

Economic and Social Reports

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Release date: February 25, 2026



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DOI: <https://doi.org/10.25318/36280001202600200004-eng>

Abstract

This study examines the educational pathways and outcomes of first-generation postsecondary students—students whose parents did not complete postsecondary education (PSE)—relative to non-first-generation students. Using descriptive statistics, this article leverages a unique integrated dataset formed by 2006 Census data and the Postsecondary Student Information System to examine (1) enrolment rates, (2) the graduation and persistence rates per enrolled cohorts from 2010/2011 to 2015/2016, and (3) the students' time to graduation. The findings suggest a higher enrolment rate (75.08%) for potential non-first-generation individuals, compared with first-generation ones (58.91%). Results also suggest that among those enrolled students, the graduation rate was also higher for non-first-generation postsecondary students (73.66%) compared with first-generation students (68.60%). Furthermore, the persistence rate—the proportion of students in the entry cohort who are still enrolled in the program at the designated graduation threshold time—is 4.30% for non-first-generation postsecondary students, compared with 5.44% for first-generation students. Breaking down the results by selected characteristics, larger differences are observed by education qualifications, sex, student entry age and racialized population group.

Keywords: First-generation students, postsecondary education, educational outcomes, Canada

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Acknowledgments

The authors would like to thank Winnie Chan and Tomasz Handler for their guidance in preparing the dataset used for this study. They would also like to thank Liliana Corak, Laura Gibson-MacGregor, Klarka Zeman, Aneta Bonikowska and Joe Iacampo for their very helpful comments.

Introduction

Postsecondary education (PSE) can improve labour market outcomes, including labour market attachment, earnings and working environment (Frenette, 2019; Finnie et al., 2019; Lauder & Mayhew, 2020; Zeman, 2023). However, not all individuals take the same pathway to the labour market. Youth from families in which neither parent completed PSE (first-generation students) may find themselves at a disadvantage compared with non-first-generation students—defined here as students who have at least one parent who completed PSE. This article seeks to present Canadian statistics on the educational pathways and outcomes of first-generation and non-first-generation students aged 19 to 24 years at the time of first enrolment in PSE, disaggregated by selected characteristics such as educational qualifications, sex, entry age and racialized population group.

Previous studies on first-generation student experiences and their education pathways were conducted in various contexts, including in the United States. Research from the United States has found that first-generation students have, on average, lower family income, lower levels of academic preparation in secondary school, less knowledge of PSE procedures, and fewer close relationships with faculty and staff (Pascarella et al., 2004; Brookover et al., 2021). First-generation students often struggle with a sense of belonging (Birani & Lehmann, 2013; Checkoway, 2018; Lehmann, 2007; Longwell-Grice et al., 2016), and while both first-generation and non-first-generation postsecondary students can suffer from the feeling of being an imposter, this is more strongly associated with stress in first-generation students (Holden et al., 2024). Attending PSE often puts more strain on family relations for first-generation students, especially when they have familial responsibilities (Lehmann, 2007; Longwell-Grice et al., 2016).

Much of the research specific to Canada is focused on Ontario and involves results from surveys at specific universities. A study at a large university in Southwestern Ontario identified that some first-generation students drop out even when they have high academic performance (Lehmann, 2007). Students in the study identified that they felt that they did not “belong” in a postsecondary setting, and some students felt that their education alienated them from their families. One study in an Ontario university found that racialized first-generation students can face additional barriers related to discrimination and lack of representation, and access to student groups and networks can provide an important source of support (Birani & Lehmann, 2013). Two other studies showed that first-generation students had lower levels of participation in student activities, which were positively associated with grade point average (Grayson, 1997; Grayson, 2013). A study at a Toronto university examined the career choices of first-generation students, finding that students often lacked career guidance from parents (Dos Santos, 2018).

A handful of Canadian studies provide national estimates by using the Canadian Youth in Transition Survey (YITS), a longitudinal survey that followed Canadians from ages 18 to 20 to ages 24 to 26. Although Finnie and Mueller (2017) did not focus on first-generation students, they found that parental education status predicted PSE more strongly than family income. Studies by Michalski et al. (2017) and Kamanzi et al. (2010) found that individuals whose parents did not have PSE were less likely to enrol in PSE, but Kamanzi et al. (2010) found that those who enrolled were as likely to persist as non-first-generation postsecondary students.

The current study contributes to the literature on first-generation students by providing updated national estimates on the educational attainment outcomes of first-generation students by educational qualification, sex and student entry age. It also produces novel estimates on these measures by specific racialized groups.

It is important to note that the estimates in this study do not control for student characteristics or for any policies or supports used by the students in adapting to PSE. As such, they do not reflect the diversity in backgrounds and needs of first-generation students. Researchers have noted that studies often portray first-generation students as deficient rather than analyzing the interaction between these students and postsecondary environments (Spiegler & Bednarek, 2013; Ives & Castillo-Montoya, 2020). Many first-generation students have high resilience and resourcefulness and use a variety of supports to improve their outcomes (Brookover et al., 2021; Longwell-Grice et al., 2016). For example, students who lack career guidance from parents may depend more on peer networks (Dos Santos, 2018). Several student activities have also been shown to help first-generation students, including interactions with student affairs professionals (Checkoway, 2018), courses on university writing and study methods (Conefrey, 2021), mentoring programs (Ogden et al., 2024), and study abroad programs (Odgen et al., 2024). While the data used for this study cannot address the interventions used to support first-generation students, this discussion is included to emphasize that previous research has indicated that postsecondary environments and policies can help reduce gaps, rather than placing the responsibility solely on students' first-generation status. Some authors have noted that policies aimed at helping first-generation students can be especially beneficial when they help all students—for example, increasing transparency about university policies and processes also supports non-first-generation postsecondary students (Spiegler & Bednarek, 2013).

Data and methodology

This analysis relies on two main Statistics Canada data sources: (1) the Postsecondary Student Information System (PSIS) and (2) the 2006 Census of Population.

Data from the 2006 Census are particularly useful because they allow for the examination of individual PSE pathways over a longer period than more recent census cycles. In this study, the 2006 Census dataset is restricted to families with at least one child aged 15 years living with their parents, i.e., the study population (X).¹ Using parental education information, individuals are classified into two subgroups: X1 is the subgroup formed by individuals with parents who have PSE credentials (potential future non-first-generation PSE individuals), and X2 is the subgroup of people whose parents do not have any PSE credentials (potential future first-generation PSE individuals).² The number of individuals per subgroup constitutes the denominator when computing the enrolment rate. For example, the enrolment rate for potential first-generation PSE individuals is the number of first-generation PSE individuals divided by X2.

The 2006 Census sample of analysis is the core dataset of the study and excludes Indigenous people. This dataset is integrated with the universe of students in the PSIS, from the 2010/2011 academic year to the last available year in the PSIS at the time of this analysis (2022/2023).^{3,4}

By the 2010/2011 school year, individuals in the sample are 19 to 20 years old and some may have finished their PSE. Therefore, the estimate should be lower than the true value. Furthermore, this analysis

1. A specific family may include children who are younger or older than 15 years. While this typical family is included in the analysis, only children aged 15 years are linked to the PSIS dataset, while the other children are excluded from the analysis.
2. For children living in a one-parent family, this analysis considers the observed parent's education level and assumes that the other parent has the same or a lower level of education.
3. The PSIS imperfectly collected data before 2009; the study period starts in 2010/2011 to reduce linkage errors.
4. The linkage between the 2006 Census study sample and the PSIS accounts for both the census composite weights and the Canadian Census Health and Environment Cohorts weights, which are designed to adjust for several factors, including sample design, non-response, poststratification and household-level integration.

assumes that parents who responded that they did not attend PSE in the 2006 Census, did not attend PSE before their child's enrolment in PSE.

To examine the education attainment outcomes, i.e., graduation, persistence and time to graduation given the threshold time allowed for graduation, the sample is further restricted to only the proportion (Y) of the 2006 Census study population who was first enrolled in a specific PSE program from 2010/2011 to 2015/2016.⁵ To accurately interpret persistence and graduation rates, it is important to understand how these metrics are calculated. Specifically, a student is considered persistent (or a graduate) if they remain in (or complete) the same educational qualification in which they initially enrolled. This means that students who switch to a different program without finishing their original one are not counted as persistent or as graduates in this study. For example, if a student enrolled in an undergraduate degree program drops out and subsequently enrolls in a college program, they are excluded from the analysis.

In this study, the time allowed for graduation following initial enrolment is eight years for doctoral degrees; six years for other university degrees, i.e., undergraduate degrees, master's degrees and other university-level qualifications; and four years for college-level qualifications. The outcomes of interest are examined by cohort using selected variables such as the year and fall session of program enrolment, the educational qualification of new entrants, and first-generation PSE status. Furthermore, the analysis is performed on a restricted sample where some educational qualifications, including qualifying programs, basic education, and apprenticeship-related programs and non-programs, were removed. This methodology aligns with the standard approach used in Statistics Canada education-related studies based on the PSIS.⁶ For a given cohort, the number of total enrolled students is the denominator that serves to compute all the outcomes of interest. For example, the graduation rate of students enrolled in a master's degree is the ratio of the number of graduates six years after initial enrolment to the number of students initially enrolled in a master's program for a given cohort. A similar definition is applied to the graduation rate of college students using a graduation-threshold time of four years after initial enrolment.

The final data make it possible to examine the educational outcomes of first-generation and non-first-generation postsecondary students by disaggregated characteristics. Table A1 in the Appendix provides the definitions of the key concepts and variables used in this study.

The resulting integrated dataset offers significant advantages for exploring the educational trajectories of first-generation postsecondary students. However, the dataset also presents certain limitations. Most of the limitations result from using 2006 Census data. The rationale for using the 2006 Census instead of more recent census cycles is twofold: (1) to capture as many individuals as possible who were living with at least one parent in the same household, allowing parental highest level of education to be identified; and (2) to maximize the number of years over which student outcomes could be followed over time. Data limitations for the study include the following:

- The 2006 Census provides linkage keys only for individuals 15 years or older. Therefore, the study sample excludes all children aged 0 to 14 years in 2006 (i.e., only individuals aged 15 years are included in the sample).
- About 20% of households accessed the long-form census questionnaire (Form 2B), reducing the number of respondents who can be linked to the PSIS dataset.

Despite the above limitations, the results obtained in this analysis are comparable with the Statistics Canada's published tables based on PSIS data (Statistics Canada, 2024).

5. Parental education may change after 2006. To limit this possibility, the analysis is restricted to the 2010/2011 to 2015/2016 academic years and to individuals enrolled for the first time in a specific program. Further, if the parent of a student appears in the PSIS from 2010/2011 to 2015/2016, the records of the corresponding student are excluded from the analysis.

6. For more details, see Statistics Canada (2024).

Results

The sample consists of nearly 85,000 individuals who were 15 years old at the time of the 2006 Census. Of these individuals, approximately 27% had parent(s) without PSE and are classified as first-generation postsecondary students if they later attend PSE, and as non-first-generation PSE individuals if they do attend PSE.

The geographical distribution of the students is broad, with the highest concentrations in Quebec and Ontario, accounting for nearly 25% and 34% of the sample, respectively. This is similar to the overall population distribution in Canada.

This section presents and discusses the educational attainment of first-generation PSE individuals compared with non-first-generation individuals by selected characteristics, including educational qualifications, sex,⁷ student entry age and racialized group.

Enrolment rates

Potential first-generation postsecondary education individuals had lower enrolment rates than potential non-first-generation individuals, and the gap is more pronounced for certain population groups

Enrolment rates are determined for subgroups of the 2006 Census study sample defined by their potential first-generation status. Throughout the paper the enrolment rate refers to the percentage of individuals enrolled in PSE relative to the total number of people in each subgroup (X1 and X2) in the 2006 Census study sample. Results suggest that potential first-generation PSE individuals (59%) had a lower enrolment rate than the non-first-generation subgroup (75%), at some point from 2010/2011 to 2022/2023 (Table 1). In other words, among subgroup X1 of potential first-generation PSE individuals identified in the 2006 Census study sample, roughly 59% were enrolled in PSE, compared with 75% for the subgroup X2 of potential non-first-generation PSE individuals. The difference in enrolment rates by parental education status is statistically significantly different at the 1% level. These high-level estimates echo those from previous Canadian studies by Michalski et al. (2017) and Kamanzi et al. (2010).

7. The 2006 Census of Population uses sex at birth, which may not always correspond to the person's gender identity.

Table 1
Enrolment rates by students' sex and racialized group

Categories per demographic characteristics	Potential non-first-generation PSE individuals	Potential first-generation PSE individuals
	percent	
All	75.08	58.91
Sex		
Men	70.01	52.45
Women	80.60	65.82
Racialized group		
White	72.98	55.69
Black	72.84	55.96
Chinese	91.28	90.31
South Asian	91.45	83.33
Filipino	81.08	78.78
Latin American	81.19	67.92
Arab	83.83	66.66
Other racialized groups	84.12	72.11

Notes: PSE = postsecondary education. The enrolment rates for "All" correspond to the weighted averages and account for differences in group sizes across the entire population. As such, the enrolment rates by sex and racialized groups should not be expected to average to the overall rate.

Source: Statistics Canada, authors' calculations using 2006 Census data and the Postsecondary Student Information System.

The data reveal significant disparities in postsecondary enrolment rates between potential first-generation and non-first-generation PSE individuals, and these disparities vary across sex and racialized groups⁸ (Table 1). Women have consistently higher enrolment rates compared with men, regardless of parental education status. However, the gap between potential non-first-generation and first-generation PSE individuals is notable—the enrolment rate for women drops from 80.60% to 65.82%, while the enrolment rate for men falls from 70.01% to 52.45%. Comparisons between racialized groups further underscore the influence of parental education status. While Chinese and South Asian individuals maintain high enrolment rates regardless of parental education, other groups—particularly White, Black, Arab and Latin American individuals—show marked declines among potential first-generation students. For example, enrolment among White individuals drops from 72.98% to 55.69%, and from 83.83% to 66.66% among Arab individuals. These differences highlight potential barriers that may disproportionately affect first-generation students, especially within certain racialized communities.

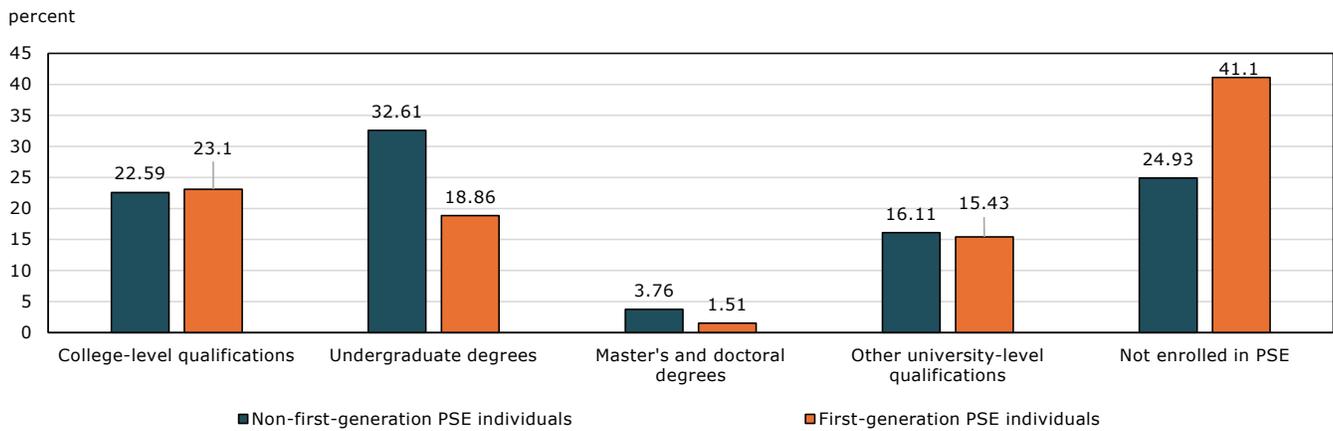
The gap in enrolment rates between potential first-generation and non-first-generation postsecondary education individuals is partly because of differences in enrolment in undergraduate degrees

Chart 1 shows the share of potential first-generation and non-first-generation PSE individuals enrolled by educational qualifications. The shares of enrolled individuals are fairly similar for both groups, except for enrolment in undergraduate degrees. Nearly 23% of potential first-generation PSE individuals were enrolled in college-level qualifications, followed by 18% in undergraduate degrees and 15% in other university-level qualifications at some point from 2010/2011 to 2022/2023. In comparison, data reveal that among potential non-first-generation PSE individuals, 22% were enrolled in college-level

8. The racialized groups are based on the population group summary variables in the 2006 Census. "Other racialized groups" includes Indigenous people.

qualifications and 32% were enrolled in undergraduate degrees. Notably, there is a large difference, about 14 percentage points, in enrolment rates in undergraduate degrees between potential first-generation and non-first-generation PSE individuals. This discrepancy may suggest that potential first-generation PSE individuals are more likely to enroll in college instead of university.

Chart 1
Share of potential first-generation and non-first-generation postsecondary education individuals enrolled by educational qualifications



Notes: PSE = postsecondary education. In addition to individuals who do not enrol in PSE, the "Not enrolled in PSE" category also includes students who were excluded from the analysis, as they were in the following programs: qualifying programs, basic education, and apprenticeship-related programs and non-programs.

Source: Statistics Canada, authors' calculations using 2006 Census data and the Postsecondary Student Information System.

Education pathways: Graduation; persistence; and not enrolled, not graduated rates

For the remainder of the analysis, the study sample is restricted to students with first-time enrolment in a specific PSE program from 2010/2011 to 2015/2016. Students can belong to one of three categories: (1) graduated; (2) persisted; or (3) not enrolled, not graduated.

Two considerations are applied to compute the educational attainment outcomes of interest: (1) the cohort based on the admission year and the study program, i.e., educational qualifications; and (2) the designate graduation-threshold point, which varies by educational qualifications: six years for undergraduate degrees, master's degrees, and other university-level qualifications; and four years for college-level qualifications. The persistence rate; the not enrolled, not graduated rate; and the time to graduation are computed given this designated graduation-threshold point.

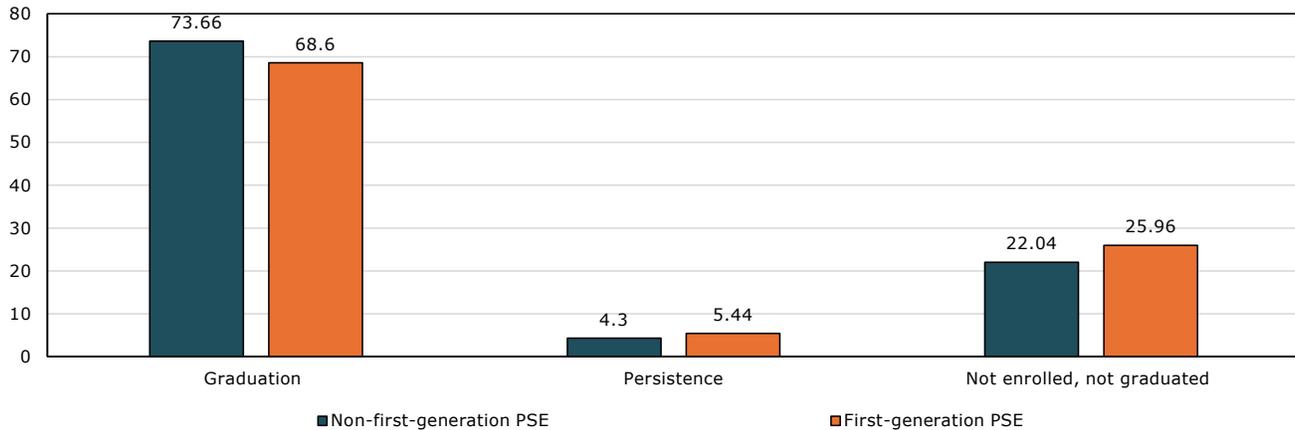
About two-thirds of first-generation postsecondary students graduated, versus nearly three-quarters of non-first-generation students

Chart 2 shows the graduation; persistence; and not enrolled, not graduated rates for first-generation and non-first-generation postsecondary students. Among enrolled students, first-generation postsecondary students graduated at a lower rate—69% compared to 74% for non-first-generation students. In terms of persistence, first-generation postsecondary students show a higher rate of continued enrolled after the threshold time (5%), roughly 1 percentage point above the rate for non-first-generation students. Chart 2 also indicates that more than one in five students are neither enrolled nor graduates at the graduation-

threshold time, and this rate is slightly higher for first-generation students than for non-first-generation students.

Chart 2
Graduation, persistence, and not enrolled, not graduated rates

percent



Notes: PSE = postsecondary education. The difference in numbers between first-generation and non-first-generation PSE students is statistically significant at the 5% level.

Source: Statistics Canada, authors’ calculations using 2006 Census data and the Postsecondary Student Information System.

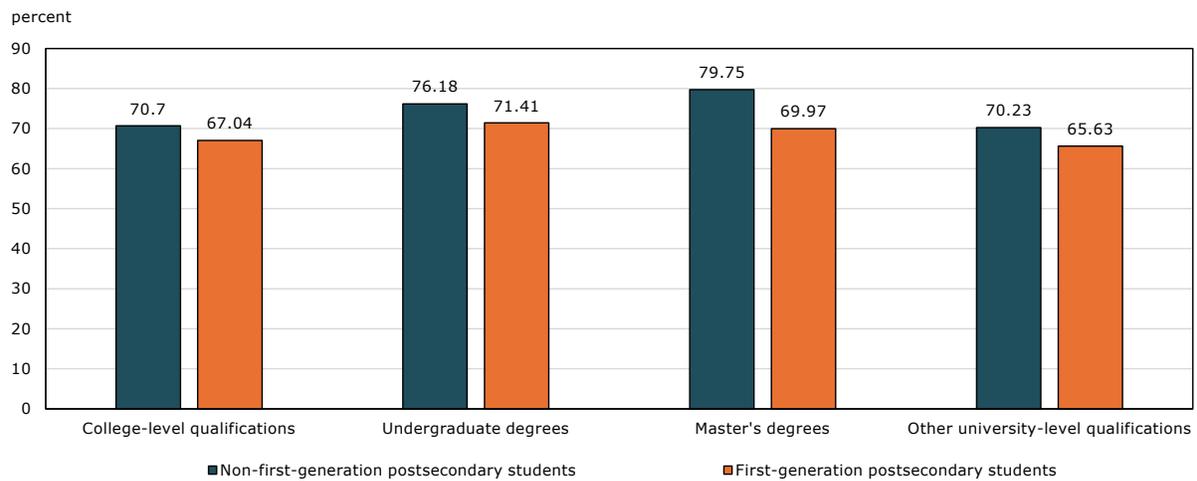
The largest difference in graduation rates between first-generation and non-first-generation postsecondary students occurred at the master’s degree level

Comparing the results by students’ educational qualifications provides additional insights. Chart 3 shows the graduation; persistence; and not enrolled, not graduated rates by educational qualifications for first-generation and non-first-generation postsecondary students. Overall, results are in line with published tables of Canadian students’ PSE performance (Statistics Canada, 2025). Irrespective of the first-generation PSE status, graduation rates are highest at the master’s degree level, followed by undergraduate degrees, college-level qualifications and other university-level qualifications. The differences in education outcomes between colleges and universities may be influenced by several factors, including program focus (career-oriented training in college and research-based education at university), which affects the skills and competencies the students acquire.

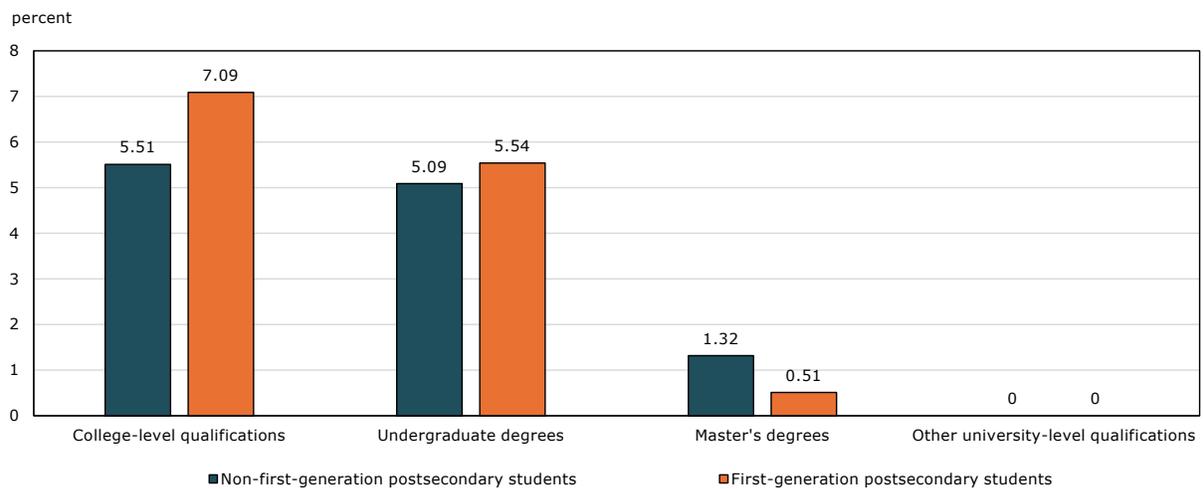
Moreover, the largest gap in graduation rates between first-generation and non-first-generation postsecondary students occurred at the master’s degree level and represents about 10 percentage points. For persistence, first-generation postsecondary students experienced higher rates than non-first-generation students, especially among those enrolled in college-level qualifications and undergraduate degrees. In other words, first-generation postsecondary students are more likely to remain enrolled in their program based on the graduation-threshold time, especially among students enrolled in college-level programs or undergraduate degrees.

Chart 3
Graduation, persistence, and not enrolled, not graduated rates by education qualifications.

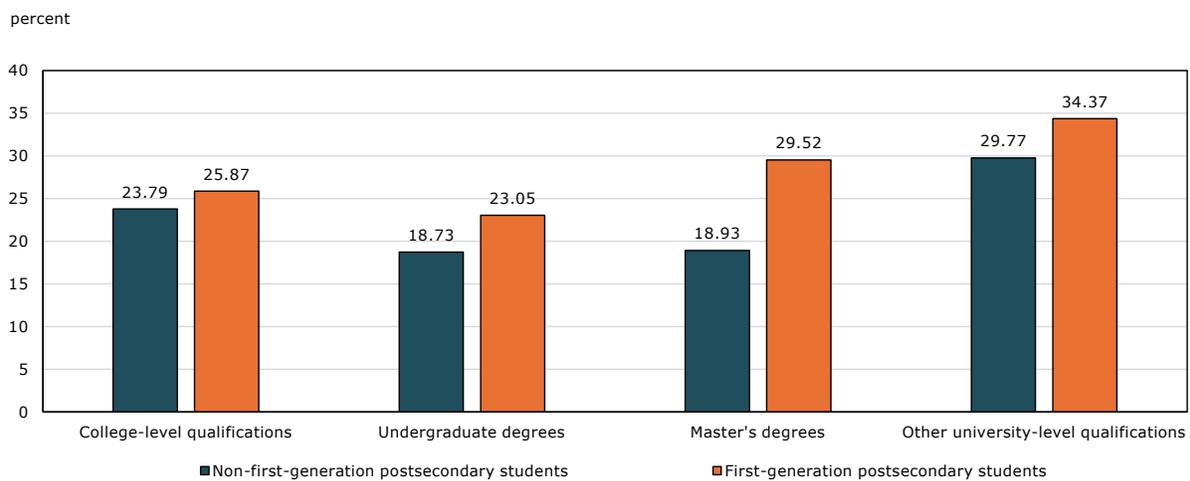
Graduation rates by education qualifications



Persistence rates by education qualifications



Not enrolled, not graduated rates by education qualifications



Notes: PSE = postsecondary education. Differences in numbers between first-generation and non-first-generation postsecondary students are statistically significant at the 5% level. The "doctoral degrees" category is removed to meet confidential requirements.
Source: Statistics Canada, authors' calculations using 2006 Census data and the Postsecondary Student Information System.

Among first-generation postsecondary students, graduation rates were highest for Arab students, women, and students 19 years or younger at entry.

Previous studies offer considerable insights into education outcomes by students' age group, subpopulation and sex (Handler, Bonikowska, & Frenette, 2024). Breaking down the results by demographic characteristics as shown in Table 2, the magnitude of differences in education outcomes between first-generation and non-first-generation postsecondary students vary considerably. Except for Filipino and Arab students, graduation rates of first-generation postsecondary students are lower relative to those of non-first-generation students across all demographic characteristic categories examined. Furthermore, among first-generation postsecondary students, graduation rates were highest among Arab students, women, and students 19 years or younger at their initial time of entry. In contrast, Black and Latin American first-generation postsecondary students had the lowest graduation rates, which were under 50%. White and Chinese non-first-generation postsecondary students had the highest graduation rates among the population groups.

Table 2
Graduation; persistence; and not enrolled, not graduated rates by students' sex, entry age and racialized group

Categories per demographic characteristics	Graduation rate		Persistence rate		Not enrolled, not graduated rate	
	Non-first-generation postsecondary student	First-generation postsecondary student	Non-first-generation postsecondary student	First-generation postsecondary student	Non-first-generation postsecondary student	First-generation postsecondary student
				percent		
Sex						
Men	71.25	66.29	5.12	5.85	23.63	27.86
Women	75.54	70.29	3.67	5.15	20.79	24.56
Entry age						
19 years or younger	74.88	69.74	4.62	5.57	20.50	24.69
20 to 21 years	64.12	62.47	3.35	4.67	32.53	32.86
22 to 24 years	73.79	65.96	2.98	5.36	23.23	28.68
Racialized group						
White	75.60	70.22	3.99	4.95	20.41	24.83
Black	49.12	43.31	8.69	6.76	42.19	49.93
Chinese	73.15	68.02	3.73	5.49	23.12	26.49
South Asian	63.00	58.31	7.01	11.58	29.99	30.11
Filipino	56.56	62.48	8.62	12.24	34.82	25.28
Latin American	63.49	40.33	9.78	18.06	26.73	41.61
Arab	70.94	82.59	1.63	2.80	27.43	14.61
Other racialized groups	65.84	63.47	4.77	5.33	29.39	31.2

Source: Statistics Canada, authors' calculations using 2006 Census data and the Postsecondary Student Information System.

Regarding persistence, Latin American individuals (18%) had the highest rate among first-generation postsecondary students, suggesting that the time to complete their program was longer than that for other population groups. Filipino individuals (12%) had the second-highest persistence rate, followed by South Asian individuals (11%). Conversely, among the non-first-generation postsecondary students, Latin American individuals had the highest persistence rate (9%), followed by Filipino and Black students, at about 8%.

Time to graduation

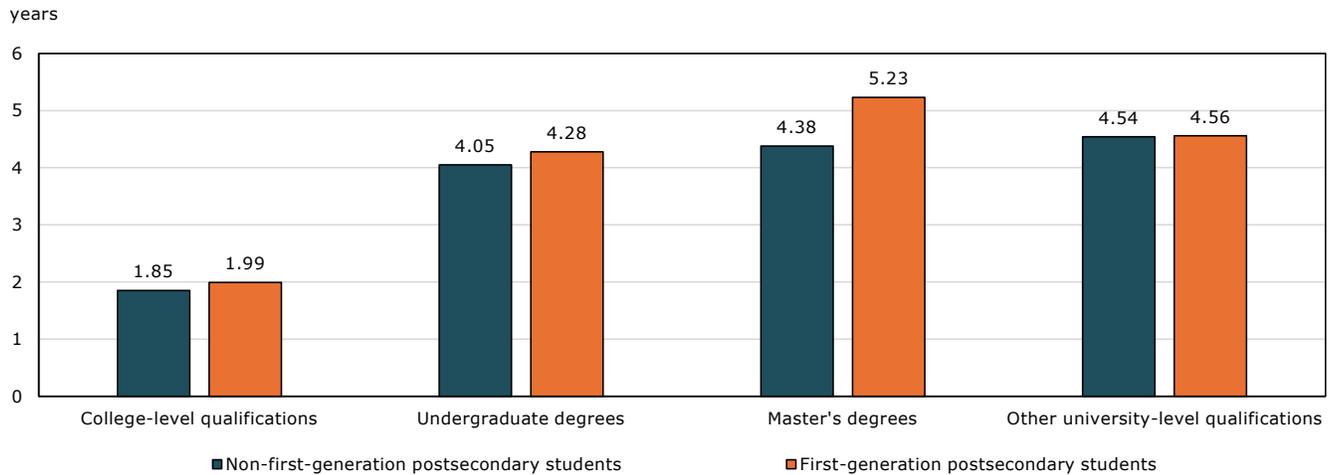
Across educational qualifications, the average time to graduation is slightly higher among first-generation postsecondary students than among non-first-generation students

Research on discontinuous patterns of school attendance has been more extensive in American studies. However, the YITS and the National Graduates Survey (NGS) have enabled researchers to examine this topic more carefully for Canada. Using the YITS, Doray et al. (2012) showed that re-enrollment in PSE is most common during the first three quarters following an interruption. Using data from the NGS, Fortin

& Rague (2017) documented a positive wage effect of temporary interruption for men who held a full-time job while out of school.

Consistent with results from previous studies (Zeman, 2023), students enrolled at college-level qualifications took almost two years to graduate, compared with roughly four years for students at the undergraduate level (Chart 4). Results also suggest that first-generation postsecondary students took slightly more time to graduate than non-first-generation ones, regardless of the educational qualification.

Chart 4
Time to graduation by education qualifications



Notes: Differences in numbers between first-generation and non-first-generation postsecondary students are statistically significant at the 5% level. The "Doctoral degrees" category is removed to meet confidential requirements.

Source: Statistics Canada, authors' calculations using 2006 Census data and the Postsecondary Student Information System.

Table 3
Time to graduation of college students by sex, entry age, and racialized group

Categories per demographic characteristics	Non-first-generation postsecondary students	First-generation postsecondary students
	years	
Sex		
Men	1.90	1.92
Women	1.82	2.04
Entry age		
19 years or younger	1.88	2.07
20 to 21 years	1.99	1.93
22 to 24 years	1.56	1.61
Racialized group		
White	1.80	1.97
Black	2.34	2.27
Chinese	2.08	1.71
South Asian	2.27	2.48
Arab	2.63	1.49
Other racialized groups	2.05	2.14

Notes: Differences in numbers between first-generation and non-first-generation postsecondary students are statistically significant at the 5% level, except for results by student entry age.

Filipino and Latin American racialized groups are removed to meet confidentiality requirements.

Source: Statistics Canada, authors' calculations using 2006 Census data and the Postsecondary Student Information System.

Table 4
Time to graduation of undergraduate students by sex, entry age and racialized group

Categories per demographic characteristics	Non-first-generation postsecondary students	First-generation postsecondary students
	years	
Sex		
Men	4.21	4.45
Women	3.94	4.17
Entry age		
19 years or younger	4.11	4.4
20 to 21 years	3.62	3.63
22 to 24 years	3.48	3.41
Racialized group		
White	4.06	4.34
Black	4.16	4.62
Chinese	3.85	3.86
South Asian	3.67	3.57
Arab	4.73	4.57
Other racialized groups	4.09	4.41

Notes: Differences between first-generation and non-first-generation postsecondary students are statistically significant at the 5% level, except for results by student entry age. Filipino and Latin American racialized groups are removed to meet confidentiality requirements.

Source: Statistics Canada, authors' calculations using 2006 Census data and the Postsecondary Student Information System.

The gap in time to graduation between first-generation and non-first-generation postsecondary students is larger for undergraduate degrees than for college degrees, with wider gaps between White and Black students

Table 3 shows the time to graduation by students' demographic characteristics for first-generation and non-first-generation postsecondary students for college qualifications, while Table 4 does so for undergraduate degrees. Starting with sex, results indicate that, on average, female students graduated sooner than male students, regardless of the educational qualification. Notably, the time to graduation for men in college qualifications is nearly equal between first-generation and non-first-generation postsecondary students.

Tables 3 and 4 show that, on average, students who were younger at their initial entry graduated later than older students. For example, students who entered PSE at ages 22 to 24 years were likely to graduate with a college credential within 1.56 years, on average, compared with about 1.88 years for those who began at age 19 or younger.

Tables 3 and 4 also present results disaggregated by racialized groups. Certain groups of first-generation postsecondary students had shorter times to graduation than non-first-generation students. For instance, White and Chinese students had the shortest time to graduation for college qualifications. Arab and Black students tended to have among the longest time to graduation for both educational qualifications, regardless of parental education status.

Discussion

This article examines education outcome trajectories of first-generation PSE individuals compared with non-first-generation individuals. In other words, it explores whether PSE individuals from families in which neither parent completed PSE (first-generation PSE individuals), may find themselves at a disadvantage relative to non-first-generation PSE individuals. To document the descriptive statistics, the study leverages a unique linked dataset combining the 2006 Census of Population data with the PSIS, which makes it possible to examine education pathways of first-generation and non-first-generation PSE individuals. The study finds a higher enrolment rate for potential non-first-generation PSE individuals (nearly 75%) compared with potential first-generation ones (about 59%). Among these enrolled students, non-first-generation postsecondary students graduated in higher proportions than first-generation students (74% versus 69%). Furthermore, persistence rates are lower for non-first-generation students than for first-generation students (4% versus 5%). First-generation students, on average, tend to have a longer time to graduation compared with non-first-generation students.

When disaggregating the results by selected characteristics, larger differences are observed by education qualifications, sex, student entry age and racialized population group. For example, the difference in the graduation rate between first-generation and non-first-generation postsecondary students was the largest for Latin American students, followed by Arab and Black students.

While this study constitutes a valuable initial contribution on educational outcomes based on parental PSE status in Canada, additional research is warranted to derive a causal relationship between first-generation PSE status and educational attainment. That is, to disentangle the effects of first-generation PSE status from those of confounding factors, such as postsecondary environments, mentoring programs and policies, that may explain the differences in outcomes. Another area of investigation may be to examine and compare the labour market outcomes after graduation of first-generation and non-first-generation postsecondary students.

Appendix

Table A1

Definitions and measurements of key variables and concepts

Concepts and variables	Definitions
Cohorts	<p>Cohort 1 (used to compute the enrolment rate): All potential future students in the 2006 Census aged 15 years. This cohort is used to compute the enrolment rate at any time during the period from 2010/2011 to 2022/2023.</p> <p>Cohort 2 (for other education outcomes): Comprised of new entrants (students with first-time enrolment in a given educational qualification level) during the fall of any academic calendar year from 2010/2011 to 2015/2016, enrolled in a specific educational qualification.</p>
First-generation students	Individuals who attended a postsecondary institution and whose parents did not obtain any postsecondary credential (including trades, apprenticeship, college or university).
Non-first-generation students	Individuals who attended a postsecondary institution whose parent or parents completed a postsecondary credential (including trades, apprenticeship, college or university).
Study population (X)	Individuals aged 15 years in the 2006 Census living with at least one parent.
Subgroups of X: (X1, X2)	X1: Individuals with parents without postsecondary education (PSE) in 2006. X2: Individuals with parents having PSE in 2006
Linkage (Y): Link X to PSIS	Y is defined as the proportion of X retrieved from the PSIS.
Subgroups of Y: (Y1, Y2)	Y1: Fraction of first-generation PSE individuals found in the PSIS. Y2: Fraction of non-first-generation PSE individuals found in the PSIS.
Enrolment rate	Percentage of enrolled individuals by first-generation PSE status at any time from 2010/2011 to 2022/2023, relative to the 2006 Census study sample.
Graduation rate	The ratio of the total number of graduates to the initial number of enrolled students for cohort 2. The graduation rate is defined as taking place over four years for college-level programs; six years for undergraduate degrees, master's degrees and other university-level qualifications; and eight years for doctoral degrees, counted from the start of the program.
Persistence rate	The proportion of students in cohort 2, by first-generation-student status, who are still enrolled in the program at the designated graduation-threshold time.
Not enrolled, not graduated rate	The proportion of students in cohort 2, by first-generation-student status, who are no longer enrolled and have not graduated from the program at the designated graduation-threshold time.
Entry age	A student's age at the time of their initial enrolment in a specific educational qualification level. Three age categories are considered: (1) 19 years or younger, (2) 20 to 21 years and (3) 22 to 24 years.
Sex	Student sex is either man, woman, or not reported or missing.
Educational qualification¹	<ol style="list-style-type: none"> 1. Using program and credential types, five categories are considered: college-level qualifications 2. undergraduate degrees 3. master's degrees 4. doctoral degrees 5. other university-level qualifications.
Racialized groups	Student subpopulation groups identified at the time of the 2006 Census. Eight categories are considered: (1) Arab, (2) Black, (3) Chinese, (4) Filipino, (5) Latin American, (6) South Asian, (7) White and (8) other racialized groups.

1. For more details on the classification of programs and credentials, please consult [Classification of programs and credentials](#).

Source: Statistics Canada, 2006 Census data and the Postsecondary Student Information System.

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