

Why Do So Many Children of Immigrants Attend University? Evidence for Canada

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ABSTRACT

The children of Canadian immigrants from some source regions, Asia, Africa and China in particular, attend university at extraordinarily high rates. Most others participate at lower rates, but still compare favourably with non-immigrant Canadians. In this paper the Youth in Transition Survey is used to analyse the role of various background factors on these outcomes, including parental education, family income, parental expectations, high school grades, and PISA test scores. To some degree, the children of immigrants go to university because they have higher levels of the background attributes associated with university attendance, parental education in particular. But by allowing these effects to vary by immigrant group, this research finds that the high immigrant university participation rates are largely driven by those possessing “unfavourable” characteristics (low levels of parental education in particular) attending university *in spite of* these apparent disadvantages.

Keywords: First-generation, Second-generation, Post-secondary education participation, Canada

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“No one who rises before dawn three hundred sixty days a year fails to make his family rich.”¹

“Nothing comes worthier than being well-educated.”²

I. Introduction and Background

In previous work, Finnie and Mueller (2009, 2010) showed that the children of immigrants attend post-secondary education (PSE), especially university, at significantly higher rates than their non-immigrant counterparts. This holds for both “first generation” children, who came to Canada as immigrants themselves (by the 15 years of age in our data), and “second generation” children, who are defined as those born in Canada to parents who came as immigrants. Overall, university participation rates are 57 percent for first generation immigrants, and 54 percent for second generation immigrants, compared to 38 percent for the non-immigrant population.

This result is perhaps not surprising given the increased emphasis that Canadian immigration policy has placed on attracting highly educated immigrants, coupled with the fact that education tends to be passed from parents to children. Indeed, this set of relationships – high educational attainment by the children of immigrants related to the relatively high schooling levels held by their parents, in turn linked to the Canadian immigration system – has become part of the story of Canadian immigration.

And it appears to be a “good news” story, since it contrasts sharply with the experiences of most other Western countries, whose children of immigrants are not doing nearly as well in these terms (or others). The finding also stands in stark contrast to most of the recent literature which shows that recent Canadian immigrants are not doing as well in the Canadian labour market compared to both previous cohorts of immigrants or to the non-immigrant population.³

¹ Malcolm Gladwell in *Outliers* explaining how Chinese persistence stems from its centuries-old wet-rice cultivation techniques.

² An old Chinese saying.

³ See, for example, Abbott and Beach (1993), Aydemir, Chen and Corak (2008), Aydemir and Skuterud (2005), Baker and Benjamin (1994), Bloom, Grenier and Gunderson (1995), Broudarbat and Lemieux (2010), Frenette and Morissette (2005), Grant (1999), Hou (2010), Li (2001), McDonald and Worswick (1997, 1998), Meng (1987), and

What is perhaps more surprising is the range of outcomes among different immigrant groups. For example, by the age of 21, over 98 percent of first generation Chinese had attended some form of PSE, with 88 percent having attended at least some university. These numbers go down for the second-generation Chinese, but only slightly, to 94 percent and 82 percent, respectively. Certain other immigrant groups, namely those from Africa and East Asia, also have high participation rates (in the 60-80 percent range for university attendance). Those from Europe and “the Anglosphere” have lower rates than these, but still go to university at higher rates than the non-immigrant population. Only those from Central and Latin America (including the Caribbean) tend to have lower participation rates than the non-immigrant population.⁴

Furthermore, these significant “immigrant effects” hold for both first and second immigrant generations even after controlling for a variety of background influences, including family income, parental education and parental expectations regarding the desired level of education for their child, as well as academic preparation as measured by high school grades and PISA test scores. These latter results began to call into question the “immigrant story” noted above: after all, if higher levels of parental education are the source of their children’s educational attainment, how could it be that substantial differences remain even after controlling for these factors, along with other potential influences?

To explore these issues further, we employ an access model with a flexible functional form, whereby the effects of key determinants of PSE attendance – family income, parental education, parental aspirations for their children’s schooling, high school grades, and PISA reading scores – are allowed to vary by immigrant source region. This contrasts to previous work, which has largely constrained these effects to be the same across all immigrant and non-immigrant groups, even though there is no theoretical reason to believe that the effects of (say) parental education should be the same across groups.

This leads to the main finding of the paper that although the children of immigrants go to university in higher numbers *to some degree* because they have higher levels of the background attributes associated with university attendance, parental education in particular, the high immigrant university participation rates are largely driven by those possessing “unfavourable”

Picot (2008). Also, see Reitz (2007a,b) and Picot and Hou (2011b) for comprehensive reviews of the factors behind this decline.

⁴ See Picot and Hou (2011a) for a recent and detailed review of the educational attainment literature by source region.

characteristics (lower levels of parental education in particular) attending university *in spite of* these apparent disadvantages. They also tend to attend university at higher rates even when the attributes are favourable (higher levels of parental education, higher family income, etc.), but the differences between the children of immigrants and non-immigrants with similar characteristics here are not so great.

Interestingly, these patterns even hold for high school grades and (even more so) PISA scores. It's not so much that immigrant children get high grades in high school and do well on their PISA scores (in fact they actually tend to do worse on the latter), thus ushering them into university spots, but that they tend to go to university even when their performance is relatively weak. Somehow these disadvantages are overcome, or the idea of going to university is otherwise so ingrained in these youth by their immigrant parents, that they find the means to attend even when, statistically speaking, they should not.

The answer as to why the children of immigrants go to university at such high rates thus reverts to at least a significant degree to one with which economists (among others) tend to be uncomfortable – “cultural differences”. Or, in more neutral terms these differences must be attributed to “unobservable (or at least unmeasured) factors” – despite the unprecedented richness of the Youth in Transition Survey data employed here. Further research is warranted.

II. Literature⁵

In Canada, evidence from Kučera (2008) has shown that second generation immigrants have higher levels of educational attainment relative to those born to Canadian-born parents, even after controlling a number of individual and family characteristics. However, he does not disaggregate by source region, nor does his General Social Survey data contain the same rich background variables as some other data sets.

Abada, Hou and Ram (2008) use the 2002 Ethnic Diversity Survey to find higher educational attainment among second-generation immigrants compared to non-immigrants, even after controlling for a variety of other influencing factors. They also include parental region of origin and find that the children of Chinese and Indian immigrants, in particular, attain the highest levels of university education, while those of Portuguese ancestry have low university

⁵ See Finnie and Mueller (2009, 2010) and Picot and Hou (2011b) for a more general review of the immigration literature. Here the focus is on the work most pertinent to the issues addressed in this paper.

completion rates. Indeed, Bonikowska and Hou (2011) find that much of the increase in the positive completion rate gap between the 1.5 generation (those who arrived before the age of 12) and the third-or-higher generation can be explained by the change in the source countries, especially Asia, where the propensity to send children to university is higher than both the third generation or higher and immigrants from other source regions. In a similar fashion to the current paper, these studies focus on the children of immigrants, including the 1.5 generation.

Thiessen (2009) uses the Youth in Transition Survey and disaggregates his sample into first generation immigrants, and second generation or above based on the ethnicity of the respondents. He discovers that those with East Asian ethnicity (i.e., Korean, Chinese or Japanese heritage) had the highest probability of attending university, regardless of whether they were born in Canada or abroad.

Researchers from Western Europe are also taking more interest in these issues as large-scale immigration is relatively new to many of these countries, and immigrant outcomes can vary between host countries, source regions, and time periods.⁶ Indeed, the international literature also reveals a great deal of heterogeneity in educational outcomes by source region, for both first and second generation immigrants (e.g., Chiswick and DebBurman (2004) for the United States, van Ours and Veenman (2003, 2006) for the Netherlands, Riphahn (2003) for Germany, Algan, et al. (2010) for Germany, France and the UK, etc.) Some groups of immigrants have better educational outcomes than the non-immigrant population, whereas others do not fare so well, even after controlling for important family and other background factors.

A largely overlooked phenomenon in the economics literature is the role that parental aspirations play in the educational attainment of their children. An increasing body of sociological literature, however, discusses the importance of parental aspirations. In their review, Heath et al. (2008) discuss parental aspirations for their children's education among immigrants in Western Europe. These aspirations tend to be higher than for non-immigrants, but this differs considerably among immigrant groups. One explanation for these higher aspirations is known as the family mobilization thesis, whereby the success of children is an integral part of the initial migration decision. Parental aspirations may also be based on the relative standing of the parents

⁶ According to Card and Schmidt (2003:707): "Despite the rising numbers of second generation immigrants in Europe, there has been almost no systematic research on their successes or failures in integrating into their host societies."

in their country of origin, rather than on their status in the country of destination. Of course, these aspirations must be transferred to their children. For example, based on his review of the evidence, Modood (2004) suggests that what drives the educational success of the British South Asian and Chinese communities is that parents are able to get their children to internalize high educational ambitions and to enforce appropriate behaviour, despite their relatively disadvantaged status in British society.

Empirical evidence for Canada suggests a similar pattern. Krahn and Taylor (2005) use the first cycle of the YITS-A and find that 15-year old visible minority immigrants (VMIs) have university aspirations that are much higher than those of the Canadian-born non-visible minority population (CBNVMs), and these aspirations do not vary much with parental income. In particular, it is those from lower income families that have the highest relative aspirations. For example, only 43 percent of CBNVMs from households with incomes below \$30,000 aspire to a university education, compared to 75 percent for VMIs. For households with incomes in excess of \$90,000, 70 percent of CBNVMs have university aspirations compared to 78 percent of VMIs. Thus, VMIs have a high, but relatively flat income-aspirations profile compared to the CBNVM group. Stated differently, aspirations amongst VMIs are not as dependent on income. As noted earlier, Finnie and Mueller (2009, 2010) show that region of origin effects still persist, even after controlling for parental aspirations.

In recent related work, Sweet, et al. (2010) investigate the pathways taken by the 2000 cohort of Toronto high school students by merging administrative data from the Toronto District School Board, and applications data from the Ontario Universities Application Centre (OUAC) and the Ontario College Applications Service (OCAC). Using a multinomial logit model with four outcomes – high school dropout, high school graduate, confirmed acceptance at a college, and confirmed university acceptance – they find many immigrant region-of-origin differences, especially within the university pathway which those from East Asia (including China) confirming university attendance in much higher proportions than those from the Caribbean, even when controlling for a variety of other factors.

III. Methodology and Data

The Econometric Model

Access to PSE is modeled as a function of different sets of influences including, most importantly for the purposes of this paper, the individual's immigrant status and the region of origin of the individual (or their parents). Starting with the principal demographic and family background variables typically included in such models, the model is then supplemented with the more comprehensive set of regressors representing the other influences captured in the Youth in Transition Survey, Cohort A or YITS-A (high school grades, PISA reading scores, high school engagement, etc.).

More specifically, the model may be expressed as follows:

$$Y = X_1\beta_1 + X_2\beta_2 + X_3\beta_3 + \mu$$

where Y represents the access measures of interest (i.e., no PSE, college or trade school, university), the X_i are the vectors of covariates that influence Y , the β_i are the coefficients associated with each set of X , and μ is a stochastic error term.

The vector X_1 consists of the immigrant identifiers alone. These come in two forms. In the first, the youth are classified solely by their broad immigrant status: first generation immigrant (or rather, the "1.5 generation" given their relatively early arrival in the country), second generation immigrant, or non-immigrant. This specification allows one to capture the broad differences between the PSE experiences of immigrant and non-immigrant youth. In the second specification, the region of birth of the respondent (for first generation immigrants), or the region of birth of the individual's parents (for second generation immigrants) are substituted for the basic measures. This allows one to model the PSE experiences of youth from different geographic regions.

The vector X_1 also includes conventional demographic and family background variables such as family income, parental education and family type, as well as urban-rural residence, province, and minority language indicators. These variables are added to each of the models corresponding to the two different sets of immigrant identifiers described above to act as controls.

The next vector of regressors, X_2 , contains an additional set of characteristics that influence PSE access, which differs across the various models discussed in this paper. In one specification, the variables pertaining to the individual's academic preparation – including the Programme of International Student Assessment (PISA) reading score and high school grades (overall average and that gained in math, science and English or French). In addition, a variable for parental aspirations is added, measuring the highest level of education that parents desire for their children.

Throughout the paper by adding a vector of interactions, X_3 , is added where one variable from X_2 is interacted with the immigrant indicators. This allows the impact of that variable to vary across the immigrant groups.

The YITS Data, Samples Used, and Definition of Access to PSE

The data used in the analysis are taken from the Youth in Transition Survey – Reading or A Cohort (generally known as the YITS-A). The YITS-A is ideal for this application since it follows all young people born in 1984 through their high school years and beyond, and contains a wealth of information on the young people, their parents, and their high schools.

These data consist of six cycles (corresponding to the interviews that have been undertaken), The first interview was conducted in 2000, and includes interviews not only with the respondents (who are age 15 at the time), but also with their parents and high school officials, and also contains the youths' reading scores from the PISA (an international standardized test in which Canada participated). Follow-up surveys were carried out with respondents (but not parents or school officials) in 2002, 2004, 2006, 2008 and 2010. For the purposes of this paper only those individuals who responded to each of the first four cycles are included. The rationale for this is individuals in the sample are 21 years of age, an age by which most people who pursue a PSE have already begun to do so. Secondly, by using the fourth cycle – instead of the fifth or sixth cycles – a larger sample size is possible owing to attrition from cycle to cycle. This is important for the purposes of this study as it is attempting to define geographic regions of origin as finely as possible.⁷

⁷ Other data (including the older YITS-B cohort) show that access rates change only slowly after this age. Therefore, the fourth cycle is the optimal point for the analysis of access without the loss of sample size from using the last cycle of the YITS.

The parental questionnaire asks the country of birth of the student and both parents or guardians. A first generation immigrant is generally defined as someone born outside of Canada but who subsequently moved to the country and became a citizen or was a landed immigrant. They must have arrived by the time of the first survey (i.e., age 15), although citizenship or landed immigrant status may have occurred at any point before Cycle 4. A second generation immigrant is defined as one who was born in Canada, but who had at least one parent who was born outside of Canada. All other individuals are treated as nonimmigrants or third generation immigrants and higher.

The YITS data also allow one to identify the particular country of birth of the respondent and their parents, but issues of sample size mean that a country-by-country analysis is impractical. Instead, countries of origin are combined into nine groups: the “Anglosphere” (all Western English-speaking countries), the Americas (excluding the U.S.), Africa, China (which includes Hong Kong and Taiwan for the purposes of this analysis), East and Southeast Asia (including Japan and Viet Nam), Other Asia (including India and Pakistan), Western and North Europe, Southern and Eastern Europe, and Others. A full listing of the countries included in these categories is contained in Appendix Table A1. These groupings correspond to those used in previous research (Finnie and Mueller, 2009, 2010) and were determined partly by geographical proximity, partly by preliminary analysis of PSE outcomes whereby similar countries were grouped together and partly by the sample sizes available.

Non-Canadian citizens or non-landed immigrants, those with unknown immigration status, those who were still continuing in high school at Cycle 4, those who were deceased by Cycle 4, and those with missing values of the variables used in the models are deleted from the samples. Because the immigration status variable was constructed from responses to the parental questionnaire, only those individuals whose parents responded were included. The sample used in the most of the analysis contains 15,019 observations or about 86.4 percent of the initial Cycle 4 total.⁸

It should be noted that the analysis has a very specific cohort interpretation – those youth who were 15 years-old in 1999. The results that follow will not, therefore, be directly

⁸ Since there are missing observations for the Grades and PISA reading scores, the number of observations used when these variables are not included increases to 16,214. A full accounting of the observations dropped from the sample is contained in Childs, Finnie, and Mueller (2012), Table A2.

comparable to other studies which use census (mostly) and other data to look at broader groups of immigrants and non-immigrants. The “1.5 generation” immigrants represent a specific group – those who arrived in Canada at some point after their birth in 1984 to 1999 and attending a Canadian high school at age 15 (to be included in the YITS). Our “second generation immigrants” also include individuals born in the same year (1984) to at least one immigrant parent, but who were themselves born in Canada. Finally, the “non-immigrant” population includes individuals of the same age (birth in 1984) who had no immigrant parents.⁹ The analysis must only be interpreted in this specific context.

The dependent variable used in the study is constructed by examining each PSE program that the individual participated in up to the Cycle 4 interview. These programs are separated into college (including trade school) or university (with university arbitrarily classified as being the “higher” of the two). Access is defined as having “touched” either of these types of programs, regardless of whether these studies were completed, and then compared to the “baseline” outcome of not attending PSE at any point before the Cycle 4 interview. “Persistence” is, in comparison, typically defined as the subsequent process of moving from one year to another through PSE, on to graduation, but represents another distinct topic, which in the current research is not as well suited to the fourth cycle of the YITS-A data since the samples capture individuals at a maximum age of 21, when persistence is still very much an on-going process.¹⁰ Educational attainment is yet another concept, typically referring to final schooling levels, and is again not the subject of the analysis, for similar reasons.

Both college and university attendance are addressed in the analysis (the former defined to include the small number of individuals in trade school). To do so, the multinomial logit approach previously used in Finnie and Mueller (2008a,b, 2009, 2010) is employed. This approach treats the particular level of PSE as a jointly determined process along with the decision to go to PSE or not. This model represents both the conceptually and econometrically

⁹ All individuals included in the YITS must have passed other basic inclusion criteria, including having been enrolled in a Canadian high school at age 15. These general conditions and the specific sample inclusion criteria used in the analysis are described further below.

¹⁰ The companion YITS-B database is better suited to studying persistence, and has been used to do so in a number of recent papers (e.g., Finnie and Qiu, 2008a,b), but the YITS-B data are not as good for looking at immigrant outcomes as the YITS-A since the immigrant sample size numbers are not as large and the information available is not generally as rich as in the YITS-A.

correct treatment (which various tests have further verified).¹¹ This approach also yields, after the appropriate transformations into probability space are made, easily interpretable estimates which represent the effects of the explanatory variables on access to college, access to university, and the net effects on the two PSE outcomes relative to non-attendance.

IV. Results¹²

Characteristics of the Children of Immigrants

To better ascertain the different characteristics of immigrant groups vis-à-vis other immigrant groups and non-immigrants, the mean values of a number of immigrant determinants are included in Table 1.¹³ Family income is higher for the second generation than for the first for all but one source regions, in many cases significantly so. The exception is the Anglosphere where the first generation outperforms the second. Conversely, parental education tends to be higher among first generation immigrants, not surprising given the arrival of these immigrants during a period when increasing emphasis has been placed on education in Canadian immigration policy.

Mean high school grades are greater for all but one of the first generation immigrant groups compared to non-immigrants; much higher in some cases such as Africa, China, and Western and Northern Europe. The only exception is for those from the Americas, where mean high school grades are slightly lower than for non-immigrants. For second generation, those from China, Africa and Asia outperform all others in terms of grades.

PISA reading scores tend to be lower for first generation immigrants, although those from Southern and Eastern Europe and the Anglosphere do better than their non-immigrant counterparts. PISA scores generally improve for the second generation with all but those with family origins in the Americas and Southern and Eastern Europe performing better than non-immigrants.

¹¹ In preliminary estimates, for example, the model has been tested against an ordered logit (where university is considered to be above college), and found the multinomial logit is indeed appropriate. We also utilized logit and linear probability models to test the specifications below (with university attendance as the choice variable) and found that this did not change the substantive results in the paper.

¹² In Childs, Finnie and Mueller (2012) we also assess the effects of age at immigration and ethnic capital, but there are few statistically significant results.

¹³ A comprehensive list of descriptive statistics can be found in Childs, Finnie, Mueller (2012), Table A3.

Parental aspirations also vary by region of origin. These aspirations are based on a six-point scale (see below) where a value of one is if parents desire less than a high school education, and six is for two or more university degrees. Chinese parents have the highest aspirations for their children, at least in the first generation, with Africans, Asians also having very high aspirations. All immigrant groups, with the exception of Western and Northern Europe, register higher aspirations than the non-immigrant group. In the second generation, all immigrant groups have higher mean aspirations than non-immigrant parents, with Africa, China, East and Asia again having the highest means, although now the ranking within these four has changed with Africa moving to the top position.

Baseline Model Results

Table 2a presents the first set of results from the baseline multinomial logit model. The dependent variable is the three-way choice of attending college (including trade school), attending university, or not attending any PSE. In each case, the individual simply had to be enrolled (for any period of time) in college or university to be included as an attendee, this being the standard definition of access in the literature.

The first model includes some basic controls – including dummy variables for gender, rural high school location, and family structure (single mother, single, other, with two-parent families omitted) – as well as the immigrant indicators, starting with the overall first and second generation. The second model adds in parental income and parental education, two key background factors. The third model adds overall high school grades and the PISA reading score (both at age 15) to the second model. The potential endogeneity of grades and PSIA scores to access are discussed below. In general, comments are limited to the results for university attendance since this is where the largest and most statistically significant effects are found.

It should be noted that the decision to attend a certain type of PSE is very fluid. For example, although those with higher levels of parental education are less likely to attend college than to attend university, there is still an increase in total PSE attendance rates (as evidenced by adding together the two marginal effects coefficients). In other words, higher incomes lead to more people attending PSE in general, but there is also movement from college and into university, and in this particular case, for example, the latter effect dominates. This is why it is important to look at the two effects together, but also explains why the stronger effects are

typically found for university attendance, which is the main reason it is focused on in the discussions below.

The general background effects are as expected. Females are more likely to attend university than males.¹⁴ Coming from a single-parent family tends to reduce the probability of attending university, but not college. Parental education exerts a strong positive influence of university access and a negative effect on college attendance. Family income also has a positive, but much smaller impact on university but no measurable effect on college access.

For the purposes of this paper, however, it is the immigrant variables that are of greatest interest. The final two rows in this table show that both first and second generation immigrants are more likely to attend university than non-immigrants, with those in the first generation more likely to attend than those in the second. And these differences are large: about 14 and 10 percentage points (in model 3) for first and second generation immigrants, respectively, compared to the non-immigrants in our sample. Furthermore, these gaps are not much lower than those found in the preceding columns, before the key parental education and family income variables are included: their higher rates do not seem to be explained by these influences, as is sometimes suggested.

Table 2b repeats this exercise disaggregating the immigrants by region of origin for both the first and second generation. Further, since a significant proportion of the second generation immigrant population does not have two parents from the same source region, separate dummy variables are coded to identify these individuals as follows: immigrant father and non-immigrant mother; immigrant mother and non-immigrant father, two immigrant parents from different regions; and single immigrant parent. To add further depth to the model, the first two categories are disaggregated into those where a parent comes from a high access region and all other regions. High access regions are defined as the three regions with the highest university access rates and include Africa, China and Other Asia.¹⁵

¹⁴ For reasons of parsimony, the coefficients on the control variables were omitted. See Childs, Finnie and Mueller (2012) for the full results from all regressions used in this paper.

¹⁵ High access regions are based on the university access rates as outlined in Childs, Finnie and Mueller (2012), Table A3. For example, for first generation students these rates are 64.0% for Africa, 88.6% for China, and 67.2% for Other Asia, For second generation students (where both parents are from the same region), these rates are 81.4%, 80.5%, and 69.1% for Africa, China and Other Asia, respectively.

Among first generation Canadians, those from Africa, China and Other Asia are much more likely than non-immigrants to attend university. For example, the estimate for the Chinese shows that this group is on average up to 49 percentage points more likely to attend university compared to non-immigrants, depending on the particular set of control variables included (parental education and family income in particular). The popularity of university education is also reflected by the fact that they are much less likely to attend college, only those from East and Southeast Asia also show a higher probability of attending the latter in all model specifications. Other regions have differences that are much smaller, in most cases not statistically different than those for non-immigrants, depending on the particular group and specification.

Among the second generation, this pattern is largely repeated, but now those children whose parents originate in East and Southeast Asia are more likely to go to university (but not college) as are second generation immigrants from Other Asia and South and East Europe. These results are largely in accord with those of Finnie and Mueller (2009, 2010) for Canada. Algan et al. (2010) also find that those from similar source regions (i.e., China, Africa, India and Pakistan) have higher educational attainment (as measured by age when the individuals left full-time education) than the non-immigrant groups in France, Germany, and the UK. Chiswick and DebBurman (2004) show higher levels of educational attainment in the United States for individuals from these countries, while showing lower educational attainment of those from Mexico and Southern Europe. Although different country groupings and dates are used in all cases, the similarity of these results is quite remarkable, especially given the differences in immigration and integration policies within Europe and between Europe, the United States and Canada.¹⁶

Among the second generation immigrants with single parents or from different regions of origin, other patterns emerge. Having an immigrant father and a non-immigrant mother increases

¹⁶ Algan, et al. (2010) briefly review immigration and integration policies in France, Germany and the United Kingdom. In general, immigration policy in these countries has largely been reactive and in response to political developments in the region or in former colonies (e.g., Algerian independence or the end of communism in Eastern Europe) and economic needs (e.g., guest workers in Germany). Canadian immigration policy, by contrast, has been largely proactive by accepting large numbers of immigrants based on their potential for success in Canada (e.g., education, language ability, etc.). According to Manning (2010, F1):

Very crudely, the UK has sought to celebrate and accommodate cultural and ethnic diversity, France has sought to deny its existence (at least in the public sphere) in the interest of 'equal treatment.' While both of these countries sought to make immigrants and their children full citizens, Germany did not, until recently, give citizenship to immigrants or their children who were not ethnically German.

the probability of attending university across all models. If the father originates in a high access region than this probability is higher still. For children of immigrant mothers and non-immigrant fathers, there is also a much higher probability of university attendance, but only if the mother comes from a high access region. Furthermore, this advantage becomes small and insignificant once high school grades and PISA reading scores are added to the model, suggested that this immigrant mother effect is working through these variables rather than directly. Having two parents from different source regions is also related to a higher probability of university attendance, whereas having a single immigrant parent is not.

Allowing the Effects to Vary by Immigrant Region

The models in Tables 2a and 2b constrain the parental income effects to be the same across all groups. The model is now expanded to include interactions of family income and parental education with immigrant status and region of origin, thus allowing these effects to vary.

The regression results from this exercise are presented in Appendix Table A2, but are difficult to interpret directly due to the mix of intercept and slope effects, especially with the non-linear multinomial logit model employed here.¹⁷ Therefore, also presented are the predicted probabilities of university attendance at the group-specific means for all variables included in the model based on the coefficients associated with each variable generated by the models, while allowing the probabilities to vary with each variable of interest, one at a time. These predicted probabilities are presented in Figures 1 and 2.

The profiles in Figure 1a show that in most cases the probability of university attendance increases in income, at least among first generation students. The exception to this rule is the Americas, which is slightly declining in income. What are striking are the profiles for Other Asia and China: both are flat, and high. University attendance does not appear to be dependent on family income, and rates are high everywhere. Thus, while it is expected that higher income families will have a somewhat higher probability of sending their children to university, all else equal, Chinese and Other Asians also have high predicted probabilities even at the low end of the

¹⁷ The results presented here do not include high school grades and PISA reading scores. Results from the exercise when these variables are included are found in Childs, Finnie, and Mueller (2012). There are few differences between the predictions with and without the grades and PISA scores included in the model. Additional results for second-generation immigrants who do not have two parents from the same source region are also not discussed here but are in the longer version of this paper.

income distribution. Compared to the non-immigrant population, almost all immigrant groups show relative high probabilities, *especially* at lower income levels.

Figure 1b replicates these results for second generation immigrants. Compared to the first generation, there is some convergence to the non-immigrant profile. For example, for the Chinese, the probability of university attendance is now increasing in parental income, while those whose parents were born in the Americas now have a profile increasing (and not decreasing) in parental income.

Figure 2 repeats this exercise for parental educational attainment. Here the profiles are much steeper, reflecting the greater importance of parental education compared to family income. Figure 2a shows that first generation immigrants from China, Other Asia, and Africa all have much higher probabilities at lower levels of parental education, before converging to the non-immigrant profile at the higher levels of education (at which point most go).

Among those from the Americas, the profile is also positive, but it slopes upward at a slower rate, and never converges to the profiles of other groups, including the non-immigrants: even when their parents have high education levels, these youth are not overly likely to attend university.

The Western and Northern European pattern shows the most variance between lower and higher levels of parental education, starting out with the lowest probabilities of attendance at the lowest level of education, growing rapidly in middle income groups, and then surpassing even the Chinese at the top education level. The other groups represent variants around these extremes.

The pattern for second generation immigrants in Figure 2b is also increasing in parental education, and the Chinese, Other Asians and Africans are still more likely to attend university at lower levels, but now they are joined by those from East and Southeast Asia. Those with parents born in the Americas have high participation rates compared to their first generation counterparts, but are still generally below most others, especially at high education levels. Western and North Europeans, as for the first generation, have the lowest probability of attending at the lowest education level, but this increases rapidly and becomes the largest at the highest level of education.

Preparation for University: High School Grades and PISA Reading Scores

Both high school grades and PISA reading scores have been shown to be strong correlates of university attendance (Finnie and Mueller, 2008a, 2008b). While it is likely that these variables are not exogenous to the model¹⁸ – students wanting to go to university will labour to get high grades and the knowledge they gain in doing so will also be reflected in PISA scores – they still provide predictive power. Furthermore, it is interesting to ask whether immigrant effects wash out when grades and PISA scores are included (i.e., do immigrants go because they get good grades and have high ability) or whether differences remain after controlling for these factors (i.e., do they go more even for given levels of grades and PISA scores). As with the case of family income and parental education, grades and PISA scores are interacted with the immigrant indicator variables to allow the effects of these variables to differ by immigrant source region.

Predicted probabilities of university access are plotted by high school grades (Figure 3) and by PISA scores (Figure 4) – both at age 15 – for each region of origin and for both immigrant generations.¹⁹ Appendix Table A3 contains the full regression results from which these predicted probabilities were generated.

Figure 3 shows that – not surprisingly – higher grades are associated with higher probabilities of university attendance. This result holds regardless of immigration generation or region of origin. There is also a sharp increase at about 60 percent, generally the minimum high school grade point average necessary to attend university.²⁰ Still, there are differences between immigrant groups.

In Figure 3a, those from China, Africa and Other Asia have much higher attendance probabilities at all grade levels, especially at the higher grades where access probabilities are close to one. But this is largely an artefact of the underlying distributions, most of these groups

¹⁸ To investigate this possibility that grades are endogenous, a model with grades as the dependent variable was estimated using OLS and various other specifications. The results from this exercise suggested that grades are indeed endogenous to the model and the immigrant effects work in part indirectly through grades to increase the probability of many immigrant groups attending university.

¹⁹ Graphs based on the same models but including grades in the last year of high school instead of grades at age 15 were also generated. There was no substantive differences in the results. The main difference is that some of those at grades below 60 at age 15 appear to have improved their grades by the final year in high school. See Childs, Finnie, and Mueller (2012).

²⁰ An inspection of the distribution of high school grades revealed that very few young people attending university had high school grades of less than 60 percent.

get the grades required to go to university (60 at a minimum), and their attendance rates rise sharply once that minimum is reached. Most interestingly, even those with grades in the minimally acceptable range (upwards of 60 percent) go at much higher rates than non-immigrants with similar grades.

For the second generation (Figure 3b), there is some convergence, as immigrant groups now tend towards the non-immigrant probabilities of attendance. Now, for example, those from the Americas have probabilities comparable to non-immigrants, while the higher profiles of the Chinese, Africans and Other Asian – while still high – are not as high as they were for the first generation groups. Another interesting result in both graphs is that some immigrants still access university despite having very low grades at age (i.e., below 60). As noted earlier, these individuals appear to improve their records by age 17, when grades are measured again, thus explaining this phenomenon, at least in terms of how they manage to get admitted.

Figure 4 again shows the predicted probabilities of university entry, but now the predicted probabilities are by PISA reading scores. Note that in Figure 4a the probability of university attendance is still very high for immigrants from China, Africa, and Other Asia, even when their PISA scores are low, even when well below the mean in the first generation (see Table 1). For the second generation (Figure 4b), these three groups have improved PISA results, indeed they have scores that are higher than those of non-immigrants. Still, what is striking is that those from these three source regions display high probabilities of attendance even at low PISA reading scores. If PISA scores are a measure of “ability”, even those not strong in the measured attributes at age 15 tend to make it into university by age 21. What behaviours underlie these patterns must be left to further research, but would be interesting to pursue.

Parental Aspirations

Parental aspirations may be thought to be strongly correlated with university attendance, but parental aspirations alone are not enough: the children must internalize their parent’s values and act on them. Given the potential cultural differences among source regions in terms the willingness of children to carry out the wishes of their parents (i.e., deference), the impact of parental aspirations may vary across these regions. Since the second generation of these groups is more assimilated into Canadian society and culture and therefore are likely to have behaviours more like Canadian norms, it might also be expected that differences exist between different

generations from the same region of origin. To investigate these issues, interactions between the variable of interest and immigrant group are introduced.

For this exercise, the parental aspirations variable was coded as a continuous variable based on their responses to the question: “What is the highest level of education that you hope [your child] will get? The possible responses were less than a high school diploma (coded as 1); high school diploma or graduation equivalency (2); trade or vocational certificate or diploma, or an apprenticeship (3); college or CEGEP certificate or diploma (3); any level of education after high school (no preference) (4); one university degree (5); and, more than one university degree (6).²¹ Again for ease of exposition, the predicted values generated from these regression results contained in Appendix Table A4 are presented in Figure 5. In all cases, the probability of university attendance is increasing in parental aspirations. Since almost all parents want their children to at least finish high school, the profiles are relatively flat until 12 years of schooling and then increase sharply thereafter. The first generation results (Figure 5a) show more variance than those for the second generation (Figure 5b), again showing the convergence in university attendance behaviour across generations.

The pattern among Chinese immigrants is again striking: probabilities of university attendance tend to be high regardless of parental aspirations or generation, possibly suggesting that these children understand that when their parents express aspirations for certain higher levels of higher education, they really mean university. Another explanation, suggested above, is children of some immigrant groups may be more likely to internalize and act open these parental aspirations. Africans and Other Asians also tend to have higher profiles. Southern and Eastern Europeans are above non-immigrants in the first generation, but not the second.

V. Conclusion

Using the Canadian YITS-A dataset and a series of multinomial logit models this research expands on previous work which found large differences in PSE access rates between immigrant and non-immigrant Canadians. This previous research has shown that immigrant university participation rates are higher than those of non-immigrants, but that there are

²¹ It is possible that parental aspirations are endogenous to the model, i.e., those with higher incomes will expect their children to attend university, while those with lower incomes will not. However, the wording of the question (“What is the highest level of education that you hope [your child] will get?”) arguably reduces this problem since it reflects desire rather than more realistic expectations.

significant differences by immigrant source region. While this research is able to explain some of these group differences by adding an increasing number of covariates to the models, large and positive differences remain for regions such as China, Africa and certain Asian countries. The limitation of previous analyses is that the estimated models may be misspecified, either by not allowing the coefficients on many important determinants of university access to vary by immigrant source region, or by the exclusion of some important variable.

Here previous work is expanded such that the constraint which limits the effects of important covariates of PSE access to be the same is relaxed. In particular, family income, parental education, high school grades, PISA reading scores, and parental aspirations are interacted with the immigrant indicators, thus painting a much richer picture of the determinants of PSE access, especially university.

What is striking in these results is that the high probabilities of attending university among many of the immigrant groups (e.g., the Chinese and the Africans) are the result of two (related) phenomena: (1) the higher probability of attending university for a given level of income, parental education, high school grades, PISA scores, and parental aspirations within the range where one would anticipate university attendance to be higher (e.g., high levels of parental education); and (2) a higher probability of participation where one does not anticipate the probability of university attendance to be high (e.g., lower levels of parental education). Stated differently, the probability profiles of some immigrant groups have higher intercepts and a smaller slope, i.e., immigrant groups tend to go to PSE almost regardless of the levels of these explanatory variables.

High school grades also are interesting. Many immigrant groups with low high school grades are attending university, whereas those with the same grades in the non-immigrant population are not.

This research has shown that the probabilities of attending PSE – especially university – are higher for most immigrant groups than for the non-immigrant population. Many related questions remain to be answered. First, do these high probabilities of attendance translate into high probabilities of completion? Second, does the apparent success in attending PSE carry forward to the labour market in terms of higher employment rates and entry level compensation? Third, what unobserved factors are driving these immigrant results? Finally, do fields of study

differ between immigrant and non-immigrant groups? If so, what are the implications for the long-term needs of the Canadian labour market?

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Figure 1a: Access to University by Family Income, First Generation Immigrants

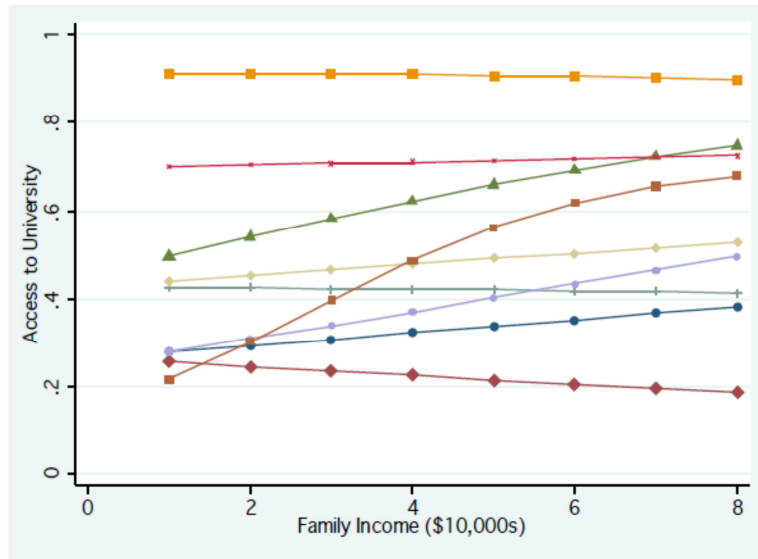


Figure 1b: Access to University by Family Income, Second Generation Immigrants

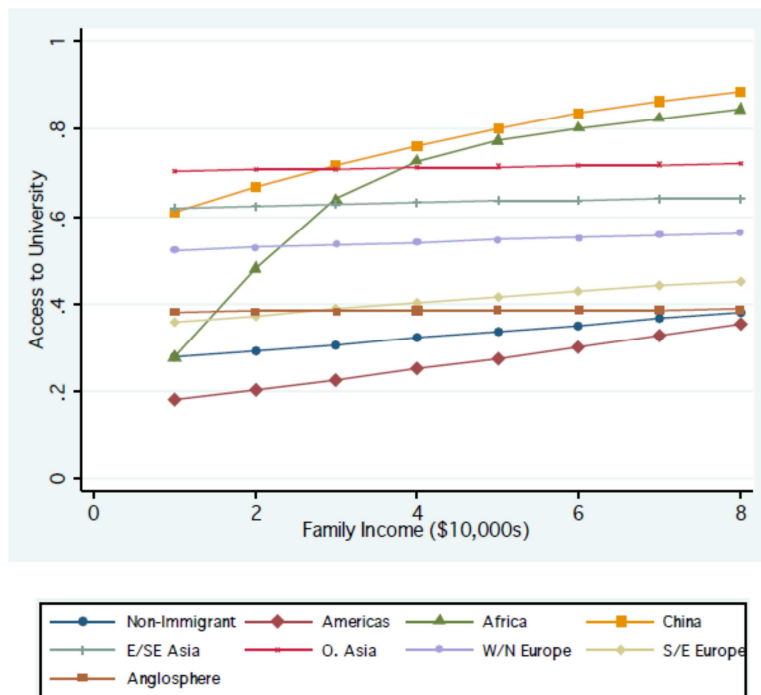


Figure 2a: Access to University by Parental Education, First Generation Immigrants

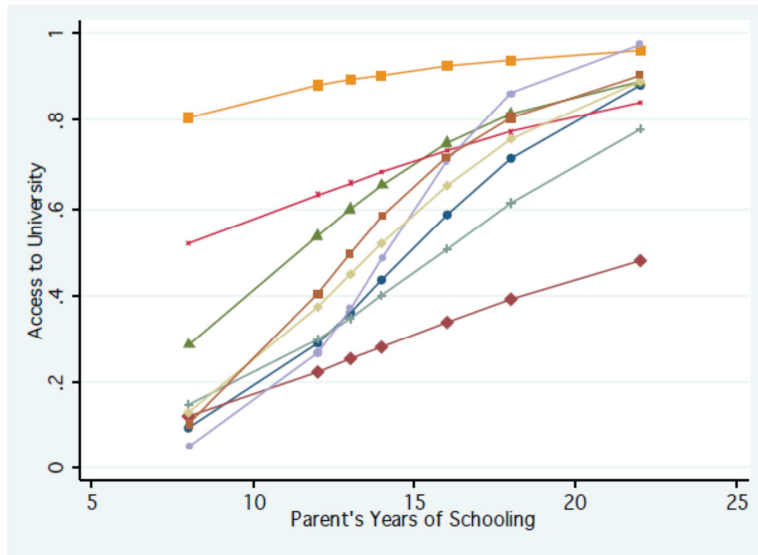


Figure 2b: Access to University by Parental Education, Second Generation Immigrants

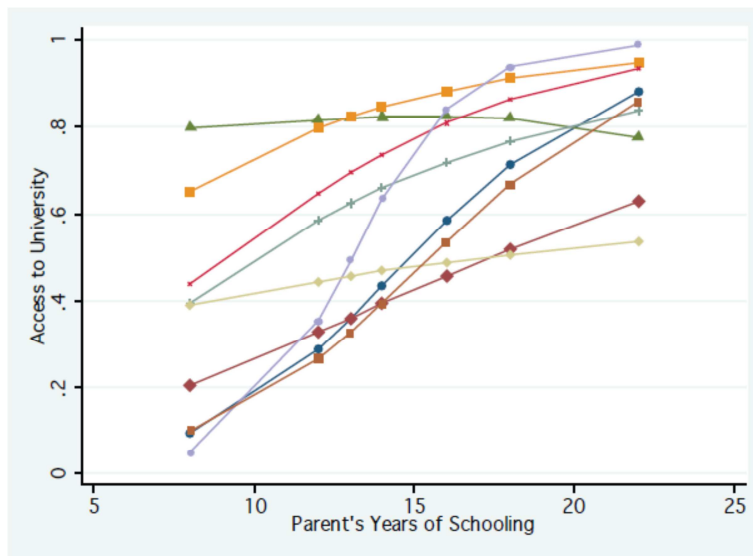


Figure 3a: Access to University by High School Grades (Age 15), First Generation Immigrants

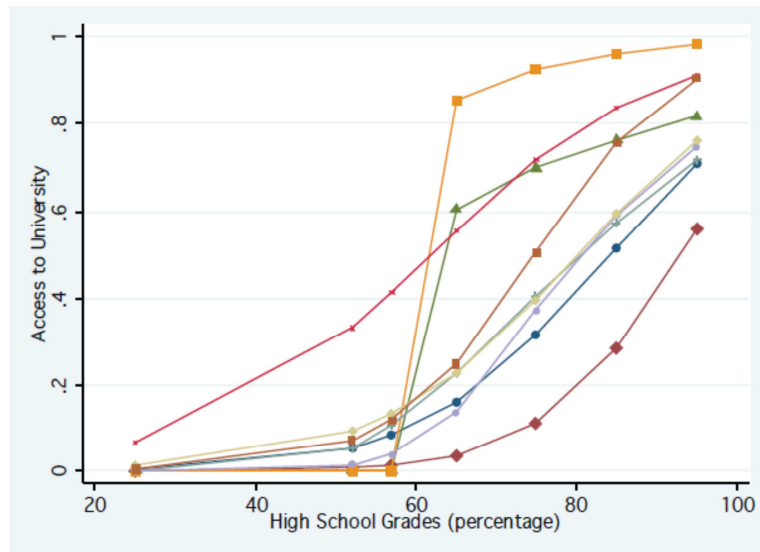


Figure 3b: Access to University by High School Grades (Age 15), Second Generation Immigrants

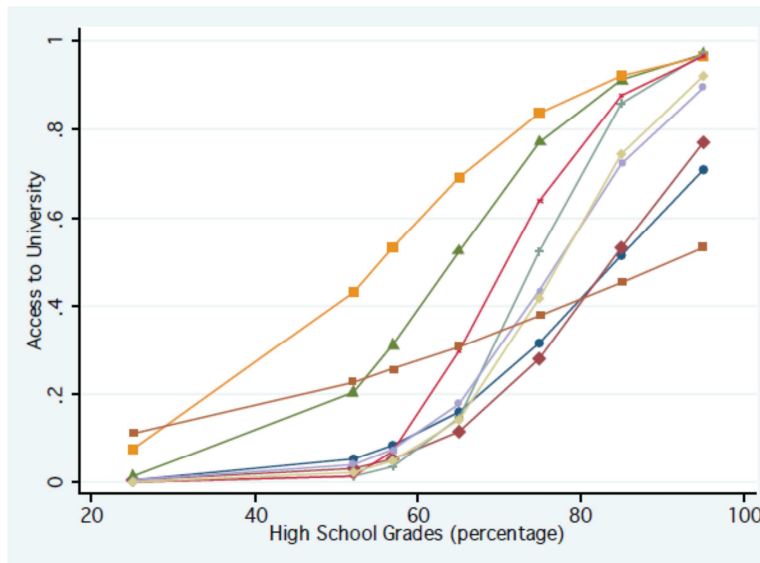


Figure 4a: Access to University by PISA Reading Score, First Generation Immigrants

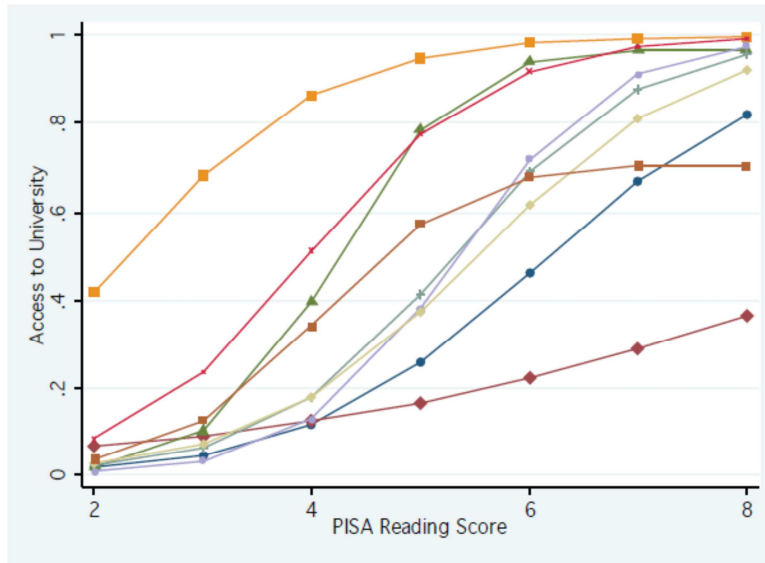


Figure 4b: Access to University by PISA Reading Score, Second Generation Immigrants

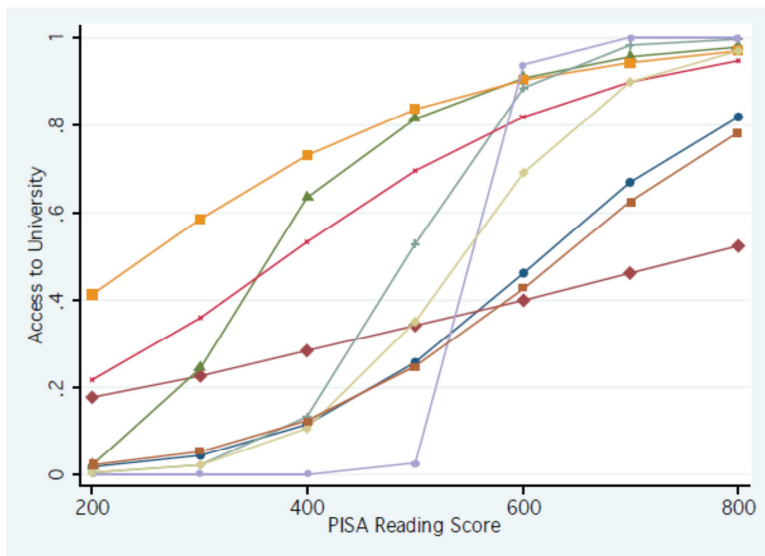


Figure 5a: Access to University by Parental Expectations, First Generation Immigrants

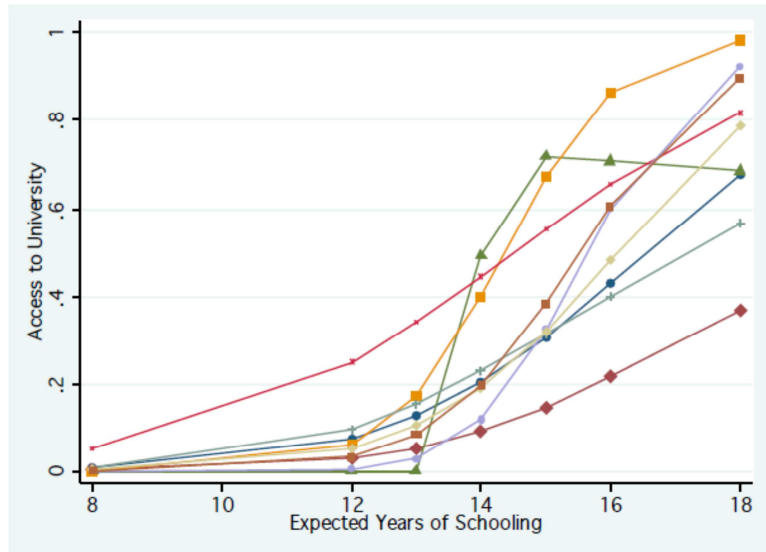
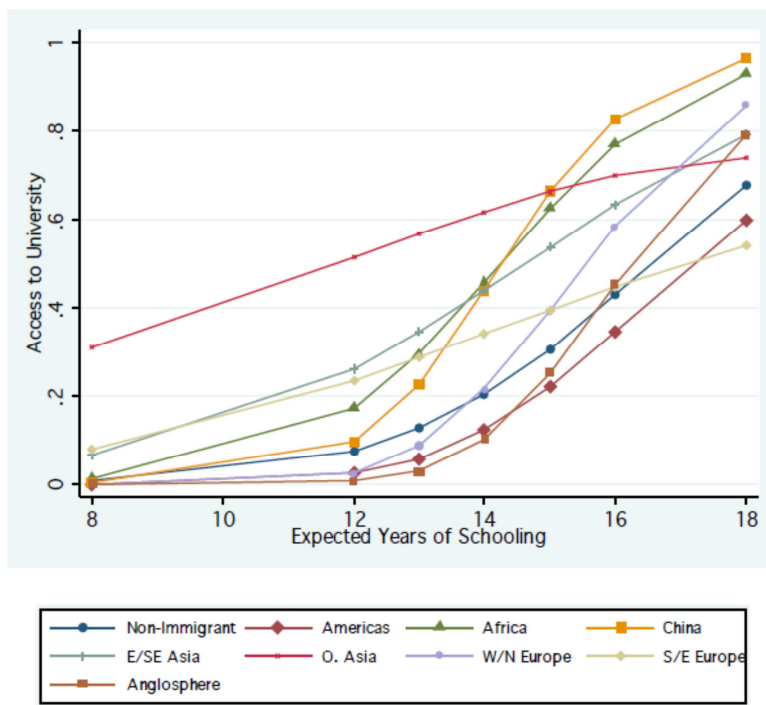


Figure 5b: Access to University by Parental Expectations, Second Generation Immigrants



Notes for Figure 1: The predicted probabilities reported are calculated using a multinomial logit model of access to college and university (only the university results are reported here) that includes a set of categorical control variables (gender, province, urban/rural status, linguistic minority status and family structure), a linear parental education variable and the set of detailed immigrant indicators used in Table 2b and interactions between those indicators and a linear family income variable. Aside from the interacted variables, the means of all other variables within each immigrant group are used to generate the probabilities.

Notes for Figure 2: The predicted probabilities reported are calculated using a multinomial logit model of access to college and university (only the university results are reported here) that includes a set of categorical control variables (gender, province, urban/rural status, linguistic minority status and family structure), a linear family income variable and the set of detailed immigrant indicators used in Table 2b and interactions between those indicators and a linear parental education variable. Aside from the interacted variables, the means of all other variables within each immigrant group are used to generate the probabilities. The linear parental education variable was constructed from a categorical education variable from the YITS-A parental survey.

Notes for Figure 3: The predicted probabilities reported are calculated using a multinomial logit model of access to college and university (only the university results are reported here) that includes a set of categorical control variables (gender, province, urban/rural status, linguistic minority status and family structure), linear family income, parental education, high school grade and PISA reading score variables, and the set of detailed immigrant indicators used in Table 2b and interactions between those indicators and a linear high school grade variable. Aside from the interacted variables, the means of all other variables within each immigrant group are used to generate the probabilities. The linear high school grade variable was constructed from a categorical grade variable from the main YITS-A student file in the first year of the survey when students are age 15.

Notes for Figure 4: The predicted probabilities reported are calculated using a multinomial logit model of access to college and university (only the university results are reported here) that includes a set of categorical control variables (gender, province, urban/rural status, linguistic minority status and family structure), linear family income, parental education, high school grade and PISA reading score variables and the set of detailed immigrant indicators used in Table 2b and interactions between those indicators and the student's PISA reading score. Aside from the interacted variables, the means of all other variables within each immigrant group are used to generate the probabilities. The PISA score variable is the result of a standardized test taken by YITS-A student respondents in the first year of the survey when students are age 15.

Notes for Figure 5: The predicted probabilities reported are calculated using a multinomial logit model of access to college and university (only the university results are reported here) that includes a set of categorical control variables (gender, province, urban/rural status, linguistic minority status and family structure), linear family income and parental education variables and the set of detailed immigrant indicators used in Table 2b and interactions between those indicators and a linear parental educational expectation variable. Aside from the interacted variables, the means of all other variables within each immigrant group are used to generate the probabilities. The linear parental educational expectation variable was constructed from a categorical question from the YITS-A parental survey which asked parents what level of education they hoped their child would achieve. This was converted into a linear variable representing the years of education the parents expect.

Table 1: Mean Grades, PISA Scores, Family Income, Parental Education and Parental Expectations, by Immigration Group

	Family income (\$1000s)		Parent's Years of Schooling		Overall High School Grade		PISA Reading Score		Expected PSE Level	
	Level	Rel.	Level	Rel.	Level	Rel.	Level	Rel.	Level	Rel.
Detailed Immigrant Status										
Non-Immigrant	71.3	100.0	13.1	100.0	75.6	100.0	535.0	100.0	3.8	100.0
First Generation										
Americas (except USA)	48.6	68.2	12.3	94.0	74.8	99.0	479.8	89.7	4.0	106.1
Africa	62.7	88.0	14.3	109.3	80.1	106.0	521.0	97.4	4.3	113.4
China	47.6	66.8	13.5	102.8	80.8	107.0	527.1	98.5	4.4	116.5
East/South-East Asia	48.3	67.8	14.4	109.8	76.6	101.4	500.9	93.6	4.1	109.8
Other Asia	54.5	76.5	14.7	112.2	78.7	104.2	505.8	94.5	4.3	114.7
West/Northern Europe	66.3	93.0	13.5	103.3	80.1	106.1	523.0	97.8	3.7	99.1
South/Eastern Europe	67.6	94.8	13.9	106.3	79.6	105.4	545.1	101.9	4.1	108.5
Anglosphere	96.9	136.0	14.2	108.0	78.6	104.1	547.6	102.4	3.9	104.1
Other/DK	66.2	92.8	13.2	100.9	78.0	103.2	521.8	97.5	4.0	106.4
Second Generation -- Parents from the Same Region of Origin										
Americas (except USA)	70.6	99.1	12.6	96.2	76.2	100.9	516.4	96.5	4.0	105.2
Africa	78.0	109.5	14.1	107.4	82.4	109.1	554.7	103.7	4.4	117.3
China	73.7	103.4	13.3	101.3	81.8	108.2	570.7	106.7	4.3	114.0
East/South-East Asia	66.1	92.8	13.4	102.1	79.2	104.8	543.4	101.6	4.1	109.0
Other Asia	72.0	101.1	13.6	103.9	80.4	106.4	550.6	102.9	4.3	114.8
West/Northern Europe	70.3	98.7	13.6	103.5	77.7	102.9	556.5	104.0	4.0	107.1
South/Eastern Europe	69.7	97.8	12.1	92.1	74.0	97.9	519.1	97.0	3.9	104.8
Anglosphere	91.3	128.1	13.9	106.0	73.8	97.6	554.6	103.7	3.9	104.5
Other/DK	65.4	91.8	12.3	94.1	73.4	97.1	520.8	97.3	4.4	116.9
Second Generation -- Parents from Different Regions of Origin										
<i>Immigrant Father / non-Immigrant Mother</i>										
High Access Region	46.1	64.6	13.6	103.7	75.3	99.7	536.5	100.3	4.0	105.4
Other	80.4	112.8	13.9	105.8	76.5	101.2	544.9	101.8	3.8	101.9
<i>Immigrant Mother/ non-Immigrant Father</i>										
High Access Region	95.9	134.5	15.0	114.6	81.2	107.5	599.8	112.1	4.2	112.5
Other	88.6	124.3	13.8	105.0	76.4	101.2	555.5	103.8	3.9	104.3
Different Regions	81.9	115.0	13.7	104.5	77.1	102.0	547.7	102.4	3.9	104.9
Single Immigrant Parent	79.2	111.1	14.1	107.8	78.2	103.5	551.6	103.1	4.0	106.9

Notes: The relative column indicates the ratio of the level for the particular group to the level of the non-immigrant group.

The Expected PSE Level is measured in years of PSE that the parents expect their child to complete.

The High Access region refers to Africa, China and Other Asia.

Table 2a: Basic Access Models, Aggregate Immigrant Indicators

	(1)		(2)		(3)	
	Basic Controls		Family Income and Parental Education		High School Grades and PISA Score	
	College	University	College	University	College	University
Basic Control Variables						
Gender (Male)						
Female	-0.048*** (0.010)	0.152*** (0.010)	-0.051*** (0.010)	0.159*** (0.010)	-0.009 (0.010)	0.066*** (0.009)
High School Location (Urban)						
Rural high school	-0.068*** (0.012)	0.129*** (0.013)	-0.054*** (0.012)	0.075*** (0.012)	-0.048*** (0.011)	0.066*** (0.010)
Family Structure (Two Parents)						
Single mother	0.013 (0.018)	-0.095*** (0.017)	0.005 (0.020)	-0.046** (0.019)	-0.009 (0.017)	-0.024 (0.015)
Single father	0.054 (0.040)	-0.115*** (0.038)	0.065 (0.041)	-0.101*** (0.038)	0.030 (0.035)	-0.051* (0.031)
Other	0.008 (0.049)	-0.165*** (0.045)	0.002 (0.049)	-0.085* (0.051)	-0.028 (0.040)	-0.023 (0.040)
Additional Explanatory Variables						
Parents' Years of Schooling			-0.014*** (0.003)	0.056*** (0.002)	-0.004* (0.002)	0.029*** (0.002)
Family Income in \$10,000s			-0.002 (0.002)	0.010*** (0.002)	-0.001 (0.002)	0.006*** (0.002)
High School Grade					-0.052*** (0.005)	0.135*** (0.004)
PISA Reading Score					-0.042*** (0.007)	0.131*** (0.006)
Immigrant Indicators						
Aggregate Immigrant Indicators (Not an Immigrant)						
First Generation	-0.040* (0.024)	0.163*** (0.025)	-0.024 (0.026)	0.150*** (0.026)	-0.022 (0.023)	0.141*** (0.021)
Second Generation	-0.033** (0.015)	0.125*** (0.016)	-0.027* (0.015)	0.121*** (0.016)	-0.019 (0.014)	0.100*** (0.012)
Number of Observations	15,019		15,019		15,019	

Notes: Average marginal effects shown. Standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

High School Grade is a percentage score divided by 10. The PISA Reading score is divided by 100.

The High Access region refers to Africa, China and Other Asia.

Models also include controls for province and linguistic minority, not shown here.

Table 2b: Basic Access Models - Detailed Immigrant Indicators

	(1)		(2)		(3)	
	Basic Controls		Family Income and Parental Education		High School Grades and PISA Score	
	College	University	College	University	College	University
Basic Control Variables						
Gender (Male)						
Female	-0.048*** (0.010)	0.151*** (0.010)	-0.051*** (0.010)	0.158*** (0.010)	-0.010 (0.009)	0.065*** (0.008)
High School Location (Urban)						
Rural high school	-0.066*** (0.012)	0.123*** (0.012)	-0.052*** (0.012)	0.068*** (0.012)	-0.046*** (0.011)	0.059*** (0.010)
Family Structure (Two Parents)						
Single mother	0.010 (0.019)	-0.094*** (0.018)	0.002 (0.021)	-0.040** (0.020)	-0.009 (0.018)	-0.025 (0.016)
Single father	0.054 (0.040)	-0.119*** (0.037)	0.062 (0.041)	-0.101*** (0.038)	0.027 (0.035)	-0.057* (0.030)
Other	0.013 (0.049)	-0.176*** (0.045)	0.008 (0.049)	-0.091* (0.052)	-0.022 (0.041)	-0.036 (0.041)
Additional Explanatory Variables						
Parents' Years of Schooling			-0.014*** (0.003)	0.056*** (0.002)	-0.005* (0.002)	0.029*** (0.002)
Additional Explanatory Variables -- cont.						
Family Income in \$10,000s			-0.002 (0.002)	0.011*** (0.003)	-0.001 (0.002)	0.006*** (0.002)
High School Grade					-0.050*** (0.005)	0.131*** (0.004)
PISA Reading Score					-0.043*** (0.007)	0.135*** (0.006)
Immigrant Indicators						
Detailed Immigrant Indicators (Not an Immigrant)						
First Generation						
Americas (Except USA)	0.017 (0.072)	-0.145** (0.057)	0.020 (0.073)	-0.070 (0.070)	0.022 (0.064)	-0.045 (0.057)
Africa	0.002 (0.091)	0.239*** (0.092)	0.029 (0.088)	0.210** (0.089)	0.008 (0.066)	0.224*** (0.065)
China	-0.215*** (0.037)	0.473*** (0.037)	-0.227*** (0.033)	0.490*** (0.033)	-0.201*** (0.031)	0.457*** (0.030)
E/SE Asia	0.133** (0.068)	0.028 (0.065)	0.152** (0.067)	0.001 (0.062)	0.097* (0.057)	0.064 (0.052)
Other Asia	-0.104** (0.051)	0.273*** (0.057)	-0.070 (0.058)	0.227*** (0.063)	-0.085* (0.048)	0.252*** (0.043)
W/E Europe	-0.028 (0.098)	0.079 (0.086)	-0.016 (0.092)	0.067 (0.067)	-0.010 (0.079)	0.048 (0.048)

cont...

Table 2b: Basic Access Models - Detailed Immigrant Indicators - cont.

	(1)		(2)		(3)	
	Basic Controls		Family Income and Parental Education		High School Grades and PISA Score	
	College	University	College	University	College	University
Immigrant Indicators - cont.						
<i>First Generation - cont.</i>						
S/E Europe	0.038 (0.060)	0.090 (0.059)	0.063 (0.063)	0.059 (0.058)	0.096* (0.058)	0.004 (0.046)
Anglosphere	-0.121** (0.060)	0.155** (0.070)	-0.096 (0.071)	0.084 (0.075)	-0.096 (0.062)	0.047 (0.054)
Unknown region	0.141 (0.181)	-0.048 (0.149)	0.126 (0.167)	-0.014 (0.122)	0.162 (0.108)	-0.018 (0.083)
Second Generation -- Parents from the Same Region of Origin						
Americas (Except USA)	0.106 (0.072)	-0.057 (0.062)	0.103 (0.069)	-0.011 (0.064)	0.069 (0.058)	0.009 (0.048)
Africa	-0.136* (0.081)	0.375*** (0.083)	-0.111 (0.082)	0.337*** (0.084)	-0.050 (0.076)	0.252*** (0.068)
China	-0.180*** (0.043)	0.384*** (0.052)	-0.182*** (0.042)	0.399*** (0.049)	-0.121** (0.048)	0.298*** (0.051)
E/SE Asia	-0.025 (0.067)	0.189*** (0.064)	-0.030 (0.065)	0.211*** (0.063)	-0.010 (0.051)	0.148*** (0.038)
Other Asia	-0.039 (0.051)	0.270*** (0.052)	-0.037 (0.051)	0.275*** (0.052)	0.021 (0.045)	0.199*** (0.041)
W/N Europe	0.111 (0.124)	0.077 (0.118)	0.110 (0.110)	0.080 (0.101)	0.127 (0.087)	0.042 (0.071)
S/E Europe	0.011 (0.051)	0.006 (0.049)	-0.011 (0.047)	0.103** (0.052)	-0.023 (0.039)	0.115*** (0.034)
Anglosphere	0.060 (0.072)	-0.015 (0.064)	0.070 (0.072)	-0.047 (0.061)	0.099 (0.068)	-0.052 (0.055)
Unknown region	-0.067 (0.151)	0.131 (0.171)	-0.107 (0.132)	0.223 (0.146)	-0.127 (0.095)	0.251*** (0.085)
Second Generation -- Parents from Different Regions of Origin						
<i>Immigrant Father / non-Immigrant Mother</i>						
High Access Region	-0.026 (0.045)	0.153*** (0.048)	-0.014 (0.044)	0.133*** (0.047)	-0.011 (0.041)	0.135*** (0.037)
Other	-0.044 (0.027)	0.114*** (0.029)	-0.037 (0.027)	0.092*** (0.026)	-0.043* (0.024)	0.096*** (0.020)
<i>Immigrant Mother/ non-Immigrant Father</i>						
High Access Region	-0.101 (0.085)	0.335*** (0.086)	-0.041 (0.092)	0.259*** (0.089)	0.068 (0.089)	0.135 (0.083)
Other	-0.032 (0.033)	0.087** (0.034)	-0.019 (0.033)	0.052* (0.031)	-0.010 (0.030)	0.028 (0.024)
Different Regions	-0.140*** (0.043)	0.157*** (0.054)	-0.127*** (0.044)	0.142*** (0.051)	-0.117*** (0.042)	0.114*** (0.040)
Single Immigrant Parent	-0.020 (0.136)	0.111 (0.126)	-0.005 (0.132)	0.088 (0.105)	0.029 (0.131)	0.044 (0.105)
Number of Observations	15,019		15,019		15,019	

Notes: Average marginal effects shown. Standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

High School Grade is a percentage score divided by 10. The PISA Reading score is divided by 100.

The High Access region refers to Africa, China and Other Asia.

Table A1: Immigration Regions

Region in Model	Region classification by United Nations		Countries within Region				
	Continent	Region					
Americas (Except USA)	Americas	North America	Bermuda	St.Pierre and Miquelon			
		South America	Argentina	Colombia	Peru		
			Bolivia	Ecuador	Uruguay		
			Brazil	Guyana	Venezuela		
			Chile	Paraguay	South America unspecifie		
		Latin America and	Aruba	Grenada	St.Vincent/Grenadines		
			Bahamas	Haiti	Trinidad-Tobago		
			Barbados	Jamaica	West Indies		
			Cuba	St.Lucia			
		Central America	Belize	Guatemala			
			Costa Rica	Honduras	Nicaragua		
			El Salvador	Mexico	Central America unspecifi		
Africa*	Africa	Eastern Africa	Burundi	Mauritius	Uganda		
			Eritrea	Mozambique	Zambia		
			Ethiopia	Somalia	Zimbabwe		
			Kenya	Tanzania	East Africa unspecified		
		Middle Africa	Angola	Congo			
		Northern Africa	Algeria	Libya	Sudan		
			Egypt	Morocco	Tunisia		
		Southern Africa	Botswana	Lesotho	Republic of South Africa		
		Western Africa	Cape Verde Islands	Mali	Sierra Leone		
			Ghana	Nigeria	Togo		
			Africa unspecified				
		China*	Asia	East Asia	Hong Kong	P.R. China	Macao
					Taiwan		
		East and South-East Asia		East Asia	South Korea	Japan	
Korea unspecified	Mongolia						
South-East Asia	Brunei			Malaysia	Thailand		
	Indonesia			Philippines	Union of Myanmar		
	Kampuchea			Singapore	Viet Nam		
Laos							
Other Asia*		Southern Asia	Afghanistan	India	Pakistan		
			Bangladesh	Iran	Sri Lanka		
		Western Asia	Bahrain	Jordan	Saudi Arabia		
			Cyprus	Kuwait	Syria		
			Iraq	Lebanon	Turkey		
			Israel	Qatar	United Arab Emirates		
			Asia unspecified				

cont...

Table A1: Immigration Regions - cont.

Region in Model	Region classification by United Nations		Countries within Region				
	Continent	Region					
Western and Northern Europe		Western Europe	Austria	France	Luxembourg		
			Belgium	Germany	Netherlands		
					Switzerland		
		Northern Europe	Denmark	Latvia	Sweden		
			Estonia	Lithuania Codes	Iceland		
			Finland	Norway			
		Southern and Eastern Europe		Southern Europe	Bosnia-Herzegovina	Malta	Slovenia
					Croatia	Portugal	Spain
					Greece	Serbia	Yugoslavia
Italy							
Eastern Europe	Bulgaria			Hungary	Russia		
	Czech Republic			Moldavia	Slovakia		
	Czechoslovakia			Poland	Ukraine		
				Romania	USSR		
	Europe unspecified						
Anglosphere	Oceania	Australia and New Zealand	Australia	New Zealand			
	Europe	Northern Europe	United Kingdom Republic of Ireland (EIRE)	Ireland unspecified			
	Americas	North America	USA				
Others/unknown	Oceania	Melanesia	Fiji Other				

**Table A2: Access Models, Detailed Immigrant Indicators
Interacted with Family Income and Parental Education**

	(1)		(2)		(3)	
	Immigrant Variables Only		Family Income Interactions		Parental Education Interactions	
	College	University	College	University	College	University
Basic Control Variables						
Gender (Male)						
Female	-0.035*** (0.010)	0.158*** (0.011)	-0.036*** (0.010)	0.158*** (0.011)	-0.034*** (0.010)	0.156*** (0.010)
Province (Ontario)						
Newfoundland	-0.104*** (0.018)	0.122*** (0.019)	-0.107*** (0.017)	0.126*** (0.019)	-0.103*** (0.018)	0.123*** (0.019)
Prince Edward Island	-0.175*** (0.015)	0.192*** (0.018)	-0.178*** (0.015)	0.196*** (0.018)	-0.175*** (0.015)	0.193*** (0.018)
Nova Scotia	-0.157*** (0.015)	0.162*** (0.017)	-0.160*** (0.014)	0.165*** (0.017)	-0.157*** (0.015)	0.162*** (0.017)
New Brunswick	-0.156*** (0.014)	0.136*** (0.017)	-0.159*** (0.014)	0.139*** (0.017)	-0.155*** (0.014)	0.136*** (0.017)
Quebec	0.025 (0.018)	-0.075*** (0.015)	0.022 (0.018)	-0.072*** (0.015)	0.025 (0.018)	-0.073*** (0.015)
Manitoba	-0.179*** (0.014)	0.088*** (0.018)	-0.181*** (0.014)	0.089*** (0.018)	-0.179*** (0.014)	0.087*** (0.018)
Saskatchewan	-0.151*** (0.015)	0.078*** (0.018)	-0.153*** (0.015)	0.080*** (0.018)	-0.152*** (0.015)	0.079*** (0.018)
Alberta	-0.092*** (0.016)	-0.035** (0.016)	-0.093*** (0.016)	-0.034** (0.016)	-0.093*** (0.016)	-0.035** (0.016)
British Columbia	-0.086*** (0.017)	-0.030* (0.016)	-0.089*** (0.017)	-0.028* (0.016)	-0.086*** (0.017)	-0.031* (0.016)
Linguistic Minority (Non Minority)						
English Min. in Que.	0.032 (0.028)	0.046* (0.027)	0.034 (0.028)	0.045* (0.027)	0.034 (0.029)	0.043 (0.027)
French Min. outside Que.	0.028 (0.025)	0.010 (0.023)	0.029 (0.024)	0.010 (0.023)	0.027 (0.025)	0.011 (0.023)
High School Location (Rural)						
Urban high school	-0.047*** (0.012)	0.069*** (0.012)	-0.047*** (0.012)	0.067*** (0.012)	-0.049*** (0.012)	0.068*** (0.012)
Family Structure (Two Parents)						
Single mother	0.002 (0.020)	-0.039** (0.019)	-0.001 (0.019)	-0.031 (0.019)	0.002 (0.020)	-0.040** (0.019)
Single father	0.069* (0.039)	-0.098*** (0.035)	0.062 (0.037)	-0.088*** (0.033)	0.071* (0.039)	-0.100*** (0.035)
Other	0.048 (0.053)	-0.100** (0.050)	0.040 (0.050)	-0.093* (0.050)	0.046 (0.051)	-0.097** (0.049)
Additional Explanatory Variables						
Parents' Years of Schooling	-0.014*** (0.002)	0.057*** (0.002)	-0.014*** (0.002)	0.056*** (0.002)	-0.013*** (0.003)	0.061*** (0.002)
Family Income in \$10,000s	-0.002 (0.002)	0.011*** (0.002)	-0.003 (0.002)	0.013*** (0.003)	-0.002 (0.002)	0.011*** (0.002)

cont...

**Table A2: Access Models, Detailed Immigrant Indicators
Interacted with Family Income and Parental Education - cont.**

	(1)		(2)		(3)	
	Immigrant Variables Only		Family Income Interactions		Parental Education Interactions	
	College	University	College	University	College	University
Immigrant Indicators						
Detailed Immigrant Indicators (Not an Immigrant)						
<i>First Generation</i>						
Americas (Except USA)	0.009 (0.066)	-0.071 (0.063)	-0.043 (0.112)	0.061 (0.113)	-0.210** (0.106)	0.337 (0.222)
Africa	-0.016 (0.085)	0.191** (0.087)	0.159 (0.197)	0.089 (0.188)	0.194 (0.490)	0.145 (0.488)
China	-0.226*** (0.031)	0.491*** (0.031)	-0.256*** (0.036)	0.515*** (0.043)	-0.249*** (0.054)	0.590*** (0.054)
E/SE Asia	0.144** (0.063)	-0.005 (0.058)	0.116 (0.123)	0.070 (0.122)	0.269 (0.349)	0.059 (0.350)
Other Asia	-0.044 (0.057)	0.215*** (0.059)	-0.082 (0.073)	0.258*** (0.079)	-0.182 (0.149)	0.511*** (0.151)
W/N Europe	0.017 (0.089)	0.048 (0.065)	0.025 (0.197)	-0.038 (0.126)	0.585*** (0.207)	-0.306*** (0.114)
S/E Europe	0.044 (0.057)	0.062 (0.053)	0.024 (0.106)	0.079 (0.097)	-0.058 (0.244)	-0.012 (0.363)
Anglosphere	-0.090 (0.067)	0.066 (0.070)	-0.275*** (0.032)	-0.157 (0.096)	-0.242*** (0.084)	-0.075 (0.305)
Unknown Region	0.123 (0.166)	-0.007 (0.121)	-0.299*** (0.088)	-0.385*** (0.010)	0.161 (2.041)	-0.356*** (0.006)
Second Generation -- Parents from Different Regions of Origin						
<i>Immigrant Father / non-Immigrant Mother</i>						
High Access Region	0.004 (0.044)	0.115** (0.045)	0.055 (0.083)	0.106 (0.077)	0.087 (0.224)	0.163 (0.238)
Other	-0.027 (0.027)	0.088*** (0.025)	0.045 (0.074)	0.054 (0.062)	0.175 (0.192)	-0.068 (0.150)
<i>Immigrant Mother/ non-Immigrant Father</i>						
High Access Region	-0.059 (0.091)	0.244*** (0.085)	0.128 (0.325)	-0.026 (0.278)	0.378 (0.423)	-0.057 (0.410)
Other	-0.025 (0.032)	0.054* (0.030)	-0.034 (0.057)	0.080 (0.058)	0.092 (0.213)	-0.107 (0.145)
Different Regions	-0.097** (0.048)	0.092* (0.050)	0.075 (0.161)	0.052 (0.123)	0.515*** (0.183)	-0.228 (0.156)
Single Immigrant Parent	-0.024 (0.126)	0.119 (0.102)	-0.173 (0.125)	0.014 (0.183)	-0.299*** (0.006)	-0.358*** (0.005)

cont...

**Table A2: Access Models, Detailed Immigrant Indicators
Interacted with Family Income and Parental Education - cont.**

	(1)		(2)		(3)	
	Immigrant Variables Only		Family Income Interactions		Parental Education Interactions	
	College	University	College	University	College	University
Immigrant Indicators - cont.						
Detailed Immigrant Indicators (Not an Immigrant)						
Second Generation -- Parents from the Same Region of Origin						
Americas (Except USA)	0.086 (0.067)	-0.030 (0.060)	0.071 (0.180)	-0.115 (0.149)	-0.136 (0.226)	0.334 (0.351)
Africa	-0.110 (0.079)	0.344*** (0.081)	-0.268** (0.134)	-0.210 (0.350)	-0.271** (0.126)	0.613*** (0.126)
China	-0.183*** (0.040)	0.398*** (0.047)	0.020 (0.201)	0.211 (0.192)	-0.242*** (0.070)	0.534*** (0.106)
E/SE Asia	-0.019 (0.063)	0.199*** (0.062)	-0.088 (0.114)	0.259** (0.116)	-0.211* (0.114)	0.427** (0.169)
Other Asia	-0.037 (0.049)	0.273*** (0.051)	-0.089* (0.049)	0.326*** (0.059)	-0.087 (0.193)	0.374* (0.210)
W/N Europe	0.079 (0.109)	0.120 (0.101)	0.020 (0.245)	0.173 (0.212)	0.674*** (0.068)	-0.336*** (0.060)
S/E Europe	-0.020 (0.045)	0.101** (0.051)	0.090 (0.117)	0.102 (0.111)	-0.179** (0.084)	0.502*** (0.085)
Anglosphere	0.102 (0.069)	-0.070 (0.056)	0.024 (0.109)	0.035 (0.098)	0.208 (0.404)	-0.055 (0.379)
Unknown region	-0.109 (0.132)	0.228 (0.146)	-0.324*** (0.022)	-0.385*** (0.008)	-0.136 (0.183)	-0.357*** (0.009)
Interactions with Immigrant Indicators						
Interactions with Family Income and Parental Education						
First Generation						
Americas (Except USA)			0.010 (0.021)	-0.024 (0.018)	0.025 (0.019)	-0.035 (0.022)
Africa			-0.043 (0.030)	0.006 (0.020)	-0.043 (0.032)	-0.024 (0.026)
China			0.040 (0.030)	0.007 (0.024)	-0.016 (0.021)	-0.041*** (0.014)
E/SE Asia			-0.001 (0.018)	-0.016 (0.017)	-0.027 (0.021)	-0.022 (0.024)
Other Asia			0.007 (0.011)	-0.007 (0.009)	-0.007 (0.024)	-0.040** (0.020)
W/N Europe			0.001 (0.023)	0.014 (0.016)	-0.056 (0.043)	0.033 (0.033)
S/E Europe			0.003 (0.015)	-0.001 (0.012)	0.009 (0.024)	0.006 (0.030)
Anglosphere			0.051*** (0.015)	0.024* (0.013)	0.022 (0.022)	0.001 (0.023)
Unknown region			0.060 (0.074)	0.175** (0.077)	-0.107 (0.110)	0.194* (0.115)

cont...

Table A2: Access Models, Detailed Immigrant Indicators
Interacted with Family Income and Parental Education - cont.

	(1)		(2)		(3)	
	Immigrant Variables Only		Family Income Interactions		Parental Education Interactions	
	College	University	College	University	College	University
Interactions with Immigrant Indicators - cont.						
Interactions with Family Income and Parental Education						
Second Generation -- Parents from Different Regions of Origin						
<i>Immigrant Father / non-Immigrant Mother</i>						
High Access Region			-0.015 (0.016)	-0.001 (0.011)	-0.012 (0.016)	-0.009 (0.018)
Other			-0.010 (0.009)	0.004 (0.007)	-0.015 (0.014)	0.011 (0.013)
<i>Immigrant Mother/ non-Immigrant Father</i>						
High Access Region			-0.015 (0.036)	0.031 (0.031)	-0.041 (0.040)	0.004 (0.036)
Other			0.001 (0.007)	-0.003 (0.006)	-0.010 (0.015)	0.013 (0.014)
Different Regions			-0.027 (0.020)	0.005 (0.013)	-0.056** (0.024)	0.020 (0.021)
Single Immigrant Parent			0.028 (0.024)	0.011 (0.022)	-0.064 (0.129)	0.266** (0.127)
Second Generation -- Parents from the Same Region of Origin						
Americas (Except USA)			0.001 (0.022)	0.014 (0.021)	0.016 (0.022)	-0.030 (0.033)
Africa			0.075 (0.048)	0.089 (0.057)	-0.018 (0.064)	-0.077* (0.043)
China			-0.043 (0.039)	0.029 (0.027)	0.008 (0.030)	-0.025 (0.026)
E/SE Asia			0.013 (0.023)	-0.007 (0.017)	0.022 (0.024)	-0.022 (0.021)
Other Asia			0.010 (0.015)	-0.005 (0.014)	0.001 (0.019)	-0.012 (0.020)
W/N Europe			0.008 (0.032)	-0.004 (0.021)	-0.085 (0.054)	0.040 (0.049)
S/E Europe			-0.022 (0.016)	-0.004 (0.013)	-0.006 (0.015)	-0.051*** (0.012)
Anglosphere			0.008 (0.009)	-0.011 (0.008)	-0.009 (0.027)	-0.002 (0.029)
Unknown region			0.056 (0.160)	0.196** (0.099)	-0.128 (0.118)	0.246 (0.199)
Number of Observations	16,214		16,214		16,214	

Notes: Average marginal effects shown. Standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

The High Access region refers to Africa, China and Other Asia.

**Table A3: Access Models, Detailed Immigrant Indicators
Interacted with Grades and PISA Reading Scores**

	(1)		(2)		(3)	
	Base Model		Grade Interactions		PISA Reading Score Interactions	
	College	University	College	University	College	University
Basic Control Variables						
Gender (Male)						
Female	-0.006 (0.010)	0.066*** (0.009)	-0.004 (0.010)	0.065*** (0.009)	-0.005 (0.010)	0.066*** (0.009)
Province (Ontario)						
Newfoundland	-0.099*** (0.016)	0.130*** (0.016)	-0.098*** (0.016)	0.128*** (0.016)	-0.097*** (0.016)	0.128*** (0.016)
Prince Edward Island	-0.150*** (0.015)	0.145*** (0.015)	-0.150*** (0.015)	0.146*** (0.015)	-0.148*** (0.015)	0.142*** (0.015)
Nova Scotia	-0.137*** (0.014)	0.139*** (0.014)	-0.137*** (0.014)	0.138*** (0.014)	-0.135*** (0.014)	0.136*** (0.014)
New Brunswick	-0.129*** (0.014)	0.117*** (0.014)	-0.129*** (0.014)	0.118*** (0.014)	-0.127*** (0.014)	0.115*** (0.014)
Quebec	0.027* (0.016)	-0.098*** (0.012)	0.027* (0.016)	-0.097*** (0.012)	0.027* (0.016)	-0.098*** (0.012)
Manitoba	-0.170*** (0.014)	0.073*** (0.015)	-0.170*** (0.014)	0.074*** (0.015)	-0.170*** (0.014)	0.074*** (0.015)
Saskatchewan	-0.131*** (0.014)	0.042*** (0.014)	-0.132*** (0.014)	0.043*** (0.014)	-0.130*** (0.014)	0.040*** (0.014)
Alberta	-0.085*** (0.015)	-0.029** (0.013)	-0.085*** (0.015)	-0.030** (0.013)	-0.086*** (0.015)	-0.028** (0.013)
British Columbia	-0.072*** (0.016)	-0.039*** (0.014)	-0.072*** (0.016)	-0.040*** (0.014)	-0.073*** (0.016)	-0.040*** (0.014)
Linguistic Minority (Non Minority)						
English Min. in Que.	0.018 (0.025)	0.074*** (0.022)	0.018 (0.025)	0.073*** (0.022)	0.020 (0.025)	0.071*** (0.022)
French Min. outside Que.	-0.005 (0.020)	0.076*** (0.017)	-0.004 (0.020)	0.075*** (0.017)	-0.002 (0.020)	0.073*** (0.017)
High School Location (Rural)						
Urban high school	-0.046*** (0.011)	0.059*** (0.010)	-0.046*** (0.011)	0.058*** (0.010)	-0.047*** (0.011)	0.059*** (0.010)
Family Structure (Two Parents)						
Single mother	-0.009 (0.018)	-0.025 (0.016)	-0.009 (0.018)	-0.025 (0.016)	-0.009 (0.018)	-0.024 (0.016)
Single father	0.027 (0.035)	-0.057* (0.030)	0.026 (0.034)	-0.057* (0.029)	0.021 (0.034)	-0.051* (0.030)
Other	-0.022 (0.041)	-0.036 (0.041)	-0.018 (0.041)	-0.033 (0.042)	-0.020 (0.041)	-0.038 (0.041)
Additional Explanatory Variables						
Parents' Years of Schooling	-0.005* (0.002)	0.029*** (0.002)	-0.009 (0.018)	-0.025 (0.016)	-0.009 (0.018)	-0.024 (0.016)
Family Income in \$10,000s	-0.001 (0.002)	0.006*** (0.002)	-0.001 (0.002)	0.006*** (0.002)	-0.001 (0.002)	0.006*** (0.002)

cont...

**Table A3: Access Models, Detailed Immigrant Indicators
Interacted with Grades and PISA Reading Scores - cont.**

	(1)		(2)		(3)	
	Base Model		Grade Interactions		PISA Reading Score Interactions	
	College	University	College	University	College	University
Additional Explanatory Variables - cont.						
Overall High School Grade	-0.050*** (0.005)	0.131*** (0.004)	-0.043*** (0.005)	0.123*** (0.004)	-0.051*** (0.005)	0.131*** (0.005)
PISA Reading Score	-0.043*** (0.007)	0.135*** (0.006)	-0.042*** (0.007)	0.135*** (0.006)	-0.035*** (0.007)	0.129*** (0.006)
Immigrant Indicators						
Detailed Immigrant Indicators (Not an Immigrant)						
<i>First Generation</i>						
Americas (Except USA)	0.022 (0.064)	-0.045 (0.057)	0.386 (0.330)	-0.307 (0.263)	-0.074 (0.339)	0.314 (0.358)
Africa	0.008 (0.067)	0.224*** (0.065)	-0.285*** (0.007)	-0.418*** (0.006)	0.608*** (0.107)	-0.327*** (0.107)
China	-0.201*** (0.031)	0.457*** (0.030)	-0.286*** (0.006)	-0.428*** (0.005)	-0.023 (0.313)	0.281 (0.320)
E/SE Asia	0.097* (0.057)	0.064 (0.052)	-0.263*** (0.038)	-0.291 (0.262)	0.433* (0.258)	-0.197 (0.232)
Other Asia	-0.085* (0.048)	0.252*** (0.044)	-0.050 (0.284)	0.303 (0.283)	0.194 (0.405)	-0.037 (0.271)
W/N Europe	-0.010 (0.079)	0.048 (0.048)	-0.271*** (0.021)	-0.367*** (0.070)	0.588*** (0.187)	-0.335** (0.150)
S/E Europe	0.096* (0.058)	0.004 (0.046)	0.239 (0.394)	-0.012 (0.420)	0.276 (0.411)	-0.135 (0.260)
Anglosphere	-0.096 (0.062)	0.047 (0.054)	0.319 (0.534)	-0.215 (0.456)	-0.306*** (0.009)	0.059 (0.368)
Unknown region	0.162 (0.108)	-0.018 (0.083)	0.711*** (0.005)	-0.440*** (0.004)	0.688*** (0.006)	-0.407*** (0.004)
Second Generation -- Parents from Different Regions of Origin						
<i>Immigrant Father / non-Immigrant Mother</i>						
High Access Region	-0.011 (0.041)	0.135*** (0.037)	0.106 (0.280)	0.126 (0.284)	-0.060 (0.239)	0.016 (0.263)
Other	-0.043* (0.024)	0.096*** (0.020)	0.322* (0.168)	-0.290*** (0.095)	-0.006 (0.178)	0.032 (0.141)
<i>Immigrant Mother/ non-Immigrant Father</i>						
High Access Region	0.068 (0.089)	0.135 (0.083)	-0.279*** (0.015)	-0.424*** (0.014)	-0.307*** (0.014)	-0.275 (0.550)
Other	-0.010 (0.030)	0.028 (0.024)	0.325* (0.186)	-0.132 (0.181)	0.184 (0.194)	0.039 (0.185)
Different Regions	-0.117*** (0.042)	0.114*** (0.040)	-0.203 (0.192)	-0.227 (0.257)	-0.255*** (0.081)	0.373** (0.186)
Single Immigrant Parent	0.029 (0.131)	0.044 (0.105)	0.594*** (0.223)	-0.338* (0.204)	-0.215 (0.303)	0.495 (0.304)

cont...

Table A3: Access Models, Detailed Immigrant Indicators
Interacted with Grades and PISA Reading Scores - cont.

	(1)		(2)		(3)	
	Base Model		Grade Interactions		PISA Reading Score Interactions	
	College	University	College	University	College	University
Immigrant Indicators - cont.						
<i>Second Generation -- Parents from the Same Region of Origin</i>						
Americas (Except USA)	0.069 (0.058)	0.009 (0.048)	0.437 (0.403)	-0.251 (0.291)	-0.192 (0.172)	0.425** (0.210)
Africa	-0.050 (0.076)	0.252*** (0.068)	0.440 (0.402)	-0.169 (0.400)	-0.299*** (0.020)	-0.319 (0.260)
China	-0.121** (0.048)	0.298*** (0.051)	0.025 (0.536)	0.227 (0.541)	-0.183 (0.173)	0.406* (0.228)
E/SE Asia	-0.010 (0.051)	0.148*** (0.038)	-0.160 (0.251)	-0.425*** (0.020)	0.658*** (0.038)	-0.388*** (0.029)
Other Asia	0.021 (0.045)	0.199*** (0.041)	-0.261*** (0.008)	-0.429*** (0.007)	0.009 (0.284)	0.253 (0.280)
W/N Europe	0.127 (0.087)	0.042 (0.071)	0.629*** (0.184)	-0.357** (0.182)	0.681*** (0.008)	-0.405*** (0.005)
S/E Europe	-0.023 (0.039)	0.115*** (0.034)	0.224 (0.275)	-0.365*** (0.089)	0.158 (0.395)	-0.273* (0.157)
Anglosphere	0.099 (0.068)	-0.052 (0.055)	-0.163 (0.183)	0.422** (0.186)	0.102 (0.367)	-0.027 (0.374)
Unknown region	-0.127 (0.095)	0.251*** (0.085)	0.711*** (0.005)	-0.439*** (0.004)	-0.248 (0.152)	0.405 (0.480)
Interactions with Immigrant Indicators						
Interactions with Grade and PISA Score						
<i>First Generation</i>						
Americas (Except USA)			-0.054 (0.063)	0.045 (0.077)	-0.011 (0.072)	-0.076 (0.073)
Africa			1.192*** (0.081)	0.537*** (0.050)	-0.326*** (0.100)	0.046 (0.054)
China			2.179*** (0.044)	1.519*** (0.085)	-0.032 (0.067)	0.048 (0.073)
E/SE Asia			0.100 (0.070)	0.026 (0.054)	-0.076 (0.071)	0.044 (0.058)
Other Asia			-0.026 (0.064)	-0.017 (0.046)	-0.050 (0.097)	0.055 (0.060)
W/N Europe			0.104 (0.074)	0.035 (0.049)	-0.154 (0.109)	0.083 (0.085)
S/E Europe			-0.031 (0.057)	-0.004 (0.060)	-0.033 (0.083)	0.025 (0.060)
Anglosphere			-0.057 (0.079)	0.038 (0.081)	0.169*** (0.065)	-0.074 (0.051)
Unknown region			-2.059*** (0.255)	2.331*** (0.138)	-2.554** (1.247)	2.108* (1.093)

cont...

**Table A3: Access Models, Detailed Immigrant Indicators
Interacted with Grades and PISA Reading Scores - cont.**

	(1)		(2)		(3)	
	Base Model		Grade Interactions		PISA Reading Score Interactions	
	College	University	College	University	College	University
Interactions with Immigrant Indicators - cont.						
<i>Second Generation -- Parents from Different Regions of Origin</i>						
<i>Immigrant Father / non-Immigrant Mother</i>						
High Access Region			-0.031 (0.038)	-0.006 (0.036)	0.017 (0.052)	0.021 (0.047)
Other			-0.055** (0.025)	0.062** (0.025)	-0.006 (0.036)	0.011 (0.027)
<i>Immigrant Mother/ non-Immigrant Father</i>						
High Access Region			-0.031 (0.038)	-0.006 (0.036)	0.229 (0.158)	0.014 (0.108)
Other			-0.051** (0.026)	0.017 (0.027)	-0.051 (0.035)	-0.011 (0.030)
Different Regions			0.020 (0.073)	0.037 (0.046)	0.052 (0.063)	-0.061 (0.043)
Single Immigrant Parent			-0.108 (0.091)	0.051 (0.078)	-0.065 (0.159)	-0.146 (0.117)
<i>Second Generation -- Parents from the Same Region of Origin</i>						
Americas (Except USA)			-0.055 (0.076)	0.036 (0.064)	0.037 (0.062)	-0.088 (0.061)
Africa			-0.101 (0.069)	0.031 (0.057)	0.159** (0.071)	0.083 (0.100)
China			-0.039 (0.076)	-0.000 (0.067)	0.011 (0.078)	-0.031 (0.066)
E/SE Asia			-0.040 (0.066)	0.164** (0.069)	-0.218** (0.090)	0.152** (0.071)
Other Asia			0.223 (0.170)	0.236** (0.097)	-0.022 (0.062)	-0.022 (0.049)
W/N Europe			-0.134 (0.111)	0.047 (0.078)	-0.749*** (0.225)	0.796** (0.337)
S/E Europe			-0.052 (0.043)	0.092** (0.045)	-0.043 (0.064)	0.089 (0.058)
Anglosphere			0.006 (0.050)	-0.077* (0.039)	-0.003 (0.062)	-0.004 (0.064)
Unknown Region			-3.329*** (0.084)	1.869*** (0.119)	0.051 (0.161)	-0.046 (0.102)
Number of Observations	15,019		15,019		15,019	

Notes: Average marginal effects shown. Standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

High School Grade is a percentage score divided by 10. The PISA Reading score is divided by 100.

The High Access region refers to Africa, China and Other Asia.

Table A4: Access Models, Detailed Immigrant Indicators Interacted with Parental Expectations

	(1)		(2)		(3)	
	Basic Model		Parental Expectations		Interactions	
	College	University	College	University	College	University
Basic Control Variables						
Gender (Male)						
Female	-0.033*** (0.010)	0.156*** (0.011)	-0.027*** (0.010)	0.126*** (0.010)	-0.027*** (0.010)	0.124*** (0.010)
Province (Ontario)						
Newfoundland	-0.104*** (0.018)	0.122*** (0.019)	-0.079*** (0.018)	0.054*** (0.018)	-0.080*** (0.018)	0.054*** (0.018)
Prince Edward Island	-0.174*** (0.015)	0.192*** (0.018)	-0.158*** (0.016)	0.148*** (0.017)	-0.159*** (0.016)	0.148*** (0.017)
Nova Scotia	-0.156*** (0.015)	0.162*** (0.017)	-0.143*** (0.015)	0.130*** (0.016)	-0.145*** (0.015)	0.131*** (0.016)
New Brunswick	-0.156*** (0.014)	0.136*** (0.017)	-0.145*** (0.015)	0.103*** (0.016)	-0.146*** (0.015)	0.103*** (0.016)
Quebec	0.026 (0.018)	-0.075*** (0.015)	0.024 (0.017)	-0.068*** (0.014)	0.022 (0.017)	-0.066*** (0.014)
Manitoba	-0.178*** (0.014)	0.086*** (0.018)	-0.172*** (0.015)	0.078*** (0.018)	-0.172*** (0.015)	0.078*** (0.018)
Saskatchewan	-0.150*** (0.015)	0.078*** (0.018)	-0.150*** (0.015)	0.077*** (0.017)	-0.150*** (0.015)	0.077*** (0.017)
Alberta	-0.090*** (0.016)	-0.035** (0.016)	-0.088*** (0.016)	-0.030** (0.015)	-0.089*** (0.016)	-0.030** (0.015)
British Columbia	-0.084*** (0.017)	-0.031* (0.016)	-0.085*** (0.017)	-0.017 (0.015)	-0.088*** (0.017)	-0.017 (0.015)
High School Location (Rural)						
Urban High School	-0.048*** (0.012)	0.070*** (0.012)	-0.037*** (0.012)	0.034*** (0.011)	-0.037*** (0.012)	0.033*** (0.011)
Minority Language (Non-Minority)						
English minority in QC	0.031 (0.028)	0.047* (0.027)	0.061** (0.029)	-0.012 (0.025)	0.061** (0.029)	-0.014 (0.025)
French minority outside QC	0.028 (0.025)	0.011 (0.023)	0.022 (0.023)	0.023 (0.022)	0.023 (0.023)	0.022 (0.022)
Family Structure (Two Parents)						
Single Mother	0.003 (0.020)	-0.039** (0.019)	0.006 (0.019)	-0.060*** (0.017)	0.006 (0.019)	-0.058*** (0.017)
Single Father	0.068* (0.040)	-0.100*** (0.036)	0.057 (0.039)	-0.091*** (0.034)	0.050 (0.037)	-0.086*** (0.032)
Other	0.046 (0.053)	-0.098* (0.050)	0.046 (0.052)	-0.093* (0.049)	0.043 (0.052)	-0.088* (0.048)

cont...

Table A4: Access Models, Detailed Immigrant Indicators Interacted with Parental Expectations - cont.

	(1)		(2)		(3)	
	Basic Model		Parental Expectations		Interactions	
	College	University	College	University	College	University
Additional Explanatory Variables						
Parents' Years of Schooling	-0.015*** (0.002)	0.057*** (0.002)	-0.010*** (0.003)	0.043*** (0.002)	-0.010*** (0.003)	0.043*** (0.002)
Family Income in \$10,000s	-0.002 (0.002)	0.011*** (0.002)	-0.001 (0.002)	0.006*** (0.002)	-0.001 (0.002)	0.006*** (0.002)
Expected PSE Level			-0.031*** (0.003)	0.094*** (0.002)	-0.030*** (0.003)	0.092*** (0.002)
Immigrant Indicators						
Detailed Immigrant Indicators (Not an Immigrant)						
<i>First Generation</i>						
Americas (Except USA)	0.010 (0.066)	-0.071 (0.063)	0.009 (0.066)	-0.122** (0.056)	-0.284*** (0.044)	-0.012 (0.717)
Africa	-0.016 (0.085)	0.191** (0.087)	0.030 (0.105)	0.097 (0.087)	-0.302*** (0.008)	-0.389*** (0.010)
China	-0.225*** (0.031)	0.491*** (0.031)	-0.153*** (0.043)	0.389*** (0.042)	0.375 (1.118)	-0.373*** (0.026)
E/SE Asia	0.145** (0.063)	-0.006 (0.058)	0.162** (0.064)	-0.063 (0.052)	-0.242 (0.221)	0.023 (0.962)
Other Asia	-0.044 (0.057)	0.214*** (0.059)	0.001 (0.062)	0.095* (0.054)	0.149 (0.818)	0.137 (0.818)
W/N Europe	0.017 (0.089)	0.048 (0.065)	0.020 (0.084)	0.057 (0.060)	-0.287*** (0.013)	-0.388*** (0.010)
S/E Europe	0.045 (0.057)	0.062 (0.053)	0.064 (0.058)	0.006 (0.047)	0.489 (0.400)	-0.304** (0.139)
Anglosphere	-0.089 (0.067)	0.066 (0.070)	-0.091 (0.062)	0.045 (0.055)	-0.068 (0.825)	-0.349*** (0.058)
Unknown region	0.123 (0.166)	-0.006 (0.121)	0.157 (0.162)	-0.055 (0.106)	0.696*** (0.004)	-0.395*** (0.007)
<i>Second Generation -- Parents from the Same Region of Origin</i>						
Americas (Except USA)	0.086 (0.067)	-0.031 (0.060)	0.093 (0.068)	-0.068 (0.054)	-0.286*** (0.044)	-0.338*** (0.063)
Africa	-0.109 (0.079)	0.344*** (0.081)	-0.039 (0.091)	0.236*** (0.086)	0.524 (0.637)	-0.270 (0.488)
China	-0.183*** (0.040)	0.397*** (0.047)	-0.142*** (0.049)	0.305*** (0.052)	-0.046 (1.363)	-0.344*** (0.077)
E/SE Asia	-0.026 (0.064)	0.206*** (0.063)	0.003 (0.066)	0.127** (0.057)	-0.056 (0.604)	0.325 (0.595)
Other Asia	-0.029 (0.049)	0.265*** (0.051)	0.045 (0.053)	0.159*** (0.055)	-0.251** (0.106)	0.551*** (0.106)
W/N Europe	0.080 (0.109)	0.120 (0.101)	0.108 (0.102)	0.071 (0.089)	-0.293*** (0.020)	-0.378*** (0.029)

cont...

Table A4: Access Models, Detailed Immigrant Indicators Interacted with Parental Expectations - cont.

	(1)		(2)		(3)	
	Basic Model		Parental Expectations		Interactions	
	College	University	College	University	College	University
Immigrant Indicators - cont.						
<i>Second Generation -- Parents from the Same Region of Origin</i>						
S/E Europe	-0.016 (0.045)	0.095* (0.051)	-0.004 (0.047)	0.046 (0.048)	-0.282*** (0.038)	0.534*** (0.102)
Anglosphere	0.112 (0.070)	-0.066 (0.057)	0.102 (0.068)	-0.064 (0.051)	-0.293*** (0.011)	-0.382*** (0.016)
Unknown region	-0.109 (0.132)	0.228 (0.145)	-0.051 (0.154)	0.085 (0.177)	0.328 (1.361)	-0.037 (1.348)
<i>Second Generation -- Parents from Different Regions of Origin</i>						
<i>Immigrant Father / non-Immigrant Mother</i>						
High Access Region	-0.029 (0.026)	0.099*** (0.024)	0.013 (0.044)	0.083** (0.042)	0.301 (0.386)	-0.046 (0.380)
Other			-0.024 (0.026)	0.074*** (0.023)	0.304 (0.281)	-0.219* (0.130)
<i>Immigrant Mother/ non-Immigrant Father</i>						
High Access Region	-0.025 (0.031)	0.056* (0.029)	-0.022 (0.095)	0.168** (0.080)	-0.280*** (0.045)	-0.393*** (0.009)
Other			-0.018 (0.031)	0.023 (0.028)	0.170 (0.274)	0.074 (0.280)
Different Regions	-0.095* (0.049)	0.089* (0.050)	-0.089* (0.050)	0.051 (0.046)	-0.140 (0.307)	0.193 (0.496)
Single Immigrant Parent	0.005 (0.044)	0.117** (0.045)	0.003 (0.120)	0.077 (0.083)	0.442 (1.063)	-0.375*** (0.026)
Interactions with Immigrant Indicators						
Parental Expectations Interactions						
<i>First Generation</i>						
Americas (Except USA)					0.051 (0.044)	-0.027 (0.046)
Africa					0.289*** (0.040)	0.207*** (0.040)
China					-0.068 (0.087)	0.119** (0.052)
E/SE Asia					0.038 (0.059)	-0.014 (0.056)
Other Asia					-0.037 (0.054)	-0.022 (0.045)
W/N Europe					-0.000 (0.056)	0.147* (0.085)
S/E Europe					-0.038 (0.045)	0.033 (0.047)
Anglosphere					-0.030 (0.068)	0.062 (0.057)
Unknown region					-0.499*** (0.000)	0.498*** (0.000)

cont...

Table A4: Access Models, Detailed Immigrant Indicators Interacted with Parental Expectations - cont.

	(1)		(2)		(3)	
	Basic Model		Parental Expectations		Interactions	
	College	University	College	University	College	University
Interactions with Immigrant Indicators - cont						
<i>Second Generation -- Parents from the Same Region of Origin</i>						
Americas (Except USA)					0.039 (0.053)	0.025 (0.045)
Africa					-0.044 (0.106)	0.034 (0.069)
China					-0.030 (0.079)	0.074 (0.055)
E/SE Asia					-0.008 (0.068)	-0.021 (0.046)
Other Asia					-0.067 (0.058)	-0.106*** (0.041)
W/N Europe					0.040 (0.089)	0.102 (0.075)
S/E Europe					0.041 (0.035)	-0.054* (0.030)
Anglosphere					0.037 (0.049)	0.098** (0.049)
Unknown region					-0.093 (0.116)	-0.041 (0.077)
<i>Second Generation -- Parents from Different Regions of Origin</i>						
<i>Immigrant Father / non-Immigrant Mother</i>						
High Access Region					-0.028 (0.031)	0.001 (0.028)
Other					-0.024 (0.020)	0.024 (0.018)
<i>Immigrant Mother/ non-Immigrant Father</i>						
High Access Region					-0.248*** (0.087)	0.499*** (0.000)
Other					-0.021 (0.019)	-0.009 (0.019)
Different Regions					0.006 (0.038)	-0.011 (0.033)
Single Immigrant Parent					-0.075 (0.078)	0.105 (0.073)
Number of Observations	16,166		16,166		16,166	

Notes: Average marginal effects shown. Standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

The expected PSE level is measured in years of PSE that the parents expect their children to complete.

The High Access region refers to Africa, China and Other Asia.