From high school to graduation and beyond: Pathways of young immigrants in a Toronto college

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Executive Summary

Immigrant families come to Canada with high education levels, with the Greater Toronto Area a primary destination. Despite high education levels, their economic and social integration into Canada is often difficult, due in part to lack of recognition of foreign credentials and work experience, weak official-language skills, and insufficient cultural competencies. For the children in these families, the young immigrants, successful education outcomes set the stage for success in adulthood, both in the workplace and in further education, enabling them to better integrate into Canadian society and contribute to the Canadian economy. This study examined the pathways of immigrant youth, and the role of English-language proficiency and region of origin in these pathways, using a recently created database containing a number of linked data sources from Seneca College, a large multicultural college in Toronto. This longitudinal dataset enables us to track individual students from the beginning of high school through to graduation from college, and their eventual transition into the labour market or to further education.

The study's overall research question was: *In a large multicultural college, what is the role of immigrants' region of origin and English-language proficiency on academic and labour market outcomes?*

This question was addressed by inquiring into the following issues:

- Do immigrant students have different aspirations for after graduation from college in terms of further education or employment, compared with non-immigrant students?
- Do immigrant students differ from their Canadian-born peers in terms of academic performance and persistence to graduation?
- Of those who graduate from a college program, who continues on to further education in college or university?
- Is there a difference in satisfaction with the usefulness of their college education after graduation for immigrants versus non-immigrants?
- Of those immigrants who graduate and enter the workforce, what are the labour market outcomes across the spectrum of English-language proficiency and region of origin, and how do these outcomes differ from those of graduates who were born in Canada?
- What is the role of college foundational English-language courses in the labour market and academic outcomes of young immigrants?

Methodology

The sample consisted of students who entered a large Toronto college between 2010 and 2014, who were educated at an Ontario high school, were not international students, were under 23 years of age at entry, were not enrolled in a graduate certificate program, and had completed both the mandatory English-language placement test and the entering-student survey. The sample contained 18,466 college entrants of whom 29% were born outside of Canada: More than two-thirds originated from Asia, 14% were from the Americas (outside Canada), 11% were from Europe, and 6% were from Africa. Of these entrants, 2,366 had graduated within the four years under study. Both descriptive and regression techniques were used to estimate how English-language proficiency at entry and region of birth affect an individual's college performance and post-graduation prospects.

Results

The immigrant population, regardless of region of origin, was more likely than the Canadian-born population to have a parent with a university degree (33% vs. 20%). However, immigrants were more

likely to be from low-income neighbourhoods: 46% were in the bottom tercile compared with only 29% of non-immigrants. This trend held true across all regions of origin, although there was high variation. On average, Canadian and immigrant college students had similar levels of high school preparation, in terms of grades and course selection. However, students who came to college with the weakest academic background were from Central and South America and the Caribbean, whereas those with the strongest academic background originated from Southeast Asia.

Overall, immigrant students were more likely to choose three-year diplomas and four-year degrees and to enrol in business or engineering, and were less likely to enrol in community services or the arts than were Canadian-born students.

Seventy percent of students not born in Canada indicated English was not their first language, compared with 15% of those born in Canada. Vast differences existed in the language preparation of college entrants by region of birth. In high school, 38% of non-Canadian-born students were placed in an English-language learner (ELL) course. These students still required English-language support in college, with only 41% eligible to take college-level English compared with two-thirds of Canadian born students with English as a first language. As well, the English-language proficiency of immigrant students who entered an Ontario high school as adults was much more likely to be at below college-level English.

Grades in the student's required English course, cumulative college grade point average (GPA), and graduation rate were used to obtain a measure of language proficiency and academic success. Controlling for a variety of academic, program, language and sociodemographic characteristics, region of birth had only a minimal effect. Students who entered college with lower English-language proficiency were less likely to graduate and more likely to obtain lower grades then those who entered college testing at college level. As expected, having high grades and taking university preparatory courses in high school were quantitatively the largest predictor of student success in college. When controlling for academic background and program, however, lower-income students achieved lower grades, but were as likely to graduate as others; male students were less likely to graduate, and obtained lower grades.

Non-Canadian-born college entrants had higher aspirations for university after college compared with those who were Canadian-born (49% vs. 39%). Specifically, college students from Central and South America, Africa, West Central Asia and the Middle East, and South Asia were substantially and significantly more likely to aspire to go to university.

Non-Canadian-born graduates were more likely to transfer to university six months after graduation than their Canadian-born peers (17% vs. 13.6%). When controlling for a variety of background factors, this effect disappeared. Regression analysis showed that graduates were more likely to transfer if a parent had a degree, which may explain this lack of significance.

Graduates who were born in Canada had an unemployment rate of 14% compared with 25% for graduates born outside of Canada. This gap remained significant in the regression models. Also, independent of region of birth, graduates with lower language skills at college entry also had higher unemployment rates. Unemployment rates were not significantly affected by college GPA, first language, or any of the other academic or sociodemographic factors.

For employed graduates, being Canadian-born had no independent effect on job relatedness, overqualification rate or earnings. However, graduates with lower college-English grades and overall grades were less likely to be in a job related to their program of study, and more likely to be overqualified. In terms of earnings, independent of region of birth, graduates with lower language proficiency at college entry earned less, as did females and those from lower-income neighbourhoods. College grades did not have a significant effect on earnings.

Graduates are asked six months after graduation about their satisfaction with their college education. The descriptive results show that those born in Canada were more likely to report being "very satisfied" than were those born outside of Canada (31% vs. 25%), but the total satisfaction rate ("satisfied" and "very satisfied") was similar. The regression models indicate that language, academic background, or region of birth were not significant factors. Those who were employed in a field related to their studies, or who were furthering their education, were the most satisfied with their college education.

Conclusions and policy implications

Seneca students who were born outside of Canada were more likely to have highly educated parents, but to live in lower-income neighbourhoods than were Canadian-born students. Although many of these immigrants had attended high school in Ontario, they came to Seneca with weak English-language skills, which hindered their success in college. Even for those who did graduate from college, insufficient language skills often continued to hamper them when they entered the labour market. Other immigrant groups whose English-language proficiency may not have been a barrier, also struggled academically, demonstrating that economic and social integration into Canada is often difficult to achieve. Despite these challenges, immigrant youth were more likely to aspire to university and to continue on after graduation. Job quality and earnings were similar for Canadian-born and immigrant graduates.

Introduction

Immigrant families come to Canada with high education levels, with the Greater Toronto Area a primary destination. Despite high education levels, their economic and social integration into Canada is often difficult, due in part to lack of recognition of foreign credentials and work experience, weak official-language skills, and insufficient cultural competencies. This issue is widely documented (Picot & Hou, 2003; Weiner, 2008). For the children in these families, the young immigrants, successful education outcomes set the stage for success in adulthood, both in the workplace and in further education, enabling them to better integrate into Canadian society and contribute to the Canadian economy. Compared with research on immigrant families, however, there is considerably less research on the integration of children of immigrants, particularly with respect to their performance in post-secondary education (PSE) and outcomes in terms of labour market participation and further education.

Most research shows that immigrant youth often out-perform their Canadian-born peers academically, although this varies widely, depending on region of origin. A study from the Toronto District School Board showed that nearly three-quarters of students born in East Asia continued on to university, compared with 42% of Canadian-born students with English as a first language and 12% of students from the Caribbean. The rates for college attendance directly after high school paint a very different picture, as shown in a study by Sweet, Anisef, Brown, Walters, & Phythian (2010): 8% of college entrants were from East Asia, 14% were from Canada (English as a first language), and 17% were from the Caribbean.

In terms of post-graduation outcomes for immigrant youth, there is very little research on pathways into the labour market or further education, particularly in relation to English-language proficiency and academic skills. A study from a large, urban community college in the United States (Conway, 2010) showed that immigrant students who attended American high schools were more likely than non-immigrants to aspire to a four-year degree, and had initially applied to a senior college rather than a community college; however, 80% of these students required remedial language courses at college, with the author concluding that there was a gap in their aspirations and ability to directly enter a four- year degree.

In a study of the 1995–1996 graduates of York University, Grayson (1997) looked at the relationship between academic performance and labour market outcomes for various ethnic groups, and found that for some ethnic groups, success in university did not translate into labour market success. Family income had a positive effect on finding full-time employment three months after graduation, whereas the effect of GPA was insignificant; Black graduates and graduates of Chinese origin were less likely to be employed. Grayson attributed these results to "labour market segmentation theory" and suggested that no single labour market exists, but rather several restrictive labour markets defined by gender and ethno-racial origin that are independent of skills. The York study is one of the very few studies to link academic performance, ethnicity and labour market outcomes, but lacks any measures of language proficiency. Research by Goldmann, Sweetman and Warman (2011) affirms that literacy competencies (which include speaking, writing and reading) are linked to successful education and employment outcomes of new immigrants to Canada.

Cross-sectional analyses of immigrant youth are common among research studies, but longitudinal studies of this population are relatively rare. Therefore, this research studies a large group of college entrants who were born outside of Canada, but were educated in Ontario, to better understand the pathways of new Canadian children, and the barriers that may exist at the college level and in the labour market.

Research questions

This study followed the pathways of students who entered Seneca College from 2010 to 2014, within five years of leaving an Ontario high school. The study used a linked student-level dataset derived from several sources, containing information on academic background, socioeconomic status, English-language proficiency, college grades and persistence, and postgraduate outcomes.

The study's overall research question was: *In a large multicultural college, what is the role of immigrants' region of origin and English-language proficiency on academic and labour market outcomes?*

This question was addressed by inquiring into the following issues:

- Do immigrant students have different aspirations for after graduation from college in terms of further education or employment, compared with non-immigrant students?

- Do immigrant students differ from their Canadian-born peers in terms of academic performance and persistence to graduation?

- Of those who graduate from a college program, who continues on to further education in college or university?

- Is there a difference in satisfaction with the usefulness of their college education after graduation for immigrants versus non-immigrants?

- Of those immigrants who graduate and enter the workforce, what are the labour market outcomes across the spectrum of English-language proficiency and region of origin, and how do these outcomes differ from graduates who were born in Canada?

- What is the role of college foundational English-language courses in the labour market and academic outcomes of young immigrants?

Research design

To examine the college pathways of immigrant youth and the role of English-language proficiency and region of origin in these pathways, the study used a previously created database containing a number of linked administrative and survey data sources within Seneca College. This longitudinal dataset enabled us to track the progress of individual students from the beginning of high school through to college graduation and their eventual transition into the labour market or further education. With these data combined into a single research set, we were able to observe whether or not students had dropped out, persisted to graduation, achieved good grades, transferred to further post-secondary, and succeeded in the labour market These policy-relevant outcomes formed the core of our analysis, as we examined how different groups of immigrants (by region of origin, first language, and measured English-language proficiency) used college as a pathway to arrive at various outcomes. Research Ethics Board approval from Seneca had previously been obtained for the linked dataset, and approval for inclusion of additional variables was obtained by an ethics amendment. Personal information was used and stored according to Seneca's privacy protocols.[1]

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[1] Seneca College, "Freedom of Information and Protection of Privacy Act," http://www.senecacollege.ca/registrar/FOI.html

Sample Selection

Seneca students were included if they had a minimum of six Grade 11 or 12 Ontario high school courses (including one Grade 12 English[2]), were not international students, were less than 23 years of age at college entry,[3] were not enrolled in any graduate certificate programs (i.e., second entry at Seneca), and had completed Seneca's mandatory English-language placement test and the entering-student survey. The Ontario Colleges Application Services (OCAS) began collecting data on students' country of birth in the 2010–11 academic year, which constrained the sample to those who entered the College in 2010 to 2014. In total, 18,446 students entered Seneca during that period; 29% of them were born outside of Canada. The same criteria were used to determine the graduate sample, with the additional requirement that graduates had to have both graduated by 2014 and responded to the graduate survey. The final sample—those who met all of these criteria—contained 2,366 graduates.

Datasets

Figure 1 contains the details of the datasets that were linked for this study, and the variables contained in each. For linking, a master ID was assigned to match as many records between the datasets as possible and to remove duplicates. This process entailed verifying a student's identity using a combination of first name, last name, date of birth, and postal code, as well as the alternate IDs already identified within the College's system.

Figure 1. Linked student-level dataset, Seneca College
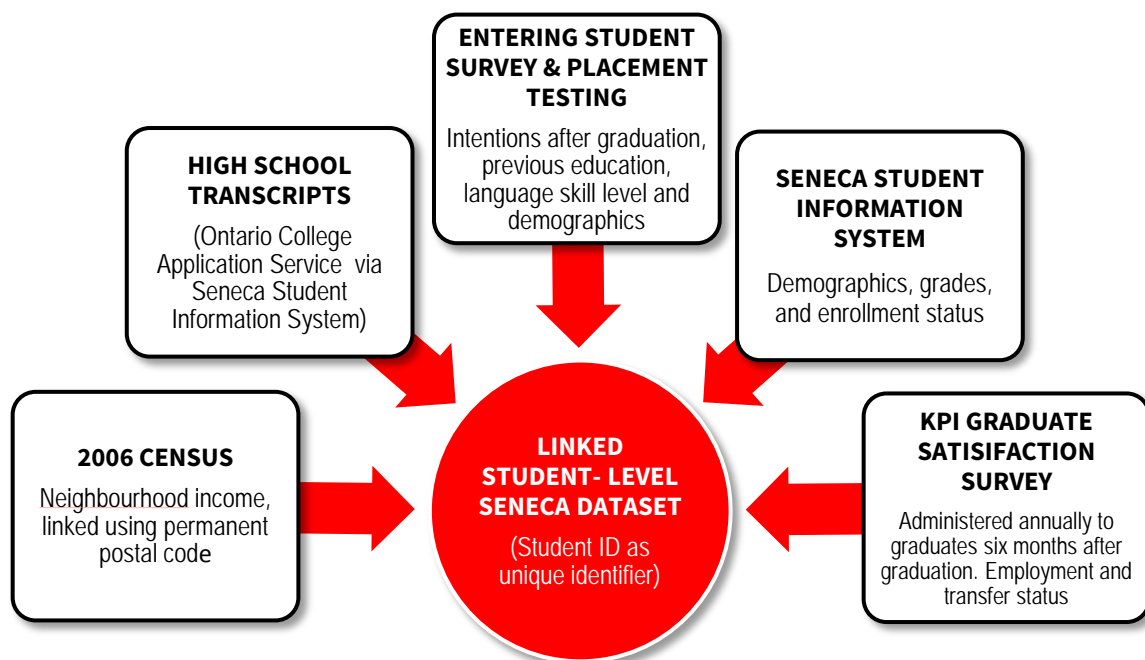
High school records

For every Seneca student who attended an Ontario high school, the College's student information system contains one record for every high school course taken from Grade 9 through to Grade 12. The subset used for this study's analysis included only those students who had a minimum of six courses

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[2] Those who had taken Ontario's Grade 12 French equivalent (FRA4U or FRA4C) were excluded; n=123.

[3] These constraints are designed to limit the potential impacts of highly variable employment or education histories and to ensure that permanent postal records likely correspond to a familial address for neighbourhood income analysis.

from Grade 11 or 12. The overall senior high school average was calculated from all Grade 11 and 12 course grades. To get a sense of whether the student struggled in high school, the total number of Grade 11 or 12 courses failed was also calculated. Two variables were created to take into consideration whether a student took a mainly university preparatory course stream or a college preparatory course stream, defined as "mostly U" and "mostly C" respectively. The variable "mostly U" was defined as having a minimum of half of Grade 11 and 12 courses that were of the university (U) or university/college (M) preparatory type, whereas "mostly C" was defined as having a minimum of half of Grade 11 and 12 courses that were of the college preparatory type (C). Additionally, an "eligible for admission to an Ontario university" variable was created.

For university admission, Ontario high school students are required to have at least six Grade 12 U or M courses, with the high school average requirement at the discretion of the institution. A review of entrance high school averages reported by Ontario universities in the Common University Data Ontario (CUDO) indicates that the minimum reported secondary school average was approximately 70%. Therefore, high school students were considered to be eligible for university entrance if their high school average was at least 70% in their top six Grade 12 U/M courses. In addition to overall high school grades, Grade 12 English course grade and type (U or M) were also included in the analysis. The high school transcripts also contained information on whether a student was initially placed in an English literacy development (ELD) course or an English as a Second Language (ESL) program, and at which level, which was used to determine language proficiency in high school.[4]

Region of birth and age of entry to Ontario high school

The Ontario Colleges Application Service (OCAS) asks applicants to indicate their country of birth and date of arrival in Canada on the application form, and this information was provided directly from OCAS to Seneca for the purposes of this study. Responses for country of birth were reliably complete, but there were a number of missing responses for date of arrival in Canada. Country of birth was grouped according to Statistics Canada's macro regions and/or sub-regions, dependent on the sample size in each. The nine regions used for the college entrant analysis included: 1) Canada and USA, 2) Central and South America, 3) Caribbean and Bermuda, 4) Europe, 5) Africa, 6) West Central Asia and the Middle East, 7) Eastern Asia, 8) Southeast Asia, and 9) Southern Asia. Oceania comprised only .05% of the sample and was included in totals, but not in the regional analyses. In the descriptive analysis for entrants, the Canada and USA group was further divided between those who reported English as their first language and those who did not. The sample size of graduates was smaller, and therefore graduates were simply categorized as either Canadian-born or non-Canadian-born. As the date of arrival field was often incomplete, the age at which the student's name first appeared in their Ontario high school record was used to create three categories of high school students: 1) Grade 9 and 10 (14- and 15-year-olds, 2) Grades 11 and 12 (16- and 17-year-olds), and 3) adults (entered high school at 18 years of age and older).

Income

For a proxy of each student's household income, the student's permanent postal code was matched to household income data from the 2006 Census. Using the six-digit permanent postal code in the College's student information system, each student from Ontario was assigned to a 2006 Dissemination Area (DA) using a 2011 Statistics Canada postal code conversion file (PCCF). If a student's permanent postal code was missing or invalid, the Ontario high school postal code was used. A student's neighbourhood income group was derived by splitting the DAs into income terciles of low, medium and high, based on the

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[4] ELD courses are for English language learners with limited prior schooling, whereas ESL courses are for English language learners who have age-appropriate literacy skills and educational backgrounds in their first language. See https://www.edu.gov.on.ca/eng/document/manyroots/ELL_LPS.pdf

average pre-tax household income for Ontario households. In addition to neighbourhood income, whether a student ever received a loan from the Ontario Student Assistance Program (OSAP) at any point in their college program was used as an individual marker of demonstrated financial need.

English-language placement testing

Most entering students at Seneca, depending on their program, are required to complete an English-language placement test (comprising a 300-word essay) to assess writing proficiency. Students are also required to complete a computerized placement test (Accuplacer) that assesses reading comprehension (120-point scale. Based on the test results, students are placed in one of several levels of English-language proficiency and corresponding courses.[5]

1) ELL–1 (non-credit): English for English Language Learners whose test scores are three levels of proficiency below college-level English
2) ELL–2 (non-credit): English for English Language Learners (ELL) whose test scores are two levels of proficiency below college-level English
3) ELL–3 (non-credit): English for native-English speakers and for ELL learners whose test scores are one level of proficiency below college-level English (at the more proficient end of the ELL scale)
4) College-level English (credit): Required for all certificate/diploma programs
5) Degree-level English (credit): Applicable for some degree programs
6) Exempt from college-level English: At high end of proficiency scale

Entering-student survey

During the mandatory placement testing, all entering Seneca students must complete a background survey, which inquired into the following variables:

- University aspirations upon entry to the College: "After graduation from my program, I plan to"
- Previous university: "The last school I attended was"
- First language: "The language I learned first was"
- Whether either parent has a university degree: "The highest level of education completed by my father/guardian is" (includes a separate question for maternal education)

In cases where two or more completed surveys existed, the earliest record was used to reflect a student's true entering status. The "previous university" variable is limited in scope because entering students are only asked about the last school they attended and not whether they have ever attended university or have completed a credential.

Program of entry

A student's first program of entry is considered to be the first term when they were observed entering a full-time program approved by the Ministry of Advanced Education, Skills, and Training (MAESD) Universities (MTCU). Seven program area groupings by were derived from MAESD's occupation cluster classification system and have been described previously (McCloy& Liu, 2010).

College performance

Overall GPA was calculated from the average of all credit courses ever taken at Seneca. GPAs were grouped into three categories: below 2.0, 2.0 to less than 3.5, and 3.5 and above.[6] GPA was computed up to the first credential a student completed. In addition, an average of all coursework completed was calculated using a midpoint formula on a 100-point scale.

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[5] See Seneca College website, http://www.senecacollege.ca/testcentre/assessment.html

[6] These categories were used in a previous study on Seneca students, and were intended to correspond approximately to being at risk of not graduating, average, and honours (Lopez-Rabson & McCloy, 2013). Seneca's current academic policy requires a 1.7 GPA to graduate, and a 3.55 GPA to graduate with honours. www.senecacollege.ca/academic-policy/

Graduation rates

This rate refers to completion of the first program in which a student was observed, within the standard program length plus one full academic year. A student who does not complete the credential in the allotted time period is considered to be in-progress.

Postgraduate outcomes

Additional outcomes were obtained from the Graduate Satisfaction Survey (GSS) administered by MAESD.[7] The survey asks graduates about their education and labour market activity during a specified reference week six months after graduating. In the present study, 68.9% of graduates in the sample responded to the survey, for a total sampling of 2,366 respondents over four years. There was no statistical difference in response rates across first language groups or between Canadian-born and immigrant graduates.

This study used the following variables from the Graduate Satisfaction Survey:

- **Overall satisfaction:** All graduates are asked to rate their satisfaction with the usefulness of their college education in achieving their goals after graduation. The scores are recorded on a five-point Likert scale, ranging from "very satisfied" to "very dissatisfied."
- **Transfer to university or college:** Enrolled in any university or college in the reference week, full or part time.
- **Unemployment rate:** Percentage of respondents in the labour force who are not working during the reference week. The labour force is defined as those who are available to work and are either looking for work or working.
- **Activity after graduation:** A derived variable based on all survey respondents, including those who are: 1) studying full or part time, and not working; 2) working in a related field; 3) working in a partially related field; 4) working in an unrelated field; and 5) neither in school nor working, regardless of labour force status.
- **Hourly salary:** Those employed full or part time and reporting an hourly wage of between $2 and $100 were considered valid. Canada's Consumer's Price Index (CPI) was used to adjust wages for inflation to 2015 dollars. The natural log of real hourly wage (in dollars) was used in the regression analysis.
- **Education required for job (Overqualification):** Graduates who were employed (full or part time) were asked to indicate the minimum education level required for their job at hiring. This information was compared with the graduate's college credential to determine whether the graduate was overqualified. Graduates of certificate of diploma programs were considered overqualified if they reported the education required was less than a diploma or certificate, whereas graduates of degree programs were considered overqualified if the job required less than a degree.

Analytic methods

Both descriptive and regression techniques were used to estimate the effect of language proficiency and region of birth on college performance and post-graduation prospects. Descriptive results for the key variables in the analysis are presented by region of birth and language proficiency. To control for the independent effects of each variable, regression models were run with a number of different outcomes

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[7] The GSS is administered to all college graduates with an Ontario College Credential from a publicly funded College of Applied Arts and Technology (CAAT) in Ontario. The survey is administered approximately six months after graduation through telephone surveys conducted by an external service provider to whom the colleges provide contact information and graduate characteristics such as age, gender, and program of study.

of interest. Ordinary Least Squares (OLS) regression was used to estimate each of the relationships, and robust standard errors were reported.

Limitations

Despite having a very comprehensive series of datasets, this study contained some limitations which may have affected the interpretation of the results:

- We did not have a good measure of graduates' language proficiency upon leaving the college. Overall GPA, and GPA in Seneca's required English course, served as proxies for graduates' outgoing English-language proficiency.

- We did not always have a reliable date of arrival in Canada and instead relied on the age at which a student entered an Ontario high school. The age of arrival varied widely, between birth and 14 years, a key period for language acquisition and integration. In addition, some immigrant students may have lived in another part of Canada, not outside the country, before moving to Ontario.

- We only know about a student's most recent schooling; we do not know whether a student had previous post-secondary experience or completed a credential prior to their most recent studies. As well, those who left without graduating may have transferred their college credits to another college or university, and may not all be "true" PSE dropouts. The analysis of academic performance as a measure of success, in addition to completion, likely ameliorated this effect.

- The relatively small number of graduates in the sample limited our ability to capture variation in region of birth, specific program of study, and specific occupation type.

Results

Composition of college entrants by region of birth

The sample for the study contained 18,466 college students who entered Seneca College between 2010 and 2014 and previously attended an Ontario high school. Of these entrants, 29% were born outside of Canada (Figure 2). Additionally, 11% of all Canadian-born entrants indicated that English was not their first language. The immigrant population was very diverse, with more than two-thirds originating from Asia, 14% from the Americas (outside Canada), 11% from Europe, and 6% from Africa**.**

- For the purposes of sample size, shared geography, and language, we combined students from the USA with those from Canada. Students from the USA comprised less than 1% of this grouping.
- South Asia was the largest immigrant grouping (6.3%); 93% of students from this grouping were from Pakistan, India, or Sri Lanka.
- Students in the West Central Asia and the Middle East grouping (5.2%) were primarily from Afghanistan, Iran, or Iraq. These three countries made up 53% of this grouping.
- The East Asian grouping (4.8% of total) comprised mostly students from China (65%), with the remainder mostly from Hong Kong or South Korea.
- Students from Southeast Asia (3.8%) were mostly from the Philippines (91%). The Philippines was the largest source country outside of Canada.
- Students from Europe (3.1%) were predominantly from Eastern Europe (63%).
- Students from Colombia and Guyana made up 51% of entrants from Central and South America (1.9% of total).

- Students from Africa (1.7% of total) were primarily from the Eastern region (41%).
- The majority of students from the Caribbean and Bermuda (1.6% of total) were from Jamaica (55%).

Figure 2. Region of origin, Seneca entrants, 2010–2014
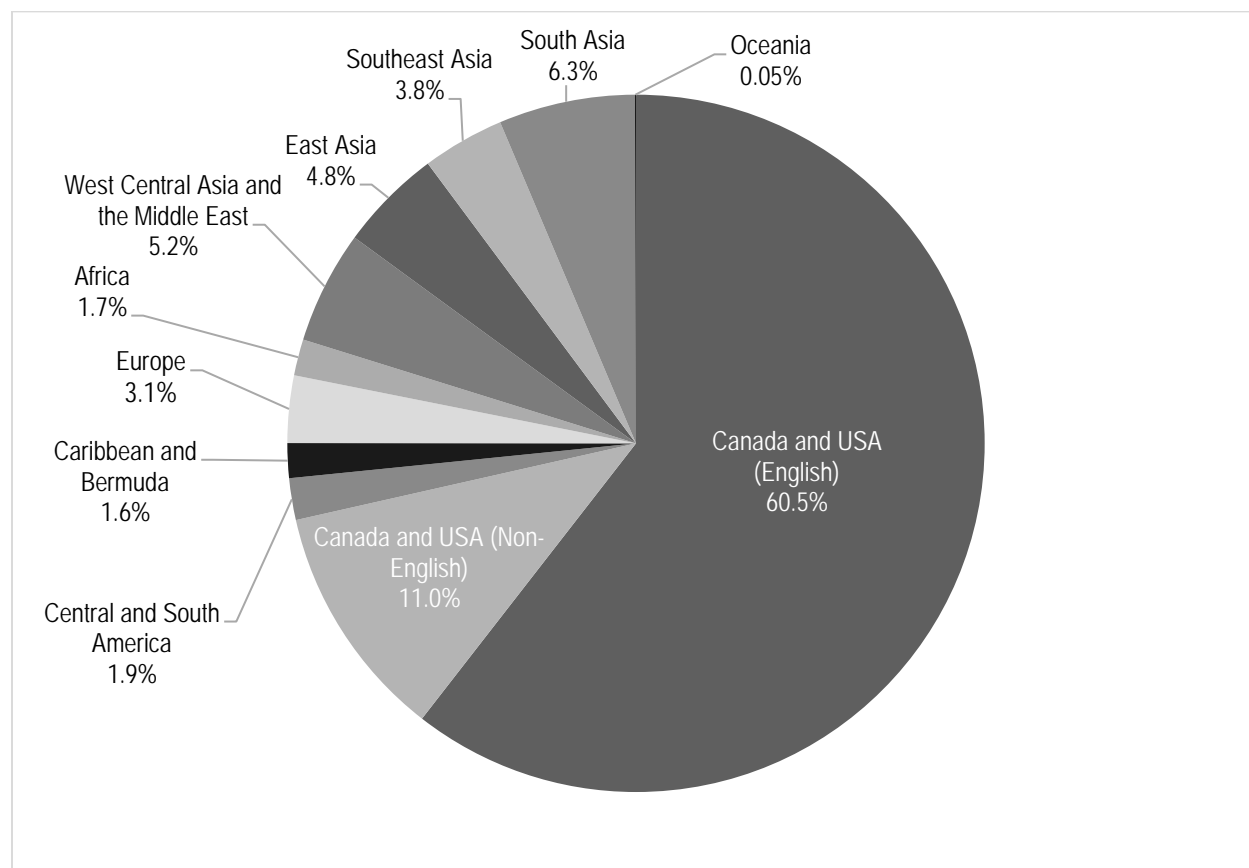
Sociodemographic and academic characteristics

Sociodemographic characteristics

Table 1 contains the sociodemographic characteristics by region of birth, whereas Figure 3 compares Canadian-born versus non-Canadian-born students. Across all regions, immigrants were somewhat older, particularly students from East Asia. The gender balance was variable: Whereas the balance was close to parity for Canadian-born students (irrespective of language), students from Central and South America and the Caribbean were more likely to be female. Those from South Asia, West Central Asia and the Middle East, and Europe were more likely to be male.

The immigrant population was more likely than their Canadian peers to have a parent with a university degree (33% vs. 20%). This finding held true across most regions, with the exception of students from the Caribbean and South Asia, whose parental education was similar to that of the Canadian-born group. Interestingly, Canadian-born students who did not report English as their first language (presumably the children of immigrants) were the least likely to have a parent with a university degree, at only 15%.

Despite high educational attainment, immigrants were more likely to be from low-income neighbourhoods; 46% were at the bottom income tercile compared with only 29% of non-immigrants.

Again, this finding held true across all regions of origin, although there was high variation. Of those not born in Canada, students originally from Europe or East Asia were less likely than other immigrants to come from low-income neighbourhoods. These findings, using census data, were further corroborated by comparing the share of immigrant and Canadian-born students who had ever received financial aid from OSAP. Two-thirds of students not born in Canada received OSAP funding compared with 47% of those who were Canadian-born. Those from East Asia and Europe had a lower uptake of OSAP funding than their peers from other regions, similar to the pattern seen for neighbourhood income.

Table 1. Sociodemographic characteristics of Seneca entrants by region of birth, 2010–2014

|		Canada and USA (English)	Canada and USA (Non-English)	Central and South America	Caribbean and Bermuda	Europe	Africa	West Central Asia and Middle East	East Asia	Southeast Asia	South Asia
Number		11,163	2,020	357	297	575	310	966	880	703	1,166
Age at Entry (yr.)	<19	52.4%	52.4%	38.7%	39.1%	44.2%	36.1%	37.2%	25.3%	45.2%	40.9%
	19	23.5%	22.5%	26.3%	23.9%	26.1%	23.9%	25.6%	24.2%	24.3%	25.1%
	20–23	24.1%	25.1%	35.0%	37.0%	29.7%	40.0%	37.3%	50.5%	30.4%	34.0%
Gender	Male	49.8%	52.6%	43.1%	37.4%	56.4%	47.7%	55.4%	52.0%	51.6%	57.7%
	Female	50.2%	47.4%	56.9%	62.6%	43.6%	52.3%	44.6%	48.0%	48.4%	42.3%
Status in Canada	Citizen	99.8%	98.7%	69.4%	69.6%	79.1%	74.8%	73.3%	62.5%	66.0%	75.3%
	Other	0.2%	1.3%	30.6%	30.4%	20.9%	25.2%	26.7%	37.5%	34.0%	24.7%
Parental Education	Degree	21.3%	14.9%	27.2%	19.2%	41.4%	31.3%	36.2%	21.5%	37.1%	38.8%
	No Degree	65.7%	62.1%	60.5%	62.6%	43.7%	50.0%	49.1%	61.4%	46.2%	46.7%
	Unknown	13.0%	23.0%	12.3%	18.2%	15.0%	18.7%	14.7%	17.2%	16.6%	14.6%
Neighbour-hood Income	Low	28.2%	35.9%	53.7%	47.1%	33.4%	58.3%	45.4%	36.4%	54.5%	50.9%
	Middle	38.9%	40.1%	28.0%	36.5%	32.3%	26.5%	26.7%	40.6%	30.6%	34.5%
	High	33.0%	24.0%	18.3%	16.4%	34.3%	15.2%	27.9%	23.0%	14.9%	14.6%
OSAP Ever Received	Yes	46.4%	52.3%	68.3%	72.1%	52.7%	75.8%	69.4%	63.1%	74.1%	69.1%

Figure 3. Sociodemographic characteristics of Canadian-born and non-Canadian-born Seneca entrants, 2010–2014
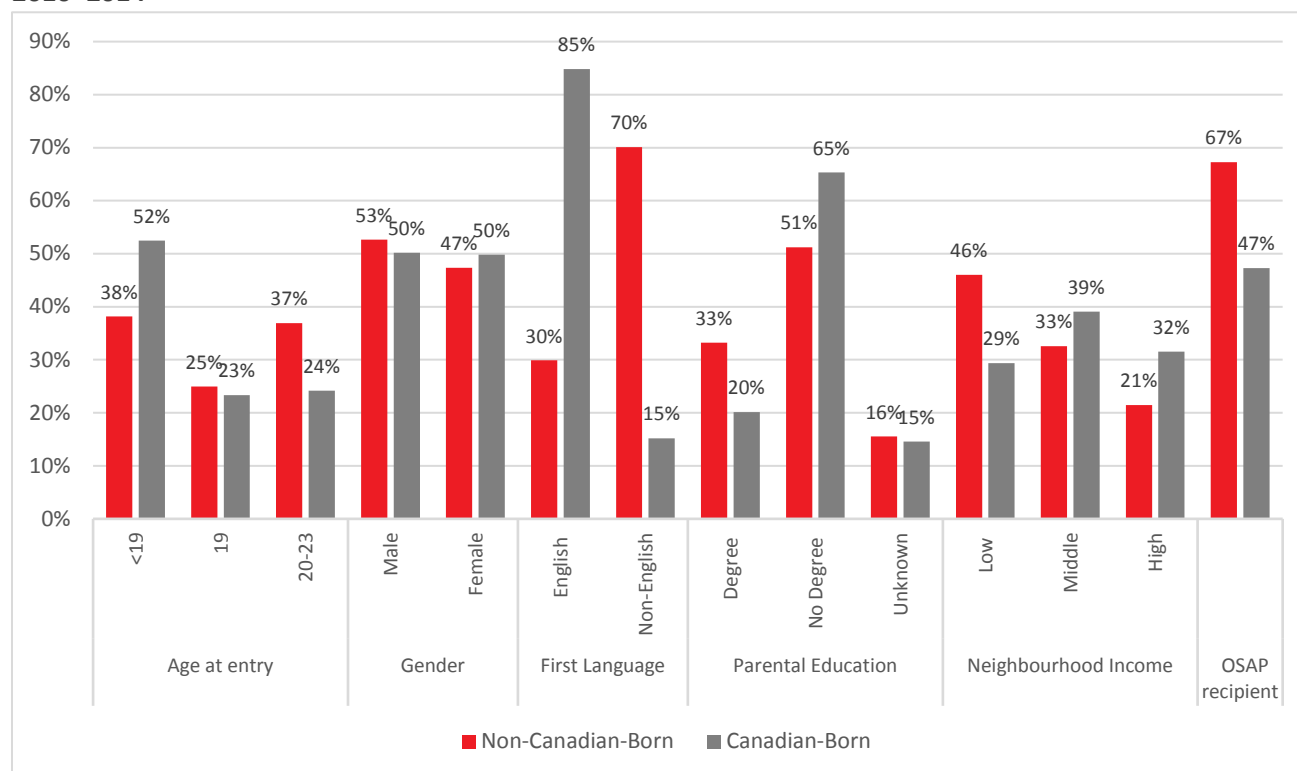
Note: Unknown parental education not shown

Academic background and language proficiency

High school grades, course type, and timing of entry are shown in Table 2. On average, across all measures shown, there was little difference in academic performance between Canadian and non-Canadian-born students. However, there were major variations between groups. Students from Europe and East Asia performed similarly to Canadian-born students, but with a slightly higher rate of course failure. Students born in Southeast Asia performed better overall than students from all other regions including Canada. The South Asian group was more likely to have chosen university prep courses, but seemed to have struggled academically, as evidenced by both a high rate of course failure and a high share (59%) with an average below 70%. Overall, an equal share of Canadian-born students and students born outside of Canada (25% each) could be considered eligible for university based on high school grades and courses taken. There were differences between regions, however, with one-third of students from East Asia considered eligible for university, compared with 17% of students born in Central and South America and the Caribbean.

The age at which a first appeared on an Ontario high school transcript was used as a proxy for the amount of Canadian education the student received. As seen for the Canadian-born group, this measure did not account for interprovincial or international mobility because not all students in this group had an Ontario high school transcript by age 15. Overall, most students not born in Canada entered an Ontario high school by age 15 (80%). We did, however, observe some regional patterns: those born in Central and South America, Europe, or South Asia were more likely to have attended an Ontario high school longer than those from other regions.

Table 2. High school (HS) background of Seneca entrants by region of birth, 2010–2014

		Canada and USA (English)	Canada and USA (Non-English)	Canada	Central and South America	Caribbean and Bermuda	Europe	Africa	West Central Asia and Middle East	East Asia	Southeast Asia	South Asia
Number		11,163	2,020	13,065	357	297	575	310	966	880	703	1,166
High School Course Type	Mostly U/M	58.4%	61.4%	58.8%	50.4%	47.1%	61.2%	51.9%	52.8%	65.0%	59.7%	62.6%
	Mostly C/W	41.6%	38.6	41.2%	49.6%	52.9%	38.8%	48.1%	47.2%	35.0%	40.3%	37.4%
High School Aver. (Gr. 11 & 12)	<70%	48.4%	57.2%	49.8%	53.2%	57.9%	51.1%	56.1%	56.9%	47.6%	37.6%	58.5%
	70–80%	42.2%	36.6%	41.2%	39.2%	38.0%	40.2%	38.4%	36.2%	41.9%	49.2%	35.9%
	>80%	9.4%	6.2%	8.9%	7.6%	4.0%	8.7%	5.5%	6.8%	10.5%	13.2%	5.6%
Number of HS Course Failures (Gr. 11 & 12)	None	59.6%	48.5%	57.9%	48.5%	48.5%	50.8%	47.1%	48.2%	49.9%	59.3%	44.9%
	1–3	31.4%	38.8%	32.5%	40.9%	39.4%	35.3%	41.3%	40.1%	37.8%	32.7%	40.0%
	4+	9.1%	12.8%	9.6%	10.6%	12.1%	13.9%	11.6%	11.7%	12.3%	8.0%	15.2%
Eligible for Univ.	Yes	24.8%	25.3%	24.7%	16.8%	17.5%	23.0%	21.3%	21.8%	33.1%	26.3%	25.6%
	No	75.2%	74.7%	75.3%	83.2%	82.5%	77.0%	78.7%	78.2%	66.9%	73.7%	74.4%
Ontario HS Entry	Grade 9–10 (14–15y)	98.5%	95.6%	98.1%	84.6%	78.1%	88.9%	77.1%	79.0%	75.2%	75.7%	83.0%
	Grade 11–12 (16–17y)	1.4%	3.6%	1.7%	11.8%	15.8%	9.9%	12.3%	14.3%	15.7%	16.8%	11.5%
	Adult (18–22y)	0.2%	0.8%	0.3%	3.6%	6.1%	1.2%	10.6%	6.7%	9.1%	7.5%	5.5%

Overall, 70% of immigrants indicated English was not their first language. Of those born in Canada, 15% indicated English was not their first language. There was major variation between regions, as expected. Students born in the Caribbean mostly reported English as a first language (85%) compared with just 15% of East Asian students. A significant proportion of immigrants required English-language support in high school, with 38% being placed in an English language learner (ELL) course. Interestingly, 13% of immigrants who reported English as a first language were placed in an English language learner (ELL) course. Placement in ELD or ESL in high school by region of birth followed a similar pattern as the first language profile, with students from East Asia most likely to require support.

Student performance in high school English and course type (U or C) did not differ between those born in Canada versus elsewhere, with an even share of students taking university prep English and college prep English. Grades for Canadian-born and immigrants were also similar. When regions were examined more closely, some patterns which emerged did not align with first language or language placement. Despite having the lowest rate of English as a first language, students from East Asia were the most likely to take university prep English and had the highest average. However, students from South Asia who were in the college English stream had the lowest average of all regions, demonstrating that it was likely a group with diverse ability. Students from Central and South America and the Caribbean were the least likely to be in the university prep English stream, but achieved similar grades as students from other regions.

Table 3 also shows the scores from the mandatory language-placement test that takes place before the student starts class. The results from the essay test, the primary source of information for placement decisions, showed a sharp divide between students, both Canadian-born and immigrant, whose first language was English. Of Canadian-born students with English as a first language, 36% scored at level 1 or 2, compared with 62% of non-Canadian-born students. A similar pattern was seen in the results of the standardized comprehension test, Accuplacer. Many of the differences in scores between regions were reflected in the share of English language learners, particularly for students from East Asia. In contrast to their high school grades, students from East Asia performed quite poorly on the essay test, with almost half scoring at the lowest level. In particular, a large share of students from the Caribbean (60%), despite primarily having English as a first language, scored at level two or below, and subsequently were placed in an English course at a level of proficiency below college-level English. These results demonstrate the complexity of interactions between integration and ELL issues, and the difficulty of disentangling them. Regression modelling, as discussed later in this paper, would contribute to the identification of independent effects.

Table 3. Language proficiency and academic background in English, Seneca entrants by region of birth, 2010–2014

		Canada and USA (English)	Canada and USA (Non-English)	Non-Canadian-Born	Central and South America	Caribbean and Bermuda	Europe	Africa	West Central Asia and Middle East	East Asia	Southeast Asia	South Asia
First Language	English	100.0%	0.0%	29.9%	36.1%	84.8%	26.8%	48.7%	23.0%	14.3%	25.3%	26.2%
	Non-English	0.0%	100.0%	70.1%	63.9%	15.2%	73.2%	51.3%	77.0%	85.7%	74.7%	73.8%
HS Language Placement	HS ELD	0.1%	0.6%	4.3%	1.7%	2.7%	0.5%	3.2%	5.2%	9.8%	0.7%	5.3%
	HS ELL	0.1%	5.8%	33.5%	26.6%	9.4%	24.0%	28.7%	37.0%	45.7%	45.5%	31.4%
HS Grade 12 English	% Took ENG4U	51.2%	53.5%	52.5%	42.6%	41.8%	53.2%	45.8%	48.4%	56.5%	49.8%	54.5%
	ENG4U Grade	70.8%	70.1%	70.1%	69.7%	67.7%	70.5%	70.0%	71.3%	73.5%	70.4%	70.2%
	% Took ENG4C	48.6%	46.0%	51.4%	57.1%	57.9%	46.8%	53.9%	51.4%	42.8%	49.8%	45.2%
	ENG4C Grade	71.9%	70.3%	70.2%	69.9%	72.0%	72.7%	70.8%	69.3%	68.2%	71.5%	69.3%
College Placement Essay Score	1	0.6%	9.1%	20.6%	8.4%	3.4%	7.3%	15.2%	21.3%	48.3%	14.9%	20.5%
	2	35.9%	44.3%	41.8%	44.8%	56.6%	40.5%	41.0%	43.4%	27.0%	48.2%	45.1%
	3	62.1%	45.9%	36.8%	45.7%	38.4%	51.1%	43.5%	34.7%	23.9%	36.0%	34.0%
	4	1.3%	0.7%	0.8%	1.1%	1.7%	1.0%	0.3%	0.6%	0.8%	0.9%	0.4%
Accuplacer Score	<51	14.2%	23.8%	30.9%	20.2%	25.9%	18.8%	32.3%	37.6%	44.0%	22.3%	33.5%
	51–77	39.6%	41.5%	37.3%	38.9%	42.1%	36.2%	39.4%	36.3%	28.7%	43.8%	38.9%
	78–98	34.6%	27.3%	24.3%	31.9%	25.3%	32.3%	22.9%	21.4%	19.9%	25.7%	21.7%
	99–120	11.5%	7.4%	7.5%	9.0%	6.7%	12.7%	5.5%	4.7%	7.4%	8.1%	5.8%
College English Course Placement	ELL Level 1	0.1%	1.7%	6.6%	1.7%	0.3%	1.6%	4.8%	6.4%	18.6%	3.4%	6.3%
	ELL Level 2	0.3%	4.9%	11.3%	5.6%	2.4%	4.0%	7.4%	11.9%	25.0%	8.7%	11.6%
	Below College-Level English ELL-3*	32.7%	43.9%	41.1%	42.6%	54.2%	37.0%	41.6%	43.5%	28.3%	47.2%	44.2%
	College-Level English	65.6%	48.7%	40.2%	49.0%	41.4%	56.2%	45.8%	37.6%	27.3%	39.7%	37.5%
	Exempt	1.3%	0.8%	0.8%	1.1%	1.7%	1.2%	0.3%	0.6%	0.8%	1.0%	0.4%

Note: *Both English language learners and native English speakers who scored one level of proficiency below college-level English, entered the same course and could not be distinguished; labelled here as ELL-3.

Figure 4 provides a closer look at the relationship between ELL placement in high school and placement in college. Students who required ELL courses in high school, particularly those who were placed in the literacy stream (ELD), continued to require significant support before being able to enter college-level English. Although only 12% of entrants had been placed in ELD or ESL in high school, they comprised a disproportionate share of students in the two lower ELL courses at Seneca, with 82% in ELL-1 and 68% in ELL-2. Of those placed in the lower end of the ELD stream (A/B), 64% required ELL courses two levels of proficiency below college-level English (ELL-1 and ELL-2). In the upper end of the ELD stream (ELD C/D/E), 38% were placed in ELL-1 or ELL-2. A similar pattern was seen in the ESL stream, with only 25% in the upper levels of ESL (C/D/E) scoring at college-level language proficiency. This compares with 63% of those who had not been in the ELD/ESL streams in high school.

Figure 4. Language placement in college, by placement in high school, Seneca entrants, 2010–2014
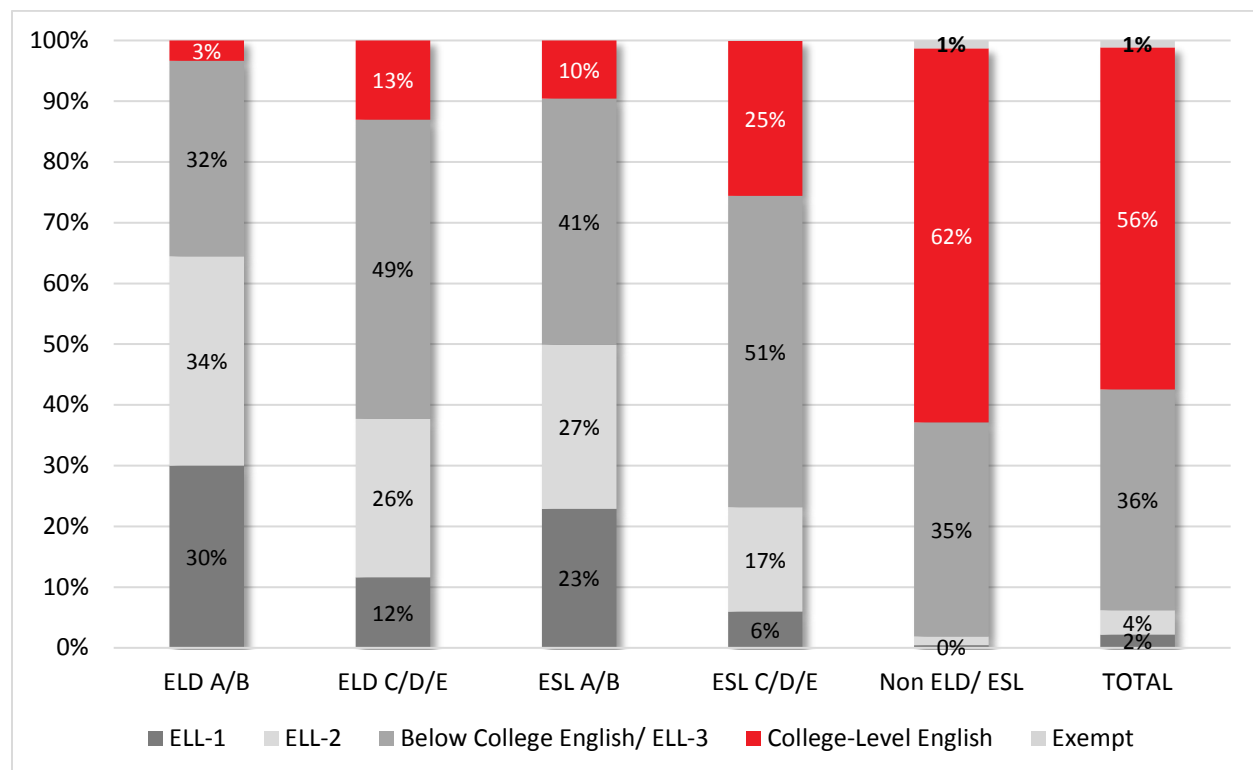
Program and credential choice by region of birth

Table 4 shows how the pattern of program and credential selection differed by region of birth. Students born outside of Canada were more likely to choose three- and four-year programs than were Canadian-born students. Within the Canadian-born group, students whose first language was English were less likely to enrol in three- or four-year programs than those whose first language was not English. When examining the results by region, students from the Caribbean had the lowest share of enrolment in the longer programs, at 25%. At the other extreme, students from South Asia were much more likely to enrol in three- and four-year programs, with 53% doing so.

Entrants' program areas also differed by region, with non-Canadian-born students more likely to enrol in business and engineering and less likely to enrol in community services or the arts. There was, however, considerable diversity in program areas across regions.

Table 4. First program area and credential of Seneca entrants by region of birth, 2010–2014

		Canada and USA (English)	Canada and USA (Non-English)	Non-Canadian-Born	Central and South America	Caribbean and Bermuda	Europe	Africa	West Central Asia and Middle East	East Asia	Southeast Asia	South Asia
Credential Type	Certificate 1-yr	10.5%	7.8%	6.1%	9.5%	9.8%	6.6%	6.1%	6.1%	5.3%	5.8%	4.6%
	Diploma 2-yr	55.8%	53.7%	51.3%	54.9%	65.0%	53.2%	49.7%	50.5%	55.8%	51.9%	42.1%
	Advanced Diploma 3-yr	28.4%	32.1%	35.8%	31.9%	22.9%	32.2%	37.7%	36.6%	32.4%	36.7%	43.8%
	Degree 4-yr	5.3%	6.4%	6.8%	3.6%	2.4%	8.0%	6.5%	6.7%	6.5%	5.5%	9.4%
Program Area	Business	26.2%	33.5%	38.2%	28.3%	25.9%	36.5%	32.6%	41.2%	46.4%	30.9%	43.2%
	Community Services	24.8%	22.4%	17.2%	23.8%	27.6%	22.1%	23.9%	18.8%	13.2%	11.9%	13.2%
	Creative and Applied Arts	15.4%	10.8%	7.7%	10.4%	11.4%	7.7%	5.2%	6.2%	9.2%	8.7%	5.2%
	Health	5.1%	4.1%	3.9%	3.1%	4.0%	4.2%	3.9%	2.3%	2.3%	8.0%	4.2%
	Hospitality	3.4%	4.9%	7.1%	8.4%	9.4%	3.1%	3.5%	5.2%	14.0%	13.1%	2.0%
	Preparatory/ Upgrading	10.3%	8.9%	7.0%	10.6%	7.7%	8.3%	10.0%	7.0%	3.3%	6.1%	6.8%
	Engineering/ Technology	14.8%	15.4%	19.0%	15.4%	13.8%	18.1%	21.0%	19.3%	11.7%	21.3%	25.4%

Previous university experience and aspirations for university, by region of birth

Figure 5 shows the regional differences in plans for university after graduation and the share of students whose last schooling was university. Students born outside of Canada had higher aspirations for university after college compared with those born in Canada (49% vs. 39%). When the rates for Canadian-born students were compared by first language, students without English as a first language had a much higher rate of aspiring to university than Canadian-born students whose first language was English (45% vs. 38%). There was little difference in the incidence of previous university attendance for those born in or outside of Canada. Students from Africa, West Central Asia and the Middle East, and South Asia were much more likely to aspire to attend university after college graduation (55%–59%), with students from East Asia the least likely (37%). However, students from East Asia had double the rate of previous university attendance, which could partially explain the lower aspirations.

Figure 5. Seneca entrants' previous university experience and aspirations for university, by region of birth, 2010–2014
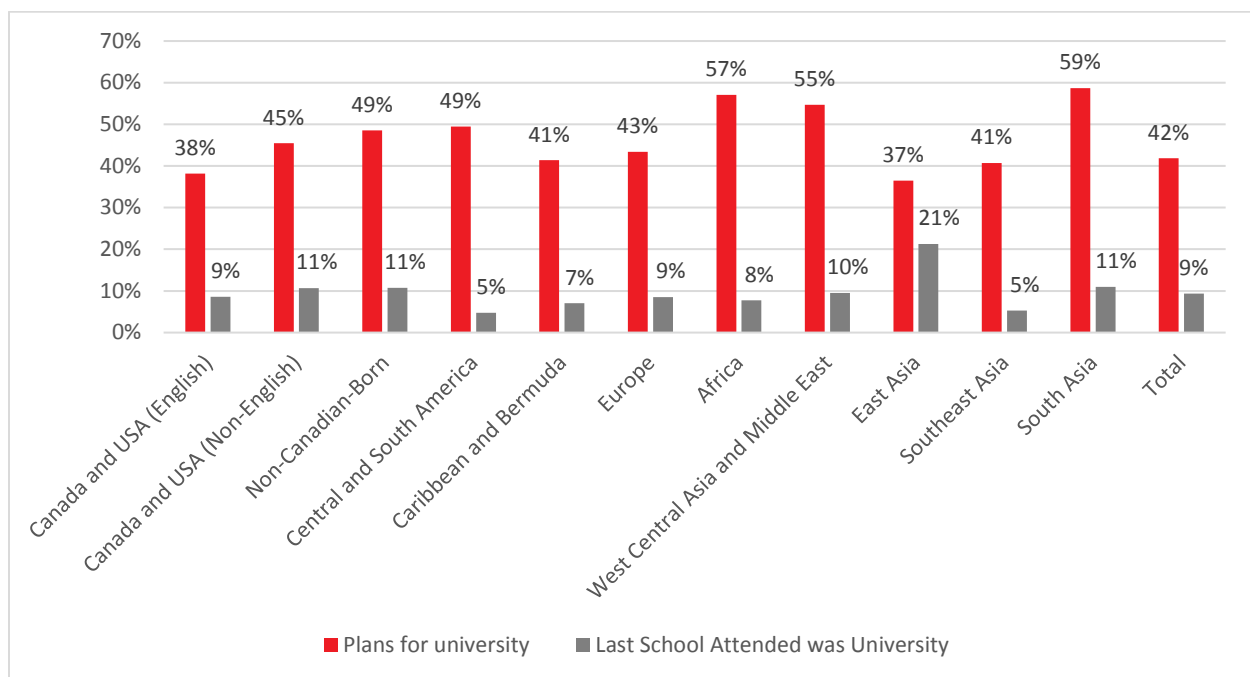
Academic Outcomes

Three measures of academic outcomes in college were chosen to obtain a measure of language proficiency and academic success: 1) grades in the student's required English course, 2) cumulative college GPA, and 3) graduation rate. College-level English is required to graduate and is therefore an important marker of both success and language proficiency. Of those who took college-level English, the distribution by region was not as large as seen previously for language proficiency at entry (Table 5). Differences between regions appeared more dramatically for the group that either had not yet taken college-level English, or had withdrawn before taking it. Students from West Central Asia and the Middle East (42%) and East Asia (44%) were the least likely to have taken a college-level English course in the time frame under study. Interestingly, of the students who have taken the college-level English course, those from these two regions had the lower failure rates.

Table 5. Enrolment and grades in college-level English, by region of birth, 2010–2014 entrants

Region of Origin	Students who Took College-Level English (Letter Grade)				Did not Enrol in College-Level English	
	F	C/D	A/B	Average Grade	Exempt	Did Not Attempt*
Canada and USA (English)	18%	41%	41%	62%	7%	19%
Canada and USA (Non-English)	19%	46%	35%	60%	5%	30%
Central and South America	17%	49%	34%	61%	6%	25%
Caribbean and Bermuda	20%	49%	31%	59%	5%	32%
Europe	18%	44%	38%	61%	6%	22%
Africa	20%	49%	31%	59%	4%	28%
West Central Asia and Middle East	14%	55%	31%	62%	4%	44%
East Asia	14%	51%	35%	62%	4%	42%
Southeast Asia	13%	48%	38%	63%	6%	31%
South Asia	20%	53%	27%	58%	4%	37%

Note:*Includes those who withdrew from the College without taking college-level English, and those who were still enrolled but had not yet taken it.

Figure 6 shows the overall GPA by category of student, including struggling (under 2.0), average (2.0 to 3.5), and honours (over 3.5), as well as the average GPA. Students from East Asia, Southeast Asia, Europe, and Canada (English as a first language) obtained grades higher than average. Overall, however, the differences in GPAs across regions were not particularly large.

Figure 6. Cumulative GPA by region of birth, 2010–2014
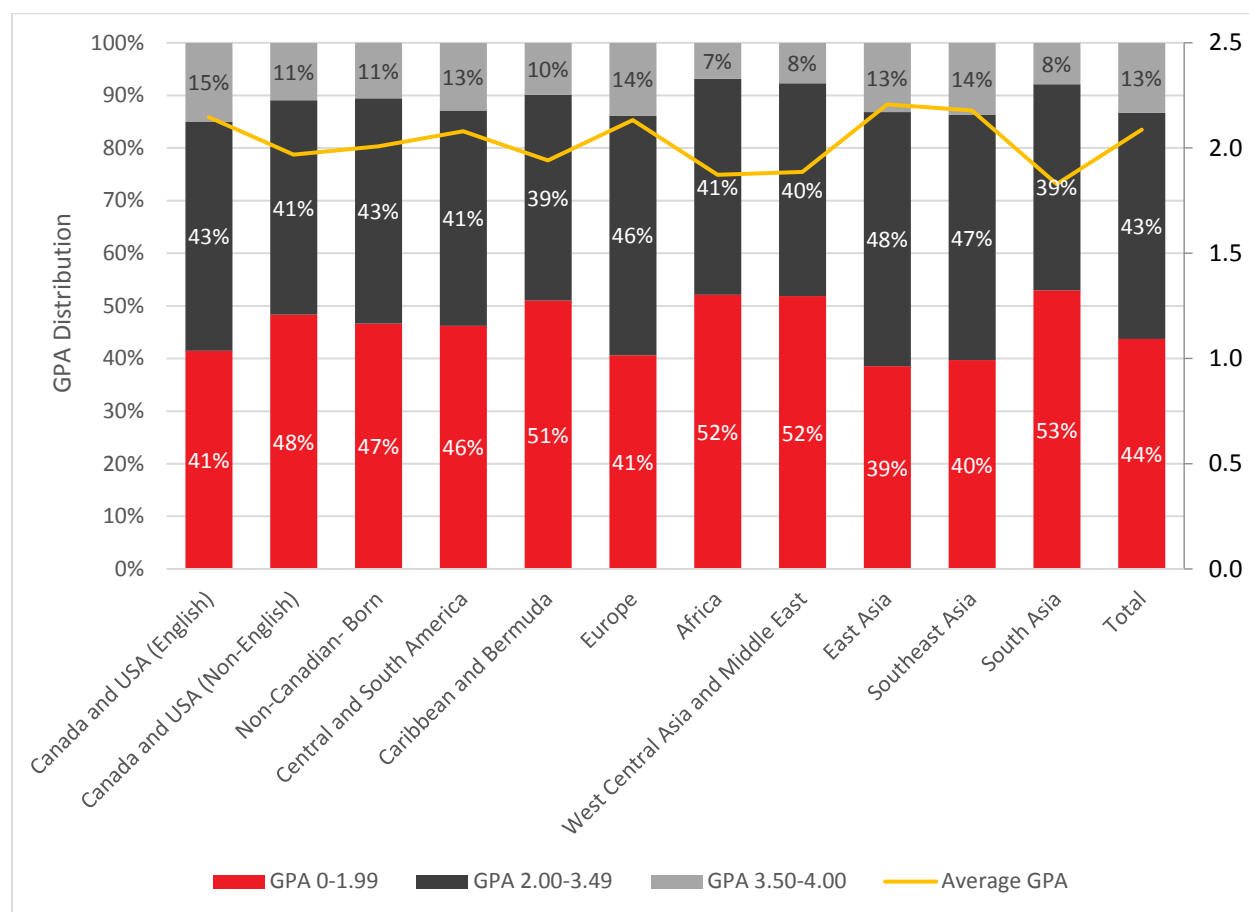
The results for the third academic outcome, graduation rate, are shown in Figure 7. Two kinds of rates are shown: 1) the share who graduated from any program within the standard program length, and 2) the share who graduated from any program within an additional year of school.[8] There were minimal differences between regions with regard to graduation within the standard program length; however, with the addition of one year to the program time frame, the graduation rates of students from East Asia out-performed those of all other groups (53% vs. 46% total). In contrast, only 39% of students from South Asia graduated within the expanded time frame.

Figure 7. Graduation rate by region of birth, Seneca entrants, 2010–2014
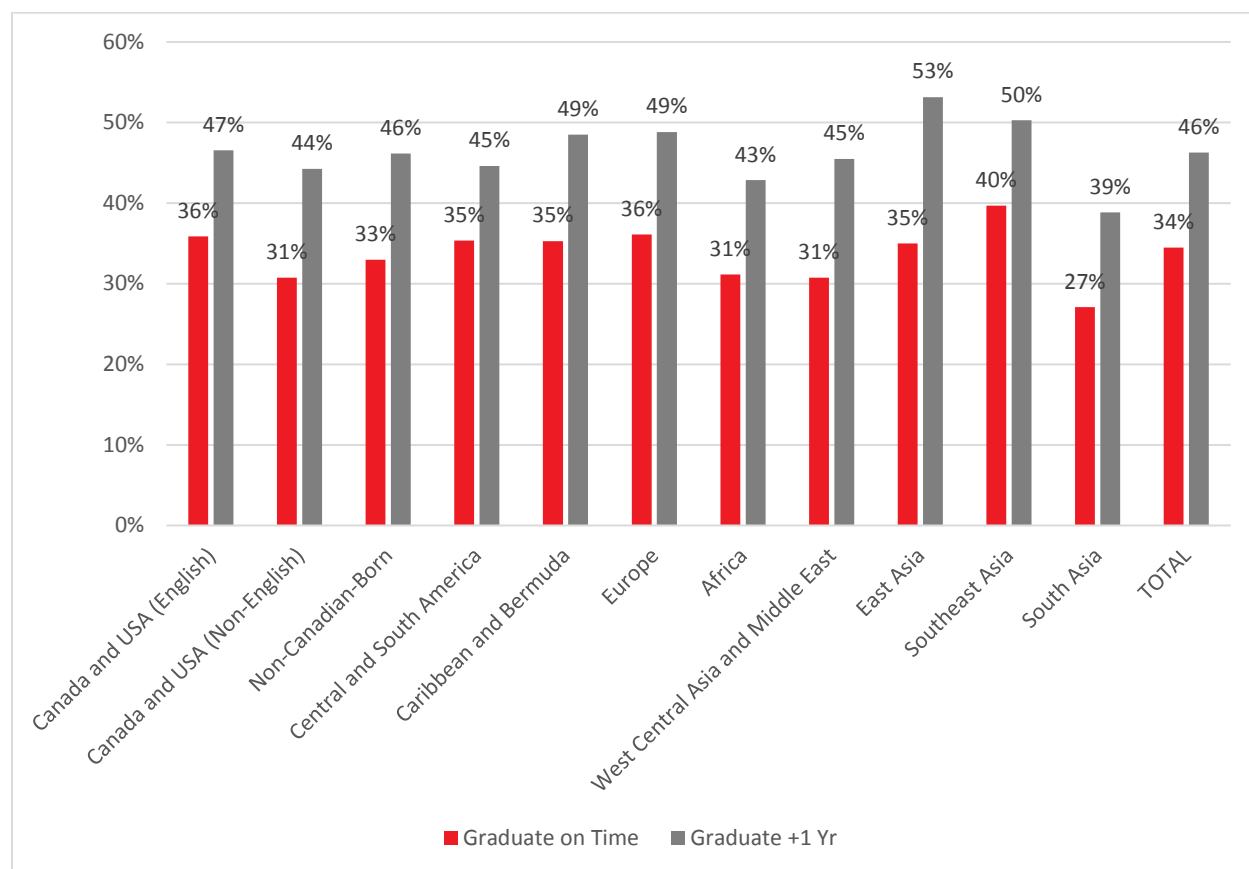
Note: Four-year degrees are excluded from this sample because of the time-frame constraints.

Graduate outcomes

All college graduates in Ontario are surveyed six months after graduating. Between 2010 and 2014, there were 2,366 graduates in the sample, 29% of whom were not born in Canada. We were unable to break out this smaller sample by region of birth as was done for the entrants. Table 6 provides an overview of graduates' activity, region of birth, and first language. Overall, about one-third of graduates had returned to school, with graduates born outside of Canada continuing at slightly higher rates. Results by language show that non-Canadian-born graduates with English as a first language were the most likely to further their education (43%), whereas Canadian-born graduates with English as a first language were the least likely (31%). The other major difference was that non-Canadian-born graduates were much more likely to be neither in school nor working (18% vs. 11%).

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[8] This rate will differ from the MTCU KPI rate for Seneca: The MTCU calculations provide for double the program length. Graduate certificates, degrees, and older students are excluded from this sample.

Table 6. Graduates' activity six months after graduation, by region of birth and first language, 2010–2014 graduates

	Canadian-Born			Non-Canadian-Born			
	English	Non-English	Total	English	Non-English	Total	Grand Total
# Graduate Respondents	1,484	257	1,741	185	440	625	2,366
Further Education	30.6%	38.1%	31.7%	42.9%	32.0%	35.2%	32.6%
Job Related	25.0%	21.8%	24.5%	18.5%	22.3%	21.2%	23.6%
Job Partially Related	8.0%	10.1%	8.3%	7.1%	7.0%	7.1%	8.0%
Job not Related	25.8%	16.7%	24.5%	15.8%	21.1%	19.6%	23.2%
Not Working or in School	10.6%	13.2%	11.0%	15.8%	17.5%	17.0%	12.6%

Notes: All groups are mutually exclusive; employed graduates may also be enrolled in school part time, but are not in the education grouping for the purposes of this table.

Table 7 looks more closely at whether graduates enrolled in college or university. Graduates born in Canada were less likely overall than those born outside of Canada to transfer to university (13.6% versus 17.0%), and equally as likely to transfer to college. With respect to language, the highest rates of transfer to both college and university were in the group with English as a first language, who were born outside of Canada.

Table 7. Transfer to university or college after graduation, by region of birth and first language, 2010–2014 graduates (full- or part-time enrolment)

	Canadian-Born			Non-Canadian-Born			
	English	Non-English	Total	English	Non-English	Total	Grand Total
# Graduate Respondents	1,484	257	1,741	185	440	625	2,366
Transfer to University	13.1%	16.3%	13.6%	19.5%	15.9%	17.0%	14.5%
Transfer to College	18.9%	23.4%	19.5%	23.8%	18.4%	20.0%	19.6%

To identify which graduates are transferring to university, a comparison of transfer rates by various characteristics was performed (Figure 8). Overall, those who were more likely to transfer were under 22 years of age, were male, had at least one parent with a degree, were from a middle- or high-income neighbourhood, took university prep courses in high school, and achieved good grades in college. With the exception of first language and income level, all of these factors held true for Canadian-born and non-Canadian-born groups.

Figure 8. Transfer rates to university by various characteristics, Seneca graduates, 2010–2014
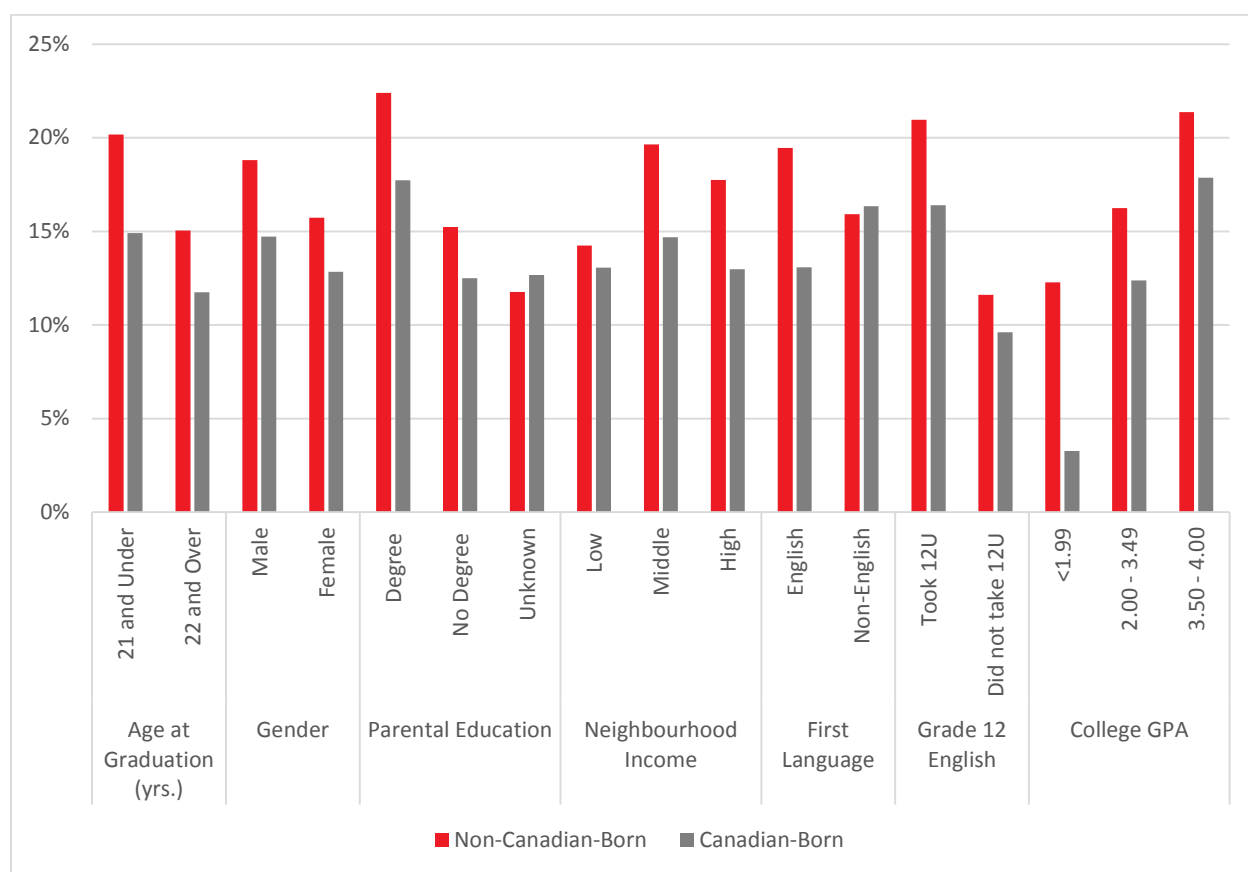
Note: Includes those who entered between 2010 and 2014, and graduated by 2014.

Various outcomes were used to measure success in the labour market, including the unemployment rate, the percentage of those working in a job related to their studies, the education required for their job, and hourly wage (Table 8). Overall, the major difference between Canadian-born and non-Canadian-born was the unemployment rate, which was eleven percentage points higher for the graduates not born in Canada. The hourly wage and rates of job-relatedness and overqualification were similar by region of birth. The Canadian-born group without English as a first language, and the non-Canadian born group with English as a first language, had high rates of unemployment; apparently, however, they had higher quality jobs, as measured by employment in a job related to their field of study, a lower incidence of being overqualified, and slightly higher earnings.

Table 8. Labour market outcomes by region of birth and first language, 2010–2014 graduates

	Canadian-Born			Non-Canadian-Born			
	English	Non-English	Total	English	Non-English	Total	Grand Total
Unemployment Rate	13.4%	20.4%	14.4%	27.4%	24.5%	25.3%	16.3%
% in Related Job	56.1%	65.6%	57.3%	61.8%	58.1%	59.1%	57.7%
% Overqualified	53.3%	48.9%	52.7%	44.4%	51.7%	49.8%	52.0%
Hourly Wage	$14.98	$15.70	$15.07	$15.30	$14.66	$14.82	$15.01

Notes: Hourly wage converted to 2015 constant dollars, using CPI for Canada. Includes only graduates who indicated they were working or looking for work during the reference week.

All surveyed graduates, regardless of their labour market or education status, are asked whether they are satisfied that college has helped them meet their goals. We used this variable to provide a measure of immigrant integration. The results show that across region of birth and language, the satisfaction rate (satisfied and very satisfied) was fairly high and consistent at over 80% (Table 9). There was an interesting difference in graduates' distinction between being "satisfied" versus "very satisfied". Graduates whose first language was not English (both Canadian-born and not) were more likely to report being "satisfied" and less likely to report being "very satisfied".

Table 9. Graduate satisfaction six months after graduation, by region of birth and first language, 2010–2014 graduates

	Canadian-Born			Non-Canadian-Born			
	English	Non-English	Total	English	Non-English	Total	Grand Total
Very Dissatisfied	1.2%	1.3%	1%	0.6%	1.0%	1%	1%
Dissatisfied	5.6%	5.5%	6%	5.6%	4.8%	5%	5%
Neither Satisfied nor Dissatisfied	12.1%	10.1%	12%	12.8%	13.8%	13%	12%
Satisfied	49.3%	58.4%	51%	50.6%	58.1%	56%	52%
Very Satisfied	31.8%	24.8%	31%	30.6%	22.3%	25%	29%

Regression Analysis

A variety of regression models were performed to determine whether region of birth and language proficiency affected academic and labour market outcomes, independent of sociodemographic and academic variables.

Language placement in college

As described previously, at Seneca College upon entry, all students are required to write an English-language placement test, which includes a standardized reading comprehension test (Accuplacer) and an essay-writing test. The level of language proficiency in which the student is placed is primarily determined by their assessed level of writing proficiency. The College provides three levels of language development below college-level English, and the opportunity for students to be exempt from college-level English if their score is high. Table 10 contains two models: The first column contains a linear probability model which estimates a student's propensity for being placed in college-level English, or being granted an exemption. The second column examines the determinants of reading comprehension (using the continuous 120-point scale) using an OLS regression model.

Focusing on the English-language placement model, students who spoke English as their first language were 11.2% more likely to be placed in college-level English (or above) compared with those whose first language was not English. Students born in each region of Asia, and those born in the Caribbean, were less likely to be placed in college-level English or above. Those who began studying in an Ontario high school as an adult (our proxy for duration of time in Canada) were 20% more likely to be placed in an ELL course than those who had attended all years of high school in Canada. Having been enrolled in ELL or ELD in high school is strongly associated with being placed in an ELL English course in college, as is having a lower GPA in senior high school and being enrolled in college prep courses.

These factors were also predictors of student success in the reading comprehension test, with the exception of the regional results. First language and region of birth played a significant but quantitatively small role in determining reading comprehension scores once accounting for the academic characteristics mentioned above.

The effect of sociodemographic control factors on language scores at college entry, although not a direct research question, is worth noting. Interestingly, males were more likely to be placed in college-level English, when controlling for academic background. This finding was further corroborated in the reading comprehension model, where males were significantly more likely than females to obtain a higher score. As well, having a parent with a degree increased the likelihood of being placed in college-level English and obtaining a higher score on reading comprehension. Students entering college under 19 years of age scored lower on the language tests and were more likely than their older peers to be placed in a level of proficiency below college-level English.

Aspirations for university

To determine whether students who plan to use the college-to-university pathway as a vehicle to access university differ by region of birth and language, we conducted a linear probability model (Table 10, third column) using a student's stated plan at entry (university or not) as an outcome. Credential type, program area, age, gender, socioeconomic status, and high school performance were all important considerations when assessing aspirations.

The regression results show that those born in Central and South America, Africa, West Central Asia and the Middle East, and South Asia were substantially and significantly more likely (8%, 13%, 12%, and 13% respectively) to aspire to go to university compared with students born in Canada and the USA. Independent of region of birth, students who had taken university prep courses in high school and had done poorly in them were the most likely to aspire to go to university upon entry to the college, indicating that college was considered to be "Plan B". Additionally, those indicating that English was not their first language were 4% more likely to aspire to university. Having a parent with a degree and coming from a middle- or high-income neighbourhood resulted in higher aspirations as well. Those who began later at an Ontario high school, in late adolescence and adulthood, were more likely to aspire to university, independent of age. Older students, independent of time of arrival, were much less likely to aspire to university, as were male students. The analysis also showed that students who placed in the highest level of language proficiency below college-level English had higher aspirations, fitting with a profile of students who have not yet acquired the skills required to continue to university.

Table 10. Regression analysis: Language proficiency and aspirations for university at college entry, Seneca entrants, 2010–2014

Reference	Variables	Placement in College-Level English	Accuplacer Score (120 pt.)	Aspirations for University
Region of Birth (Ref: Canada & USA)	Central and South America	0.035	4.245***	0.075***
		(0.025)	(1.000)	(0.025)
	Caribbean and Bermuda	-0.099***	-0.936	0.024
		(0.027)	(1.042)	(0.028)
	Europe	0.053***	3.108***	-0.001
		(0.019)	(0.798)	(0.021)
	Africa	0.000	-2.376**	0.128***
		(0.025)	(1.077)	(0.028)
	West Central Asia and Middle East	-0.044***	-3.740***	0.120***
		(0.016)	(0.697)	(0.017)
	East Asia	-0.143***	-5.296***	-0.007
		(0.016)	(0.748)	(0.019)
	Southeast Asia	-0.042**	2.153***	0.007
		(0.019)	(0.748)	(0.019)
	South Asia	-0.095***	-4.624***	0.134***
		(0.015)	(0.615)	(0.016)
First Language	English	0.112***	3.927***	-0.038***
		(0.009)	(0.367)	(0.009)
Age at Entry (Ref: <19yrs)	19 yrs.	0.029***	3.107***	-0.053***
		(0.008)	(0.340)	(0.009)
	20 yrs. +	0.100***	7.428***	-0.134***
		(0.009)	(0.366)	(0.009)
Gender	Male	0.035***	4.669***	-0.063***
		(0.007)	(0.294)	(0.007)
Income & Parental Education (Ref: Low Income, No Degree)	Mid Income, No Degree	0.019	0.211	0.007
		(0.010)	(0.399)	(0.010)
	High Income, No Degree	0.040***	0.748	-0.016
		(0.011)	(0.438)	(0.011)
	Low Income, Degree	0.043***	3.991***	0.029
		(0.014)	(0.591)	(0.015)
	Mid Income, Degree	0.067***	3.181***	0.054***
		(0.013)	(0.559)	(0.014)
	High Income, Degree	0.076***	4.323***	0.041***
		(0.013)	(0.545)	(0.014)
	Low Income, Unknown Ed	-0.060***	-1.361**	-0.032**
		(0.016)	(0.657)	(0.016)
	Mid Income, Unknown Ed	-0.018	-2.092***	-0.002
		(0.016)	(0.623)	(0.016)
	High Income, Unknown Ed	-0.021	-1.959**	-0.045**
		(0.019)	(0.761)	(0.019)
Age First Observed in Ontario HS (Ref: Grade 9 Age)	Start HS Grade 11–12 Age	-0.097***	-4.360***	0.074***
		(0.014)	(0.669)	(0.017)
	Start HS Adult	-0.207***	-9.135***	0.122***
		(0.021)	(1.001)	(0.027)
Senior HS Stream (Ref: Mostly C/W Level)	Senior HS Mostly U Level	0.240***	12.160***	0.116***
		(0.007)	(0.299)	(0.008)
Senior HS GPA	70–80%	0.086***	4.666***	-0.076***
		(0.007)	(0.293)	(0.008)
	>80%	0.156***	11.118***	-0.140***
		(0.011)	(0.506)	(0.013)
ELL in HS (Ref: Not Observed in ELL Courses)	HS ELL/ELD Courses	-0.268***	-13.256***	
		(0.013)	(0.552)	
Activity Before College	Previous University	0.042***	2.874***	-0.010
		(0.011)	(0.507)	(0.013)
Plans After Graduation	Aspired to University	-0.023***	-0.963***	
		(0.007)	(0.293)	

Reference	Variables	Placement in College-Level English	Accuplacer Score (120 pt.)	Aspirations for University
Entering Program Group (Ref: Business)	Community Services	-0.042***	-2.924***	0.070***
		(0.010)	(0.416)	(0.011)
	Creative and Applied Arts	0.023**	3.190***	-0.178***
		(0.012)	(0.482)	(0.012)
	Health	0.076***	3.900***	-0.011
		(0.017)	(0.675)	(0.018)
	Hospitality	-0.070***	-1.804**	-0.258***
		(0.017)	(0.715)	(0.016)
	Engineering/Technology	0.029	1.292**	0.352***
		(0.015)	(0.618)	(0.013)
	Preparatory	-0.011	1.040**	-0.014
		(0.010)	(0.426)	(0.011)
Entering Credential (Ref: 2-yr Diploma)	Certificate 1-yr	-0.041***	-1.580***	-0.209***
		(0.014)	(0.564)	(0.012)
	Advanced Diploma 3-yr	0.010	0.187	0.077***
		(0.009)	(0.360)	(0.009)
	Degree 4-yr	0.129***	1.395**	-0.212***
		(0.013)	(0.623)	(0.015)
English Placement (Ref: College English – Level 4)	ELL – Level 1 or 2			0.014
				(0.018)
	Below College-Level/ELL – Level 3			0.025***
				(0.008)
Academic Year of Entry (Ref: 2010–11)	2011–12	0.061***	-0.466	0.002
		(0.010)	(0.423)	(0.011)
	2012–13	0.054***	-1.892***	-0.008
		(0.010)	(0.413)	(0.011)
	2013–14	0.070***	-2.281***	-0.014
		(0.010)	(0.418)	(0.011)
	2014–15	0.100***	-1.678***	-0.023**
		(0.011)	(0.439)	(0.011)
Term of Entry	Summer	-0.022	1.814	-0.002
		(0.026)	(1.039)	(0.028)
	Fall	0.014	-0.467	0.019
		(0.010)	(0.433)	(0.011)
Constant		0.228***	56.227***	0.451***
		(0.019)	(0.784)	(0.020)
Observations		18,077	18,077	18,077
R-squared		0.234	0.307	0.152

Note: Robust standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$

Academic outcomes

As described previously, grades in the student's required English course, cumulative college GPA, and graduation rate were chosen as the academic outcomes to obtain a measure of language proficiency and academic success. The descriptive data showed some differences between regions in these outcomes, but they were not as large as those seen in language proficiency. Controlling for a variety of academic, program, language, and sociodemographic characteristics, it was found that across the three outcomes there were only minimal differences by region (Table 11). There was no difference across regions for graduation rates: Students from East Asia obtained a higher GPA by two percentage points, and students from South Asia obtained a lower grade in college English than did Canadian-born students. Academic, language, or sociodemographic factors were likely responsible, rather than region of birth directly.

Those with lower entering-language proficiency (placed in a lower-level English course) were less likely to graduate within one year of the program's expected time frame, and more likely to obtain a lower

overall GPA and lower college-level English grades. For example, those placed in ELL levels 1 and 2, and in ELL level 3, were less likely to graduate (by 6% and 7% respectively) compared with those placed in college-level English or above. Looking at the results in another way, the predicted graduation rate was 49% for those placed in college-level English or above, 42% for those placed in ELL level 3, and 41% for those in the bottom two ELL levels (1 and 2). This suggests that poor language skills can be a significant barrier to completing a college credential. Similarly, using overall GPA as an outcome, on average, those who had been placed in ELL courses at entry obtained averages that were four percentage points lower than the averages of those who, at entry, had been placed in college-level English or above.

Turning to the college-level English grade, this outcome was chosen to serve as a marker of language proficiency at the end of most students' structured language training. However, there was very little difference in the college-level English grade by the initial English placement groups, with only a slight, but significant effect for those who placed in the highest English-language course (ELL level 3) offered below college-level. It is important to note that many of those with weak entering language proficiency were effectively weeded out before reaching college-level English.[9] However, those with weak language proficiency also obtained weaker grades overall, controlling for other factors (described above), which demonstrates they were also struggling outside the language placement pathway.

High school grades and course selection proved incredibly important in explaining the probability of all three outcomes. For example, those who took mostly university preparatory courses in high school were 12% more likely to graduate with a college credential. Having a high school GPA above 80%, or in the 70% to 79% range, was associated with an increased likelihood of graduating (39% and 20% respectively) over those with a GPA below 70%. Similarly, for overall GPA and college level-English grade, high school course stream and grades were quantitatively the largest predictors of student success in college.

Other sociodemographic variables. Interesting sociodemographic variables that were significant factors on academic outcomes included gender, age, and neighbourhood income. Those starting college at age 19, relative to those starting college under 19 and over 20 years of age were less likely to graduate, and obtained both lower overall college grades and lower grades in college-level English. A similar effect was seen in males, who performed less well than females across all three academic outcomes. Students from middle- or high-income neighbourhoods, regardless of whether either parent had a degree, had a higher GPA than did students from low-income neighbourhoods, with neither parent having a degree. However, there was no neighbourhood income effect on graduation rate or grade in college-level English.

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[9] The use of college English grade as an outcome is problematic because over three-quarters of those who did not enrol in college-level English within the time frame for the study were originally not placed in college-level English, in sharp contrast to only 36% of those who ever enrolled in college-level English.

Table 11. Regression analysis: Graduation rates, overall GPA, and college English grades; Seneca entrants, 2010–2014

Reference	Variables	Graduation	Overall GPA (100 pt.)	College English Grade (100 pt.)
Region of Birth (Ref: Canada & USA)	Central and South America	-0.000	0.013	0.007
		(0.042)	(0.008)	(0.011)
	Caribbean and Bermuda	0.053	-0.000	-0.016
		(0.047)	(0.009)	(0.012)
	Europe	0.030	0.007	-0.002
		(0.034)	(0.007)	(0.010)
	Africa	-0.012	-0.006	-0.012
		(0.049)	(0.009)	(0.012)
	West Central Asia and Middle East	0.023	-0.004	0.010
		(0.030)	(0.006)	(0.007)
	East Asia	0.050	0.022***	-0.006
		(0.033)	(0.006)	(0.009)
	Southeast Asia	-0.015	0.008	0.006
		(0.037)	(0.006)	(0.008)
	South Asia	-0.030	-0.006	-0.019***
		(0.028)	(0.005)	(0.007)
First Language	English	-0.022	-0.005	0.001
		(0.016)	(0.003)	(0.004)
Age at Entry (Ref: <19 yrs.)	19 yrs.	-0.033**	-0.017***	-0.017***
		(0.015)	(0.003)	(0.004)
	20 yrs. +	-0.000	0.008**	-0.002
		(0.016)	(0.003)	(0.005)
Gender	Male	-0.077***	-0.024***	-0.026***
		(0.013)	(0.003)	(0.003)
Neighbourhood Income & Parental Education (Ref: Low Income, No Degree)	Mid Income, No Degree	0.002	0.007**	0.011**
		(0.018)	(0.004)	(0.005)
	High Income, No Degree	0.027	0.011***	0.007
		(0.019)	(0.004)	(0.005)
	Low Income, Degree	-0.030	-0.010	-0.011
		(0.027)	(0.005)	(0.007)
	Mid Income, Degree	0.027	0.013***	0.012
		(0.027)	(0.005)	(0.006)
	High Income, Degree	0.001	0.011**	0.009
		(0.025)	(0.005)	(0.006)
	Low Income, Unknown Ed	-0.026	0.001	-0.010
		(0.029)	(0.006)	(0.008)
	Mid Income, Unknown Ed	0.023	0.003	-0.000
		(0.029)	(0.005)	(0.007)
	High Income, Unknown Ed	-0.052	-0.002	0.000
		(0.034)	(0.006)	(0.009)
Age First Observed in Ontario HS (Ref: Grade 9 Age)	Start HS Grade 11–12 Age	0.004	-0.002	-0.005
		(0.032)	(0.006)	(0.008)
	Start HS Adult	0.067	0.003	-0.011
		(0.049)	(0.009)	(0.012)
Senior HS Course Type (Ref: Mostly C/W Level)	Senior HS Mostly U level	0.117***	0.059***	0.050***
		(0.013)	(0.003)	(0.003)
Senior HS GPA (Ref: Under 70%)	70–80%	0.201***	0.104***	0.082***
		(0.014)	(0.003)	(0.003)
	>80%	0.391***	0.197***	0.159***
		(0.022)	(0.004)	(0.005)
Activity Before College	Previous University	0.018	0.013***	0.004
		(0.027)	(0.005)	(0.006)
Plans After Graduation	Aspired to University	0.001	-0.002	0.001
		(0.013)	(0.003)	(0.003)
Entering Program Group (Ref: Business)	Community Services	0.113***	0.066***	0.016***
		(0.020)	(0.004)	(0.005)
	Creative and Applied Arts	0.023	0.046***	-0.026***
		(0.022)	(0.004)	(0.005)

Reference	Variables	Graduation	Overall GPA (100 pt.)	College English Grade (100 pt.)
	Health	0.113***	0.035***	0.056***
		(0.031)	(0.006)	(0.007)
	Hospitality	0.175***	0.066***	0.004
		(0.030)	(0.006)	(0.008)
	Engineering and Technology	-0.013	-0.012**	-0.007
		(0.024)	(0.005)	(0.007)
	Preparatory	0.078***	0.002	0.010**
		(0.023)	(0.004)	(0.005)
Entering Credential (Ref: 2-yr Diploma)	Certificate 1-yr	-0.051**	0.008	-0.001
		(0.022)	(0.005)	(0.007)
	Advanced Diploma 3-yr	-0.027	0.003	0.004
		(0.020)	(0.003)	(0.004)
	Degree 4-yr^		0.007	0.012
			(0.005)	(0.011)
English Placement (Ref: College English – Level 4)	ELL Level 1 or 2	-0.061**	-0.041***	-0.008
		(0.030)	(0.006)	(0.008)
	Below College-Level English (ELL Level 3)	-0.067***	-0.037***	-0.015***
		(0.014)	(0.003)	(0.004)
Academic Year of Entry (Ref: 2010–11)	2011–12	-0.051***	-0.004	-0.007
		(0.014)	(0.004)	(0.005)
	2012–13	-0.102***	-0.015***	-0.016***
		(0.029)	(0.004)	(0.004)
	2013–14		-0.021***	-0.037***
			(0.004)	(0.005)
	2014–15		0.012***	-0.050***
			(0.004)	(0.006)
Term of Entry	Summer	0.076	-0.006	0.001
		(0.055)	(0.010)	(0.014)
	Fall	0.073***	0.026***	0.026***
		(0.017)	(0.004)	(0.005)
Constant		0.304***	0.484***	0.544***
		(0.034)	(0.007)	(0.010)
Observations		6,031	17,932	13,346
R-squared		0.141	0.267	0.130

Notes: Robust standard errors in parentheses, *** p < 0.01, ** p < 0.05, ^ four-year degree programs were excluded from graduation-rate models because of time constraints.

Graduate outcomes

Transfer to university

The descriptive data showed a difference in transfer rates to university between Canadian-born and non-Canadian-born graduates. To test whether this effect could be explained by other factors, a linear probability model with transfer as an outcome (0/1) was performed to estimate a student's propensity for transfer (Table 12). No differences in transfer propensity were observed across region of birth, first language, or English-language placement level. Model 1, containing language placement but not Seneca grades, indicates that graduates who had been placed in ELL levels 1 and 2 at entry were 3% less likely to transfer than graduates who had college-level English at entry. Model 2, which controls for Seneca grades but not language placement, demonstrates that graduates in the top half of the graduating class were the most likely to transfer to university after graduating (six months post-graduation). Those coming from preparatory programs, and those with two- and three-year credentials, were the most likely to transfer. Unsurprisingly, aspirations for transfer were a strong predictor of eventual transfer. We knew that entrants' aspirations for university differed by region of birth (Table 10); when the models were also run without aspirations as a control variable, region of birth remained insignificant. Having a

parent with a university degree also significantly increased the likelihood of transferring to university. Non-Canadian-born graduates also had more highly educated parents, which may explain the lack of significant effect of region of birth on transfer in the regression model, unlike that seen in the descriptive analysis.

Table 12. Regression analysis: Transfer to university, six months after graduation, Seneca graduates, 2010–2014

Reference	Variables	(1) Transfer to University	(2) Transfer to University
Region of Birth (Ref: Not Canada)	Canada	-0.020	-0.022
		(0.022)	(0.021)
First Language	English	-0.012	-0.011
		(0.020)	(0.019)
Age at Grad (Ref: <22)	22 yrs. +	-0.018	-0.000
		(0.016)	(0.016)
Gender	Male	0.026	0.032**
		(0.016)	(0.016)
Parental Education (Ref: Did not State Degree or Higher)	Stated Degree or Higher	0.036**	0.042**
		(0.018)	(0.018)
OSAP Status (Ref: Never Received OSAP)	Received OSAP	-0.005	-0.006
		(0.014)	(0.014)
Age First Observed in Ontario HS (Ref: Grade 9 Age)	Start HS Grade 11–12 Age	-0.026	-0.040
		(0.035)	(0.031)
	Start HS Adult	0.016	0.003
		(0.051)	(0.051)
Seneca Grad GPA Quartile (Ref: Top 25%)	0–24th Percentile		-0.137***
			(0.021)
	25th–49th Percentile		-0.070***
			(0.021)
	50th–75th Percentile		-0.001
			(0.021)
College-Level English Grade (Ref: A & B Grade Range)	C & D Grade Range		-0.006
			(0.015)
	Exempt		-0.057**
			(0.024)
Activity Before College	Previous University	0.047	0.028
		(0.026)	(0.027)
Plans After Grad	Aspired to University	0.170***	0.175***
		(0.016)	(0.016)
Grad Program Group (Ref: Business)	Community Services	0.038	0.009
		(0.023)	(0.023)
	Creative and Applied Arts	-0.059***	-0.086***
		(0.020)	(0.020)
	Health	-0.083***	-0.108***
		(0.020)	(0.021)
	Hospitality	-0.029	-0.057**
		(0.023)	(0.024)
	Preparatory	0.151***	0.146***
		(0.037)	(0.037)
	Engineering and Technology	-0.040	-0.045
		(0.025)	(0.026)
Grad Credential (Ref: 2-yr Diploma)	Certificate 1-yr	-0.069***	-0.058***
		(0.021)	(0.022)
	Advanced Diploma 3-yr	0.077***	0.052**
		(0.022)	(0.022)
	Degree 4-yr	-0.049	-0.028
		(0.061)	(0.079)
English Placement (Ref: College English)	ELL Level 1 or 2	-0.024	
		(0.036)	
	Below College Level/ ELL Level 3	-0.030**	
		(0.015)	
Academic Year of Graduation (Ref: 2010–11)	2011–12	-0.018	0.011
		(0.066)	(0.067)
	2012–13	-0.039	-0.009
		(0.065)	(0.066)
	2013–14	-0.045	-0.003
		(0.065)	(0.066)

Reference	Variables	(1) Transfer to University	(2) Transfer to University
Term of Graduation (Ref: Fall)	Summer	**0.118***	**0.099***
		(0.018)	(0.018)
	Winter	**0.151***	**0.129***
		(0.014)	(0.014)
Constant		0.007	0.049
		(0.070)	(0.072)
Observations		2,353	2,323
R-squared		0.146	0.169

Notes: Robust standard errors in parentheses, *** p < 0.01, ** p < 0.05

Labour market outcomes

Employment

Graduates who indicated they were in the labour force (working or looking for work, not in full-time school) during a set reference week were analyzed to determine factors that independently affected employment (Table 13). Those born in Canada were 9% less likely to be unemployed than those born outside of Canada. In addition to region of birth, those who were placed in ELL level 3 were 5% more likely to be unemployed; the rate for graduates who were placed in the lowest levels of ELL courses was not, statistically, significantly different (presumably because of the small sample size available). No statistical differences in unemployment rates were found between student GPA groups, first language, or any of the academic or sociodemographic factors.

Table 13. Regression analysis: Likelihood of employment six months after graduation, Seneca graduates, 2010–2014.

Reference	Variables	(1) Unemployed	(2) Unemployed
Region of Birth (Ref: Not Canada)	Canada	-0.089***	-0.094***
		(0.032)	(0.032)
First Language	English	-0.028	-0.039
		(0.029)	(0.029)
Age at Grad (Ref: <22)	22 yrs. +	-0.017	-0.015
		(0.022)	(0.022)
Gender	Male	0.016	0.012
		(0.022)	(0.022)
Parental Education (Ref: Did not State Degree or Higher)	Stated Degree or Higher	-0.000	-0.002
		(0.025)	(0.025)
OSAP Status (Ref: Never Received OSAP)	Received OSAP	0.006	0.012
		(0.020)	(0.020)
Age First Observed in Ontario HS (Ref: Grade 9–10 Age)	Start HS Grade 11–12 Age	-0.016	0.001
		(0.054)	(0.053)
	Start HS Adult	-0.126	-0.098
		(0.064)	(0.064)
Seneca Grad GPA Quartile (Ref: Top 25%)	0–24th Percentile		0.023
			(0.032)
	25th–49th Percentile		0.033
			(0.028)
	50th–75th Percentile		0.020
			(0.028)
College-Level English Grade (Ref: A & B Grade Range)	C & D Grade Range		0.009
			(0.022)
	Exempt		-0.025
			(0.033)
Activity Before College	Previous University	0.011	0.017
		(0.033)	(0.035)
Grad Program Group (Ref: Business)	Community Services	-0.044	-0.030
		(0.029)	(0.029)
	Creative and Applied Arts	0.029	0.038
		(0.033)	(0.034)
	Health	0.033	0.037
		(0.041)	(0.041)
	Hospitality	-0.081**	-0.068
		(0.041)	(0.041)
	Preparatory	0.064	0.070
		(0.059)	(0.060)
	Engineering and Technology	-0.019	-0.015
		(0.038)	(0.038)
Grad Credential (Ref: 2-yr Diploma)	Certificate 1-yr	-0.029	-0.021
		(0.036)	(0.037)
	Advanced Diploma 3-yr	0.060	0.060
		(0.032)	(0.032)
	Degree 4-yr	-0.059	-0.041
		(0.070)	(0.086)
English Placement (Ref: College English)	ELL Level 1 or 2	0.081	
		(0.057)	
	Below College Level/ ELL Level 3	0.045**	
		(0.022)	
Academic Year of Graduation (Ref: 2010–11)	2011–12	0.020	0.021
		(0.096)	(0.095)
	2012–13	0.053	0.048
		(0.094)	(0.093)
	2013–14	0.067	0.061
		(0.095)	(0.094)
Constant	Constant	0.191	0.191
		(0.103)	(0.102)

Reference	Variables	(1) Unemployed	(2) Unemployed
Observations	Observations	1,567	1,547
R-squared	R-squared	0.038	0.035

Note: Robust standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$.

Rates of job relatedness and overqualification for employed graduates

In addition to determining the factors related to obtaining any job, we looked at the key components of job quality—whether the job is related to the graduate's field of study and whether a postsecondary credential was required. Unlike the results for employment rate, being born in Canada did not affect the likelihood of being in an unrelated job or being overqualified (Table 14). Likewise, English-language proficiency at college entry was not significantly related to eventual job relatedness or being overqualified. However, graduates who obtained a college English grade in the C to D range were 6% less likely to be in a related job and 10% more likely be overqualified compared with those with grades in the A to B range. Those with an overall GPA in the bottom two quartiles were between 13% and 15% more likely to be overqualified than their peers in the top GPA quartile, with a similar effect seen in the job relatedness model.

Graduates of advanced diploma programs were more likely to have a job related to their field of study and less likely to be overqualified. Compared with business graduates, health graduates were much more likely to be employed in a related field and less likely to be overqualified for their work, whereas preparatory graduates were much less likely to be working in a related field. Creative and applied arts graduates and hospitality graduates were much more likely to be overqualified. Graduates with previous university were more likely to be employed in a related job and less likely to be overqualified (however, the overqualified effect disappeared when grades were included in the model). Interestingly, males were more likely to report being overqualified for their job, but with no significant difference in reported rate of job relatedness.

Table 14. Regression analysis: Job relatedness and overqualification, six months after graduation, employed Seneca graduates, 2010–2014.

Reference	Variables	(1) Job Related (Y/N)	(2) Job Related (Y/N)	(3) Overqualified	(4) Overqualified
Region of Birth (Ref: Not Canada)	Canada	0.010	0.007	0.011	0.028
		(0.042)	(0.042)	(0.049)	(0.047)
First Language	English	-0.039	-0.046	0.017	0.032
		(0.039)	(0.038)	(0.045)	(0.044)
Age at Grad (Ref: <22)	22 yrs. +	-0.022	-0.016	-0.003	-0.019
		(0.031)	(0.032)	(0.036)	(0.036)
Gender	Male	-0.019	-0.010	0.089**	0.080**
		(0.031)	(0.031)	(0.035)	(0.035)
Parental Education (Ref: Did not State Degree or Higher)	Stated Degree or Higher	0.002	-0.007	-0.055	-0.052
		(0.035)	(0.035)	(0.041)	(0.040)
OSAP Status (Ref: Never Received OSAP)	Received OSAP	-0.046	-0.045	0.020	0.026
		(0.028)	(0.028)	(0.033)	(0.032)
Age First Observed in Ontario HS (Ref: Grade 9–10 Age)	Start HS Grade 11–12 Age	0.001	-0.006	-0.053	-0.048
		(0.073)	(0.071)	(0.086)	(0.081)
	Start HS Adult	0.049	0.023	0.016	0.045
		(0.103)	(0.105)	(0.116)	(0.116)
Seneca Grad GPA Quartile (Ref: Top 25%)	0–24th Percentile		-0.077		0.125**
			(0.044)		(0.051)
	25th–49th Percentile		-0.109***		0.145***
			(0.040)		(0.047)
	50th–75th Percentile		-0.056		0.035
			(0.039)		(0.045)
College-Level English Grade (Ref: A & B Grade Range)	C & D Grade Range		-0.056*		0.098***
			(0.031)		(0.035)
	Exempt		0.011		-0.011
			(0.049)		(0.058)
Activity Before College	Previous University	0.143***	0.106**	-0.123**	-0.069
		(0.045)	(0.046)	(0.054)	(0.055)
Grad Program Group (Ref: Business)	Community Services	0.029	0.028	-0.082*	-0.066
		(0.042)	(0.042)	(0.048)	(0.047)
	Creative and Applied Arts	-0.001	-0.009	0.096*	0.112**
		(0.046)	(0.047)	(0.053)	(0.053)
	Health	0.229***	0.215***	-0.186***	-0.150**
		(0.053)	(0.054)	(0.063)	(0.064)
	Hospitality	0.076	0.070	0.157**	0.195***
		(0.062)	(0.062)	(0.070)	(0.070)
	Preparatory	-0.240***	-0.243***	0.127	0.117
		(0.071)	(0.071)	(0.089)	(0.088)
	Engineering and Technology	0.023	0.017	-0.038	-0.059
		(0.052)	(0.053)	(0.060)	(0.060)
Grad Credential (Ref: 2-yr Diploma)	Certificate 1-yr	-0.118**	-0.118**	0.021	0.002
		(0.053)	(0.054)	(0.064)	(0.065)
	Advanced Diploma 3-yr	0.110***	0.098**	-0.141***	-0.107**
		(0.043)	(0.043)	(0.049)	(0.050)
	Degree 4-yr	0.094	-0.077	0.035	0.226
		(0.111)	(0.143)	(0.130)	(0.139)
English Placement (Ref: College English – Level 4)	ELL Level 1 or 2	-0.023		-0.010	
		(0.075)		(0.084)	
	Below College Level/ ELL Level 3	-0.011		0.048	
		(0.031)		(0.035)	
Academic Year of Graduation (Ref: 2010–11)	2011–12	0.302**	0.311**	-0.315***	-0.367***
		(0.120)	(0.123)	(0.104)	(0.104)
	2012–13	0.305***	0.323***	-0.305***	-0.369***
		(0.118)	(0.121)	(0.101)	(0.102)
	2013–14	0.309***	0.336***	-0.294***	-0.381***
		(0.119)	(0.122)	(0.102)	(0.104)
Constant		0.290**	0.359***	0.803***	0.735***

Reference	Variables	(1) Job Related (Y/N)	(2) Job Related (Y/N)	(3) Overqualified	(4) Overqualified
		(0.127)	(0.130)	(0.118)	(0.118)
Observations		1,300	1,285	1,003	993
R-squared		0.062	0.075	0.070	0.097

Note: Robust standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$

Earnings for employed graduates

The four models shown in Table 15 depict the factors determining the hourly wage (Ln) of college graduates. Columns 1 and 2 estimate the factors related to wage, without controlling for job quality. Columns 3 and 4 contain models that do control for the job quality measures such as education required for job, whether the job was full time, and whether the job was related to the graduate's program of study. In all four models, there is no observable difference in hourly wage across region of birth or by first language. Because of our small sample of graduates, we were unable to control for a more nuanced variation in region of birth and we had no way to control for ethnicity at the individual level.

Models 1 and 3 contain controls for language proficiency at college entry, whereas models 2 and 4 control for overall college grades and grades in college-level English. Graduates who were initially placed in level 1 or 2 ELL earned an hourly wage that was 14% less than that of their peers who were placed in college-level English (or above) at entry. This gap narrowed when controlling for job-specific characteristics, but a pay gap of 12% existed between the two groups. Overall college grades and grades in college English did not influence hourly wage when job-specific characteristics are were included.

In terms of sociodemographic factors, variables including age, gender, and income had significant effects on hourly wage. Graduates ages 22 years and older tended to earn more, likely because of previous job experience or education that we could not control for. As well, those who did not receive financial aid from OSAP (income-level marker) had lower earnings. However, this income differential disappeared when controlling for measures of job quality. In models 1 and 2, females earned about 7 to 8% less than their male counterparts. This pay gap widened to 11% when controlling for job relatedness, education required, and part-time employment status. Although the wage gap between genders is well known, such a large gap, particularly that early in a college graduate's career, is noteworthy.

Table 15. Regression analysis: Hourly wage six months after graduation, employed Seneca graduates, 2010–2014.

Reference	Variables	(1) Ln (wage)	(2) Ln (wage)	(3) Ln (wage)	(4) Ln (wage)
Region of Birth (Ref: Not Canada)	Canada	0.013	0.024	0.006	0.020
		(0.034)	(0.035)	(0.033)	(0.034)
First Language	English	-0.007	0.005	0.015	0.030
		(0.031)	(0.030)	(0.032)	(0.031)
Age at Grad (Ref: <22)	22 yrs. +	0.074***	0.073***	0.067***	0.068***
		(0.022)	(0.023)	(0.021)	(0.022)
Gender	Male	0.073***	0.078***	0.112***	0.113***
		(0.023)	(0.023)	(0.024)	(0.024)
Parental Education (Ref: Did not State Degree or Higher)	Stated Degree or Higher	0.024	0.023	0.019	0.018
		(0.024)	(0.024)	(0.024)	(0.024)
OSAP Status (Ref: Never Received OSAP)	Received OSAP	-0.037	-0.037	-0.032	-0.030
		(0.020)	(0.020)	(0.020)	(0.020)
Age First Observed in Ontario HS (Ref: Grade 9 Age)	Start HS Grade 11–12 Age	-0.004	-0.031	-0.059	-0.083
		(0.056)	(0.055)	(0.041)	(0.043)
	Start HS Adult	0.058	0.031	0.073	0.054
		(0.098)	(0.097)	(0.099)	(0.097)
Seneca Grad GPA Quartile (Ref: Top 25%)	0–24th Percentile		-0.034		-0.008
			(0.034)		(0.031)
	25th–49th Percentile		-0.076***		-0.036
			(0.029)		(0.028)
	50th–75th Percentile		-0.003		0.008
			(0.028)		(0.027)
College-Level English Grade (Ref: A & B Grade Range)	C & D Grade Range		-0.016		0.009
			(0.023)		(0.022)
	Exempt		0.024		-0.009
			(0.033)		(0.031)
Activity Before College	Previous University	0.016	0.010	-0.004	0.010
		(0.036)	(0.035)	(0.038)	(0.036)
Grad Program Group (Ref: Business)	Community Services	0.055**	0.051	0.031	0.027
		(0.028)	(0.028)	(0.029)	(0.028)
	Creative and Applied Arts	-0.023	-0.033	-0.015	-0.020
		(0.035)	(0.035)	(0.035)	(0.035)
	Health	0.151***	0.142***	0.085**	0.088**
		(0.041)	(0.043)	(0.042)	(0.044)
	Hospitality	-0.054	-0.062	-0.063	-0.067
		(0.041)	(0.041)	(0.050)	(0.049)
	Preparatory	-0.151***	-0.141**	-0.073	-0.065
		(0.057)	(0.057)	(0.056)	(0.056)
	Engineering/Technology	0.119***	0.125***	0.064	0.068
		(0.039)	(0.040)	(0.038)	(0.038)
Grad Credential (Ref: 2-yr Diploma)	Certificate 1-yr	-0.019	-0.032	0.037	0.019
		(0.041)	(0.042)	(0.047)	(0.048)
	Advanced Diploma 3-yr	0.051	0.047	0.024	0.021
		(0.031)	(0.032)	(0.029)	(0.030)
	Degree 4-yr	0.012	0.000	-0.036	0.013
		(0.094)	(0.077)	(0.088)	(0.065)
English Placement (Ref: College English)	ELL Level 1 or 2	-0.142***		-0.120**	
		(0.052)		(0.053)	
	Below College Level/ ELL Level 3	-0.000		-0.000	
		(0.022)		(0.022)	
Academic Year of Graduation (Ref: 2010–11)	2011–12	0.024	0.028	-0.122	-0.126
		(0.111)	(0.110)	(0.102)	(0.103)
	2012–13	0.071	0.079	-0.057	-0.061
		(0.110)	(0.109)	(0.100)	(0.101)
	2013–14	0.041	0.051	-0.086	-0.091
		(0.110)	(0.110)	(0.101)	(0.103)
Job Relatedness (Ref: Job Related to Program of Study)	Job Partially Related			-0.049	-0.050

Reference	Variables	(1) Ln (wage)	(2) Ln (wage)	(3) Ln (wage)	(4) Ln (wage)
				(0.034)	(0.034)
	Job not Related			-0.132***	-0.136***
				(0.030)	(0.030)
Education Required for Work (Ref: High School)	Partial PSE			0.096	0.096
				(0.052)	(0.053)
	Diploma/Certificate/Trade			0.161***	0.155***
				(0.028)	(0.029)
	Complete Degree			0.167**	0.195***
				(0.070)	(0.063)
	Others			-0.063	-0.065
				(0.058)	(0.056)
Hours of Work (Ref: Full Time)	Part Time			0.004	0.002
				(0.024)	(0.024)
Constant		2.511***	2.516***	2.633***	2.621***
		(0.115)	(0.115)	(0.107)	(0.109)
Observations		1,058	1,047	887	878
R-squared		0.110	0.115	0.251	0.258

Note: Robust standard errors in parentheses, *** p < 0.01, ** p < 0.05

Graduate satisfaction

Graduates who responded to the Graduate Satisfaction Survey provided information on how satisfied they were with their education in meeting their goals. In relation to our research questions, satisfaction served as a measure of integration of students who were not born in Canada. Simplifying the five-point Likert scale to satisfied and unsatisfied (1/0), a linear probability model was used to estimate the determinants of graduate satisfaction. Two regression models are shown in Table 16. Both contain the same measures; however model 1 contains a control for language proficiency at entry to the college, whereas model 2 uses students' English grades and overall GPA as ability controls. The results show that graduate satisfaction did not significantly differ by entering-language proficiency, college GPA or English grades. As well, no statistical differences in satisfaction levels were found between Canadian-born and non-Canadian- born students, by first language groups, gender or age. Interestingly, graduates who report that a parent had a university degree were less likely to be satisfied with the usefulness of their college education in achieving their goals. Additionally, area of study, but not credential, had a significant effect on satisfaction, with graduates from health, community services, and preparatory programs being more satisfied relative to business.

The most important determinant of a graduate's satisfaction with their education was their activity after graduating. Those who were employed in a field related to their studies, or who were furthering their education, were the most satisfied. Those working in an unrelated field were 28% less likely to report being satisfied with their education than those working in a related field. Graduates who were not employed or in school reported a satisfaction rate 20% lower than those working in a related field. Our descriptive results show that non-Canadian-born and non-English-as-a first-language students were more likely to be unemployed. When controlling for activity, there were no statistically significant differences in satisfaction between any of these groups, likely indicating that graduate satisfaction is largely influenced by one's ability to find employment or pursue further educational goals *after* graduation.

Table 16. Regression analysis: Graduate satisfaction, Seneca graduates, 2010–2014

Reference	Variables	(1) Satisfaction (Y/N)	(2) Satisfaction (Y/N)
Region of Birth (Ref: Not Canada)	Canada	0.005	0.000
		(0.023)	(0.023)
First Language	English	-0.005	-0.007
		(0.021)	(0.021)
Age at Grad (Ref: <22)	22 yrs. +	-0.004	-0.005
		(0.019)	(0.019)
Gender	Male	-0.020	-0.017
		(0.018)	(0.018)
Parental Education (Ref: Did not State Degree or Higher)	Stated Degree or Higher	-0.048**	-0.051**
		(0.020)	(0.020)
OSAP Status (Ref: Never Received OSAP)	Received OSAP	-0.023	-0.024
		(0.017)	(0.017)
Age First Observed in Ontario HS (Ref: Grade 9 Age)	Start HS Grade 11–12 Age	0.003	0.007
		(0.044)	(0.042)
	Start HS Adult	0.108	0.112**
		(0.057)	(0.056)
Seneca Grad GPA Quartile (Ref: Top 25%)	0–24th Percentile		-0.009
			(0.026)
	25th–49th Percentile		-0.005
			(0.023)
	50th–75th Percentile		-0.026
			(0.022)
College-Level English Grade (Ref: A & B Grade Range)	C &D Grade Range		-0.019
			(0.019)
	Exempt		0.020
			(0.027)
Activity Before College	Previous University	-0.029	-0.038
		(0.030)	(0.032)
Plans after Graduation	Aspired to University	-0.016	-0.018
		(0.018)	(0.019)
Grad Program Group (Ref: Business)	Community Services	0.062**	0.067***
		(0.025)	(0.026)
	Creative and Applied Arts	0.020	0.026
		(0.031)	(0.031)
	Health	0.072**	0.075**
		(0.035)	(0.035)
	Hospitality	0.011	0.018
		(0.044)	(0.045)
	Preparatory	0.082**	0.083**
		(0.035)	(0.036)
	Engineering and Technology	0.042	0.048
		(0.031)	(0.032)
Grad Credential (Ref: 2-yr diploma)	Certificate 1-yr	0.020	0.021
		(0.029)	(0.030)
	Advanced Diploma 3-yr	0.011	0.013
		(0.026)	(0.026)
	Degree 4-yr	-0.002	-0.106
		(0.079)	(0.110)
English Placement (Ref: College English)	ELL Level 1 or 2	0.016	
		(0.046)	
	Below College Level/ ELL Level 3	-0.006	
		(0.018)	
Academic Year of Graduation (Ref: 2010-11)	2011–12	0.011	0.011
		(0.060)	(0.060)
	2012–13	-0.004	-0.002
		(0.059)	(0.059)
	2013–14	0.021	0.024
		(0.059)	(0.060)
Activity After Graduating (Ref: Working in a Job	University	-0.014	-0.013

Reference	Variables	(1) Satisfaction (Y/N)	(2) Satisfaction (Y/N)
Related to Study Program)		(0.023)	(0.024)
	College	-0.040	-0.045
		(0.023)	(0.023)
	Work Partially Related	-0.108***	-0.112***
		(0.033)	(0.034)
	Work Not Related	-0.279***	-0.276***
		(0.025)	(0.026)
	Not Employed, Not PSE	-0.202***	-0.199***
		(0.030)	(0.030)
Constant		0.908***	0.923***
		(0.067)	(0.067)
Observations		2,187	2,158
R-squared		0.097	0.099

Note: Robust standard errors in parentheses; *** $p<0.01$; ** $p<0.05$

Key Findings

This study followed the pathways of students who entered Seneca College between 2010 and 2014, within five years of leaving an Ontario high school. The sample contained 18,466 college students. Of these, 29% were born outside of Canada, with over two-thirds originating from Asia, 14% from the Americas (outside Canada), 11% from Europe, and 6% from Africa.

Sociodemographic and academic characteristics

Socioeconomic background
The immigrant population was more likely than the Canadian-born population to have a parent with a university degree (33% vs. 20%) regardless of region of origin. However, immigrants were more likely to be from low-income neighbourhoods, with 46% from the bottom income tercile compared with only 29% for non-immigrants. This trend held true across all regions of origin, although there was high variation.

On average, Canadian-born and non-Canadian-born college students did not differ greatly in high school preparation, in terms of grades and course selection. However, students from Central and South America and the Caribbean came to college with the weakest academic background, with students from Southeast Asia having the strongest.

College program choice
Overall, non-Canadian-born students were more likely than Canadian-born students to choose three-year diplomas and four-year degrees and to enrol in business or engineering, but were less likely to enrol in community services or the arts.

Language proficiency
Of those born outside of Canada, 70% indicated English was not their first language, compared with 15% of those born in Canada. There were vast differences in college entrants' language preparation by region of birth. In high school, 38% of non-Canadian-born students were placed in an English language learner (ELL) course. Once in college, English language support was still required, with only 41% eligible to take college-level English, compared with two-thirds of Canadian-born with English as a first language. As well, those who started in an Ontario high school as adults were much more likely to be placed in a proficiency level below college-level English.

Academic outcomes

Grades in a required English course, cumulative college GPA, and graduation rate were chosen as the academic outcomes used to obtain a measure of language proficiency and academic success. When controlling for a variety of characteristics—academic, program, language, sociodemographic—region of birth had only a minimal effect. Students who entered college with lower language proficiency were less likely to graduate and more likely to obtain lower grades. As expected, high school grades and university preparatory courses in high school were quantitatively the largest predictor of student success in college. When controlling for academic background and program, lower-income students achieved lower grades, but were as likely to graduate as others. Male students were less likely to graduate and obtained lower grades.

Graduate outcomes

Aspirations for university

Non-Canadian-born college entrants had higher aspirations for university after college compared with Canadian-born entrants (49% vs. 39%). Specifically, college students from Central and South America, Africa, West Central Asia and the Middle East, and South Asia were substantially and significantly more likely to aspire to go to university.

Transfer to university

Upon graduation, non-Canadian-born students were more likely to transfer six months after graduation than were their Canadian-born peers (17% vs. 13.6%). When controlling for a variety of background factors, this effect disappeared. Regression analysis showed that graduates who had a parent with a degree were more likely to transfer, which may serve to explain this lack of significance.

Unemployment rate

Graduates who were born in Canada had an unemployment rate of 14.4% compared with 25.3% for graduates born outside of Canada. This gap remained significant in the regression models. Also, independent of region of birth, graduates with lower language skills at college entry had higher unemployment rates as well. Unemployment rates were not significantly affected by college GPA, first language, or any of the academic or sociodemographic factors.

Job quality

For employed graduates, being Canadian-born had no independent effect on job quality (job relatedness and overqualification rate) or earnings. However, graduates with lower college-English grades and overall grades were less likely to be in a job related to their study program, and more likely to be overqualified. In terms of earnings, independent of region of birth, graduates with lower language skills at college entry earned less, as did females and those from lower-income neighbourhoods. College grades did not have a significant effect on earnings.

Graduate satisfaction

Six months after graduation, graduates are asked about their satisfaction with their college education, which for this study served as a measure of integration into Canada. The descriptive results show that Canadian-born graduates were more likely than those born outside of Canada to report being "very satisfied" (31% vs. 25%). However, the total satisfaction rate ("satisfied" and "very satisfied") for both groups was similar. In the regression models, language, college grades, or region of birth were not significant factors. Those who were employed in a field related to their studies, or who were furthering their education, were the most satisfied.

Summary

Major differences exist between immigrant and non-immigrant students attending a large multicultural college in Toronto. Immigrant students are more likely to have highly educated parents, but to live in lower-income neighbourhoods. They have challenges in English-language proficiency and in integrating into the labour market, but are more likely to aspire and continue on to university after graduation, and are equally as likely to be successful academically in college if they develop sufficient language skills. For college graduates who were successful in obtaining a job, job quality and earnings were similar regardless of whether or not they came to Canada as immigrants.

Policy implications

Young immigrants who come to Canada have not been well researched, yet they are the next generation of workers whom Canada will increasingly come to rely upon in a complex, globalized economy. More than 50% of Toronto's population comprises individuals born outside of Canada, a figure that is expected to continuously increase in the coming years. Canada's declining birth rate, combined with the aging of the "baby boom generation," means there is an urgent policy need to ensure that younger immigrants—including the current generation in high school and post-secondary education—have the language skills, cultural competencies, and the social and financial supports required to succeed in formal education and the workplace. For these young immigrants, successful PSE education outcomes set the stage for success in adulthood, both in the workplace and in further education, enabling them to better integrate into Canadian society and contribute to Canada's economy.

Policy-makers need to understand the full composite of determinants, not just language, that play a role in younger immigrants' success or lack thereof, including region of origin, arrival timing, parental education, cultural competencies and more. Immigrant students with weak language skills (speaking, writing, and reading) often carry their literacy deficiencies with them to post-secondary education (PSE), even despite the language-requirements for entry. This scenario continues to hamper their capacity to learn, to graduate, and to successfully transition to the labour market.

Colleges need to be prepared to support highly diverse students at varying levels of English-language proficiency. Those placed in lower levels of English upon entry are less likely to graduate, and they achieve a lower overall GPA. We hope that the results of this study provide insights to policy-makers and college administrators on how to improve the effectiveness and delivery of remedial language programs at various points along a student pathway, from high school to PSE to the labour market. Models for consideration may include the provision of intensive language programming for students with low proficiency prior to college entry, or the pursuit of an adjunct model whereby students continue to receive language support throughout the duration of their college program.

Non-Canadian-born graduates have higher unemployment rates than their Canadian-born peers. Of those in the graduate sample who were employed, those with lower levels of English proficiency had lower wages and worse job alignment. Targeting co-op options to help young immigrants to forge connections and language competencies in the workplace and would bridge the gaps in graduate unemployment, wage level, and job alignment. Increasingly, employers across a range of industries are seeking qualified college candidates; they recognize that Canada's competitive advantage relies in large part on the capacity of colleges to produce graduates with industry-relevant skills and knowledge. With shifting demographics, new immigrants will increasingly comprise a large proportion of college applicants. Policies to ensure that immigrant students have the supports required to succeed at college and beyond are essential.

This research serves to inform Ontario's mandate to recognize and meet the needs of diverse groups of learners, and to "give Ontarians the support they need to be successful in our economy, including help as they transition from high school to postsecondary education and the workplace."[10] By focusing on key outcomes for immigrant youth, this study affirms the unique role of Ontario colleges in fostering the province's diverse talent, demonstrates alignment with Ontario's youth employment strategy, and provides important new insights into the current and emerging needs of Ontario's labour market.

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[10] Premier Kathleen Wynne. 2014 Mandate letter: Training, Colleges and Universities. Premier's instructions to the Minister on priorities for the year 2014.
 https://www.ontario.ca/page/2014-mandate-letter-training-colleges-and-universities

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Appendix A. List of top source countries by region, Seneca entrants, 2010–2014

Geographic Group	Country	Number of Students	% of Group	% of Sample
Canada and U.S.A.	Canada	13,065	99.1%	70.8%
	United States	118	0.9%	0.6%
Central and South America	Colombia	92	25.8%	0.5%
	Guyana	89	24.9%	0.5%
	El Salvador	24	6.7%	0.1%
	Mexico	24	6.7%	0.1%
	Other	128	35.9%	0.7%
Caribbean and Bermuda	Jamaica	164	55.2%	0.9%
	Trinidad and Tobago	45	15.2%	0.2%
	Cuba	23	7.7%	0.1%
	Other	65	21.9%	0.4%
Europe	Ukraine	88	15.3%	0.5%
	Russian Federation	87	15.1%	0.5%
	Romania	53	9.2%	0.3%
	United Kingdom	30	5.2%	0.2%
	Other	317	55.1%	1.7%
Africa	Nigeria	58	18.7%	0.3%
	Kenya	28	9.0%	0.2%
	Ghana	24	7.7%	0.1%
	Egypt	22	7.1%	0.1%
	Other	178	57.4%	1.0%
West Central Asia and the Middle East	Afghanistan	219	22.7%	1.2%
	Iran	163	16.9%	0.9%
	Iraq	126	13.0%	0.7%
	Israel	97	10.0%	0.5%
	Other	361	37.4%	2.0%
East Asia	China	573	65.1%	3.1%
	Hong Kong	137	15.6%	0.7%
	Korea, South	131	14.9%	0.7%
	Other	39	4.4%	0.2%
Southeast Asia	Philippines	638	90.8%	3.5%
	Viet Nam	26	3.7%	0.1%
	Malaysia	11	1.6%	0.1%
	Other	28	4.0%	0.2%
South Asia	Pakistan	430	36.9%	2.3%
	India	346	29.7%	1.9%
	Sri Lanka	311	26.7%	1.7%
	Other	79	6.8%	0.4%
Other/ Oceania	Other	9	100.0%	0.0%
		18,446		100.0%