

**ACCESS TO POST-SECONDARY EDUCATION AMONG THE  
FIRST AND SECOND GENERATION CHILDREN  
OF CANADIAN IMMIGRANTS**

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**ABSTRACT**

This research exploits the uniquely rich Youth in Transition Survey to investigate access to post-secondary education (PSE) among the children of Canadian immigrants, including both (i) those who came to this country as immigrants themselves by age 15, and (ii) those who were born in Canada to immigrant parents. Both groups are, overall, considerably more likely to attend PSE, university in particular, than non-immigrant youth, but the patterns vary a great deal by source country, with the Chinese, African and certain other Asian groups having especially high rates. The immigrant differences are partly explained by certain demographic characteristics of their families (e.g., province and area size of residence and family structure), by the relatively high education levels of their parents, and other observable factors such as parental aspirations regarding their children's education. However, some significant differences remain even after controlling for these and other factors.

JEL codes: I20, I23, J15, J18

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**Introduction**

There exists a long line of research on the economic assimilation of immigrants to Canada. One particular recent focus of this work is the perplexing issue of why recent cohorts are doing poorly relative to their Canadian-born counterparts, as well as to previous immigrant cohorts – especially since the Canadian immigrant selection system is based at least partly on applicants’ stock of human capital – educational attainment in particular – which should help lead to good labour market outcomes.

Another more recent, and much more limited, line of research has begun to look further down the road in terms of immigrants’ economic adjustment to investigate the outcomes of their children. This includes a focus on the educational attainment of the children of immigrants, based on the understanding that one of the most critical determinants of success in the Canadian labour market and economic wellbeing is an individual’s level of schooling, especially participation in post-secondary education.

Interest in the outcomes of immigrants and their children is driven in part by the general importance of immigrant outcomes to Canada’s demographic, economic, and social future due to their sheer numbers, which are substantial. But this interest is also motivated by recent developments in Europe, where the children of immigrants appear to be experiencing difficulty. This is seen in not only their lower average educational attainment and weaker labour market performance (e.g., Österberg, 2000; Nielsen, Rosholm, Smith and Husted, 2003; and Van Ours and Veenman 2002, 2003), both of which are in contrast to the situation in Canada, but in its more extreme taking the form of ghettoised communities, riots, religious extremism and even outright terrorism.

The contribution of the present paper is to exploit the unique richness of the Canadian Youth in Transition Survey, A (or “Reading”) Cohort (“YITS-A”) to present new empirical evidence on one particular aspect of this set of issues: access to post-secondary education (PSE) among the children of Canadian immigrants. We consider two distinct groups: (i) those born outside of Canada who arrived with their parents as immigrants themselves, in our case by the

age of 15 and thus facing their PSE opportunities in Canada; and, (ii) individuals born in Canada to immigrant parents. We refer to these as “first generation” and “second generation” children of immigrants – as compared to “non-immigrant” youth (i.e., “third generation” or higher).<sup>1</sup> This paper differs from other research in this area which normally uses educational attainment as the outcome variable, rather than access to PSE. Furthermore, the YITS data allow us to ascertain many new, important, and heretofore uninvestigated correlates of PSE access among immigrants that data sets most often used for these purposes (e.g., the census) cannot.

Using the YITS-A, we track participation in PSE up to age 21, and relate this participation to a rich set of individual and family background variables. We address the following questions. Does access to PSE differ, overall, for the children of immigrants as compared to non-immigrant Canadian youth? If so, do the differences vary by country of origin or by different combinations of the mother’s and father’s immigration status? What are the underlying factors that drive the observed patterns? In particular, what role is played by generally recognised factors such as parental education and family income, but in addition, what is the contribution of some of the more unique factors captured by the YITS, such as high school grades and engagement, standardised test scores, and parents’ aspirations for their children’s PSE attainment? In this way, we paint a detailed picture of the comparative PSE attainment of Canadian immigrant youth and some of the underlying dynamics driving their outcomes, and identify some potentially important implications of these findings.

## **The Literature**

The general literature on Canadian immigrants’ economic adjustment (labour market and related), including the recent decline in their fortunes, is vast, a sampling of which includes Abbott and Beach, 1993; Aydemir, Chen and Corak, 2008; Aydemir and Skuterud, 2005; Baker and Benjamin, 1994; Bloom, Grenier and Gunderson, 1995; Frenette and Morissette, 2005; Grant, 1999; Li, 2001; Meng, 1987; McDonald and Worswick, 1997, 1998; and Picot, 2008; and Picot and Hou, 2011b.. This is somewhat surprising since most immigrants to Canada are admitted based on their observable labour market skills such as education and experience, or are

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<sup>1</sup> Our first group would be included in the “1.5 generation” in the terminology of Aydemir and Sweetman (2008), referring to those immigrants who come to the country early enough to finish their schooling here. Outcomes for this group are very different than those of immigrants who arrive when older.

directly related to someone who does possess the requisite skills. However, often education and experience attained abroad are not rewarded in the Canadian labour market and unobservable skills – which often are rewarded – obviously cannot be used as admission criteria (Aydemir, 2011).

The more specific literature on immigrants' education further informs us that there are important differences in schooling and labour market outcomes among those who enter Canada at different ages, with those who come earlier, and especially those who finish their schooling in Canada, doing best (Schaafsma and Sweetman, 2001); that there are higher rates of return to post-secondary education for immigrants when the schooling is obtained in Canada than when it is gained elsewhere (Hum and Simpson, 1999; McBride and Sweetman, 2003; Alboim, Finnie and Meng, 2005); that there are significant differences in the rates of return to schooling gained in the source country by immigrants' region of origin (Ferrer and Riddell, 2008); and that there is a positive intergenerational transfer of education (de Broucker and Lavallée, 1998) and a slow convergence of education levels to those of the Canadian-born (Sweetman and Dicks, 1999).

The literature on the educational outcomes of the *children* of immigrants is, however, much more limited. Hum and Simpson (2007) use the Survey of Labour and Income Dynamics (SLID) to find that second generation children of immigrants (using the terminology established above) tend to have higher educational attainment than non-immigrant Canadians, and that this attainment has largely been passed from generation to generation, since their parents also tend to be highly educated. Their finding is, however, somewhat dependent on the specific definition of parental immigrant status: those with one immigrant parent have about one-half year of additional education compared to non-immigrants, while those with two immigrant parents have approximately one full year of extra schooling. Second generation immigrants are also much more like to hold a university degree compared to non-immigrant Canadians. Hansen and Kučera (2004) also use the SLID and again find that the children of immigrants have more education, on average, than their non-immigrant counterparts. Kučera (2008) finds similar results using the General Social Survey. All of these studies thus confirm the results reported in earlier work by Sweetman and Dicks (1999), who find a positive and significant correlation in educational attainment across immigrant generations.

Aydemir, Chen and Corak (2008) use census data to construct “probable” (i.e., imputed) parental characteristics (rather than actual characteristics) – and come to comparable conclusions

regarding the educational attainment of first and second generation children of immigrants. Aydemir and Sweetman (2008) also use census data and, controlling for ethnicity, come to essentially the same conclusions. Finally, Bonikowska (2007) uses the Ethnic Diversity Survey – which contains a wide variety of ethnic categories but is limited in the number of educational background variables – to show that the children of immigrants attain higher levels of education compared to non-immigrants, even after controlling for parental education and ethnicity.

In their recent review of the literature, Picot and Hou (2011a) focus on second generation immigrants. They also show that these children of immigrant have higher levels of education than the third or higher generation. Factors such as parental education, living in an urban area, ethnic capital, and other demographic characteristics explain much of this education gap, but the gap itself still remains. Furthermore, there are often large differences between ethnic groups and/or source regions with those with Chinese and Asian immigrant parents being the highest achievers on average.

In sum, these studies, using a variety Canadian data sources and methodologies, find that second generation children of immigrants (i.e., those born in Canada to immigrant parents) have higher levels of educational attainment than both non-immigrants and first generation immigrants (i.e., those who themselves came to Canada), and that the effects of parental education as well as ethnicity are important drivers of these outcomes, but do not explain the entire gap.

The fact that second generation immigrants are more educated than non-immigrant Canadians is, however, as suggested in some of the above studies, perhaps not very surprising, given that (i) research on post-secondary access in Canada shows that the most important determinant of an individual's educational attainment is parents' education levels (Finnie, Sweetman, Mueller and Usher, 2009); and (ii) immigrants tend to be better educated than non-immigrant Canadians, a fact that is at least partly due to Canada's immigrant selection rules, which favour education. Ergo, as long as educational attainment is at least as heritable for immigrants as non-immigrants, we should expect the children of immigrants to have higher educational attainment than non-immigrant Canadians.

In fact, even as the labour market outcomes of new immigrant arrivals appear to be declining, immigrant educational attainment appears to be increasing. For example, according to data from the Labour Force Survey (Zietsma, 2007), immigrants arriving in the five years up to

2006 were more likely to have a bachelor's degree or higher compared to those who arrived in the previous five years – and both immigrant cohorts were much more likely to hold bachelor's or advanced degrees than the Canadian-born.

Insofar as the intergenerational transfer of education remains strong, this bodes well for the educational attainment (and presumably the earnings) of the future children of immigrants. In the words of Hum and Simpson (2007:1985), this intergenerational transfer of education on the part of immigrants may constitute “an important legacy of immigration”. But this educational heritability is not, *ex ante*, guaranteed, and other factors also matter (e.g., family income). Furthermore, these patterns appear to vary significantly with immigrant source country.

Recently, the international literature has been populated with research about the educational attainment of European immigrants (e.g., van Ours and Veenman (2002, 2003, 2006) for the Netherlands; Belzil and Poinas (2010) for France; Riphahn (2003) for Germany; Nielsen, et al. (2003), and Colding et al. (2009) for Denmark; and, Algan, et al. (2010) for Germany, France and the UK). The three basic conclusions that can be drawn from this literature are: (i) both first and second generation immigrants in Europe tend to attain lower levels of education than those born in Europe to European parents; (ii) that there is heterogeneity among immigrants in educational outcomes; and, (iii) that observable student background characteristics such as parental education and/or socio-economic status do not account of the entire gap.<sup>2</sup> For the United States, the situation is somewhat different: both Chiswick and DebBurman (2004) and Card (2005) find a positive gap in the schooling attainment of the second generation compared to both those born in the US to US-born parents and first-generation immigrants, in addition to finding heterogeneity among countries of origin.

The analysis of the education attainment of immigrants' children thus remains an interesting and important topic of study, and the YITS-A represents a rich new data source for investigating this issue and expanding our knowledge of the educational experiences of first and second generation immigrants in Canada and perhaps elsewhere.

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<sup>2</sup> Similarly, the sociology literature on this topic comes to the same conclusion. Heath, et al. (2008) review the literature and find “stable” patterns across European countries in the lower educational attainment of immigrants, but also find some exceptions to this pattern.

## **The Econometric Model**

We use a multinomial logit model for estimating access to PSE, where not participating in PSE, going to college (including trade school), or going to university is taken to be a function of a number of sets of influences. We first include only the immigrant indicators. This allows us to start with the raw differences in PSE access by group expressed in a regression context – which of course correspond to what we observe in the simple descriptive data (i.e., the rates for each group). We then add a set of demographic and family background variables which are typically included in such models. Next we include a more comprehensive set of regressors captured in the YITS relating to the youth’s performance and experiences in high school. We conclude with the addition of parental attitudes to their children’s future schooling attainment.

The model may be expressed as follows:

$$Y = X_1\beta_1 + X_2\beta_2 + X_3\beta_3 + X_4\beta_4 + \mu$$

where  $Y$  represents the outcomes of interest (i.e., no PSE or access to college or university), the  $X_i$  are the vectors of covariates that influence  $Y$ , the  $\beta_i$  are the coefficients associated with each set of  $X$ , and  $\mu$  is a stochastic error term.

The vector  $X_1$  consists of the immigrant identifiers. These come in two forms. In the first, the youth are classified solely by their general immigrant status: first generation immigrant, second generation immigrant, or non-immigrant. This specification allows us to capture the overall record of immigrant youth’s comparative PSE experiences. 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 broader measures. This allows us to get at the PSE experiences of immigrants from different source regions.

The vector  $X_2$  is then added to the model as a second block, and 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 (i.e.,

Francophones outside of Quebec, Anglophones in Quebec<sup>3</sup>). These variables are added to each of the two models corresponding to the different sets of immigrant identifiers described above (aggregate, detailed), and yield the differences in PSE access rates by immigrant group after controlling for the additional regressors. Furthermore, in observing the change in the immigrant effects<sup>4</sup> from the first model (immigrant identifiers only) to the second (adding the control variables), we are also able to see how much of the overall or raw gaps are related to these factors, including the key parental education variable.

The regressors represented by  $X_3$  contain the variables pertaining to the individual's academic preparation and high school experiences. These include high school grades (overall average and those in math, science and English or French), the individual's "PISA" reading score (a standardized test constructed by the Programme of International Student Assessment in which Canada participated), academic and social engagement, parental discipline habits, and others. Again we are able to see what gaps remain after these variables are added – and in observing the changes from the second model to the third, how much<sup>5</sup> of the gaps are related to these factors.<sup>5</sup>

Finally parental aspirations for their children's education are added with the vector of variables represented by  $X_4$ .

The multinomial logit approach used here has been previously developed in Finnie and Mueller (2008, 2009a), and treats the particular level of PSE as a jointly determined process along with the decision to go to PSE or not. We believe this model represents both the conceptually and econometrically correct treatment, which various tests have further verified.<sup>6</sup> This approach also yields, after the appropriate transformations into probability space are made, easily interpretable estimates of the effects of the explanatory variables on the probability of an individual accessing college, accessing university, or not attending PSE.

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<sup>3</sup> Other language indicators are not included since they would capture some of the immigrant effects we are interested in identifying.

<sup>4</sup> Throughout this paper we use the term "effects" to mean the empirical relationships in question, without necessarily implying causality.

<sup>5</sup> There is clearly the potential problem of endogeneity in this set-up. For example, students who aspire to attend university may tend to work harder in high school to attain the grades necessary for admission, so grades are endogenous and the associated coefficient estimates will be biased. This paper is, however, intended only to present a descriptive analysis of immigrant PSE outcomes and how they are broadly *related* to these variables, including those that are potentially endogenous.

<sup>6</sup> We have, for example, tested our model against an ordered logit and found that the multinomial logit is indeed appropriate, although the two models generated similar results.



## **The YITS-S Dataset, Definitions, Samples Employed**

### ***The YITS-A Dataset***

The data used in the analysis are taken from the first four cycles of Statistics Canada's 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 a large, representative sample of young people born in 1984 through their high school years and beyond.<sup>7</sup>

The first interview was carried out in the spring of 2000 and captured individuals' situations (including schooling status) as of December 31<sup>st</sup> of the preceding year, when they were age 15. This cycle of the YITS-A includes information gathered not just from the respondents, but also from their parents and high school officials, and also contains the youths' PISA scores referred to above. Immigrant status and other family background information (e.g., family income, parental education, place of residence) are also taken from this cycle.

Follow-up surveys were carried out with respondents (but not parents or school officials) in 2002, 2004 and 2006 (see Motte, et al. (2009) for a general discussion of the YITS), the latter capturing the youth when they were age 21 (i.e., as of December 2005) – an age by which the great majority of young people have made their PSE decisions.<sup>8</sup>

### ***Definitions of Access to PSE and the Immigrant Groups***

The dependent variables used in our study represent the “highest” level of PSE in which the individual had participated up to the Cycle IV interview – i.e., college or university (the relatively few students who had done both are arbitrarily included in the university category). Access to these is compared to the “baseline” outcome of no PSE.

Our analysis uses the standard definition of access employed in the literature: whether a person has at some point been enrolled in (or “touched”) a certain level of PSE, regardless of whether they completed their studies. “Persistence” is, in comparison, typically defined as the subsequent process of moving through PSE to graduation, but represents another distinct topic.

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<sup>7</sup> See Finnie and Mueller (2009b) for a comparison of the YITS-A with other datasets for the purposes of this analysis.

<sup>8</sup> Other data (including the older YITS-B cohort) show that access rates change only slowly after this age, and the structure of participation with respect to family background even less so.

Educational attainment is yet another concept, typically referring to final schooling levels, and is again not the specific subject of our analysis.

We follow standard conventions in defining those youth classified as immigrants themselves – and thus our “first generation children of immigrants” – as those who were born outside of Canada but who moved to the country and became a citizen or landed immigrant, in our case arriving in the time by age 15 in order to be included in the first YITS survey. Our “second generation children of immigrants” are defined very conventionally as those who were born in Canada but who had at least one parent who was born outside of Canada. All other individuals are treated as “non-immigrants” (i.e., “third generation immigrants” and higher).<sup>9</sup>

The YITS data also allow us to identify the particular country of birth of the respondent and their parents. Countries of origin are combined into nine groups: the “Anglosphere” (all Western English-speaking countries), the Americas (excluding the U.S.), Africa, China, East and Southeast Asia (including India, Pakistan, and countries in the Mid-East), Other Asia (including Japan and South Korea), Western and Northern Europe, Southern and Eastern Europe, and Others. A full listing of the countries included in these categories is contained in Appendix 1. These groupings 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.

### ***Samples Employed***

Non-Canadian citizens, those with unknown immigration status, those who were still continuing in high school at Cycle IV, and those with missing values of the variables used in the models are deleted from the samples. The sample used in the first parts of our analysis contains 16,269 observations, or 93.6 percent of the initial total of those participating in Cycle IV, including 7,937 males and 8,332 females. Sample size is then reduced slightly due to missing

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<sup>9</sup> Some individuals object to such terminology and its implicit reference to “first generation Canadians” and “second generation Canadians” on the grounds that such language is inherently divisive and potentially judgmental. We use this terminology nevertheless since it allows us to concisely refer to the groups in question, which we (and others) find interesting and important to study.

values on some of the variables included in the different models, as shown in the tables of results.<sup>10</sup>

It should be noted that our analysis has a very specific cohort interpretation – those 15-year-olds included in the YITS-A dataset. Our results will, therefore, not be directly comparable to other studies which use census and other data to look at broader groups of immigrants and non-immigrants. In particular, our “1.5 generation” immigrants represent the specific group of individuals who were born in 1984 and came to Canada with their families and became landed immigrants or citizens sometime before 2000. Our “second generation” immigrants also include individuals born in that same year (1984) to at least one immigrant parent, but who were themselves born in Canada. Finally, our “non-immigrant” population includes individuals of the same age (birth in 1984) who had no immigrant parents.<sup>11</sup>

## **Empirical Results**

### ***Descriptive Statistics***

The means for the variables included in the analysis and the associated PSE participation rates are shown in Table 1.<sup>12</sup> The patterns are consistent with what is typically found in the literature. PSE participation rates are much higher for females than for males, 81.1 percent versus 69.0 percent, this difference almost entirely due to the higher university participation rates of young women – 50.1 percent compared to 34.6 percent for males. University participation rates are the highest in Nova Scotia and Prince Edward Island and lowest in Alberta and Quebec, and overall PSE rates are the highest in Ontario and lowest in the three Prairie provinces. University participation rates are higher among urban residents, with rural residents having higher rates of college attendance but not enough to compensate, and thus lower PSE participation rates overall. Children from two parent families have higher overall PSE rates and

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<sup>10</sup> A full accounting of the observations dropped from the sample at various stages of the estimation process is available from the authors.

<sup>11</sup> 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.

<sup>12</sup> In the main results presented here, we combine male and female observations. This is due to sample size limitations, and because the patterns tend to be similar for males and females. Results by sex are found in Finnie and Mueller (2009b).

are especially ahead in terms of university attendance compared to those with only one parent present. Parental education is strongly related to PSE attendance, especially university. Parental income also shows a positive relationship, although it is weaker than that of parental education.

For our purposes, the data on immigrants are the main focus. Both first and second generation children of immigrants have higher overall PSE participation rates than non-immigrants, with higher university rates driving this difference: non-immigrant Canadians have a 37.8 percent rate of university participation as compared to rates of 56.6 and 53.5 percent for first and second generation immigrants, respectively. In contrast, non-immigrant Canadians are more likely to go to college than immigrants, their participation rates being about five percentage points higher: 33.9 percent as against 29.1 and 29.7 percent. In short, immigrant children are (i) more likely to go to PSE, and (ii) more likely to go to university rather than college when they do go to PSE.

In terms of region of origin, we find a number of interesting patterns, some perhaps surprising. Among those children of immigrants who were themselves born abroad and came to Canada (i.e., our first generation children of immigrants), the university participation rates of those from Africa, China, and Other Asia (which includes India and Pakistan) exceed 60 percent; China is the greatest outlier with a full 88.6 percent going to university. The Americas (excluding the U.S.) have the lowest overall PSE participation rate (61.5 percent), and have especially low university attendance (24.2 percent) – not only in comparison to other immigrant groups, but when compared to the non-immigrant population as well. We return to these patterns in a regression context below.

Among those born in Canada to immigrants (i.e., our second generation immigrant group), we have calculated a number of sets of rates reflecting mother's origin (regardless of the father's status), father's origin (same), and where both parents are from the same region along with those of mixed origin. The results are generally quite similar across the different ways of looking at immigration status (see Finnie and Mueller, 2009b) and here we present only the results for those whose parents are from the same region, as well as broader categories of those cases where one parent is an immigrant and the other is not. For those for whom both parents are from the same region, the patterns generally follow those seen for first generation immigrants – those with both parents from China or Africa having the highest university participation rates,

those from the Americas having the lowest, and the others lying between these extremes. Discussions of the patterns for other groups, and for those of mixed origins are left to below.

## ***Multivariate Results***

### **Differences by Aggregate Immigrant Groups**

Table 2 presents the results obtained with our multinomial logit model using the aggregate immigrant indicators (i.e., first generation immigrant, second generation immigrant, non-immigrant). The different columns report the average marginal effects associated with each of the explanatory variables on the probability of attending college or attending university while including different sets of regressors in the model. Since most of the quantitatively larger outcomes are for access to university, our comments will likewise focus on that outcome, although the results for college access are also presented for comparison purposes.<sup>13</sup>

The first columns of Table 2 shows the results for the model which includes only the immigrant indicators, and reflect the overall raw differences seen in the descriptive statistics presented above, namely, that both first and second generation immigrants are more likely to attend PSE, especially university, compared to those born in Canada to Canadian parents. The results indicate that first generation children of immigrants are, overall, 18.8 percentage points more likely to attend university compared to non-immigrant Canadians, while second generation children of immigrants are 15.8 percentage points above the non-immigrant group. Given the mean overall university participation rate in the sample of 42.1 percent (Table 1), these are large differences.<sup>14</sup> Immigrant college access rates are lower than those of non-immigrants, but by a much smaller difference, meaning overall PSE access rates are higher (as previously seen).

The second model adds the set of basic controls representing province, being a linguistic minority (Francophone out of Quebec or Anglophone in Quebec), urban versus rural residence, and family type to the model. The effects on these variables all appear reasonable, but more important to the focus of this paper is that adding them reduces the marginal “effects” of the immigrant indicators only moderately. First and second generation children of immigrants

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<sup>13</sup> The results for the no-PSE outcome are not shown since they are the residual of the PSE effects: any effect(s) on the probability of attending college or university must be offset by a corresponding effect on not attending PSE.

<sup>14</sup> These estimated differences correspond exactly (allowing for rounding) to the differences in the means reported in the descriptive statistics.

remain 14.4 and 11.3 percentage points (respectively) more likely to attend university than non-immigrant Canadians. About 23 percent of the overall (raw) gap on the part of first generation immigrants and 28 percent of the raw gap for second generation is thus explained by these basic control variables (i.e., these are the respective proportional declines in the estimated immigrant effects between the first and second models). Their higher rates of living in cities and coming from two parent families are most important in this regard.

Column three adds parental income to the equation. The income effects are – in the absence of the parental education measures – quite strong, and taking income into account raises the university coefficient on the first generation immigrant children identifier substantially (from .144 to .203), while having no such effect for second generation immigrants. This is an interesting, but perhaps not surprising result. It is well known that recently arrived immigrants (and hence the parents of the first generation immigrants included in our samples) tend to have lower incomes than the Canadian-born. Since income generally has a positive effect on PSE attendance, taking immigrant families' low incomes into account boosts the “pure” immigrant effect – i.e., they are *especially* more likely to attend given their low incomes. This effect is weaker for second generation immigrants because their families have been in the country longer and are therefore no longer at such a general income disadvantage.

The final model adds the level of education of the most educated parent to the model. The estimated parental education effects are strong, and reduce the income effects substantially, thus again showing that parental education has a greater effect than family income, and that the estimated effect of the latter is substantially biased upward if parental education is not included (Finnie and Mueller, 2008, 2009a). Including the education variables also reduces the first generation immigrant effect to 12.0 percentage points, and for second generation Canadians the effect is reduced to 10.0 percentage points. The higher immigrant PSE participation rates thus appear to be attributable a substantial degree to their parents having relatively high education levels, which tend to drive their PSE participation rates upwards.

Nevertheless, strong university attendance effects (in particular) remain even after parental education is added, suggesting that there are differences beyond those associated with parental education. The simple story that “the children of immigrants get more PSE because their parents are highly educated” appears to be far from the whole story.

### **The Detailed Immigrant Groups**

In Table 3 we replace the aggregate immigrant indicators with the detailed region of origin indicators for the child in the case of first generation immigrants, and the region of origin of the parents in the case of second generation immigrants. The different columns of the table represent the same model progression just seen using the aggregate indicators.

Again reflecting the descriptive data seen earlier, the results in the two columns (i.e., the first model) show the differences in college and university access by region of origin. Children of immigrants of African, Chinese, and Other Asian origin are considerably more likely to go to university, in particular, and in some cases substantially so, regardless of which generation (first or second). So too are first, but not second, generation Southern-Eastern Europeans and those from the Anglosphere, second generation East and Southeast Asians. In contrast, the only group with university participation rates that are significantly lower than those of non-immigrants is the first generation group from the Americas (which excludes the United States). The other effects are positive, but not statistically different from zero, except the second generation Americas effect which is negative but also non-significant.

One other set of interesting patterns emerges regarding those second generation immigrants with parents of mixed origins, who actually comprise the largest immigrant group in our sample (Table 1). Those with immigrant fathers (regardless of their specific region of origin) but non-immigrant mothers have a 17.9 percentage point higher university access rate than non-immigrant Canadians, while those with an immigrant mother and a non-immigrant father have a 12.5 percent advantage. Those with two immigrant parents, but from different regions (as per our definitions – two parents from different countries within the same region are not included here) have a 15.1 percent higher rate than non-immigrants, and single immigrant parents have a rate that is 11.4 percent higher.

As we add the other explanatory variables to the model (and make our way across the results presented in Table 3), we see that for first generation children of Chinese origin, only a small portion of their remarkably high university access rate is explained by the different sets of regressors (which include parental education) as the estimated effect barely falls, from 50.8 percentage points in model 1 (no additional explanatory variables) to 48.3 percentage points in column 4 (all included). The Africa effect falls more, from 26.2 percentage points to 19.7 percentage points, as is the case for the Other Asia category, from 29.5 to 17.6.

In contrast, for the first generation groups with smaller differences to start, Southeast Europe and the Anglosphere, the effects fall substantially, to non-significance, mainly due the inclusion of parental education, but also the basic control variables (place of residence and family type) in the case of Southern and Eastern Europe. Similarly, the Americas effect also falls to non-significance, in this case mostly when family income is included in the model.

Among the second generation groups, roughly similar patterns are evident, but with some nuances. The strongly positive China effect is again reduced only marginally as the other regressors are added (from a 42.8 percentage point difference in university participation to 39.7 percentage points), while the African group drops a little more, from 43.6 to 34.4 percentage points. The differences for East-Southeast Asia (including Japan and Korea along with Vietnam, Thailand and so on), and Other Asia (India, Pakistan and others) also decline, but remain significant (20.3 and 25.3 percent, respectively), with different factors mattering, including the basic controls (place of residence, family type) along with parental education.

The effects of having one immigrant parent and one non-immigrant parent, of having two immigrant parents from different regions, and of having an immigrant single parent all fall as well, such that only the father-immigrant/mother-non-immigrant and single parent immigrant categories remain significant after the full set of regressors is added.

The conclusions thus far are that (i) significant overall differences in PSE participation rates, particularly at the university level, exist between first and second generation immigrants and non-immigrant Canadian youth; (ii) these differences vary a great deal by source region; and, (iii) in some, but not all, cases a significant amount of the gap is explained by the basic demographic controls included in the models and parental education levels, while the influence of family income tends to work against immigrants, but iv) substantial differences remain for certain groups. Since the estimates on the aggregate immigrant variables disguise important differences by source region, and for the sake of brevity, all subsequent analysis presented in this paper will be for the detailed immigrant groups.<sup>15</sup>

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<sup>15</sup> See Finnie and Mueller (2009b) for further results using the aggregate categories.



### **Adding the High School Grade and “Scale” Variables**

We now add the high school variables to the models. These variables were constructed from the questionnaires administered to the students, to their parents, and to their high school administrators during the initial cycle of the YITS-A in 2000, and thus correspond to the time when the students were 15 years of age.<sup>16</sup>

The grade variables represent pseudo-continuous variables, measured on percentage point scales, constructed by the authors using the mid-points of the range categories reported by students. The PISA reading score is that obtained on the standardised international reading test administered to all those included in the YITS mentioned earlier. The score is normalised to have a mean of 500 and a standard deviation of 100 across all countries participating in the PISA. The other “scale” variables relate to various aspects of high school and related life experiences, and are thus labelled by Statistics Canada because they are constructed from series of underlying related variables into the index variables we employ.

Three measures come under the heading of “high school engagement”. The first of these, “academic participation” is an aggregate of working diligently both inside and outside of school, including hours spent on homework, meeting assignment deadlines, not skipping classes, etc. “Academic identification”, refers to getting along with teachers, having an interest in the subject matter, and related behaviours and attitudes. Finally, “social engagement” is a gauge of social involvement at school such as having friends, a feeling of belonging to the social aspects of school, and so on.

The next set of variables represents “self-perception”, and also contains three specific measures. “Self-esteem” is largely self-explanatory. “Self-efficacy” reflects the student’s responses to questions related to his/her competence and confidence in performing school work. Finally, “self-mastery” is an appraisal of the individual’s sense of broader control over their life.

The third category of scale measure consists of a single variable, “social support”, which measures the availability of assistance from friends and family.

Finally, “Parental Behaviour” consists of three separate measures. “Monitoring behaviour” reflects the parents’ awareness of what their child is doing and with whom they are

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<sup>16</sup> Full details of these variables can be found in Finnie and Mueller (2009b).

friends. Second, “nurturance behaviour” means what it says. Thirdly, “inconsistent discipline” addresses how parents address their child’s inappropriate behaviour.

As mentioned above, we recognise that at least some of these scale and grade variables are potentially endogenous to participation in PSE decisions (e.g., someone who wants to go to university will presumably attempt to get the grades required to be admitted), but in other cases this is less likely to be the case (e.g., some of the parental behaviour variables). But the basic idea here is to again see how much further the observed gaps can be narrowed by including these variables, thus indicating that the observed differences are “related to” or “work through” the variables in question, and to then see how much of the gap remains after the inclusion of different sets of variables, thus indicating what effects remain *on top of* the controls added. Is it, for example, higher grades and academic participation (i.e., hard work) during high school – or at least something *related* to these variables – that cause the Chinese to go to university at such high rates, or are the effects still strong even after controlling for these influences?

Table 4 shows the results for the models including the high school grade and scale variables. The first model reported in the table is the same as the final model of Table 3 with the basic background controls included and is included to facilitate comparisons with the other models reported in the table.<sup>17</sup> The second and third models augment this basic model with high school grades and the scale variables (as well as the PISA reading score), respectively. The final column represents the full model including all variables. In all models, the background variables behave as expected, so we again focus on the immigrant effects.

Among first generation children of immigrants, the two groups that show significantly different university participation rates in the first model (i.e., the model with the controls that were previously added), show smaller effects when the grade variables are added. The effects drop most for those from African, and become insignificant at this point. The Chinese effect decreases from .483 to .389, which is still large, and highly significant. The Other Asia difference also drops, but remains significant at .169. The other effects (i.e., for the other regions) – and their changes as the variables are added – are smallish, and the remaining differences not statistically significant, thus precluding us from drawing much from them.

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<sup>17</sup> The results from the first model in this table are somewhat different than those in the final model of Table 3, owing to a smaller sample size as observations were dropped due to missing values on some of the variables added. Nonetheless, the coefficient estimates in both cases are very similar.

Adding both grades and the scale and PISA reading score variables (the final column of Table 4) actually increases the African and Other Asian effects compared to when grades alone are included (the African estimate again becomes statistically significant), suggesting these groups are actually disadvantaged in terms of their high school and related experiences, while there is little change for Chinese immigrants. The conclusion here is that among first generation immigrants, a small portion of their higher university participation rates appears to be related to their high school performance as represented in their grades, but not other attributes related to their high school and related family experiences.

Broadly similar results are seen for second generation immigrants: grades clearly work in the favour of all groups with significantly higher university access rates at this point (Africa, China, East-Southeast Asia, Other Asia), thus reducing the “unexplained” portion of these gaps to in each case, in some cases quite substantially. The grade, PISA score, and “scale” variables work in different directions for different groups, but all differences continue to remain significant after the addition of these extra variables.

Interestingly, adding these new sets of variables does little to affect one way or the other the relative university access rates of those with “mixed” parents, suggesting they are little different from the non-immigrant reference group on these counts. Having an immigrant father but non-immigrant mother, as well as having an immigrant single parent, continue to have significantly higher university participation rates, while those with immigrant parents from different regions have marginally higher rates (again) when these extra variables are added in.

### **The Role of Parental Aspirations**

To try to further understand the gap between the children of immigrants and non-immigrants, we introduce a series of variables which capture parental aspirations regarding the education of their children.

In the YITS, parents were asked the following questions: (i) How important is it that (your child) graduates from high school? (ii) How important is it to you that (your child) gets more education after high school? and (iii) What’s the highest level of education you hope (your child) will get? The results of adding these variables sequentially to the model are presented in Table 5. We add these in two sets in order to demonstrate which of these variables appear to have the greatest effect on the immigrant gaps. To again facilitate comparisons, the original

baseline model (i.e., including the first set of regressors but not the high school grade, PISA score, and other high school variables) is reported as the first set of results in this table, while the last model adds the high school variables to the model augmented with the (full) new set of aspiration variables.<sup>18</sup>

The second model reported in the table includes the first two aspiration variables. The importance parents attach to finishing high school is not significantly related to PSE attendance (although the point estimate is substantial), largely because there is little variation in this variable (almost all parents think it's important). Seeing the importance of PSE at some level is, however, a significant indicator of university participation, the effect increasing as parental responses go from "fairly important" to "highly important". Furthermore, adding the highest level of PSE that a parent wishes for their child (model 3) is also significant: the higher the parental wishes, the more likely the child is to attend university. Also of note, if a parent wishes a trade or college PSE choice for their child, the child is more likely to attend college (including trade school).<sup>19</sup>

While these results are interesting on their own, we return to our focus on the immigrant effects. Adding the first two aspiration variables (finishing high school, obtaining some PSE) does relatively little to change the immigrant effects on access to PSE, regardless of immigrant generation or specific immigrant region of origin. The inclusion of the specific level of PSE hoped for does, however, have a substantial impact.

Starting with first generation immigrants, those from the Americas are estimated to be 14.0 percentage points, on average, less likely to attend university compared to non-immigrants after all the aspiration variables are added – an effect that is stronger (and now significant), as compared to when aspirations are not included. One interpretation of this finding is that the lower than average PSE access rates of this group cannot be blamed on their parents' not attaching importance to PSE: in fact, this group underperforms relative to those aspirations. Conversely, for first generation immigrant Africans and Other Asians, the estimated gaps decline substantially in size, and in statistical significance, when the level of PSE variable is introduced. The Chinese difference also falls, but remains statistically significant.

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<sup>18</sup> Note again that the sample size in this table is reduced somewhat compared to previous results. However, the coefficient estimates in the basic model are comparable to those for the same model in Tables 3 and 4.

<sup>19</sup> We recognise the potential endogeneity of these variables and again present the results in the spirit of a further descriptive element of the analysis.

For the second generation immigrant groups for which the differences are significant in the baseline model to this table the effects are diminished with the addition of the aspiration variables, particularly the level of PSE indicator, but all remain significant (although diminished) with the new variables included. These include African, China, East and East and Southeast Asia, and Other Asia. The same story of diminished effects holds for the immigrant father but non-immigrant mother group, as well as the single immigrant parent group.

Parental aspirations are thus an important correlate of a child's access to PSE, but it is the desired level of PSE completion that is most important for the immigrant access gaps we observe.

## **V. Conclusions and Policy Implications**

Using the YITS-A dataset and a series of multinomial logit models we have found large differences in PSE access rates between the children of immigrant and non-immigrant Canadian youth which favour the immigrant groups, these differences driven by their substantially higher participation rates at the university level, with college rates generally being a bit lower. As interesting, these differences vary a great deal by source country, with those from China, Asia, and Africa doing most favourably, whereas those from the Americas (a group which in our analysis excludes those from the U.S.) are the only immigrant group which does worse than the non-immigrant population.

A portion of these gaps is explained by the basic demographic controls included in the models (i.e., family type and place of residence, including province and the urban-rural indicator), and still more by parental education levels, which tend to be high among the children of immigrants, while the lower than average income levels of first generation immigrant families work against them to some degree. High school grades, scores on the international PISA reading test, and other high school measures of performance, "engagement" and related attributes explain another portion of these gaps. Still, despite the inclusion of the large number of controls made possible with the YITS data, substantial differences remain between the immigrant and non-immigrant groups, especially those from the regions indicated above. We conjecture that these differences reflect cultural factors, including a strong pro-PSE ethos. In a phrase, "they just go".

These results have a number of implications for our understanding of the immigrant experience in Canada. First, our findings suggest that it is probably important to consider the

*children* of immigrants in any full analysis of the economic integration of immigrants. One corollary of this first implication is that the children of immigrants are likely to enjoy economic success themselves, since PSE is the best predictor of later economic outcomes. This is perhaps especially important in a context where there has been a deterioration in the economic outcomes of recent immigrants, as indicated by their earnings levels, poverty rates, and other measures, since the early 1990s, and especially since around 2000 – both at their point of arrival and in the years that follow. But as long as their children continue to flock to PSE, at least their fortunes may continue to be relatively rosy – and the longer-run perspective of the integration of immigrants we suggest may continue to have this important adjustment. That said, it remains to be seen if the conjectured successful labour force outcomes of the PSE-educated children of immigrants will indeed forthcoming. Only the future can tell us this.<sup>20</sup>

Another interesting observation to make is that, based on this analysis, the Canadian record appears to differ substantially from the European one, where at least by some measures the children of immigrants are facing substantial difficulties. Our research cannot, however, say why this is. Does the explanation lie in the manner in which immigrants are received in Canada, which of course has a long history of immigration, even as the “face” of Canadian immigration has of late shifted away from the traditional European and “Anglosphere” sources and towards Asia, Africa, and the Mid-East? Or is the answer more in the qualities of the immigrants we attract and permit to enter, the latter perhaps related to our “points” system which favours those with more education, those with language skills, more youthful applicants, and those with relatives already in Canada (among other criteria). Again our research cannot fully answer these questions.

Another implication of our findings is that with the relatively large populations of immigrants permitted to enter Canada – on the order of close to one percent of the population each year – the high PSE participation rates of their children may put increasing strains on the Canadian university system, especially campuses located in the cities where most of these new immigrants reside (Toronto, Vancouver, and Montreal in particular). Either capacity will have to be expanded or we risk seeing a “crowding out” of non-immigrant youth by non-immigrants,

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<sup>20</sup> We emphasize that our analysis focuses on the *children* of immigrants – including not only second generation immigrants, but those first generation immigrants who themselves finished their high school and faced their PSE opportunities in Canada. We thus exclude those who came to Canada at a later age, who would not have this same set of schooling experiences and opportunities.

which could cause undesirable tensions. To us, recognising such a possibility and taking appropriate action would seem to represent a better strategy than ignoring the issue, perhaps on the grounds that it is too delicate, or that it is simply unpalatable to consider the possibilities of such a “backlash”. This said, the age-related demographics of the country point to a decline in the PSE-attending population in the next years to come, so perhaps some of this pressure may be resolved in this manner.

Finally, in an increasingly globalised economy, advantages are likely to accrue to countries that have citizens able to conduct business with citizens from around the world. It is hard to imagine anyone being more suited to this than the children of immigrants, who will generally have a familiarity with the languages, customs, and cultures of other countries, and their high levels of PSE will likely tend to put them in positions of business leadership where such advantages would naturally be well utilized. The Chinese and Asian heritage of a good percentage of our immigrant population corresponds to where most observers believe the greatest economic growth, and business opportunities, are bound to lie. In this respect, the Canadian economy should have a special advantage due to the high rates at which our own immigrant population goes to college and, especially, university.

According to Citizenship and Immigration Canada (2011), of the 189,913 permanent residents admitted as economic immigrants in 2010, 140,869 of these originated in Africa, the Middle East, and the Asia-Pacific region. Whatever the outcomes of these individuals, our research suggests that their children will tend to go on to PSE, university in particular. With PSE being a driving force of the nation’s economy, as well as a key to individual success, this is an important dynamic to consider when thinking about the fortunes of immigrants and their impact on the country.

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Table 1: Sample Means and Access Rates by Age 21

|                             | Mean  | Access Rates |         |            |       |
|-----------------------------|-------|--------------|---------|------------|-------|
|                             |       | No PSE       | PSE     |            |       |
|                             |       |              | College | University | Any   |
| <b>Gender</b>               |       |              |         |            |       |
| Female                      | 0.497 | 0.189        | 0.310   | 0.501      | 0.811 |
| Male                        | 0.503 | 0.310        | 0.344   | 0.346      | 0.690 |
| <b>Province</b>             |       |              |         |            |       |
| Newfoundland and Labrador   | 0.021 | 0.251        | 0.302   | 0.447      | 0.749 |
| Prince Edward Island        | 0.006 | 0.221        | 0.212   | 0.567      | 0.779 |
| Nova Scotia                 | 0.034 | 0.226        | 0.226   | 0.548      | 0.774 |
| New Brunswick               | 0.028 | 0.264        | 0.240   | 0.496      | 0.736 |
| Quebec                      | 0.219 | 0.289        | 0.402   | 0.309      | 0.711 |
| Ontario                     | 0.377 | 0.181        | 0.358   | 0.461      | 0.819 |
| Manitoba                    | 0.037 | 0.327        | 0.201   | 0.472      | 0.673 |
| Saskatchewan                | 0.039 | 0.321        | 0.234   | 0.445      | 0.679 |
| Alberta                     | 0.108 | 0.331        | 0.282   | 0.388      | 0.669 |
| British Columbia            | 0.132 | 0.276        | 0.268   | 0.456      | 0.724 |
| <b>Linguistic Minority</b>  |       |              |         |            |       |
| Majority language           | 0.952 | 0.252        | 0.325   | 0.423      | 0.748 |
| English in Quebec           | 0.019 | 0.162        | 0.405   | 0.433      | 0.838 |
| French in ROC               | 0.028 | 0.218        | 0.345   | 0.437      | 0.782 |
| <b>High School Location</b> |       |              |         |            |       |
| Urban                       | 0.745 | 0.224        | 0.315   | 0.461      | 0.776 |
| Rural                       | 0.255 | 0.323        | 0.363   | 0.314      | 0.677 |
| <b>Visible Minority</b>     |       |              |         |            |       |
| Non-visible minority        | 0.874 | 0.269        | 0.333   | 0.398      | 0.731 |
| Visible minority            | 0.126 | 0.115        | 0.286   | 0.599      | 0.885 |
| <b>Family Structure</b>     |       |              |         |            |       |
| Two parents                 | 0.832 | 0.236        | 0.322   | 0.442      | 0.764 |
| Single mother               | 0.128 | 0.312        | 0.342   | 0.346      | 0.688 |
| Single father               | 0.026 | 0.304        | 0.406   | 0.289      | 0.696 |
| Don't know                  | 0.014 | 0.378        | 0.355   | 0.267      | 0.622 |
| <b>Parental Education</b>   |       |              |         |            |       |
| Below high school           | 0.084 | 0.517        | 0.327   | 0.156      | 0.483 |
| High school completed       | 0.213 | 0.340        | 0.381   | 0.280      | 0.660 |
| Some PSE                    | 0.067 | 0.277        | 0.386   | 0.337      | 0.723 |
| College                     | 0.313 | 0.263        | 0.372   | 0.364      | 0.737 |
| University-below BA         | 0.047 | 0.150        | 0.314   | 0.536      | 0.850 |
| University-BA               | 0.181 | 0.112        | 0.261   | 0.627      | 0.888 |
| University-Grad             | 0.094 | 0.057        | 0.148   | 0.796      | 0.943 |
| Other/unknown               | 0.001 | 0.372        | 0.401   | 0.227      | 0.628 |
| <b>Family Income</b>        |       |              |         |            |       |
| \$5,000 to 25,000           | 0.074 | 0.382        | 0.318   | 0.300      | 0.618 |
| \$25,000 to 50,000          | 0.254 | 0.325        | 0.352   | 0.323      | 0.675 |
| \$50,000 to 75,000          | 0.287 | 0.257        | 0.345   | 0.398      | 0.743 |
| \$75,000 to 100,000         | 0.231 | 0.198        | 0.314   | 0.488      | 0.802 |
| \$100,000 and up            | 0.154 | 0.124        | 0.277   | 0.599      | 0.876 |

cont...

**Table 1: Sample Means and Access Rates by Age 21 - cont.**

|  | Mean  | Access Rates |         |            |       |
|--|-------|--------------|---------|------------|-------|
|  |       | No PSE       | PSE     |            |       |
|  |       |              | College | University | Any   |
| <b>Aggregate Immigrant Status</b>                    |       |              |         |            |       |
| Non-immigrant  | 0.727 | 0.283        | 0.339   | 0.378      | 0.717 |
| First generation                                     | 0.085 | 0.143        | 0.291   | 0.566      | 0.857 |
| Second generation                                    | 0.187 | 0.168        | 0.297   | 0.535      | 0.832 |
| <b>Detailed Immigrant Status</b>                     |       |              |         |            |       |
| <b>First Generation</b>                              |       |              |         |            |       |
| Non-Immigrant  | 0.727 | 0.283        | 0.339   | 0.378      | 0.717 |
| Americas (except USA)                                | 0.010 | 0.395        | 0.363   | 0.242      | 0.605 |
| Africa   | 0.005 | •            | •       | 0.640      | •     |
| China  | 0.014 | •            | •       | 0.886      | •     |
| E/SE Asia  | 0.012 | 0.121        | 0.469   | 0.411      | 0.879 |
| Other Asia   | 0.019 | 0.068        | 0.260   | 0.672      | 0.932 |
| W/N Europe   | 0.003 | 0.214        | 0.337   | 0.449      | 0.786 |
| S/E Europe   | 0.012 | 0.147        | 0.348   | 0.505      | 0.853 |
| Anglosphere  | 0.008 | 0.256        | 0.209   | 0.535      | 0.744 |
| Other/unknown  | 0.002 | •            | •       | 0.437      | •     |
| <b>Second Generation -- Mix of Parents' Origin</b>   |       |              |         |            |       |
| Immig. father/non-imm. mother                        | 0.049 | 0.162        | 0.282   | 0.556      | 0.838 |
| Immig. mother/non-imm. father                        | 0.033 | 0.207        | 0.291   | 0.502      | 0.793 |
| Imm. parents, different regions                      | 0.013 | 0.249        | 0.222   | 0.529      | 0.751 |
| Single immigrant parent                              | 0.022 | 0.166        | 0.342   | 0.492      | 0.834 |
| <b>Second Generation -- Parents from Same Origin</b> |       |              |         |            |       |
| Americas (except USA)                                | 0.009 | 0.208        | 0.439   | 0.353      | 0.792 |
| Africa   | 0.003 | •            | •       | 0.814      | •     |
| China  | 0.009 | 0.065        | 0.129   | 0.805      | 0.935 |
| E/SE Asia  | 0.008 | 0.113        | 0.282   | 0.605      | 0.887 |
| Other Asia   | 0.012 | 0.040        | 0.269   | 0.691      | 0.960 |
| W/N Europe   | 0.002 | •            | •       | 0.545      | •     |
| S/E Europe   | 0.019 | 0.218        | 0.342   | 0.440      | 0.782 |
| Anglosphere  | 0.007 | 0.192        | 0.416   | 0.392      | 0.808 |
| Other/unknown  | 0.001 | •            | •       | 0.520      | •     |

Cells marked • are suppressed due to Statistics Canada confidentiality rules related to small sample sizes and residual disclosure.

Table 2: Access Models, Aggregate Immigrant Indicators

|   | Immigrant Variables Only |            | Basic Controls       |                      | Family Income        |                      | Parental Education   |                      |
|---|--------------------------|------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|   | College                  | University | College              | University           | College              | University           | College              | University           |
| <b>Gender (Male)</b>                              |                          |            |                      |                      |                      |                      |                      |                      |
| Female  |                          |            | -0.034***<br>(0.011) | 0.155***<br>(0.011)  | -0.035***<br>(0.011) | 0.159***<br>(0.011)  | -0.033***<br>(0.010) | 0.158***<br>(0.011)  |
| <b>Province (Ontario)</b>                         |                          |            |                      |                      |                      |                      |                      |                      |
| Newfoundland                                      |                          |            | -0.095***<br>(0.018) | 0.078***<br>(0.020)  | -0.113***<br>(0.018) | 0.140***<br>(0.020)  | -0.106***<br>(0.018) | 0.123***<br>(0.019)  |
| Prince Edward Island                              |                          |            | -0.175***<br>(0.015) | 0.177***<br>(0.020)  | -0.189***<br>(0.015) | 0.226***<br>(0.019)  | -0.174***<br>(0.016) | 0.185***<br>(0.019)  |
| Nova Scotia                                       |                          |            | -0.156***<br>(0.015) | 0.147***<br>(0.018)  | -0.168***<br>(0.014) | 0.191***<br>(0.018)  | -0.153***<br>(0.015) | 0.150***<br>(0.017)  |
| New Brunswick                                     |                          |            | -0.153***<br>(0.015) | 0.111***<br>(0.019)  | -0.166***<br>(0.014) | 0.160***<br>(0.018)  | -0.159***<br>(0.014) | 0.138***<br>(0.017)  |
| Quebec  |                          |            | 0.029*<br>(0.018)    | -0.116***<br>(0.015) | 0.020<br>(0.018)     | -0.080***<br>(0.015) | 0.026<br>(0.018)     | -0.081***<br>(0.014) |
| Manitoba  |                          |            | -0.172***<br>(0.015) | 0.055***<br>(0.020)  | -0.179***<br>(0.015) | 0.082***<br>(0.019)  | -0.176***<br>(0.015) | 0.078***<br>(0.018)  |
| Saskatchewan                                      |                          |            | -0.147***<br>(0.015) | 0.058***<br>(0.019)  | -0.157***<br>(0.015) | 0.098***<br>(0.019)  | -0.154***<br>(0.015) | 0.079***<br>(0.018)  |
| Alberta   |                          |            | -0.089***<br>(0.016) | -0.039**<br>(0.017)  | -0.092***<br>(0.016) | -0.039**<br>(0.017)  | -0.096***<br>(0.016) | -0.034**<br>(0.016)  |
| British Columbia                                  |                          |            | -0.091***<br>(0.017) | -0.013<br>(0.018)    | -0.097***<br>(0.017) | 0.006<br>(0.017)     | -0.096***<br>(0.017) | -0.009<br>(0.016)    |
| <b>Linguistic Minority (Non Minority)</b>         |                          |            |                      |                      |                      |                      |                      |                      |
| English minority in QC                            |                          |            | 0.005<br>(0.027)     | 0.100***<br>(0.029)  | 0.017<br>(0.028)     | 0.072**<br>(0.029)   | 0.035<br>(0.028)     | 0.035<br>(0.027)     |
| French minority outside QC                        |                          |            | 0.029<br>(0.026)     | -0.002<br>(0.025)    | 0.029<br>(0.026)     | 0.004<br>(0.025)     | 0.033<br>(0.025)     | 0.003<br>(0.024)     |
| <b>High School Location (Rural)</b>               |                          |            |                      |                      |                      |                      |                      |                      |
| Urban   |                          |            | -0.063***<br>(0.012) | 0.131***<br>(0.012)  | -0.057***<br>(0.012) | 0.098***<br>(0.012)  | -0.046***<br>(0.012) | 0.065***<br>(0.011)  |
| <b>Family Structure (Two Parents)</b>             |                          |            |                      |                      |                      |                      |                      |                      |
| Single mother                                     |                          |            | 0.017<br>(0.018)     | -0.099***<br>(0.017) | 0.000<br>(0.019)     | 0.012<br>(0.019)     | 0.009<br>(0.019)     | -0.008<br>(0.018)    |
| Single father                                     |                          |            | 0.067*<br>(0.038)    | -0.120***<br>(0.035) | 0.058<br>(0.039)     | -0.061*<br>(0.037)   | 0.078**<br>(0.038)   | -0.070**<br>(0.034)  |
| Don't know  |                          |            | 0.044<br>(0.052)     | -0.178***<br>(0.045) | 0.044<br>(0.052)     | -0.105**<br>(0.050)  | 0.040<br>(0.051)     | -0.072<br>(0.051)    |
| <b>Parental Education (High School Completed)</b> |                          |            |                      |                      |                      |                      |                      |                      |
| Less than HS                                      |                          |            |                      |                      |                      |                      | -0.044*<br>(0.023)   | -0.114***<br>(0.018) |
| Some PSE  |                          |            |                      |                      |                      |                      | 0.023<br>(0.026)     | 0.032<br>(0.023)     |
| Trade/College                                     |                          |            |                      |                      |                      |                      | 0.000<br>(0.016)     | 0.071***<br>(0.015)  |
| University-Below BA                               |                          |            |                      |                      |                      |                      | -0.065**<br>(0.027)  | 0.225***<br>(0.028)  |
| University-BA                                     |                          |            |                      |                      |                      |                      | -0.103***<br>(0.017) | 0.298***<br>(0.018)  |
| University-Grad                                   |                          |            |                      |                      |                      |                      | -0.204***<br>(0.018) | 0.443***<br>(0.020)  |
| Other/unknown                                     |                          |            |                      |                      |                      |                      | 0.026<br>(0.193)     | -0.067<br>(0.144)    |

cont...

**Table 2: Access Models, Aggregate Immigrant Indicators - cont.**

|   | Immigrant Variables Only |                     | Basic Controls     |                     | Family Income        |                      | Parental Education |                      |
|---|--------------------------|---------------------|--------------------|---------------------|----------------------|----------------------|--------------------|----------------------|
|   | Trade / College          | University          | Trade / College    | University          | Trade / College      | University           | Trade / College    | University           |
| <b>Family Income</b> (\$50,000 to 75,000)             |                          |                     |                    |                     |                      |                      |                    |                      |
| \$5,000 to 25,000                                     |                          |                     |                    |                     | -0.022<br>(0.024)    | -0.129***<br>(0.021) | -0.024<br>(0.023)  | -0.037<br>(0.022)    |
| \$25,000 to 50,000                                    |                          |                     |                    |                     | 0.010<br>(0.015)     | -0.088***<br>(0.014) | 0.003<br>(0.015)   | -0.037***<br>(0.014) |
| \$75,000 to 100,000                                   |                          |                     |                    |                     | -0.031**<br>(0.015)  | 0.086***<br>(0.015)  | -0.008<br>(0.015)  | 0.030**<br>(0.015)   |
| \$100,000 and up                                      |                          |                     |                    |                     | -0.065***<br>(0.016) | 0.192***<br>(0.017)  | -0.001<br>(0.018)  | 0.071***<br>(0.017)  |
| <b>Aggregate Immigrant Indicators</b> (Non-Immigrant) |                          |                     |                    |                     |                      |                      |                    |                      |
| First generation                                      | -0.048**<br>(0.022)      | 0.188***<br>(0.024) | -0.031<br>(0.023)  | 0.144***<br>(0.024) | -0.052**<br>(0.023)  | 0.203***<br>(0.024)  | -0.006<br>(0.025)  | 0.120***<br>(0.024)  |
| Second generation                                     | -0.042***<br>(0.014)     | 0.158***<br>(0.015) | -0.027*<br>(0.015) | 0.113***<br>(0.016) | -0.029*<br>(0.015)   | 0.123***<br>(0.015)  | -0.017<br>(0.015)  | 0.100***<br>(0.015)  |
| Number of observations                                | 16,269                   |                     | 16,269             |                     | 16,269               |                      | 16,269             |                      |

Notes: Average marginal effects shown. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 3: Access Models, Detailed Immigrant Indicators

|   | Immigrant Variables Only |            | Basic Controls       |                      | Family Income        |                      | Parental Education   |                      |
|---|--------------------------|------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|   | College                  | University | College              | University           | College              | University           | College              | University           |
| <b>Gender (Male)</b>                              |                          |            |                      |                      |                      |                      |                      |                      |
| Female  |                          |            | -0.033***<br>(0.010) | 0.152***<br>(0.011)  | -0.034***<br>(0.010) | 0.156***<br>(0.011)  | -0.033***<br>(0.010) | 0.157***<br>(0.010)  |
| <b>Province (Ontario)</b>                         |                          |            |                      |                      |                      |                      |                      |                      |
| Newfoundland                                      |                          |            | -0.091***<br>(0.018) | 0.070***<br>(0.020)  | -0.112***<br>(0.017) | 0.136***<br>(0.020)  | -0.104***<br>(0.018) | 0.119***<br>(0.019)  |
| Prince Edward Island                              |                          |            | -0.171***<br>(0.015) | 0.168***<br>(0.019)  | -0.187***<br>(0.015) | 0.221***<br>(0.019)  | -0.172***<br>(0.015) | 0.181***<br>(0.018)  |
| Nova Scotia                                       |                          |            | -0.152***<br>(0.015) | 0.139***<br>(0.018)  | -0.166***<br>(0.014) | 0.186***<br>(0.018)  | -0.152***<br>(0.015) | 0.146***<br>(0.017)  |
| New Brunswick                                     |                          |            | -0.150***<br>(0.015) | 0.105***<br>(0.018)  | -0.165***<br>(0.014) | 0.157***<br>(0.018)  | -0.158***<br>(0.014) | 0.135***<br>(0.017)  |
| Quebec  |                          |            | 0.029*<br>(0.018)    | -0.117***<br>(0.015) | 0.019<br>(0.017)     | -0.079***<br>(0.015) | 0.025<br>(0.017)     | -0.079***<br>(0.014) |
| Manitoba  |                          |            | -0.172***<br>(0.015) | 0.055***<br>(0.019)  | -0.180***<br>(0.015) | 0.084***<br>(0.019)  | -0.177***<br>(0.014) | 0.079***<br>(0.018)  |
| Saskatchewan                                      |                          |            | -0.143***<br>(0.015) | 0.049***<br>(0.019)  | -0.154***<br>(0.015) | 0.093***<br>(0.019)  | -0.152***<br>(0.015) | 0.074***<br>(0.018)  |
| Alberta   |                          |            | -0.086***<br>(0.016) | -0.046***<br>(0.017) | -0.091***<br>(0.016) | -0.045***<br>(0.016) | -0.094***<br>(0.016) | -0.038**<br>(0.015)  |
| British Columbia                                  |                          |            | -0.080***<br>(0.017) | -0.042**<br>(0.017)  | -0.086***<br>(0.017) | -0.022<br>(0.017)    | -0.086***<br>(0.017) | -0.037**<br>(0.016)  |
| <b>Linguistic Minority (Non-minority)</b>         |                          |            |                      |                      |                      |                      |                      |                      |
| English minority in QC                            |                          |            | 0.010<br>(0.028)     | 0.097***<br>(0.028)  | 0.021<br>(0.028)     | 0.071**<br>(0.028)   | 0.040<br>(0.028)     | 0.035<br>(0.026)     |
| French minority outside QC                        |                          |            | 0.032<br>(0.025)     | -0.005<br>(0.025)    | 0.031<br>(0.025)     | 0.001<br>(0.025)     | 0.035<br>(0.025)     | 0.002<br>(0.024)     |
| <b>High School Location (Rural)</b>               |                          |            |                      |                      |                      |                      |                      |                      |
| Urban   |                          |            | -0.062***<br>(0.012) | 0.126***<br>(0.012)  | -0.055***<br>(0.012) | 0.091***<br>(0.012)  | -0.043***<br>(0.012) | 0.057***<br>(0.011)  |
| <b>Family Structure (Two Parents)</b>             |                          |            |                      |                      |                      |                      |                      |                      |
| Single mother                                     |                          |            | 0.013<br>(0.019)     | -0.098***<br>(0.017) | -0.008<br>(0.020)    | 0.023<br>(0.020)     | 0.001<br>(0.020)     | 0.002<br>(0.019)     |
| Single father                                     |                          |            | 0.067*<br>(0.038)    | -0.119***<br>(0.035) | 0.056<br>(0.039)     | -0.057<br>(0.037)    | 0.076**<br>(0.038)   | -0.066*<br>(0.034)   |
| Don't know  |                          |            | 0.051<br>(0.053)     | -0.186***<br>(0.045) | 0.051<br>(0.053)     | -0.110**<br>(0.050)  | 0.047<br>(0.052)     | -0.073<br>(0.053)    |
| <b>Parental Education (High School Completed)</b> |                          |            |                      |                      |                      |                      |                      |                      |
| Less than HS                                      |                          |            |                      |                      |                      |                      | -0.045*<br>(0.023)   | -0.112***<br>(0.017) |
| Some PSE  |                          |            |                      |                      |                      |                      | 0.022<br>(0.025)     | 0.042*<br>(0.023)    |
| Trade/College                                     |                          |            |                      |                      |                      |                      | -0.002<br>(0.016)    | 0.079***<br>(0.015)  |
| Univeristy-below BA                               |                          |            |                      |                      |                      |                      | -0.063**<br>(0.027)  | 0.223***<br>(0.028)  |
| University-BA                                     |                          |            |                      |                      |                      |                      | -0.105***<br>(0.017) | 0.300***<br>(0.018)  |
| University-Grad                                   |                          |            |                      |                      |                      |                      | -0.202***<br>(0.018) | 0.445***<br>(0.021)  |
| Other/unknown                                     |                          |            |                      |                      |                      |                      | 0.023<br>(0.186)     | -0.072<br>(0.146)    |

cont...



**Table 3: Access Models, Detailed Immigrant Indicators - cont.**

|  | Immigrant Variables Only |                     | Basic Controls       |                      | Family Income        |                      | Parental Education   |                      |
|--|--------------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|  | College                  | University          | College              | University           | College              | University           | College              | University           |
| <b>Family Income (\$50,000 to 75,000)</b>            |                          |                     |                      |                      |                      |                      |                      |                      |
| \$5,000 to 25,000                                    |                          |                     |                      |                      | -0.017<br>(0.024)    | -0.145***<br>(0.020) | -0.016<br>(0.024)    | -0.052**<br>(0.022)  |
| \$25,000 to 50,000                                   |                          |                     |                      |                      | 0.012<br>(0.015)     | -0.096***<br>(0.013) | 0.005<br>(0.015)     | -0.045***<br>(0.014) |
| \$75,000 to 100,000                                  |                          |                     |                      |                      | -0.031**<br>(0.015)  | 0.086***<br>(0.015)  | -0.008<br>(0.015)    | 0.031**<br>(0.014)   |
| \$100,000 and up                                     |                          |                     |                      |                      | -0.066***<br>(0.016) | 0.195***<br>(0.017)  | -0.002<br>(0.018)    | 0.075***<br>(0.017)  |
| <b>Detailed Immigrant Indicators (Non-immigrant)</b> |                          |                     |                      |                      |                      |                      |                      |                      |
| <b>First Generation</b>                              |                          |                     |                      |                      |                      |                      |                      |                      |
| Americas (Except USA)                                | 0.024<br>(0.070)         | -0.136**<br>(0.055) | 0.007<br>(0.066)     | -0.146***<br>(0.052) | 0.009<br>(0.068)     | -0.078<br>(0.064)    | 0.012<br>(0.066)     | -0.087<br>(0.059)    |
| Africa   | -0.050<br>(0.090)        | 0.262***<br>(0.093) | -0.037<br>(0.085)    | 0.224**<br>(0.090)   | -0.069<br>(0.077)    | 0.279***<br>(0.082)  | -0.025<br>(0.085)    | 0.197**<br>(0.085)   |
| China  | -0.239***<br>(0.030)     | 0.508***<br>(0.031) | -0.212***<br>(0.035) | 0.471***<br>(0.035)  | -0.241***<br>(0.029) | 0.512***<br>(0.029)  | -0.221***<br>(0.032) | 0.483***<br>(0.032)  |
| E/SE Asia  | 0.130**<br>(0.062)       | 0.033<br>(0.060)    | 0.144**<br>(0.062)   | 0.012<br>(0.059)     | 0.101<br>(0.062)     | 0.089<br>(0.062)     | 0.161***<br>(0.061)  | -0.009<br>(0.057)    |
| Other Asia   | -0.079<br>(0.051)        | 0.295***<br>(0.053) | -0.058<br>(0.055)    | 0.237***<br>(0.057)  | -0.095*<br>(0.050)   | 0.308***<br>(0.053)  | -0.006<br>(0.061)    | 0.176***<br>(0.061)  |
| W/N Europe   | -0.002<br>(0.098)        | 0.071<br>(0.095)    | 0.004<br>(0.096)     | 0.064<br>(0.083)     | -0.001<br>(0.091)    | 0.086<br>(0.076)     | 0.030<br>(0.092)     | 0.052<br>(0.068)     |
| S/E Europe   | 0.009<br>(0.056)         | 0.127**<br>(0.059)  | 0.023<br>(0.055)     | 0.077<br>(0.055)     | 0.017<br>(0.055)     | 0.112**<br>(0.055)   | 0.063<br>(0.058)     | 0.023<br>(0.049)     |
| Anglosphere  | -0.131**<br>(0.054)      | 0.158**<br>(0.074)  | -0.114**<br>(0.058)  | 0.122*<br>(0.068)    | -0.117**<br>(0.060)  | 0.145**<br>(0.068)   | -0.095<br>(0.061)    | 0.063<br>(0.061)     |
| Other/unknown  | 0.092<br>(0.177)         | 0.060<br>(0.174)    | 0.139<br>(0.181)     | -0.039<br>(0.149)    | 0.129<br>(0.180)     | -0.010<br>(0.143)    | 0.141<br>(0.158)     | -0.010<br>(0.112)    |
| <b>Second Generation -- Mix of Parents' Origin</b>   |                          |                     |                      |                      |                      |                      |                      |                      |
| Imm. father/non-imm. mother                          | -0.057**<br>(0.025)      | 0.179***<br>(0.027) | -0.040<br>(0.025)    | 0.130***<br>(0.026)  | -0.038<br>(0.025)    | 0.126***<br>(0.026)  | -0.025<br>(0.025)    | 0.094***<br>(0.024)  |
| Imm. mother/non-imm. father                          | -0.048<br>(0.030)        | 0.125***<br>(0.033) | -0.036<br>(0.031)    | 0.086***<br>(0.031)  | -0.031<br>(0.031)    | 0.076**<br>(0.031)   | -0.019<br>(0.031)    | 0.037<br>(0.028)     |
| Imm. parents, different regions                      | -0.118**<br>(0.049)      | 0.151***<br>(0.057) | -0.107**<br>(0.048)  | 0.101*<br>(0.054)    | -0.108**<br>(0.047)  | 0.113**<br>(0.055)   | -0.095*<br>(0.049)   | 0.058<br>(0.050)     |
| Single immigrant parent                              | 0.003<br>(0.044)         | 0.114**<br>(0.045)  | -0.013<br>(0.045)    | 0.139***<br>(0.047)  | -0.013<br>(0.044)    | 0.142***<br>(0.046)  | 0.003<br>(0.043)     | 0.112**<br>(0.045)   |
| <b>Second Generation -- Parents from Same Origin</b> |                          |                     |                      |                      |                      |                      |                      |                      |
| Americas (Except USA)                                | 0.100<br>(0.070)         | -0.025<br>(0.065)   | 0.089<br>(0.070)     | -0.079<br>(0.058)    | 0.086<br>(0.070)     | -0.058<br>(0.058)    | 0.078<br>(0.067)     | -0.037<br>(0.057)    |
| Africa   | -0.172**<br>(0.068)      | 0.436***<br>(0.070) | -0.134*<br>(0.078)   | 0.381***<br>(0.080)  | -0.130*<br>(0.076)   | 0.381***<br>(0.078)  | -0.106<br>(0.079)    | 0.344***<br>(0.080)  |
| China  | -0.210***<br>(0.036)     | 0.428***<br>(0.047) | -0.178***<br>(0.043) | 0.377***<br>(0.052)  | -0.188***<br>(0.040) | 0.404***<br>(0.047)  | -0.182***<br>(0.041) | 0.397***<br>(0.047)  |
| E/SE Asia  | -0.057<br>(0.064)        | 0.227***<br>(0.064) | -0.018<br>(0.065)    | 0.169***<br>(0.062)  | -0.037<br>(0.063)    | 0.214***<br>(0.061)  | -0.031<br>(0.062)    | 0.203***<br>(0.060)  |
| Other Asia   | -0.070<br>(0.046)        | 0.313***<br>(0.048) | -0.033<br>(0.049)    | 0.259***<br>(0.050)  | -0.064<br>(0.048)    | 0.305***<br>(0.049)  | -0.021<br>(0.050)    | 0.253***<br>(0.051)  |
| W/N Europe   | 0.047<br>(0.122)         | 0.167<br>(0.118)    | 0.080<br>(0.122)     | 0.120<br>(0.118)     | 0.066<br>(0.115)     | 0.144<br>(0.110)     | 0.129<br>(0.107)     | 0.063<br>(0.097)     |
| S/E Europe   | 0.003<br>(0.048)         | 0.063<br>(0.049)    | -0.000<br>(0.048)    | -0.004<br>(0.047)    | -0.012<br>(0.047)    | 0.039<br>(0.047)     | -0.014<br>(0.045)    | 0.088*<br>(0.048)    |
| Anglosphere  | 0.077<br>(0.071)         | 0.014<br>(0.066)    | 0.095<br>(0.069)     | -0.041<br>(0.060)    | 0.095<br>(0.070)     | -0.055<br>(0.058)    | 0.092<br>(0.068)     | -0.063<br>(0.053)    |
| Other/unknown  | -0.050<br>(0.142)        | 0.142<br>(0.168)    | -0.011<br>(0.154)    | 0.097<br>(0.165)     | -0.040<br>(0.150)    | 0.164<br>(0.160)     | -0.061<br>(0.139)    | 0.197<br>(0.149)     |
| Number of observations                               | 16,269                   |                     | 16,269               |                      | 16,269               |                      | 16,269               |                      |

Notes: Average marginal effects shown. \*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Table 4: Access Models, Detailed Immigrant Indicators with Grade and Scale Variables

|   | Basic Model          |                      | Grades Only          |                      | Scales Only          |                      | Grades and Scales    |                      |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|   | College              | University           | College              | University           | College              | University           | College              | University           |
| <b>Gender (Male)</b>                              |                      |                      |                      |                      |                      |                      |                      |                      |
| Female  | -0.038***<br>(0.011) | 0.161***<br>(0.011)  | -0.017*<br>(0.010)   | 0.087***<br>(0.009)  | -0.022**<br>(0.011)  | 0.095***<br>(0.010)  | -0.014<br>(0.011)    | 0.066***<br>(0.009)  |
| <b>Province (Ontario)</b>                         |                      |                      |                      |                      |                      |                      |                      |                      |
| Newfoundland                                      | -0.108***<br>(0.018) | 0.127***<br>(0.020)  | -0.099***<br>(0.016) | 0.115***<br>(0.016)  | -0.107***<br>(0.017) | 0.121***<br>(0.017)  | -0.101***<br>(0.016) | 0.113***<br>(0.015)  |
| Prince Edward Island                              | -0.175***<br>(0.016) | 0.174***<br>(0.019)  | -0.139***<br>(0.016) | 0.103***<br>(0.016)  | -0.188***<br>(0.014) | 0.213***<br>(0.016)  | -0.160***<br>(0.014) | 0.156***<br>(0.015)  |
| Nova Scotia                                       | -0.153***<br>(0.015) | 0.148***<br>(0.018)  | -0.122***<br>(0.015) | 0.096***<br>(0.015)  | -0.170***<br>(0.014) | 0.186***<br>(0.015)  | -0.144***<br>(0.013) | 0.140***<br>(0.014)  |
| New Brunswick                                     | -0.156***<br>(0.015) | 0.148***<br>(0.018)  | -0.124***<br>(0.015) | 0.083***<br>(0.014)  | -0.165***<br>(0.013) | 0.180***<br>(0.015)  | -0.139***<br>(0.013) | 0.124***<br>(0.013)  |
| Quebec  | 0.034*<br>(0.019)    | -0.071***<br>(0.016) | 0.033**<br>(0.017)   | -0.086***<br>(0.013) | 0.027<br>(0.018)     | -0.077***<br>(0.013) | 0.031*<br>(0.016)    | -0.086***<br>(0.012) |
| Manitoba  | -0.177***<br>(0.015) | 0.079***<br>(0.019)  | -0.165***<br>(0.014) | 0.065***<br>(0.016)  | -0.182***<br>(0.014) | 0.105***<br>(0.016)  | -0.171***<br>(0.013) | 0.084***<br>(0.014)  |
| Saskatchewan                                      | -0.142***<br>(0.016) | 0.075***<br>(0.018)  | -0.121***<br>(0.015) | 0.019<br>(0.015)     | -0.156***<br>(0.014) | 0.102***<br>(0.015)  | -0.134***<br>(0.014) | 0.053***<br>(0.014)  |
| Alberta   | -0.089***<br>(0.017) | -0.047***<br>(0.016) | -0.099***<br>(0.014) | 0.014<br>(0.014)     | -0.089***<br>(0.016) | -0.067***<br>(0.013) | -0.089***<br>(0.015) | -0.027**<br>(0.013)  |
| British Columbia                                  | -0.079***<br>(0.018) | -0.040**<br>(0.017)  | -0.069***<br>(0.017) | -0.044***<br>(0.014) | -0.085***<br>(0.017) | -0.033**<br>(0.014)  | -0.073***<br>(0.016) | -0.043***<br>(0.013) |
| <b>Linguistic Minority (Non-minority)</b>         |                      |                      |                      |                      |                      |                      |                      |                      |
| English minority in QC                            | 0.024<br>(0.029)     | 0.054*<br>(0.028)    | 0.017<br>(0.026)     | 0.056***<br>(0.021)  | 0.027<br>(0.027)     | 0.058***<br>(0.022)  | 0.023<br>(0.025)     | 0.055***<br>(0.020)  |
| French minority outside QC                        | 0.033<br>(0.027)     | -0.003<br>(0.026)    | 0.020<br>(0.021)     | 0.023<br>(0.017)     | -0.002<br>(0.022)    | 0.064***<br>(0.019)  | -0.001<br>(0.019)    | 0.063***<br>(0.016)  |
| <b>High School Location (Rural)</b>               |                      |                      |                      |                      |                      |                      |                      |                      |
| Urban High School                                 | -0.045***<br>(0.013) | 0.055***<br>(0.012)  | -0.046***<br>(0.011) | 0.065***<br>(0.010)  | -0.035***<br>(0.012) | 0.038***<br>(0.010)  | -0.039***<br>(0.011) | 0.051***<br>(0.009)  |
| <b>Family Structure (Two Parents)</b>             |                      |                      |                      |                      |                      |                      |                      |                      |
| Single mother                                     | -0.001<br>(0.021)    | -0.005<br>(0.020)    | -0.005<br>(0.018)    | -0.004<br>(0.016)    | -0.001<br>(0.019)    | -0.013<br>(0.016)    | -0.003<br>(0.018)    | -0.011<br>(0.015)    |
| Single father                                     | 0.056<br>(0.040)     | -0.073**<br>(0.036)  | 0.033<br>(0.035)     | -0.030<br>(0.032)    | 0.030<br>(0.034)     | -0.043<br>(0.028)    | 0.023<br>(0.031)     | -0.024<br>(0.027)    |
| Don't know  | 0.006<br>(0.050)     | -0.072<br>(0.055)    | -0.009<br>(0.043)    | -0.042<br>(0.044)    | -0.024<br>(0.044)    | -0.009<br>(0.046)    | -0.037<br>(0.039)    | 0.007<br>(0.039)     |
| <b>Parental Education (High School Completed)</b> |                      |                      |                      |                      |                      |                      |                      |                      |
| Less than HS                                      | -0.039<br>(0.025)    | -0.111***<br>(0.020) | -0.028<br>(0.022)    | -0.075***<br>(0.020) | -0.011<br>(0.024)    | -0.075***<br>(0.020) | -0.012<br>(0.021)    | -0.065***<br>(0.018) |
| Some PSE  | 0.015<br>(0.027)     | 0.043*<br>(0.024)    | 0.012<br>(0.023)     | 0.028<br>(0.020)     | 0.029<br>(0.024)     | 0.000<br>(0.020)     | 0.022<br>(0.021)     | 0.005<br>(0.018)     |
| Trade/College                                     | -0.004<br>(0.017)    | 0.074***<br>(0.016)  | 0.001<br>(0.015)     | 0.048***<br>(0.013)  | 0.014<br>(0.015)     | 0.028**<br>(0.013)   | 0.010<br>(0.014)     | 0.028**<br>(0.012)   |
| Univeristy-below BA                               | -0.081***<br>(0.028) | 0.225***<br>(0.029)  | -0.053**<br>(0.026)  | 0.153***<br>(0.023)  | -0.032<br>(0.027)    | 0.123***<br>(0.023)  | -0.029<br>(0.025)    | 0.111***<br>(0.022)  |
| University-BA                                     | -0.104***<br>(0.018) | 0.290***<br>(0.019)  | -0.056***<br>(0.017) | 0.177***<br>(0.016)  | -0.039**<br>(0.017)  | 0.151***<br>(0.016)  | -0.036**<br>(0.016)  | 0.133***<br>(0.014)  |
| University-Grad                                   | -0.209***<br>(0.018) | 0.436***<br>(0.021)  | -0.139***<br>(0.020) | 0.284***<br>(0.021)  | -0.117***<br>(0.022) | 0.246***<br>(0.021)  | -0.109***<br>(0.020) | 0.222***<br>(0.019)  |
| Other/unknown                                     | -0.172<br>(0.133)    | 0.106<br>(0.151)     | -0.186*<br>(0.109)   | 0.150<br>(0.107)     | -0.136<br>(0.125)    | 0.093<br>(0.111)     | -0.152<br>(0.111)    | 0.123<br>(0.102)     |

cont...

**Table 4: Access Models, Detailed Immigrant Indicators with Grade and Scale Variables - cont.**

|   | Basic Model          |                      | Grades Only          |                     | Scales Only          |                     | Grades and Scales    |                     |
|---|----------------------|----------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|
|   | College              | University           | College              | University          | College              | University          | College              | University          |
| <b>Family Income (\$50,000 to 75,000)</b>               |                      |                      |                      |                     |                      |                     |                      |                     |
| \$5,000 to 25,000                                       | -0.009<br>(0.025)    | -0.046*<br>(0.024)   | -0.021<br>(0.023)    | -0.004<br>(0.022)   | -0.023<br>(0.023)    | -0.008<br>(0.021)   | -0.028<br>(0.021)    | 0.009<br>(0.019)    |
| \$25,000 to 50,000                                      | 0.001<br>(0.016)     | -0.040***<br>(0.015) | -0.005<br>(0.014)    | -0.025**<br>(0.012) | -0.010<br>(0.014)    | -0.011<br>(0.012)   | -0.011<br>(0.013)    | -0.010<br>(0.011)   |
| \$75,000 to 100,000                                     | -0.017<br>(0.016)    | 0.035**<br>(0.015)   | -0.022<br>(0.014)    | 0.036***<br>(0.012) | -0.020<br>(0.015)    | 0.037***<br>(0.012) | -0.022*<br>(0.013)   | 0.036***<br>(0.011) |
| \$100,000 and up  | -0.009<br>(0.019)    | 0.080***<br>(0.018)  | -0.006<br>(0.017)    | 0.067***<br>(0.015) | -0.002<br>(0.018)    | 0.063***<br>(0.015) | -0.004<br>(0.016)    | 0.060***<br>(0.014) |
| <b>Detailed Immigrant Indicators (Not an Immigrant)</b> |                      |                      |                      |                     |                      |                     |                      |                     |
| <b>First Generation</b>                                 |                      |                      |                      |                     |                      |                     |                      |                     |
| Americas (Except USA)                                   | 0.033<br>(0.074)     | -0.092<br>(0.064)    | 0.030<br>(0.064)     | -0.114**<br>(0.051) | 0.020<br>(0.071)     | -0.042<br>(0.069)   | 0.021<br>(0.063)     | -0.065<br>(0.058)   |
| Africa  | 0.030<br>(0.089)     | 0.199**<br>(0.090)   | 0.073<br>(0.102)     | 0.135<br>(0.100)    | -0.007<br>(0.068)    | 0.234***<br>(0.068) | -0.000<br>(0.069)    | 0.208***<br>(0.066) |
| China   | -0.219***<br>(0.035) | 0.473***<br>(0.035)  | -0.152***<br>(0.039) | 0.389***<br>(0.037) | -0.196***<br>(0.033) | 0.449***<br>(0.033) | -0.167***<br>(0.034) | 0.405***<br>(0.033) |
| E/SE Asia   | 0.161**<br>(0.067)   | -0.002<br>(0.063)    | 0.149**<br>(0.061)   | -0.004<br>(0.056)   | 0.107*<br>(0.064)    | 0.061<br>(0.061)    | 0.112**<br>(0.057)   | 0.041<br>(0.053)    |
| Other Asia  | -0.088<br>(0.062)    | 0.230***<br>(0.070)  | -0.061<br>(0.060)    | 0.169***<br>(0.053) | -0.081<br>(0.058)    | 0.206***<br>(0.055) | -0.079<br>(0.055)    | 0.194***<br>(0.047) |
| W/N Europe  | 0.013<br>(0.099)     | 0.034<br>(0.065)     | -0.001<br>(0.076)    | 0.028<br>(0.047)    | 0.022<br>(0.098)     | 0.070<br>(0.053)    | 0.003<br>(0.076)     | 0.062<br>(0.046)    |
| S/E Europe  | 0.077<br>(0.064)     | 0.023<br>(0.055)     | 0.106*<br>(0.061)    | -0.034<br>(0.046)   | 0.078<br>(0.062)     | -0.006<br>(0.047)   | 0.092<br>(0.058)     | -0.027<br>(0.044)   |
| Anglosphere   | -0.092<br>(0.068)    | 0.065<br>(0.068)     | -0.085<br>(0.059)    | 0.037<br>(0.047)    | -0.085<br>(0.061)    | 0.045<br>(0.052)    | -0.080<br>(0.055)    | 0.036<br>(0.046)    |
| Other/unknown   | 0.138<br>(0.158)     | -0.021<br>(0.114)    | 0.112<br>(0.113)     | -0.004<br>(0.079)   | 0.180<br>(0.129)     | -0.053<br>(0.077)   | 0.152<br>(0.104)     | -0.043<br>(0.071)   |
| <b>Second Generation -- Mix of Parents' Origin</b>      |                      |                      |                      |                     |                      |                     |                      |                     |
| Imm. father/non-imm. mother                             | -0.036<br>(0.027)    | 0.094***<br>(0.026)  | -0.037<br>(0.024)    | 0.088***<br>(0.020) | -0.032<br>(0.026)    | 0.085***<br>(0.022) | -0.035<br>(0.023)    | 0.086***<br>(0.019) |
| Imm. mother/non-imm. father                             | -0.022<br>(0.033)    | 0.046<br>(0.031)     | -0.020<br>(0.030)    | 0.034<br>(0.025)    | -0.023<br>(0.031)    | 0.020<br>(0.025)    | -0.022<br>(0.029)    | 0.022<br>(0.022)    |
| Imm. parents, different                                 | -0.117**<br>(0.047)  | 0.091*<br>(0.053)    | -0.120***<br>(0.043) | 0.087**<br>(0.036)  | -0.117***<br>(0.044) | 0.062<br>(0.044)    | -0.116***<br>(0.041) | 0.067*<br>(0.036)   |
| Single immigrant parent                                 | -0.026<br>(0.044)    | 0.126***<br>(0.047)  | -0.036<br>(0.039)    | 0.136***<br>(0.036) | -0.027<br>(0.041)    | 0.152***<br>(0.038) | -0.036<br>(0.038)    | 0.148***<br>(0.033) |
| <b>Second Generation -- Parents from Same Origin</b>    |                      |                      |                      |                     |                      |                     |                      |                     |
| Americas (Except USA)                                   | 0.124*<br>(0.072)    | -0.023<br>(0.063)    | 0.095<br>(0.060)     | -0.006<br>(0.050)   | 0.107<br>(0.066)     | -0.021<br>(0.054)   | 0.088<br>(0.058)     | -0.007<br>(0.048)   |
| Africa  | -0.165**<br>(0.072)  | 0.372***<br>(0.082)  | -0.099<br>(0.077)    | 0.246***<br>(0.072) | -0.107<br>(0.080)    | 0.284***<br>(0.082) | -0.094<br>(0.077)    | 0.248***<br>(0.074) |
| China   | -0.183***<br>(0.042) | 0.392***<br>(0.048)  | -0.123***<br>(0.046) | 0.277***<br>(0.050) | -0.143***<br>(0.050) | 0.325***<br>(0.048) | -0.122**<br>(0.049)  | 0.277***<br>(0.046) |
| E/SE Asia   | -0.042<br>(0.063)    | 0.206***<br>(0.062)  | -0.015<br>(0.052)    | 0.146***<br>(0.041) | -0.040<br>(0.050)    | 0.185***<br>(0.040) | -0.017<br>(0.047)    | 0.148***<br>(0.037) |
| Other Asia  | -0.021<br>(0.054)    | 0.248***<br>(0.055)  | 0.043<br>(0.048)     | 0.158***<br>(0.043) | 0.035<br>(0.051)     | 0.176***<br>(0.048) | 0.048<br>(0.045)     | 0.147***<br>(0.039) |
| W/N Europe  | 0.145<br>(0.111)     | 0.033<br>(0.100)     | 0.146<br>(0.089)     | 0.010<br>(0.077)    | 0.137<br>(0.086)     | 0.032<br>(0.068)    | 0.144*<br>(0.079)    | 0.010<br>(0.065)    |
| S/E Europe  | -0.013<br>(0.048)    | 0.085*<br>(0.050)    | -0.006<br>(0.042)    | 0.084**<br>(0.041)  | -0.017<br>(0.044)    | 0.075**<br>(0.037)  | -0.014<br>(0.038)    | 0.080**<br>(0.033)  |
| Anglosphere   | 0.058<br>(0.070)     | -0.038<br>(0.058)    | 0.043<br>(0.063)     | 0.007<br>(0.053)    | 0.091<br>(0.067)     | -0.053<br>(0.055)   | 0.076<br>(0.063)     | -0.032<br>(0.054)   |
| Other/unknown   | -0.063<br>(0.138)    | 0.186<br>(0.150)     | -0.080<br>(0.098)    | 0.214**<br>(0.087)  | -0.072<br>(0.125)    | 0.187<br>(0.121)    | -0.074<br>(0.099)    | 0.199**<br>(0.092)  |

cont...

**Table 4: Access Models, Detailed Immigrant Indicators with Grade and Scale Variables - cont.**

|                               | Basic Model |            | Grades Only          |                     | Scales Only          |                      | Grades and Scales    |                      |
|-------------------------------|-------------|------------|----------------------|---------------------|----------------------|----------------------|----------------------|----------------------|
|                               | College     | University | College              | University          | College              | University           | College              | University           |
| <b>High School Grades</b>     |             |            |                      |                     |                      |                      |                      |                      |
| Overall Grade                 |             |            | -0.040***<br>(0.008) | 0.100***<br>(0.008) |                      |                      | -0.028***<br>(0.008) | 0.064***<br>(0.007)  |
| Math Grade                    |             |            | -0.008*<br>(0.004)   | 0.015***<br>(0.004) |                      |                      | -0.006<br>(0.004)    | 0.011***<br>(0.004)  |
| Main Language Grade           |             |            | -0.007<br>(0.005)    | 0.038***<br>(0.005) |                      |                      | 0.001<br>(0.005)     | 0.021***<br>(0.005)  |
| Science Grade                 |             |            | -0.016***<br>(0.005) | 0.036***<br>(0.005) |                      |                      | -0.010**<br>(0.005)  | 0.021***<br>(0.004)  |
| <b>PISA Reading Score</b>     |             |            |                      |                     |                      |                      |                      |                      |
|                               |             |            |                      |                     | -0.061***<br>(0.006) | 0.170***<br>(0.004)  | -0.043***<br>(0.007) | 0.118***<br>(0.006)  |
| <b>High School Engagement</b> |             |            |                      |                     |                      |                      |                      |                      |
| Academic Participation        |             |            |                      |                     | -0.023***<br>(0.007) | 0.082***<br>(0.006)  | -0.015**<br>(0.006)  | 0.056***<br>(0.005)  |
| Academic Identification       |             |            |                      |                     | 0.010<br>(0.007)     | -0.001<br>(0.006)    | 0.012*<br>(0.006)    | -0.009*<br>(0.005)   |
| Social Engagement             |             |            |                      |                     | -0.002<br>(0.006)    | 0.007<br>(0.005)     | -0.005<br>(0.006)    | 0.012**<br>(0.005)   |
| <b>Self-Perception</b>        |             |            |                      |                     |                      |                      |                      |                      |
| Self-Efficacy                 |             |            |                      |                     | -0.025***<br>(0.007) | 0.045***<br>(0.006)  | -0.011*<br>(0.006)   | 0.007<br>(0.005)     |
| Sense of Mastery              |             |            |                      |                     | -0.007<br>(0.007)    | 0.012**<br>(0.006)   | -0.009<br>(0.007)    | 0.016***<br>(0.005)  |
| Self-Esteem                   |             |            |                      |                     | 0.004<br>(0.007)     | 0.009<br>(0.006)     | 0.007<br>(0.007)     | -0.000<br>(0.006)    |
| <b>Social Support</b>         |             |            |                      |                     |                      |                      |                      |                      |
|                               |             |            |                      |                     | 0.003<br>(0.007)     | -0.022***<br>(0.006) | 0.001<br>(0.006)     | -0.017***<br>(0.005) |
| <b>Parental Behaviour</b>     |             |            |                      |                     |                      |                      |                      |                      |
| Monitoring Behaviour          |             |            |                      |                     | -0.003<br>(0.006)    | 0.011*<br>(0.006)    | -0.002<br>(0.006)    | 0.009*<br>(0.005)    |
| Nurturance Behaviour          |             |            |                      |                     | -0.000<br>(0.006)    | 0.004<br>(0.005)     | -0.000<br>(0.005)    | 0.002<br>(0.004)     |
| Inconsistent Discipline       |             |            |                      |                     | -0.000<br>(0.006)    | -0.010**<br>(0.005)  | -0.003<br>(0.005)    | -0.003<br>(0.004)    |
| Number of observations        | 14,464      |            | 14,464               |                     | 14,464               |                      | 14,464               |                      |

Notes: Average marginal effects shown. \*\*\* p<0.01, \*\* p<0.05, \* p<0.10. The grade variables are the student's percentage score divided by 10. The PISA Reading score is divided by 100.

Table 5: Access Models, Detailed Immigrant Indicators with Parental Aspirations

|   | Basic Model          |                      | Level of Importance  |                      | Level of Importance + Desired Level |                      | Parental Aspirations and HS Variables |                      |
|---|----------------------|----------------------|----------------------|----------------------|-------------------------------------|----------------------|---------------------------------------|----------------------|
|   | College              | University           | College              | University           | College                             | University           | College                               | University           |
| <b>Gender (Male)</b>                              |                      |                      |                      |                      |                                     |                      |                                       |                      |
| Female  | -0.037***<br>(0.011) | 0.160***<br>(0.011)  | -0.037***<br>(0.012) | 0.156***<br>(0.016)  | -0.026**<br>(0.012)                 | 0.130***<br>(0.016)  | -0.011<br>(0.011)                     | 0.061***<br>(0.010)  |
| <b>Province (Ontario)</b>                         |                      |                      |                      |                      |                                     |                      |                                       |                      |
| Newfoundland                                      | -0.108***<br>(0.018) | 0.127***<br>(0.020)  | -0.105***<br>(0.019) | 0.109***<br>(0.020)  | -0.082***<br>(0.019)                | 0.054***<br>(0.019)  | -0.090***<br>(0.016)                  | 0.083***<br>(0.015)  |
| Prince Edward Island                              | -0.174***<br>(0.016) | 0.174***<br>(0.019)  | -0.172***<br>(0.016) | 0.168***<br>(0.020)  | -0.156***<br>(0.017)                | 0.129***<br>(0.018)  | -0.153***<br>(0.015)                  | 0.140***<br>(0.015)  |
| Nova Scotia                                       | -0.152***<br>(0.015) | 0.147***<br>(0.018)  | -0.151***<br>(0.016) | 0.140***<br>(0.019)  | -0.139***<br>(0.016)                | 0.111***<br>(0.017)  | -0.139***<br>(0.014)                  | 0.126***<br>(0.014)  |
| New Brunswick                                     | -0.155***<br>(0.015) | 0.147***<br>(0.018)  | -0.154***<br>(0.016) | 0.145***<br>(0.019)  | -0.139***<br>(0.016)                | 0.106***<br>(0.017)  | -0.132***<br>(0.014)                  | 0.106***<br>(0.013)  |
| Quebec  | 0.035*<br>(0.019)    | -0.073***<br>(0.016) | 0.036*<br>(0.019)    | -0.062***<br>(0.016) | 0.034*<br>(0.018)                   | -0.064***<br>(0.015) | 0.031*<br>(0.016)                     | -0.079***<br>(0.012) |
| Manitoba  | -0.176***<br>(0.015) | 0.077***<br>(0.019)  | -0.176***<br>(0.015) | 0.090***<br>(0.020)  | -0.170***<br>(0.016)                | 0.075***<br>(0.018)  | -0.169***<br>(0.014)                  | 0.084***<br>(0.015)  |
| Saskatchewan                                      | -0.142***<br>(0.016) | 0.075***<br>(0.019)  | -0.143***<br>(0.016) | 0.080***<br>(0.019)  | -0.141***<br>(0.016)                | 0.065***<br>(0.017)  | -0.135***<br>(0.014)                  | 0.052***<br>(0.013)  |
| Alberta   | -0.089***<br>(0.017) | -0.048***<br>(0.016) | -0.089***<br>(0.017) | -0.044***<br>(0.016) | -0.088***<br>(0.017)                | -0.042***<br>(0.015) | -0.089***<br>(0.015)                  | -0.025**<br>(0.012)  |
| British Columbia                                  | -0.078***<br>(0.018) | -0.040**<br>(0.017)  | -0.079***<br>(0.018) | -0.035**<br>(0.017)  | -0.083***<br>(0.018)                | -0.027*<br>(0.016)   | -0.075***<br>(0.016)                  | -0.037***<br>(0.013) |
| <b>Linguistic Minority (Non-minority)</b>         |                      |                      |                      |                      |                                     |                      |                                       |                      |
| English minority in QC                            | 0.024<br>(0.029)     | 0.055*<br>(0.028)    | 0.026<br>(0.029)     | 0.039<br>(0.028)     | 0.049<br>(0.030)                    | 0.006<br>(0.025)     | 0.034<br>(0.025)                      | 0.034*<br>(0.019)    |
| French minority outside QC                        | 0.033<br>(0.027)     | -0.003<br>(0.026)    | 0.033<br>(0.027)     | -0.003<br>(0.026)    | 0.023<br>(0.024)                    | 0.016<br>(0.024)     | -0.002<br>(0.019)                     | 0.065***<br>(0.017)  |
| <b>High School Location (Rural)</b>               |                      |                      |                      |                      |                                     |                      |                                       |                      |
| Urban High School                                 | -0.046***<br>(0.013) | 0.055***<br>(0.012)  | -0.045***<br>(0.013) | 0.049***<br>(0.013)  | -0.034***<br>(0.013)                | 0.021*<br>(0.012)    | -0.034***<br>(0.011)                  | 0.037***<br>(0.010)  |
| <b>Family Structure (Two Parents)</b>             |                      |                      |                      |                      |                                     |                      |                                       |                      |
| Single mother                                     | -0.001<br>(0.021)    | -0.006<br>(0.020)    | -0.001<br>(0.021)    | -0.012<br>(0.020)    | 0.007<br>(0.021)                    | -0.036*<br>(0.019)   | 0.000<br>(0.018)                      | -0.024*<br>(0.015)   |
| Single father                                     | 0.054<br>(0.040)     | -0.075**<br>(0.036)  | 0.055<br>(0.040)     | -0.074**<br>(0.036)  | 0.049<br>(0.040)                    | -0.068*<br>(0.035)   | 0.023<br>(0.032)                      | -0.029<br>(0.027)    |
| Don't know  | 0.004<br>(0.050)     | -0.071<br>(0.056)    | 0.004<br>(0.050)     | -0.073<br>(0.055)    | 0.002<br>(0.051)                    | -0.067<br>(0.053)    | -0.033<br>(0.040)                     | -0.002<br>(0.037)    |
| <b>Parental Education (High School Completed)</b> |                      |                      |                      |                      |                                     |                      |                                       |                      |
| Less than HS                                      | -0.040<br>(0.025)    | -0.108***<br>(0.020) | -0.035<br>(0.025)    | -0.105***<br>(0.020) | -0.028<br>(0.025)                   | -0.093***<br>(0.023) | -0.013<br>(0.021)                     | -0.055***<br>(0.019) |
| Some PSE  | 0.013<br>(0.027)     | 0.046*<br>(0.025)    | 0.013<br>(0.027)     | 0.041*<br>(0.025)    | 0.016<br>(0.027)                    | 0.023<br>(0.024)     | 0.022<br>(0.021)                      | -0.000<br>(0.018)    |
| Trade/College                                     | -0.004<br>(0.017)    | 0.075***<br>(0.016)  | -0.005<br>(0.017)    | 0.069***<br>(0.018)  | -0.007<br>(0.017)                   | 0.063***<br>(0.017)  | 0.007<br>(0.014)                      | 0.026**<br>(0.012)   |
| Univeristy-below BA                               | -0.081***<br>(0.028) | 0.227***<br>(0.029)  | -0.079**<br>(0.031)  | 0.214***<br>(0.039)  | -0.060**<br>(0.030)                 | 0.161***<br>(0.033)  | -0.023<br>(0.025)                     | 0.093***<br>(0.023)  |
| University-BA                                     | -0.105***<br>(0.017) | 0.292***<br>(0.019)  | -0.103***<br>(0.025) | 0.278***<br>(0.040)  | -0.078***<br>(0.023)                | 0.217***<br>(0.034)  | -0.032*<br>(0.017)                    | 0.115***<br>(0.017)  |
| University-Grad                                   | -0.209***<br>(0.018) | 0.437***<br>(0.021)  | -0.205***<br>(0.028) | 0.421***<br>(0.052)  | -0.163***<br>(0.029)                | 0.333***<br>(0.046)  | -0.096***<br>(0.023)                  | 0.193***<br>(0.025)  |
| Other/unknown                                     | -0.173<br>(0.132)    | 0.108<br>(0.151)     | -0.174<br>(0.132)    | 0.107<br>(0.155)     | -0.183<br>(0.128)                   | 0.120<br>(0.144)     | -0.161<br>(0.109)                     | 0.126<br>(0.099)     |

cont...

**Table 5: Access Models, Detailed Immigrant Indicators with Parental Aspirations - cont.**

|  | Basic Model          |                      | Level of Importance  |                     | Level of Importance + Desired Level |                     | Parental Aspirations and HS Variables |                     |
|--|----------------------|----------------------|----------------------|---------------------|-------------------------------------|---------------------|---------------------------------------|---------------------|
|  | College              | University           | College              | University          | College                             | University          | College                               | University          |
| <b>Family Income (\$50,000 to 75,000)</b>            |                      |                      |                      |                     |                                     |                     |                                       |                     |
| \$5,000 to 25,000                                    | -0.008<br>(0.025)    | -0.045*<br>(0.024)   | -0.008<br>(0.025)    | -0.037<br>(0.025)   | -0.016<br>(0.025)                   | -0.011<br>(0.024)   | -0.029<br>(0.021)                     | 0.021<br>(0.019)    |
| \$25,000 to 50,000                                   | 0.003<br>(0.016)     | -0.041***<br>(0.015) | 0.003<br>(0.016)     | -0.038**<br>(0.015) | -0.002<br>(0.016)                   | -0.026*<br>(0.015)  | -0.010<br>(0.013)                     | -0.006<br>(0.011)   |
| \$75,000 to 100,000                                  | -0.016<br>(0.016)    | 0.034**<br>(0.015)   | -0.015<br>(0.016)    | 0.027*<br>(0.015)   | -0.012<br>(0.016)                   | 0.020<br>(0.014)    | -0.018<br>(0.013)                     | 0.029***<br>(0.011) |
| \$100,000 and up                                     | -0.010<br>(0.019)    | 0.080***<br>(0.018)  | -0.008<br>(0.019)    | 0.073***<br>(0.020) | 0.006<br>(0.019)                    | 0.045***<br>(0.017) | 0.001<br>(0.017)                      | 0.048***<br>(0.014) |
| <b>Detailed Immigrant Indicators (Non-immigrant)</b> |                      |                      |                      |                     |                                     |                     |                                       |                     |
| <b>First Generation</b>                              |                      |                      |                      |                     |                                     |                     |                                       |                     |
| Americas (Except USA)                                | 0.034<br>(0.074)     | -0.093<br>(0.064)    | 0.030<br>(0.073)     | -0.106*<br>(0.062)  | 0.035<br>(0.072)                    | -0.140**<br>(0.055) | 0.017<br>(0.060)                      | -0.080<br>(0.052)   |
| Africa   | 0.029<br>(0.088)     | 0.200**<br>(0.090)   | 0.030<br>(0.089)     | 0.195**<br>(0.093)  | 0.108<br>(0.095)                    | 0.099<br>(0.087)    | 0.041<br>(0.073)                      | 0.159**<br>(0.065)  |
| China  | -0.218***<br>(0.035) | 0.473***<br>(0.035)  | -0.210***<br>(0.043) | 0.462***<br>(0.052) | -0.131**<br>(0.054)                 | 0.368***<br>(0.060) | -0.119***<br>(0.043)                  | 0.347***<br>(0.043) |
| E/SE Asia  | 0.162**<br>(0.067)   | -0.003<br>(0.063)    | 0.166**<br>(0.068)   | -0.019<br>(0.061)   | 0.197***<br>(0.068)                 | -0.072<br>(0.055)   | 0.133**<br>(0.055)                    | 0.002<br>(0.049)    |
| Other Asia   | -0.087<br>(0.062)    | 0.230***<br>(0.070)  | -0.084<br>(0.064)    | 0.213***<br>(0.072) | -0.042<br>(0.069)                   | 0.124*<br>(0.065)   | -0.059<br>(0.058)                     | 0.150***<br>(0.047) |
| W/N Europe   | 0.013<br>(0.099)     | 0.034<br>(0.065)     | 0.010<br>(0.098)     | 0.030<br>(0.065)    | 0.014<br>(0.094)                    | 0.046<br>(0.063)    | 0.004<br>(0.073)                      | 0.063<br>(0.044)    |
| S/E Europe   | 0.078<br>(0.064)     | 0.022<br>(0.055)     | 0.079<br>(0.064)     | 0.009<br>(0.054)    | 0.095<br>(0.064)                    | -0.021<br>(0.049)   | 0.096*<br>(0.057)                     | -0.043<br>(0.041)   |
| Anglosphere  | -0.092<br>(0.068)    | 0.064<br>(0.068)     | -0.093<br>(0.068)    | 0.061<br>(0.067)    | -0.088<br>(0.066)                   | 0.066<br>(0.058)    | -0.078<br>(0.054)                     | 0.032<br>(0.043)    |
| Other/unknown  | 0.139<br>(0.158)     | -0.021<br>(0.114)    | 0.130<br>(0.153)     | -0.015<br>(0.106)   | 0.165<br>(0.149)                    | -0.054<br>(0.105)   | 0.169<br>(0.106)                      | -0.069<br>(0.072)   |
| <b>Second Generation -- Mix of Parents' Origin</b>   |                      |                      |                      |                     |                                     |                     |                                       |                     |
| Imm. father/non-imm. mother                          | -0.035<br>(0.027)    | 0.093***<br>(0.026)  | -0.036<br>(0.027)    | 0.093***<br>(0.027) | -0.030<br>(0.026)                   | 0.081***<br>(0.024) | -0.030<br>(0.023)                     | 0.080***<br>(0.020) |
| Imm. mother/non-imm. father                          | -0.020<br>(0.033)    | 0.046<br>(0.031)     | -0.019<br>(0.033)    | 0.045<br>(0.031)    | -0.011<br>(0.033)                   | 0.019<br>(0.030)    | -0.015<br>(0.029)                     | 0.013<br>(0.022)    |
| Imm. parents, different regions                      | -0.115**<br>(0.047)  | 0.087<br>(0.053)     | -0.111**<br>(0.048)  | 0.088<br>(0.054)    | -0.102**<br>(0.049)                 | 0.055<br>(0.050)    | -0.105**<br>(0.042)                   | 0.048<br>(0.035)    |
| Single immigrant parent                              | -0.025<br>(0.045)    | 0.128***<br>(0.047)  | -0.025<br>(0.045)    | 0.124**<br>(0.049)  | -0.010<br>(0.045)                   | 0.090**<br>(0.044)  | -0.022<br>(0.039)                     | 0.127***<br>(0.034) |
| <b>Second Generation -- Parents from Same Origin</b> |                      |                      |                      |                     |                                     |                     |                                       |                     |
| Americas (Except USA)                                | 0.125*<br>(0.072)    | -0.023<br>(0.063)    | 0.125*<br>(0.073)    | -0.035<br>(0.062)   | 0.143*<br>(0.075)                   | -0.081<br>(0.054)   | 0.098*<br>(0.059)                     | -0.034<br>(0.045)   |
| Africa   | -0.164**<br>(0.072)  | 0.372***<br>(0.082)  | -0.156**<br>(0.077)  | 0.353***<br>(0.091) | -0.096<br>(0.088)                   | 0.258***<br>(0.089) | -0.066<br>(0.082)                     | 0.206***<br>(0.073) |
| China  | -0.182***<br>(0.042) | 0.391***<br>(0.048)  | -0.178***<br>(0.047) | 0.382***<br>(0.062) | -0.135**<br>(0.054)                 | 0.301***<br>(0.060) | -0.106*<br>(0.056)                    | 0.241***<br>(0.050) |
| E/SE Asia  | -0.049<br>(0.065)    | 0.212***<br>(0.063)  | -0.043<br>(0.066)    | 0.192***<br>(0.066) | -0.013<br>(0.067)                   | 0.128**<br>(0.058)  | -0.011<br>(0.049)                     | 0.117***<br>(0.036) |
| Other Asia   | -0.012<br>(0.055)    | 0.238***<br>(0.056)  | -0.004<br>(0.058)    | 0.224***<br>(0.063) | 0.064<br>(0.058)                    | 0.137**<br>(0.057)  | 0.090*<br>(0.047)                     | 0.094**<br>(0.038)  |
| W/N Europe   | 0.145<br>(0.111)     | 0.034<br>(0.100)     | 0.144<br>(0.111)     | 0.045<br>(0.104)    | 0.152<br>(0.101)                    | 0.025<br>(0.090)    | 0.155*<br>(0.080)                     | -0.000<br>(0.065)   |
| S/E Europe   | -0.009<br>(0.048)    | 0.079<br>(0.051)     | -0.009<br>(0.049)    | 0.064<br>(0.050)    | 0.006<br>(0.050)                    | 0.029<br>(0.048)    | -0.007<br>(0.039)                     | 0.056*<br>(0.033)   |
| Anglosphere  | 0.058<br>(0.070)     | -0.038<br>(0.058)    | 0.057<br>(0.070)     | -0.031<br>(0.058)   | 0.054<br>(0.070)                    | -0.044<br>(0.052)   | 0.076<br>(0.063)                      | -0.039<br>(0.053)   |
| Other/unknown  | -0.063<br>(0.138)    | 0.187<br>(0.149)     | -0.056<br>(0.139)    | 0.169<br>(0.150)    | -0.005<br>(0.144)                   | 0.072<br>(0.146)    | -0.051<br>(0.096)                     | 0.162**<br>(0.082)  |

cont...

**Table 5: Access Models, Detailed Immigrant Indicators with Parental Aspirations - cont.**

|  | Basic Model |            | Level of Importance |            | Level of Importance + Desired Level |            | Parental Aspirations and HS Variables |            |
|--|-------------|------------|---------------------|------------|-------------------------------------|------------|---------------------------------------|------------|
|  | College     | University | College             | University | College                             | University | College                               | University |
| <b>High School Grades</b>  |             |            |                     |            |                                     |            |                                       |            |
| Overall grade  |             |            |                     |            |                                     |            | -0.027***                             | 0.059***   |
|  |             |            |                     |            |                                     |            | (0.009)                               | (0.008)    |
| Math grade   |             |            |                     |            |                                     |            | -0.005                                | 0.011***   |
|  |             |            |                     |            |                                     |            | (0.004)                               | (0.004)    |
| Main language grade  |             |            |                     |            |                                     |            | 0.002                                 | 0.018***   |
|  |             |            |                     |            |                                     |            | (0.005)                               | (0.005)    |
| Science grade  |             |            |                     |            |                                     |            | -0.009*                               | 0.020***   |
|  |             |            |                     |            |                                     |            | (0.005)                               | (0.005)    |
| <b>PISA Reading Score</b>  |             |            |                     |            |                                     |            |                                       |            |
|  |             |            |                     |            |                                     |            | -0.038***                             | 0.105***   |
|  |             |            |                     |            |                                     |            | (0.009)                               | (0.010)    |
| <b>High School Engagement</b>  |             |            |                     |            |                                     |            |                                       |            |
| Academic participation   |             |            |                     |            |                                     |            | -0.013*                               | 0.052***   |
|  |             |            |                     |            |                                     |            | (0.007)                               | (0.007)    |
| Academic identification  |             |            |                     |            |                                     |            | 0.011*                                | -0.007     |
|  |             |            |                     |            |                                     |            | (0.006)                               | (0.005)    |
| Social engagement  |             |            |                     |            |                                     |            | -0.006                                | 0.011**    |
|  |             |            |                     |            |                                     |            | (0.006)                               | (0.005)    |
| <b>Self-Perception</b>   |             |            |                     |            |                                     |            |                                       |            |
| Self-efficacy  |             |            |                     |            |                                     |            | -0.008                                | 0.003      |
|  |             |            |                     |            |                                     |            | (0.006)                               | (0.005)    |
| Sense of mastery   |             |            |                     |            |                                     |            | -0.011                                | 0.016***   |
|  |             |            |                     |            |                                     |            | (0.007)                               | (0.006)    |
| Self-esteem  |             |            |                     |            |                                     |            | 0.009                                 | -0.002     |
|  |             |            |                     |            |                                     |            | (0.007)                               | (0.006)    |
| <b>Social Support</b>  |             |            |                     |            |                                     |            |                                       |            |
|  |             |            |                     |            |                                     |            | 0.001                                 | -0.017***  |
|  |             |            |                     |            |                                     |            | (0.006)                               | (0.005)    |
| <b>Parental Behaviour</b>  |             |            |                     |            |                                     |            |                                       |            |
| Monitoring behaviour   |             |            |                     |            |                                     |            | -0.001                                | 0.008      |
|  |             |            |                     |            |                                     |            | (0.006)                               | (0.005)    |
| Nurturance behaviour   |             |            |                     |            |                                     |            | 0.000                                 | -0.001     |
|  |             |            |                     |            |                                     |            | (0.005)                               | (0.004)    |
| Inconsistent discipline  |             |            |                     |            |                                     |            | -0.002                                | -0.004     |
|  |             |            |                     |            |                                     |            | (0.005)                               | (0.004)    |
| <b>Importance Child Graduates High School (Not Important At All)</b> |             |            |                     |            |                                     |            |                                       |            |
| Slightly important   |             |            |                     |            |                                     |            |                                       |            |
|  |             |            |                     |            |                                     |            | -0.342                                | 0.029      |
|  |             |            |                     |            |                                     |            | (0.300)                               | (0.206)    |
| Fairly important   |             |            |                     |            |                                     |            | -0.482**                              | 0.270      |
|  |             |            |                     |            |                                     |            | (0.196)                               | (0.285)    |
| Highly important   |             |            |                     |            |                                     |            | -0.276***                             | 0.130      |
|  |             |            |                     |            |                                     |            | (0.064)                               | (0.320)    |
|  |             |            |                     |            |                                     |            | -0.358                                | 0.161      |
|  |             |            |                     |            |                                     |            | (0.300)                               | (0.290)    |
|  |             |            |                     |            |                                     |            | -0.466**                              | 0.267      |
|  |             |            |                     |            |                                     |            | (0.182)                               | (0.272)    |
|  |             |            |                     |            |                                     |            | -0.268***                             | 0.154      |
|  |             |            |                     |            |                                     |            | (0.068)                               | (0.274)    |
|  |             |            |                     |            |                                     |            | -0.203                                | 0.079      |
|  |             |            |                     |            |                                     |            | (0.218)                               | (0.167)    |
|  |             |            |                     |            |                                     |            | -0.312**                              | 0.139      |
|  |             |            |                     |            |                                     |            | (0.145)                               | (0.147)    |
|  |             |            |                     |            |                                     |            | -0.217***                             | 0.038      |
|  |             |            |                     |            |                                     |            | (0.083)                               | (0.145)    |
| <b>Importance of Child Getting PSE (Not Important At All)</b>        |             |            |                     |            |                                     |            |                                       |            |
| Slightly important   |             |            |                     |            |                                     |            |                                       |            |
|  |             |            |                     |            |                                     |            | -0.026                                | 0.090      |
|  |             |            |                     |            |                                     |            | (0.134)                               | (0.115)    |
| Fairly important   |             |            |                     |            |                                     |            | -0.045                                | 0.210      |
|  |             |            |                     |            |                                     |            | (0.127)                               | (0.145)    |
| Highly important   |             |            |                     |            |                                     |            | -0.176**                              | 0.361***   |
|  |             |            |                     |            |                                     |            | (0.080)                               | (0.093)    |
|  |             |            |                     |            |                                     |            | -0.081                                | 0.156      |
|  |             |            |                     |            |                                     |            | (0.131)                               | (0.149)    |
|  |             |            |                     |            |                                     |            | -0.112                                | 0.219      |
|  |             |            |                     |            |                                     |            | (0.120)                               | (0.151)    |
|  |             |            |                     |            |                                     |            | -0.145*                               | 0.275**    |
|  |             |            |                     |            |                                     |            | (0.088)                               | (0.112)    |
|  |             |            |                     |            |                                     |            | -0.103                                | 0.223      |
|  |             |            |                     |            |                                     |            | (0.117)                               | (0.137)    |
|  |             |            |                     |            |                                     |            | -0.121                                | 0.237*     |
|  |             |            |                     |            |                                     |            | (0.108)                               | (0.133)    |
|  |             |            |                     |            |                                     |            | -0.145*                               | 0.268***   |
|  |             |            |                     |            |                                     |            | (0.079)                               | (0.100)    |

cont...

**Table 5: Access Models, Detailed Immigrant Indicators with Parental Aspirations - cont.**

|  | Basic Model |            | Level of Importance |            | Level of Importance + Desired Level |                      | Parental Aspirations and HS Variables |                      |
|--|-------------|------------|---------------------|------------|-------------------------------------|----------------------|---------------------------------------|----------------------|
|  | College     | University | College             | University | College                             | University           | College                               | University           |
| <b><i>Highest Level of Education Parent Hopes Child Will Get</i></b> (HS Completion) |             |            |                     |            |                                     |                      |                                       |                      |
| Parent Hopes Child Will Achieve...   |             |            |                     |            |                                     |                      |                                       |                      |
| Less than HS   |             |            |                     |            | 0.202<br>(0.285)                    | -0.172***<br>(0.021) | 0.304<br>(0.203)                      | -0.304***<br>(0.018) |
| College/trade  |             |            |                     |            | 0.111**<br>(0.055)                  | 0.049<br>(0.046)     | 0.051<br>(0.048)                      | 0.042<br>(0.043)     |
| One university degree  |             |            |                     |            | -0.064<br>(0.043)                   | 0.305***<br>(0.050)  | -0.031<br>(0.041)                     | 0.160***<br>(0.042)  |
| Multiple university degrees  |             |            |                     |            | -0.072<br>(0.044)                   | 0.388***<br>(0.055)  | -0.060<br>(0.040)                     | 0.188***<br>(0.043)  |
| Achieve any PSE  |             |            |                     |            | 0.065<br>(0.057)                    | 0.208***<br>(0.059)  | 0.029<br>(0.048)                      | 0.107**<br>(0.046)   |
| Number of observations   | 14,416      |            | 14,416              |            | 14,416                              |                      | 14,416                                |                      |

Notes: Average marginal effects shown. \*\*\* p<0.01, \*\* p<0.05, \* p<0.10. The grade variables are the student's percentage score divided by 10. The PISA Reading score is divided by 100.



## Appendix 1: Immigration Regions

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

cont...

Appendix 1: Immigration Regions - cont.

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