The Educational Attainment of Second Generation Immigrants in Canada: Evidence from SLID*

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Abstract

This paper examines differences in educational attainment between natives and children of immigrants to Canada. We introduce two definitions of second-generation immigrants: The first considers all children with at least one immigrant parent to be second-generation immigrants, while the second definition requires that both parents were foreign-born. In the data, regardless of which definition we use, immigrants' children have more education, on average, than their native counterparts. To analyze educational attainments, we first outline a simple economic model of schooling and then proceed by estimating a sequence of ordered discrete-choice models. The estimated marginal effects suggest that a part of the observed educational difference between natives and second-generation immigrants can be explained by differences in family background, such as parents' education and mother tongue, but a significant difference remains even after controlling for these characteristics. Moreover, the educational difference prevails even when we apply the narrower definition of second-generation immigrants.

JEL Classification: I21, J24, J61

Keywords: educational attainment, second-generation immigrants

1 Introduction

The resurgence of immigration in many western countries has initiated an intensive debate over its effects. A major portion of current research has focused mainly on how first-generation immigrants integrate into the economic and social structure of the host country, despite the fact that the overall, long-term impact of immigration also depends on the adjustment process experienced by their children, the second-generation immigrants. Moreover, given the importance of immigration in the context of the current demographic trends in most developed countries, it is imperative to determine how immigrants (both first and second generation) integrate and perform in the host country. Surprisingly, economic research on the integration of immigrants' children is scarce and many issues that are consequential to the immigration debate have been largely neglected.

For example, only limited attention has so far been paid to the schooling attainment of the second-generation immigrants. Considering that education is a strong determinant not only of subsequent labor market experiences but of a successful social and economic integration in general, it is essential to study how children of immigrants differ in their educational attainments compared with children of native-born parents in order to evaluate current and past immigration policies.

Although the existing literature is still rather sparse, there are a few studies that have looked at how immigrants' children fare in the labor market compared with children of native-born parents. For example, Borjas (1992, 1994) summarizes a number of observations about second-generation immigrants in the United States. He reports a substantial improvement in schooling attainments across generations but also identifies a large dispersion in educational attainment, as well as wages and

occupational prestige scores, across different ethnic groups. However, Borjas' primary concern is the intergenerational transfer of ethnic capital and not an explicit comparison between immigrants' children and their native contemporaries.

Such a comparison has been the focus of a few recent European studies. Gang and Zimmermann (2000) used a sample of 17 to 38 years old extracted from the German Socio-Economic Panel to investigate the effects of parental education on the schooling of their children and to identify whether there are differences in educational attainment between the second-generation immigrants, divided into five major ethnic groups, and native Germans of the same age. They find that the educational level of first-generation immigrants has no effect on the educational attainment of their children while in the case of native-born Germans, parental education does have an influence on the schooling of the progeny. They further report that although there appears to be some convergence between the immigrants' children and the natives in terms of education, ethnic differences persist within one's educational cohort even after controlling for parental human capital and a number of other characteristics.

Another study by Riphahn (2003) analyzes the educational attainment of German-born children of immigrants using German Census data. She finds that the educational outcomes of second-generation immigrants are significantly below that of natives and that even after controlling for various characteristics the overall educational gap between the children of immigrants and native Germans not only remains significant but actually widens over time.

Van Ours and Veenman (2003) use Dutch data to compare 15 to 29 years old second-generation immigrants, divided into four major ethnic groups, both with the first-generation immigrants and with the natives of the same age group. As second

generation immigrants they consider individuals who were born in the Netherlands from at least one immigrant parent or those who immigrated to the Netherlands at or under the age of 6 years. As for the second generation immigrants, the main finding of the study is that the differences in educational attainment which appear in the data are largely driven by the differences in parental education rather than by ethnicity. In other words, the children of immigrants are worse off in terms of schooling because their parents have, on average, lower education than the parents of the natives. Van Ours and Veenman conclude that if these differences are taken into account, the gap between the native Dutch people and the second generation immigrants vanishes to a large extent.

Lastly, a study by Worswick (2001) is aimed at school performance of the children of immigrants in Canada. Worswick uses data on children aged 15 or younger extracted from three cycles of the National Longitudinal Survey of Children and Youth to analyze the determinants of school performance measured in terms of ability at reading, writing, mathematics and overall aptitude. He points out that there appears to be a significant effect of the first language on the school performance as the children of immigrants whose first language is either French or English have especially high performance outcomes. Those children whose mother tongue is neither of Canada's two official languages have lower performance in reading and writing but are comparable to children of the Canadian-born in other areas. However, regardless of the initial differences, Worswick concludes that by the age of thirteen the school performance of immigrants' children is at least as good as that of the children of Canadian-born parents, which indicates a convergence in school performance as children move through the Canadian educational system.

As mentioned above, acquiring a level of education equivalent to that of the natives is one of the key elements that determine how immigrants and their children integrate into the economic and social structures of the host country. This paper addresses the issue by focusing on the schooling attainment of second-generation immigrants in Canada. Using data from the Survey of Labour and Income Dynamics (SLID), we extract a sample of 11,983 males between 26 and 65 years of age and focus on how children of immigrants compare to similarly-aged children of Canadian-born parents in terms of schooling attainment.

In our analysis we employ two distinct definitions of what constitutes a second-generation immigrant. The first definition considers a Canadian citizen to be a second-generation immigrant if at least one of his parents was foreign-born. This appears to be the definition most commonly used in the previous literature. The second definition is stricter as it requires that both parents were foreign-born for an individual to be defined as a second-generation immigrant. The use of two alternative definitions on what constitutes a second-generation immigrant will allow us, to some extent, assess the importance of cultural differences and/or language skills on schooling attainments. The effect of language skills will also be addressed explicitly using information in SLID regarding the mother tongue.

We distinguish five levels of schooling and estimate a set of ordered-choice models. In contrast with the European studies mentioned above, our results suggest that the children of immigrants do better in terms of educational attainment than their native Canadian counterparts even after the effects of selected individual characteristics, such as parents' educational attainment, are controlled for. Our results also indicate that parents' education and mother tongue (other than English or French) have significant and positive effects on educational attainment. However,

once we control for parental human capital and mother tongue, ethnic background has no significant effect on schooling.

The paper is organized in the following way: Section 2 describes the data and the variables used in the analysis. Section 3 specifies the econometric model and provides a brief introduction to the methodology. It is followed by Section 4 which presents and discusses the results. Finally, Section 5 concludes the paper.

2 Data and Sample Description

2.1 *The SLID Sample*

The data used in this paper have been extracted from the master file of Statistics Canada's Survey of Labour and Income Dynamics (SLID). In SLID, households and individuals are followed for six years and information on their labor market experience, income and family circumstances are collected.

The first panel of SLID started in 1993 with an initial sample drawn from the Labour Force Survey. Approximately 15,000 households, comprising of roughly 31,000 individuals aged 16 and over, were interviewed. The second panel was initiated in 1996 and the third one in 1999. The number of households and individuals involved in the later panels were similar to those in the first panel. As every subsequent panel of SLID is administered so that it overlaps the previous one for a period of three years, the actual combined sample is considerably large.

The target population for SLID are Canadian residents, excluding those living on the reserves and in the Yukon and the Northwest Territories, full-time members of the armed forces and institutionalized persons. Although SLID is a longitudinal survey primarily designed to capture the dynamics of labor market activities and the

well-being of individuals and households living in Canada, it also contains an extensive set of individual-background variables which, along with the large sample size, makes it a convenient source of data for a wide range of empirical studies.

For this paper, we have extracted a sample of males between 26 and 65 years of age from the 2000 wave of SLID. Due to the overlap of the second and third panel of SLID in 2000, we had about 70,000 individuals to begin with. After imposing age and gender restrictions and excluding all first-generation immigrants, our sample consists of 11,983 males.

The restrictions on the composition of the sample are deliberate. At the age of 26, most respondents have already completed their education and there is, therefore, no need to account for censoring. Moreover, targeting only the male population allows us to concentrate fully on the effects of family background and leave out, for the time being, potential effects of the gender. The 2000 wave of SLID was chosen mainly because it is currently the source of the most recent data for Canada and for the large sample size it provides.

2.2 *Schooling Attainment: Second-Generation Immigrants vs. Natives*

In order to differentiate the second-generation immigrants from the native Canadians, we have employed two definitions. According to **definition 1**, anyone for whom at least one parent was foreign-born is defined a second-generation immigrant. **Definition 2** is stricter as it requires that both parents were foreign-born for an individual to be considered a second-generation immigrant. As can be seen in Table 1, our sample contains approximately 18 percent of the second-generation

immigrants by definition 1 and about 9 percent of the definition 2 second-generation immigrants.[1]

The educational attainments of the natives Canadians as well as both categories of second-generation immigrants are summarized in Table 2. We distinguish five levels of schooling: (1) no or elementary education, (2) less than high school, (3) high school, (4) some post-secondary education and (5) university degree. For all three groups, the most represented schooling category is the post-secondary education. This is primarily due to its construction: the category comprises essentially every form of education that can possibly fall between high-school diploma and bachelor's degree.

Regarding the differences in the distributions of schooling attainments between the subsamples, native Canadians, in comparison with any of the two groups of immigrants' children we consider, are more represented in the lower levels of education. This is especially true for the first two lowest categories. For example, there are around 13 percent of natives in our sample who attended but never graduated from high school while there are only 9 percent of high school dropouts among second-generation immigrants according to definition 1 and 8 percent among second-generation immigrants according to definition 2. Furthermore, although natives match second-generation immigrants in the high school and the post-secondary education levels, they are underrepresented in the highest educational level. In the whole sample, only about 18 percent of them have a university degree, compared to over 26 percent of university graduates among second-generation immigrants.

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[1] All tables we refer to in the text can be found in appendix.

So far, our data reveal quite an interesting pattern which is in contrast with the conclusions of most of the studies we have referred to. The second-generation immigrants actually appear to be better rather than worse off in terms of educational attainment than similarly-aged native Canadians, regardless of which definition of a second-generation immigrant we apply. Our findings, however, clearly coincide with Worswick's (2001) conclusion that by the age of thirteen immigrant children are no worse at school than the children of Canadian-born parents. In other words, if there exist any adverse effects on one's schooling due to being a second-generation immigrant, they seem to vanish at quite a young age.

2.3 *Parental Education and Other Observable Characteristics*

For the individuals in our sample, we have information on the highest level of education attained by both of their parents. We also know whether they belong to a visible minority group (about 1.4 percent of the sample), in which province they reside and whether their mother's tongue is English or French (about 5 percent of the individuals in our sample stated that their first language in neither French nor English).

Furthermore, we control for ethnic background by employing a set of indicator variables. We define 10 major ethnic groups: English, French, German, Scottish, Italian, Irish, Ukrainian, Dutch, Polish and Canadian. These ethnic groups altogether represent about 93 percent of the sample while the remaining 7 percent are grouped as the *other ethnicity*. The respondents who consider themselves Canadians account

for about 26 percent of the whole sample and two other major ethnic categories, English and French, represent about 19 and 16 percent, respectively.[2]

Unarguably, parental background, and the educational attainment of parents in particular, is commonly regarded as one of the leading determinants of child's schooling attainment. Tables 3 and 4 allow us to compare the distributions of father's and mother's education between native Canadians and the two definitions of second-generation immigrants.[3]

Although there are some variations across the two types of second-generation immigrants, the overall pattern is quite clear: the fathers of second-generation immigrants do not differ substantially from the fathers of native Canadians as far as schooling is concerned. Fathers of the second-generation immigrants seem to be, on average, slightly more represented in higher educational levels. However, the largest fraction of fathers, both of the natives and of the second-generation immigrants, still has only below high school education.[4]

As for the mother's education, there seems to be virtually no difference between the schooling distributions of the mothers of natives and that of the mothers of second-generation immigrants. About 60 percent of mothers have less than high school and around 15 percent of them achieved some post-secondary education. Overall, it appears that Canadian immigration policy, at least over the period we consider in this study, succeeded in attracting immigrants who have not been inferior in terms of education to the native population.

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[2] For an overview of the sample composition see Table 1 in appendix.

[3] Father's as well as mother's education is defined in terms of the highest level attained. As can be seen in Tables 3 and 4, the same five categories applied to the children apply for their parents as well.

[4] More specifically: 64 percent of the fathers of natives, 57 percent of the fathers of the definition-one second-generation immigrants and 61 percent of the fathers of the definition-two second-generation immigrants.

3 Model Specification and Methodology

In order to analyze educational attainment, we estimate an ordered discrete-choice model based on a simple wealth-maximizing model proposed by Cameron and Heckman (1998). In this framework, the optimal level of schooling for an individual is the solution to the optimization problem

$$\max_j [r(j) - c(j \mid \mathbf{x})], \quad j = 1, 2, ..., S$$

where $r(j)$ is the discounted lifetime return to the *j*-th level of schooling, and $c(j \mid \mathbf{x})$ represents the costs of acquiring this particular level of education, given a vector of observable individual background characteristics, $\mathbf{x}$, which are invariant across all schooling levels.

Under fairly general restrictions imposed on the return and the cost functions, Cameron and Heckman showed that at the optimal level of schooling, s, the resulting net return will always be positive and at least as large as the net returns at $s-1$ or $s+1$. That is,

$$\begin{aligned} r(s) - c(s \mid \mathbf{x}) &\geq r(s-1) - c(s-1 \mid \mathbf{x}) \\ r(s) - c(s \mid \mathbf{x}) &\geq r(s+1) - c(s+1 \mid \mathbf{x}) \end{aligned} \tag{1}$$

To make the concept operational, the cost function is assumed to be of the form:

$$c(s \mid \mathbf{x}) = c(s) \cdot \exp(-\mathbf{x}\boldsymbol{\beta} + u) \tag{2}$$

where u is a stochastic term (assumed to be independent of $\mathbf{x}$) which represents unobserved individual-specific factors that shift the return relative to the cost.

The optimality conditions (1) and the functional form of the cost function proposed in (2) lead to the following restrictions on u at the optimum:

$$h(s)+\mathbf{x}\boldsymbol{\beta} \;\le\; u \;\le\; h(s-1)+\mathbf{x}\boldsymbol{\beta} \tag{3}$$

where

$$h(s)=\log\left[\frac{r(s+1)-r(s)}{c(s+1)-c(s)}\right]$$

and $h(s-1)$ is defined in the same manner. Furthermore, the inequality in (3) allows us to formalize schooling transitions as an ordered-choice model:

$$\begin{aligned} s &= 1 \quad \text{if} \quad h(1)+\mathbf{x}\boldsymbol{\beta} < u \le h(0)+\mathbf{x}\boldsymbol{\beta} \\ &= 2 \quad \text{if} \quad h(2)+\mathbf{x}\boldsymbol{\beta} < u \le h(1)+\mathbf{x}\boldsymbol{\beta} \\ &\vdots \\ &= S \quad \text{if} \quad h(S)+\mathbf{x}\boldsymbol{\beta} < u \le h(S-1)+\mathbf{x}\boldsymbol{\beta} \end{aligned}$$

and formulate the probability that an individual attains the level of schooling s, conditional on a set of individual-specific covariates $\mathbf{x}$, as

$$\Pr(s\,|\,\mathbf{x}) \;=\; \Pr\left[h(s)+\mathbf{x}\boldsymbol{\beta} \;<\; u \;\le\; h(s-1)+\mathbf{x}\boldsymbol{\beta}\right].$$

Assuming further that u follows a standard normal distribution, we use a standard ordered-probit model to estimate the coefficients in $\boldsymbol{\beta}$ along with the parameters $h(s-1)$ and $h(s)$. Under the normality assumption, we can write:

$$\Pr(s\,|\,\mathbf{x}) \;=\; \Phi\left[h(s-1)+\mathbf{x}\boldsymbol{\beta}\right] \;-\; \Phi\left[h(s)+\mathbf{x}\boldsymbol{\beta}\right], \quad s=1,2,...,S$$

where Φ denotes the standard normal cumulative distribution function.

Indeed, we are ultimately interested in the marginal effects of the variables in $\mathbf{x}$ which can be obtained in the usual fashion. The covariate vector $\mathbf{x}$ includes an indicator for second-generation immigrant status, the educational attainments of parents and indicators for foreign mother tongue, visible minority status, ethnic background and the province of residence.

4 Estimation Results

This section summarizes the results contained in Tables 5 to 8. The focus is on the estimates of the marginal effects of the second-generation immigrant dummy. These marginal effects, or differences in the probability of obtaining a schooling level s depending on the value of the second-generation dummy, show the effects of being a child of immigrant parents on the final level of schooling attainment.

The first sets of estimation results, presented in Tables 5 and 6, are based on different specifications of the vector of observable characteristics, $\mathbf{x}$. Model (1) contains only the indicator for the second-generation-immigrant status, Model (2) also controls for the education of parents, Model (3) further includes an indicator for the visible minority status, and in Model (4) we add a set of ethnic background variables. The reason for adding control variables sequentially is to illustrate their respective contributions to the differences in schooling between native Canadians and immigrants' children. Finally, we estimate an ordered-probit model with the full set of covariates which includes mother's and father's highest level of education and the indicators for the second-generation immigrant status, visible minority, ethnic background, mother's tongue and indicators for the province of residence. Each of these models is estimated twice in order to account for our two distinct definitions of second-generation immigrants and the results are presented in Tables 7 and 8.

The estimates of the marginal effects as reported in Tables 7 and 8 clearly indicate that being a definition 1 second-generation immigrant lowers the probabilities of attaining the three lowest levels of education, while it increases the probabilities of obtaining the highest two. This suggests that children with at least one foreign-born parent tend to acquire more schooling than children of Canadian-born parents. Moreover, these results are overall significant and also hold across both definitions of second-generation immigrants.

Regarding the effects of the other individual-background characteristics on the schooling probabilities, the education of the parents appears, not surprisingly, to be an important and statistically significant factor that determines educational outcomes of children. As for the interplay between the second-generation immigrant status and parents' education, when the controls for father's and mother's schooling are added to the model, the absolute magnitude of the effect of being the definition 1 second-generation immigrant decreases (see Table 5) which suggests that a portion of the observed difference in schooling attainments between the second-generation immigrants and the natives can be attributed to differences in the education of parents. However, even after controlling for parents' education, significant differences in educational attainment between the native-born Canadians and the second-generation immigrants still remain.

The estimated marginal effects corresponding to the first-language dummy, or mother tongue, suggest that those with English or French as their first language acquire less schooling than those with other mother tongue. However, ethnic background does not seem to have much of an impact on the magnitude of the second-generation immigrant coefficient in absolute terms. Neither does it appear to

have an overall significant and robust effect on the schooling attainment probabilities.

Regarding the definition of second-generation immigrants, the results in Table 8 suggest that, when we use the stricter definition of second-generation immigrants which requires both parents to be born outside Canada, there are again significant differences between the children of immigrants and the natives. In fact, the estimated marginal effects are very similar to those we obtained using the first definition of second-generation immigrants. This result appears not to be due to the language skills, visible minority status or ethnicity, as controlling for the effects of these covariates does not change the result.

Overall, our results indicate that children of immigrants appear to be better off in terms of educational attainment than the children of Canadian-born parents. This contrasts the conclusions in Gang and Zimmermann (2000) and in Riphahn (2003), both based on German data, who found that second-generation immigrants acquire less education than their native counterparts, even after controlling for observable characteristics. It is likely that the difference in immigration and integration policies between the two countries can explain a portion of this difference. In Germany, a significant portion of the current stock of immigrants arrived in the 1960s and 1970s and is commonly referred to as *guest workers*. These were generally low-skilled workers from the Mediterranean countries, and, according to Zimmermann (1995), the German government never intended for these immigrants to stay (hence the term *guest workers*). Canadian immigration policies, on the other hand, have focused more on the long-term impacts of immigration and have most likely been able to attract more high-skilled workers than Germany.

While it is likely that differences in immigration policies can partly explain differences in results for Canada and Germany, it is also possible that changes in Canadian immigration policies over time can explain the higher schooling attainment among second-generation immigrants.[5] To determine if there appears to be any significant *cohort effects* in the effect of being a second-generation immigrant, we also estimated educational outcome models for different age cohorts.[6] Overall, the results we obtained from these models are quite similar to the ones we report in this paper.

There exist a number of possible explanations for the observed difference in schooling attainments between natives and second-generation immigrants. For instance, it may be that immigrants upon arriving in Canada find that their stock of human capital is not valued to the same extent as that of natives. That is, immigrants' credentials may not be fully recognized in the Canadian labor market. Consequently, immigrants may value host-country education more than native Canadians. Alternatively, immigrants might decide to migrate because of better opportunities offered in host country, not necessarily for themselves but for their offspring. Finally, one could also imagine that immigrants possess only limited knowledge of how local labor market work and that they also lack the necessary connections and networks needed to succeed. They may, therefore, put greater emphasis on formal education compare to their native counterparts, seeing it as a means of offsetting their disadvantage. While some of these explanations might be more plausible, it is

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[5] Green and Green (1999) provide an excellent survey of the changes in Canadian immigration policies from 1870 to the 1990s.

[6] More specifically, we estimated the same ordered-probit model with the full set of covariates as before for the whole sample but this time separately for four age cohorts of males: 26-35 years old (born 1965-74), 36-45 years old (born 1955-64), males aged 46-55 (born 1945-54) and 56-65 years old (born 1935-44).

difficult to empirically determine what factors are driving the observed difference in education attainments.

5 Summary and Conclusions

This paper focuses on the educational attainment of the children of immigrants (second-generation immigrants) in comparison with similarly-aged natives. Despite the clear policy relevance of how children of immigrants fare in the labor market, almost all existing research has focused on the adjustment process experienced by first-generation immigrants.

We examine the issue of schooling attainment of second-generation immigrants using a sample of Canadian males between 26 and 65 years of age extracted from the 2000 master file of the Survey of Labour and Income Dynamics. For the purpose of our analysis, we use two definitions of what constitute a second-generation immigrant. One definition regards an individual as a second-generation immigrant if at least one of his parents was born outside Canada. The other definition is narrower as it requires both parents to be foreign-born.

To discern the impact of being a second-generation immigrant on schooling attainment probabilities, we distinguish five levels of schooling and estimate a set of ordered-choice models in which we differentiate between the second-generation immigrants and similarly-aged native Canadians. In contrast with previous studies, our results suggest that the children of immigrants do better in terms of educational attainment than their native Canadian counterparts even after the effects of selected individual characteristics are controlled for.

Our results also suggest that the definition of second-generation immigrants does not matter. When we use a stricter definition of second-generation immigrants

(which requires both parents to be born outside Canada), there are still significant differences between second-generation immigrants and natives.

The results of this paper indicate that the Canadian immigration system has been able to favorably select immigrants whose children will do at least as well as children of Canadian-born parents. A similar result is also reported in Worswick (2001), who found that the school performance of immigrants' children by the age of 13 is no worse than that of the children of Canadian-born parents. Another indication that the long-term effects of immigration are favorable in Canada is the difference in our results compared with recent studies using Dutch and German data. These studies generally find that the educational attainment of second-generation immigrants is less than that of their native counterparts, and in Germany the difference prevails even after controlling for family characteristics. Given the difference in immigration and integration policies between Canada and Germany, where a relatively large fraction of immigrants are low-skilled workers who arrived during the 1960s and 1970s, the difference in results may not be too surprising.

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Table 1. *Composition of the sample*

Category	Fraction of the sample
Def. 1 second-gen. Immigrants	0.178
Def. 2 second-gen. Immigrants	0.092
Visible minority	0.014
Mother tongue other than Eng. or Fr.	0.052
Ethnic background	
1. English	0.191
2. French	0.159
3. German	0.058
4. Scottish	0.082
5. Italian	0.015
6. Irish	0.092
7. Ukrainian	0.028
8. Canadian	0.262
9. Dutch	0.025
10. Polish	0.017
11. Other	0.071

Table 2. *Distribution of education attained by sampled individuals*

	Native Canadians	Second-gen. immigrants by definition 1	Second-gen. immigrants by definition 2
1. No or elementary education	0.07	0.04	0.03
2. Less than high school	0.13	0.09	0.08
3. High school	0.18	0.15	0.15
4. Some post-secondary education	0.45	0.46	0.47
5. University degree	0.18	0.26	0.27

Table 3. *Distribution of education attained by fathers of sampled individuals*

	Native Canadians	Second-en. immigrants by definition 1	Second-gen. immigrants by definition 2
1. No or elementary education	0.42	0.38	0.45
2. Less than high school	0.22	0.19	0.16
3. High school	0.22	0.22	0.19
4. Some post-secondary education	0.06	0.10	0.11
5. University degree	0.08	0.10	0.09

Table 4. *Distribution of education attained by mothers of sampled individuals*

	Native Canadians	Second-gen. immigrants by definition 1	Second-gen. immigrants by definition 2
1. No or elementary education	0.37	0.36	0.44
2. Less than high school	0.23	0.19	0.18
3. High school	0.27	0.30	0.26
4. Some post-secondary education	0.10	0.09	0.07
5. University degree	0.04	0.06	0.05

Table 5. *Estimated marginal effects of being a definition 1 second-generation immigrant*

	Model 1	Model 2	Model 3	Model 4
Pr(s = none or elementary)	-0.032	-0.021	-0.020	-0.018
Pr(s = less than HS)	-0.041	-0.037	-0.036	-0.033
Pr(s = HS)	-0.033	-0.033	-0.032	-0.029
Pr(s = post-secondary)	0.019	0.023	0.022	0.021
Pr(s = university degree)	0.087	0.069	0.067	0.059

All marginal effects are highly significant (p-values < 0.001)

Table 6. *Estimated marginal effects of being a definition 2 second-generation immigrant*

	Model 1	Model 2	Model 3	Model 4
Pr(s = none or elementary)	-0.031	-0.025	-0.024	-0.022
Pr(s = less than HS)	-0.040	-0.047	-0.046	-0.041
Pr(s = HS)	-0.033	-0.045	-0.044	-0.038
Pr(s = post-secondary)	0.016	0.022	0.022	0.021
Pr(s = university degree)	0.088	0.096	0.092	0.080

All marginal effects are highly significant (p-values < 0.001)

Covariates added sequentially as follows:

Model 1 = Second generation immigrant indicator
Model 2 = Model 1 + mother's education + father's education
Model 3 = Model 2 + visible minority indicator
Model 4 = Model 3 + ethnicity indicators

Table 7. *Estimated marginal effects of being a definition 1 second-generation immigrant and other covariates*

Est. marginal effect on	Pr(none or element.)		Pr(less than high sch.)		Pr(high sch.)		Pr(post-secondary)		Pr(university)	
Def. 1 second-gen. immigrant	-0.016	(0.000)	-0.028	(0.000)	-0.025	(0.000)	0.019	(0.000)	0.050	(0.000)
Father's educ.	-0.022	(0.000)	-0.037	(0.000)	-0.030	(0.000)	0.030	(0.000)	0.060	(0.000)
Mother's educ.	-0.021	(0.000)	-0.035	(0.000)	-0.028	(0.000)	0.028	(0.000)	0.056	(0.000)
Visible minority	-0.016	(0.057)	-0.030	(0.091)	-0.028	(0.133)	0.017	(0.001)	0.058	(0.152)
Eng./Fr. first language	0.013	(0.010)	0.024	(0.017)	0.021	(0.029)	-0.015	(0.001)	-0.044	(0.034)
Other ethnic	0.003	(0.549)	0.005	(0.541)	0.004	(0.534)	-0.005	(0.556)	-0.009	(0.533)
English	-0.001	(0.792)	-0.002	(0.793)	-0.001	(0.794)	0.001	(0.791)	0.003	(0.794)
French	-0.004	(0.306)	-0.007	(0.315)	-0.005	(0.322)	0.005	(0.295)	0.011	(0.324)
German	0.003	(0.608)	0.005	(0.601)	0.004	(0.595)	-0.004	(0.615)	-0.008	(0.594)
Scottish	-0.006	(0.150)	-0.011	(0.166)	-0.009	(0.179)	0.008	(0.126)	0.018	(0.184)
Italian	-0.023	(0.000)	-0.044	(0.001)	-0.043	(0.005)	0.019	(0.000)	0.092	(0.009)
Irish	-0.011	(0.006)	-0.019	(0.010)	-0.016	(0.014)	0.013	(0.002)	0.033	(0.015)
Ukrainian	-0.010	(0.123)	-0.017	(0.148)	-0.015	(0.172)	0.012	(0.072)	0.030	(0.181)
Dutch	0.007	(0.400)	0.011	(0.381)	0.009	(0.360)	-0.010	(0.416)	-0.017	(0.357)
Polish	-0.019	(0.002)	-0.036	(0.007)	-0.034	(0.018)	0.018	(0.000)	0.070	(0.026)

P-values in the parentheses. The province of residence is controlled for but, for the sake of brevity, we do not report corresponding estimates.

Table 8. *Estimated marginal effects of being a definition 2 second-generation immigrant and other covariates*

Est. marginal effect on	Pr(none or element.)		Pr(less than high sch.)		Pr(high sch.)		Pr(post-secondary)		Pr(university)	
Def. 1 second-gen. immigrant	-0.018	(0.000)	-0.033	(0.000)	-0.030	(0.000)	0.019	(0.000)	0.062	(0.001)
Father's educ.	-0.022	(0.000)	-0.037	(0.000)	-0.030	(0.000)	0.030	(0.000)	0.060	(0.000)
Mother's educ.	-0.021	(0.000)	-0.035	(0.000)	-0.028	(0.000)	0.028	(0.000)	0.056	(0.000)
Visible minority	-0.016	(0.059)	-0.030	(0.092)	-0.028	(0.135)	0.017	(0.001)	0.057	(0.154)
Eng./Fr. first language	0.011	(0.036)	0.020	(0.050)	0.018	(0.070)	-0.014	(0.011)	-0.036	(0.077)
Other ethnic	0.003	(0.564)	0.005	(0.557)	0.004	(0.550)	-0.004	(0.571)	-0.008	(0.549)
English	-0.001	(0.769)	-0.002	(0.770)	-0.002	(0.772)	0.002	(0.768)	0.003	(0.772)
French	-0.003	(0.361)	-0.006	(0.369)	-0.005	(0.375)	0.005	(0.351)	0.010	(0.377)
German	0.003	(0.590)	0.005	(0.582)	0.004	(0.575)	-0.004	(0.597)	-0.008	(0.574)
Scottish	-0.006	(0.136)	-0.011	(0.153)	-0.010	(0.165)	0.008	(0.112)	0.019	(0.170)
Italian	-0.022	(0.000)	-0.044	(0.002)	-0.042	(0.007)	0.019	(0.000)	0.089	(0.012)
Irish	-0.011	(0.005)	-0.019	(0.008)	-0.017	(0.012)	0.013	(0.001)	0.034	(0.014)
Ukrainian	-0.009	(0.137)	-0.016	(0.163)	-0.014	(0.186)	0.011	(0.086)	0.029	(0.197)
Dutch	0.007	(0.423)	0.011	(0.406)	0.008	(0.386)	-0.009	(0.439)	-0.016	(0.383)
Polish	-0.020	(0.001)	-0.038	(0.004)	-0.036	(0.013)	0.018	(0.000)	0.076	(0.020)

P-values in the parentheses. The province of residence is controlled for but, for the sake of brevity, we do not report corresponding estimates.