysis, I evaluate how children of immigrants fare in terms of adult socio-economic attainment relative to natives with similar childhood circumstances. I start by comparing the overall child-by-parent intergenerational gradients in education and earnings among immigrants and natives. Next, I assess the contribution of observed differences in parental resources and adolescent neighbourhood segregation to the native-immigrant gaps in adult socio-economic outcomes experienced within each of the separate second-generation ethnic minorities.

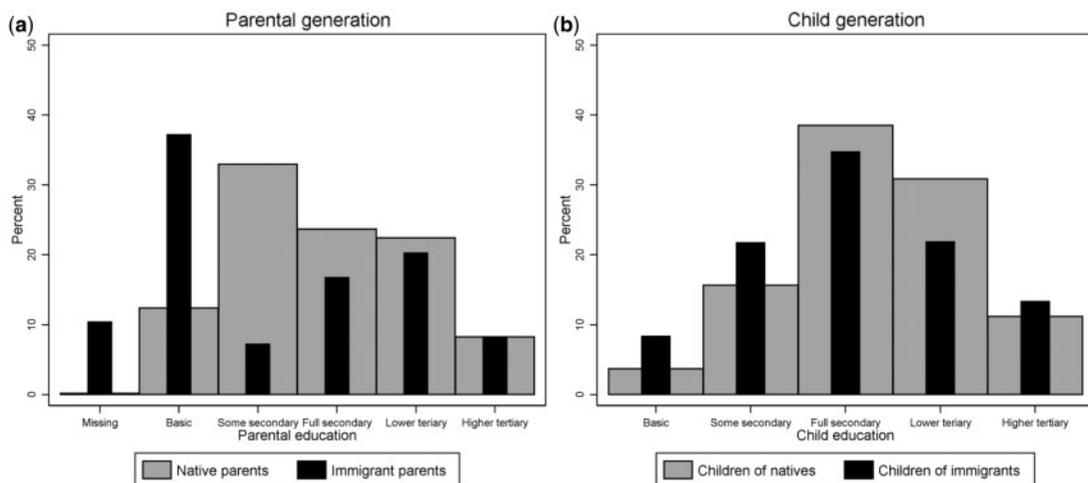
This approach is inspired by a 'premarket' design ([Neal and Johnson, 1996](#)), where I relate the native-immigrant gaps to group-level differences in children's social origins (i.e. characteristics of their parents and neighbourhood environments while growing up) rather than characteristics of the children's themselves.<sup>8</sup> To achieve a robust estimate of the conditional native-immigrant differentials, I start by controlling for the full set of observed socio-economic family background characteristics. Then, I control for the child's neighbourhood of residence in adolescence as a set of fixed effects. The neighbourhood fixed effects capture all contextual variation that is shared within these residential areas, by facilitating the statistical comparison of children who

grew up in the same neighbourhood. While this will capture both observed and unobserved stable aspects of the local environment, it should be noted that the fixed-effects adjustments will also reflect unobserved and non-random population sorting across residential areas. Thus, any additional change in the native-immigrant gaps due to inclusion of the neighbourhood fixed effects should be interpreted as an upper-bound limit of the 'true' contextual effects of neighbourhood segregation.

## Results

The educational and earnings distributions among parents and their children in the immigrant and native population are presented in [Figures 1 and 2](#), respectively. The figures reveal two striking results. First, there is a high overrepresentation of the immigrant parents in the bottom of the parental earnings and educational distributions, with nearly half of the immigrant parents found in the lowest earnings decile or the lowest educational attainment level. Secondly, the native-immigrant differentials are strongly reduced in the child generation. While the second-generation immigrants are still overrepresented at the bottom of the distribution, the figures document strong intergenerational convergence towards the earnings and educational profiles of their native counterparts. Yet, this raises the question of whether this overall pattern of upward intergenerational mobility applies to all of the second-generation ethnic minorities.

In [Figure 3](#), I explore ethnic variation in the degree of intergenerational gains in socio-economic attainment among the second-generation immigrant minorities. The



**Figure 1.** Educational distribution of parents and their children among immigrants and natives

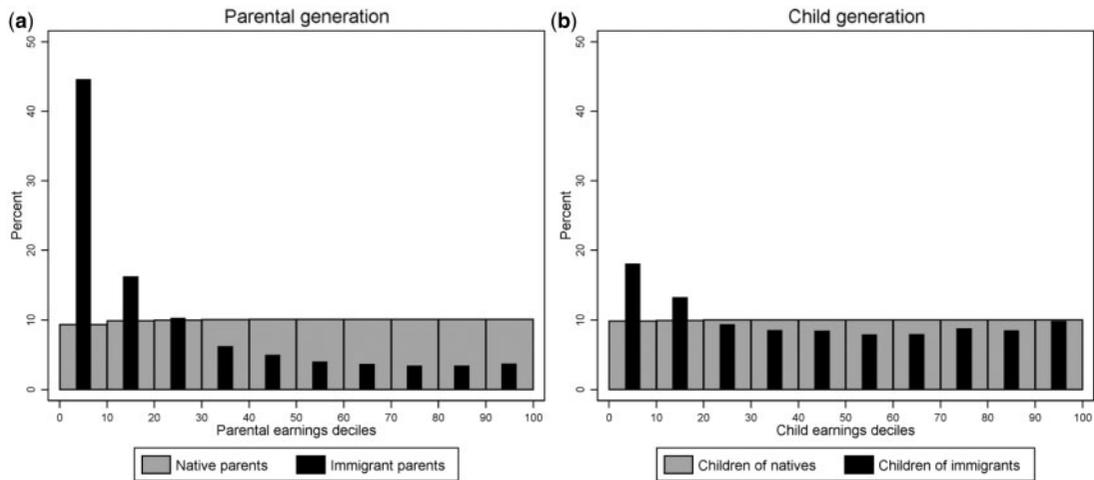


Figure 2. Earnings distribution of parents and their children among immigrants and natives

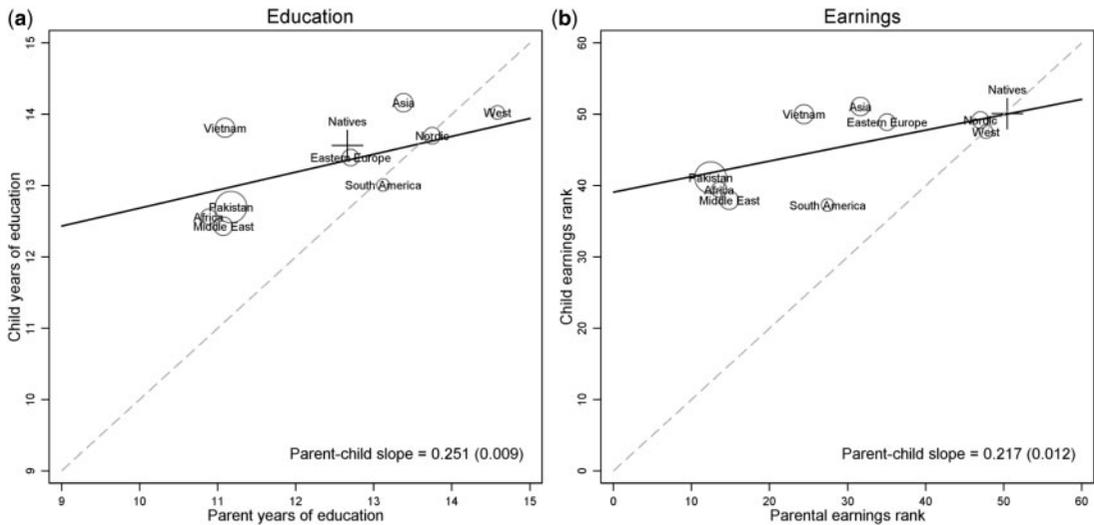


Figure 3. Educational attainment and earnings rank of immigrant parents and their children by ethnic origin

Note: In panel A, the solid black line refers to the bivariate parent-child slope for education years within the immigrant population estimated using OLS regression ( $N = 7,791$ ). All observations with missing parental education are excluded. In panel B, the solid black line refers to the bivariate parent-child slope for earnings rank within the immigrant population estimated using OLS regression ( $N = 8,694$ ). In each panel, the centre of the overlaid scatter point circles refers to the conditional child-parental mean years of education or earnings rank, respectively, within each ethnic origin group. The size of each circle is proportional to the number of child observations in each ethnic origin group. For comparison, the dashed grey lines refer to the diagonal where the child's education or earnings equals that of the parents. The centre of the black cross represents the conditional child-parental mean years of education ( $N = 475,309$ ) or earnings rank ( $N = 476,178$ ), respectively, for the native population. Supplementary Tables S1 and S2 report detailed information on child and parental means and distributions within each ethnic origin group.

figure reports the intergenerational association in education (panel A) and earnings (panel B) within the entire immigrant offspring population. The solid lines present the bivariate parent-child slope in earnings and education, respectively, estimated with OLS regression. These

parent-child slopes highlight the central tendencies in the degree of intergenerational persistence between the socio-economic attainments of the second-generation immigrants and their parents. To provide a benchmark of the level of intergenerational regression to mean, the

dashed grey line along the diagonal refers to the hypothetical parent–child slope in a situation where parents' outcomes are completely reproduced among their children (i.e. where the parent–child slope equals 1). Further, the overlaid scatter point circles in each panel, which represents the various ethnic origin groups, provide a description of how second-generation adult attainment is related to group-level variation in parental origins. The centre of each circle refers to the conditional average level of attainment among the parents plotted against the average attainment of the children by ethnic origin group. For further reference purposes, the black cross represents the conditional parent–child average for each socio-economic outcome within the native population.

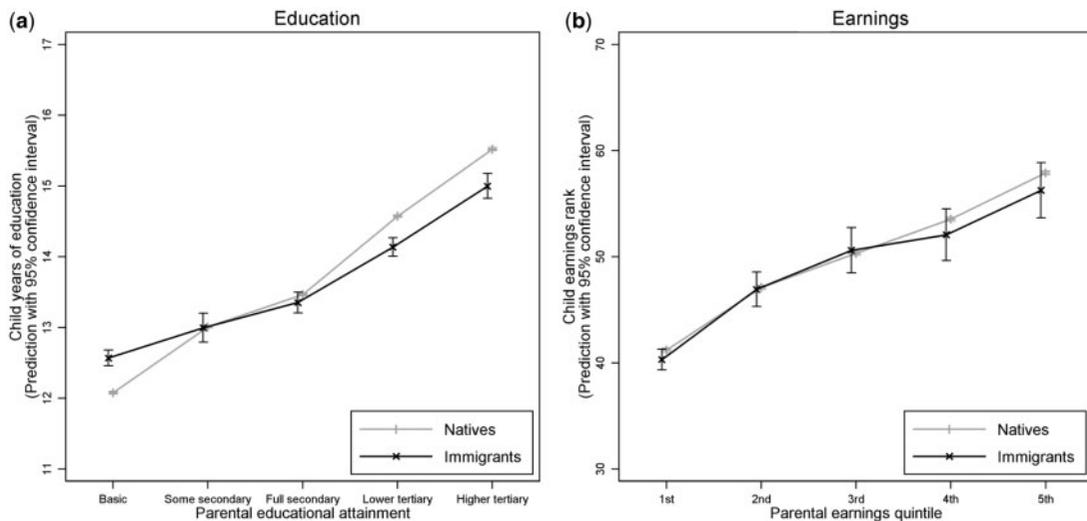
The panels in [Figure 3](#) suggest several conclusions. To begin with, a clear individual-level relationship between the attainments of the second-generation immigrants and their parents is documented for both years of completed education (slope = 0.251, s.e. = 0.009) and earnings rank (slope = 0.217, s.e. = 0.012). Nevertheless, these parent–child slopes suggest a substantial degree of intergenerational regression to the mean between the immigrant parents and their children, as indicated by distance between the estimated slopes and the diagonal.<sup>9</sup> Moreover, the conditional parent–child averages plotted for the various origin groups are relatively close to the estimated individual-level regression lines in both figures. This indicates that variation in adult attainments across the different second-generation ethnic minorities is closely related to their parental socio-economic origins. Nevertheless, there are some notable outliers, especially the high earnings and educational attainment among the children of Vietnamese and Asian immigrants and the low earnings among second-generation immigrants of South American background.

Importantly, both panels document substantial socio-economic progress among the second-generation minorities (see [Supplementary Tables S1](#) and [S2](#) for detailed information). The level of intergenerational catch-up is highest within the ethnic origin groups characterized by the lowest parental statuses. For example, children of Pakistani immigrants, by far the largest origin group, whose parents had about 1.8 fewer years of completed education and 37.5 percentiles lower earnings rank than the native-born parents, ended up with about 1.0 years of education and 9.0 earnings rank percentiles less than their same-age native counterparts. Measured this way, about 44 per cent of the gap in education years ( $1 - [0.99/1.77] = 0.44$ ) and 76 per cent of the gap in earnings rank ( $1 - [8.99/38.00] = 0.76$ ) experienced by their immigrant parents is closed in the

Pakistani-origin second generation. Similar calculations show that about 33–47 per cent of the educational gap and 65–70 per cent of the earnings gap relative to natives in the immigrant generation is closed among the adult second-generation children within the Middle Eastern and African origin groups. The native-immigrant gaps in earnings and education are entirely closed among second-generation immigrants of Vietnamese and other Asian origins, while children of the more advantaged European and Western origin groups generally reproduce their parents' statuses. By contrast, the second-generation minority of South American origin, consisting primarily of children of Chilean political refugees, experience less educational and economic progress relative to their parents. In sum, these results show a considerable intergenerational socio-economic convergence between the children of immigrants and their native counterparts. Yet, several second-generation minorities still lag behind the average attainment levels found among native Norwegians.

In [Figure 4](#), I compare the intergenerational gradients in education (panel A) and earnings (panel B) for immigrants and natives. The plotted gradients are based on OLS models where each child outcome is regressed on the corresponding parental outcome separately by immigrant background ([Supplementary Tables S3](#) and [S4](#)). Thus, each panel reports the fitted parental gradient in the child outcome separately for immigrants and natives by allowing both the level of the outcome variable and the slope, that is, the intergenerational gradient to vary by immigrant background. Our key interest is whether the intergenerational socio-economic gradients differ between the children of immigrants and the children of the native-born.

Panel A in [Figure 4](#) shows the intergenerational gradient in education by immigrant background. The parental gradient is slightly steeper among natives, where children of parents with higher tertiary education complete almost 3.5 more years of education than children of the least-educated parents. Among the immigrants' children, the corresponding difference in the educational gradient is about 2.5 years. Importantly, children of immigrants seem to outperform their native counterparts at low levels of parental education while they fall slightly behind their native counterparts with better-educated parents. These results are in line with a recent Norwegian study focusing on second-generation immigrants' completion of upper-secondary education in Norway ([Bratsberg et al., 2012](#)). Turning to panel B, the parental gradient in child earnings rank reveals a similar pattern among immigrants and natives. In the lower part of the parental earnings distribution, children of



**Figure 4.** Intergenerational gradient in educational attainment and earnings rank for immigrants and natives

Note: Full OLS regression estimates reported in [Supplementary Tables S3](#) and [S4](#).

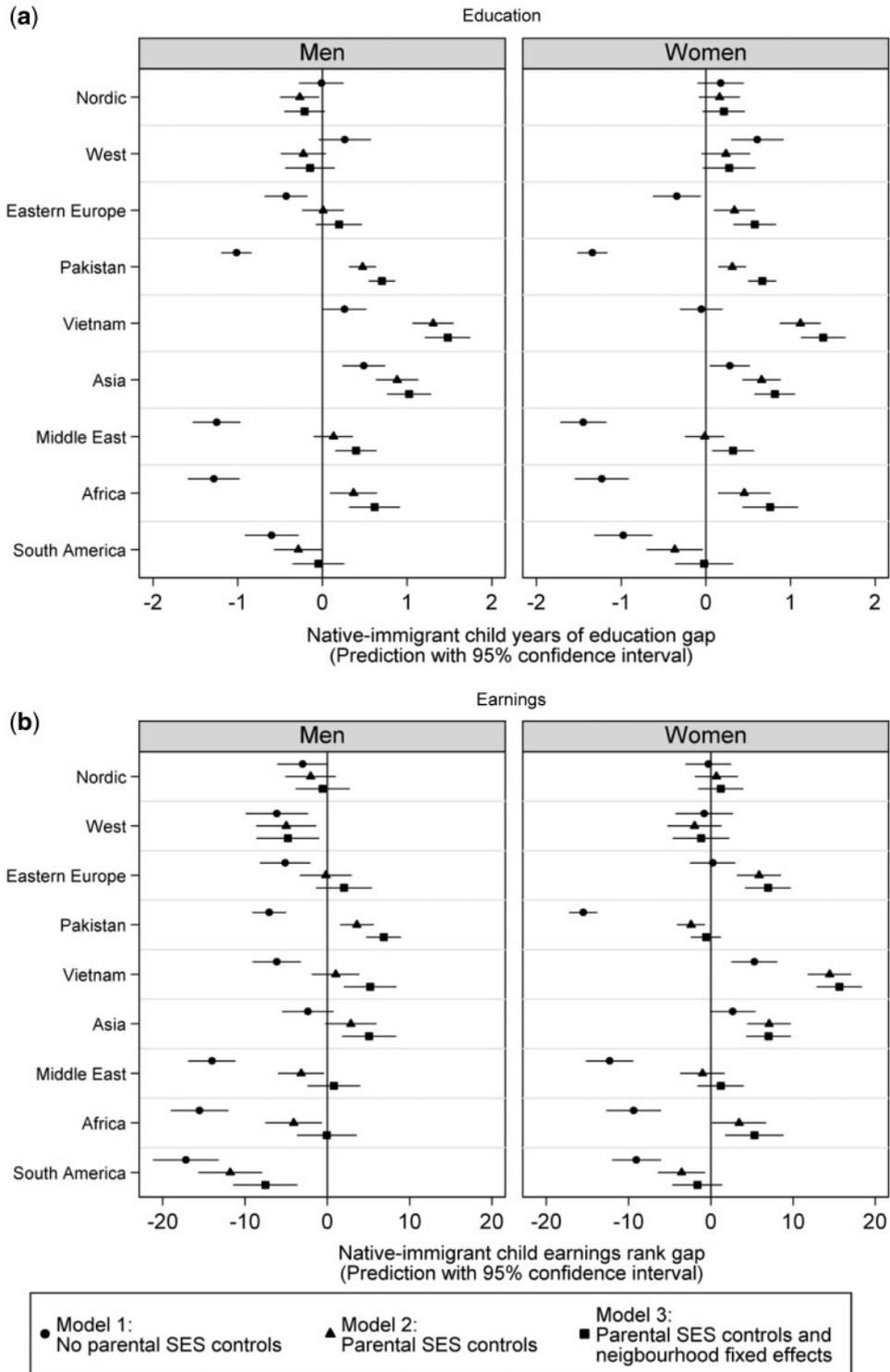
immigrants' relative adult earnings are, on average, comparable to those of their native counterparts with parents within the same earnings quintile. However, as we also saw for education, second-generation immigrants with parents in the upper part of the parental earnings distribution earn slightly less as adult than comparable natives.

When interpreting these gradients it is, however, important to bear in mind that most second-generation immigrants grew up in families located in the lower part of the parental distribution of both education and earnings. Thus, these gradients suggest that socio-economic transmission from parents to children is broadly comparable for second-generation immigrants and natives who grew up in families with low parental education and few economic resources. Importantly, there is little evidence that intergenerational persistence in socio-economic disadvantage is any stronger among second-generation immigrants compared to native Norwegians. This implies that the high level of upward mobility found among second-generation immigrants of disadvantaged origins seems to be one they share with natives of similar family background.

Finally, I examine how second-generation immigrants in each of the separate ethnic minority groups fare as adults when compared to native Norwegians with similar socio-economic family background and neighbourhood environment in adolescence. [Figure 5](#) summarizes the estimated native-immigrant gaps in educational attainment (panel A) and earnings rank (panel

B) from a series of OLS regressions ([Supplementary Tables S5](#) and [S6](#)). To assess whether there is any gender variation across the different second-generation minorities, the results are presented separately for men and women. In both panels, I start by presenting the baseline estimates of the 'gross' native-immigrant gaps controlling only for birth cohort and county of residence in adolescence (model 1). Next, model 2 introduces controls for the full set of observed socio-economic family background characteristics. If the 'gross' native-immigrant gaps across the different second-generation minorities reflect variation in parental socio-economic resources, the conditional gaps should be substantially reduced after controls for observed characteristics of the family of origin. Finally, model 3 adds the neighbourhood fixed effects that narrow the statistical comparison down to individuals who grew up in the same local residential area. To the extent that ethnic disadvantages reflect processes related to residential segregation, the conditional native-immigrant gaps should differ substantially before and after the inclusion of the neighbourhood fixed effects.

[Figure 5](#) shows that the pattern of native-immigrant socio-economic gaps across all second-generation minority groups is generally similar for men and women in all model specifications. Moreover, the estimated 'gross' native-immigrant gaps show that second-generation minorities of Pakistani, Middle Eastern, African, and South American origins all lag behind the average level of education and earnings found among natives. By



**Figure 5.** Estimated native-immigrant gaps in child educational attainment and child earnings rank

Note: The black vertical line refers to the native Norwegian reference group. Full OLS regression estimates reported in [Supplementary Tables S5 and S6](#).

contrast, children of immigrants from Vietnam and other parts of Asia achieve on par with natives. This also applies to the Western origin groups, although the second-generation Eastern Europeans fall slightly behind.

Next, a clear pattern is revealed after introducing controls for socio-economic family background. By taking into account variation in observed parental resources and neighbourhood segregation, we account for nearly all of the ethnic variation in the socio-economic disadvantages experienced by the different second-generation minorities. In fact, several of the second-generation minorities experience net ethnic advantages in educational attainment and adult earnings when these extensive controls are taken into account. This pattern is especially pronounced among the children of Asian-origin immigrants, particularly those of Vietnamese parents, where both second-generation men and women on average complete almost 1.5 more years of education and have between 7 and 15 percentiles higher earnings rank compared to similar natives. Although less pronounced, this pattern of net ethnic advantages applies to nearly all of the second-generation minorities with non-European background. However, second-generation men of South American origin experience a persistent earnings disadvantage after adjusting for family background and neighbourhood segregation.

Finally, controlling for neighbourhood fixed effects contributes with a relatively modest change in estimated native-immigrant gaps in education and earnings net of observed parental characteristics. Comparing the native-immigrant gaps before and after the neighbourhood fixed-effects adjustment, the estimates suggest neighbourhood segregation account for between 10 and 20 per cent the overall change in native-immigrant gaps in education and earnings for most of the non-European origin groups.

Taken together, the estimated native-immigrant attainment gaps suggest that when children of immigrants are compared to children of natives with similar childhood origins, they fare equally well or better in terms of adult socio-economic attainment. Thus, observed parental characteristics and neighbourhood segregation seem to account for the remaining ethnic disadvantages experienced within the second-generation ethnic minorities.

## Discussion and Conclusions

The aim of this article was to study intergenerational socio-economic transmission among children of immigrants in Norway. I find considerable generational progress reflected in strongly reduced native-immigrant

gaps in educational attainment and adult earnings among immigrant offspring compared to the gaps found in the parental immigrant generation. The level of intergenerational socio-economic gains is highest within second-generation ethnic minorities characterized by the lowest parental origins. The results also show that child-by-parent gradients in education and earnings are broadly similar among immigrants and natives, suggesting comparable rates of upward mobility among children of immigrants and children of natives with disadvantaged family background. Moreover, I find that second-generation men and women in most ethnic minority groups achieve similar or higher levels of educational attainment and adult earnings relative to comparable natives once we take into account differences in socio-economic family background and neighbourhood of residence in adolescence. Finally, the role of neighbourhood segregation seems to be considerably less important in accounting for the native-immigrant attainment gaps than observed parental characteristics. On the whole, the results document substantial intergenerational convergence in socio-economic life chances between the children of immigrants and the children of the native-born in Norway.

The findings are consistent with an optimistic scenario of gradual intergenerational socio-economic progress within Norway's new immigrant-origin ethnic minorities. Importantly, perspectives that project intergenerational stagnation or even 'downward assimilation' gain limited support in the Norwegian welfare state setting. Despite marked intergenerational progress, it should nevertheless be noted that several second-generation immigrant minorities—especially those of Pakistani, Middle Eastern, and African origins—still lag behind the average levels educational attainment and adult earnings found among native Norwegians. However, these patterns of ethnic stratification should be interpreted in light of children of immigrants' concentrated origins in disadvantaged families with little formal education and few economic resources. It could well be that the initially most disadvantaged immigrant groups might simply just need one additional generation to reach native-level attainments. A key issue for future research is therefore whether progress is also sustained among 'third-generation' immigrant descendants (Duncan and Trejo, 2015).

In fact, the results indicate that several of the second-generation immigrant minorities are more upwardly mobile than their native peers with comparable childhood origins. A plausible interpretation of these patterns is that children of immigrants, in contrast to native children with similar socio-economic origins, exhibit higher

career ambitions and grow up in families and communities characterized by (unobserved) mobility-enhancing resources that enable them to overcome initial obstacles and move ahead in the educational system and labour market. The results presented here resonate with a recent study of native-immigrant educational inequalities in 10 Western countries, which showed that second-generation immigrants' disadvantages relative to natives are often reversed to net ethnic advantages when differences in parental socio-economic status are taken into account (Heath and Brinbaum, 2014). In Norway, future studies should address whether residual variation in second-generation socio-economic achievement across ethnic minorities reflects between-group variation in selectivity of the immigrant parents, as captured by their relative educational position in the distribution of the origin country (Feliciano, 2005; Ichou, 2014; Van de Werfhorst *et al.*, 2014).

Needless to say, more research is needed to corroborate many of the present findings. A large literature shows that second-generation immigrants often face considerable obstacles relative to equally qualified natives in Western labour markets (Heath and Cheung, 2007; Algan *et al.*, 2010), but few studies have so far utilized linked parent-child data to track intergenerational economic progress within immigrant minorities in European host societies (Hammarstedt and Palme, 2012). As new cohorts of immigrant descendants make their transition to adulthood, more comparative research on the degree of economic convergence towards natives across immigrant generations is needed to shed light on the future of ethnic stratification in Europe.

### Notes

- 1 I use the terms 'children of immigrants' and 'second-generation immigrants' synonymously.
- 2 In this sample, 47.3 per cent of the children of immigrants were born abroad.
- 3 Note that these categories do not capture ethnicity as such, since this would require detailed information on individuals' religion, culture, skin colour, and the like, which are all likely to vary within each of these groups.
- 4 Because children of immigrants are overrepresented among those who lack information on parental education, I also include a separate indicator for this category. When parental education is measured in years, I exclude these observations (i.e. panel A in Figure 3).
- 5 Earnings is observed between 1 and 5 years depending on the child's birth cohort, as information is available up to 2012. The mean number of years earnings are observed is 3.43 (s.d. = 1.00) for children of immigrants and 3.08 (s.d. = 1.17) for children of natives.
- 6 An advantage of using earnings ranks is that this allows the inclusion of observations with zero earnings. Since children of immigrants and their parents may have weaker labour market attachments than natives, it is important not to exclude observations with zero earnings when assessing intergenerational mobility.
- 7 For example, if  $\beta$  is 0.33, then, on average, otherwise comparable individuals whose parents differ in education by 1 year will themselves differ in education by only one-third of a year, implying that one-third of the parental education differential is transmitted to their children while two-thirds of these differentials are wiped out in the offspring generation.
- 8 Neal and Johnson (1996) originally argued that adjustment for achieved statuses, such as work experience and educational qualifications, would downwardly bias estimates of the black-white earnings gap, as these variables would themselves be endogenous to the processes that create these gaps in the first place.
- 9 For otherwise comparable families, these estimates suggest that, on average, about 75 per cent of the differences in education and about 80 per cent of the differences in earnings rank in the parental generation would vanish among their children.

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### Supplementary Data

Supplementary data are available at *ESR* online.

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## Appendix

**Table A1.** Ethnic minority origin groups among the children of immigrants

Regions of origin	Men (N)	Women (N)	All (N)	All (per cent)	Largest countries of origin ( $n \geq 15$ )
Nordic	397	359	756	8.7	Denmark ( $n = 347$ ), Sweden ( $n = 201$ ), Finland ( $n = 102$ ), Iceland ( $n = 92$ )
West	287	239	526	6.1	Great Britain ( $n = 145$ ), Germany ( $n = 97$ ), The Netherlands ( $n = 83$ ), United States ( $n = 45$ ), Spain ( $n = 23$ ), France ( $n = 22$ ), Portugal ( $n = 19$ ), Switzerland ( $n = 19$ ), Italy ( $n = 15$ )
Eastern Europe	399	379	778	8.9	(Ex-) Yugoslavia (as before the civil war) ( $n = 397$ ), Poland ( $n = 237$ ), Hungary ( $n = 51$ ), former Czechoslovakia ( $n = 37$ )
Pakistan	1,419	1,255	2,674	30.8	Pakistan
Vietnam	508	489	997	11.5	Vietnam
Asia	467	477	944	10.9	India ( $n = 471$ ), Philippines ( $n = 154$ ), Sri Lanka ( $n = 94$ ), China ( $n = 69$ ), Thailand ( $n = 46$ ), Hong Kong ( $n = 37$ ), Bangladesh ( $n = 20$ )
Middle East	470	460	930	10.7	Turkey ( $n = 636$ ), Iran ( $n = 215$ ), Iraq ( $n = 25$ ), Lebanon ( $n = 16$ )
Africa	341	314	655	7.5	Morocco ( $n = 392$ ), Somalia ( $n = 36$ ), Eritrea ( $n = 32$ ), Cape Verde ( $n = 31$ ), Kenya ( $n = 22$ ), Gambia ( $n = 20$ ), Algeria ( $n = 16$ )
South America	219	215	434	5.0	Chile ( $n = 322$ ), Uruguay ( $n = 18$ ), Brazil ( $n = 16$ ), Columbia ( $n = 16$ )
Total	4,507	4,187	8,694	100.0	

Note: The table shows number of observations by gender by region of origin. For each ethnic minority origin groups, all countries of origin with 15 or more observations are listed. The parents (or their children) in our sample immigrated no later than 1989, so countries of origin listed in the table do not always follow present geographical borders or represent currently existing nations.