

Insights on Canadian Society

The rising popularity of college postgraduate credential programs in Canada

by Katherine Wall

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The rising popularity of college postgraduate credential programs in Canada

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Overview of the study

This study uses the Postsecondary Student Information System (PSIS) linked to the Longitudinal Immigration Database (IMDB) and income tax records to provide a profile of the number and characteristics of college postgraduate credential students in Canada, as well as their outcomes, including graduation rates, rates of transition to permanent residency (for international students), and earnings after graduation.

- College postgraduate credentials – that is, credentials from college programs that typically require a previous postsecondary credential – have grown in popularity, accounting for 13% of all college graduations in 2019, up from 6% in 2014.
- The rise in college postgraduate credentials is largely driven by international students, particularly those from India. By 2019, two-thirds (67%) of graduates from college postgraduate credential programs were international students, up from less than one-third (30%) in 2014. Over half (53%) of all graduates with these credentials in 2019 were international students from India.
- Eight in ten international students who completed a college postgraduate credential in 2015 gained permanent residency within 5 years of graduation, a higher rate than for international graduates of bachelor's or master's degrees.
- Over three-quarters of international students who completed a college postgraduate credential in 2015 had wage earnings four years after graduation.
- Among international students who completed a college postgraduate credential in 2015, Indian students were more likely than those from other countries to have wage earnings four years after graduation, but their average earnings were lower.
- International students from countries other than India who completed a college postgraduate credential in 2015 had similar earnings to international students who completed a bachelor's degree, while Indian graduates with college postgraduate credentials earned less.
- Canadian students who completed a college postgraduate credential in 2015 had higher earnings than those with a non-postgraduate college certificate or diploma, by several thousand dollars.

Introduction

Largely introduced in the early 2000s, college postgraduate credentials are a relatively new type of Canadian college credential. While growing slowly at first, the programs gained popularity in the 2010s – both in terms of the number of offerings and the demand from interested students, particularly international students.¹ In 2019, college postgraduate credentials accounted for 13% of graduations from public colleges, up from 6% in 2014.

Despite the growth, there is very little quantitative research on the program itself and outcomes. One paper commissioned by *Colleges and Institutes Canada* provides a description of the history, terminology, the rationale behind college postgraduate credentials, and their value to both domestic and international students.² At the same time, the report also articulates the challenges related to a lack of available data concerning these programs. The current study attempts to address the data gap in the growth, characteristics, and outcomes of students from these programs, particularly international students.

College postgraduate programs differ from other college programs as they typically require a postsecondary credential (e.g., a college diploma or bachelor's degree) as a prerequisite for entry. They are generally directed at providing career-specific skills, and frequently incorporate work-integrated learning. The applied nature of these credentials may be what makes them attractive both to Canadian students and to international students seeking work and permanent residency in Canada. Their short duration (typically one year in length³, though some are

longer) may also contribute to their appeal to international students, as the programs are less expensive than longer programs.

The rising number of international students at Canadian colleges has been a major trend in Canadian postsecondary education for over a decade. The first phase of the rise was in 2009 to 2015, coinciding with changes in immigration policy. In 2009, immigrants began being admitted under the newly-created Canadian Experience Class, which was introduced to facilitate transitions to permanent residency for temporary foreign workers, including those who had been international students. The number of international students studying in colleges rose from 37,000 in 2009/2010 to 58,000 in 2014/2015. The number of college international students from India quintupled from 2,400 to 12,000.

These increases accelerated in the following years, with the number of international students attending Canadian colleges rising to 153,000 by 2018/19, of which 81,000 (or 53%) were Indian students. By 2019, international students made up over a quarter (27%) of all graduates from Canadian public colleges.⁴

The rapid increases were largely the result of policy changes both in Canada and abroad. Starting in June 2014, Canadian international students at designated postsecondary learning institutions were permitted to work off campus for up to 20 hours per week during the academic year, and full-time during school breaks. Previously, they needed to apply for a separate work permit.⁵ An additional factor involved decreases in international student enrolments in the United States starting in 2016/2017, as a result of the more restrictive

immigration policies in that country⁶, creating greater demand for other destinations, including Canada and Australia.⁷

Additional factors contributed specifically to the rise in the number of Indian international students. The federal International Education Strategy 2014-2019 also identified specific markets for recruiting international students, including India.⁸ Advertising and recruitment in India by Canadian colleges expanded, and Indian international students increasingly arrived from more rural regions.⁹ Indian international students and graduates sharing positive accounts and social media images of their experiences in Canada, and even Indian celebrities promoting study in Canada, also encouraged more Indian students to study here.¹⁰ It has been reported that India now has agencies to help their residents apply to Canadian colleges and that it is common for some Canadian college courses with small class sizes to only have students from India.¹¹

The increases in international students at Canadian colleges have generated strong interest in the outcomes of international students at colleges, both in terms of their rate of attaining permanent residency, and their earnings post-graduation. Several Statistics Canada articles have been published in recent years examining the characteristics, work activity (during and after studies) and transitions to permanent residence of international students.¹²

This article will be the first to distinguish international students who completed college postgraduate credentials from those who completed other college certificates and diplomas, and provide a clear portrait of their numbers and characteristics, as well

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as their outcomes: graduation rates, rates of transition to permanent residency, and earnings after graduation. It differs from other articles in integrating data from the Postsecondary Student Information System (PSIS) on graduates from public colleges with the Longitudinal Immigration Database (IMDB) and income tax records. Unlike most IMDB-based papers, which track students' outcomes from the date of first obtaining a study permit, it examines their outcomes following graduation. It also provides findings on Canadian graduates with post-graduate credentials, in order to provide a comprehensive understanding of this new credential type that is playing a large and rapidly increasing role in Canada's college system.

One reason for the lack of prior research on college postgraduate credentials has been the lack of a consistent pan-Canadian definition. This article provides a clear definition based on the categories

used in PSIS. The large majority (over 95%) of college postgraduate credentials are those defined in PSIS as "post career, technical or professional training certificates and diplomas." The detailed definition, presented in the "[Data sources, definitions and methods](#)," section, lays the groundwork for further research both by Statistics Canada and academic and institutional researchers.

College postgraduate credentials have risen from 6% of college graduations in 2014 to 13% in 2019

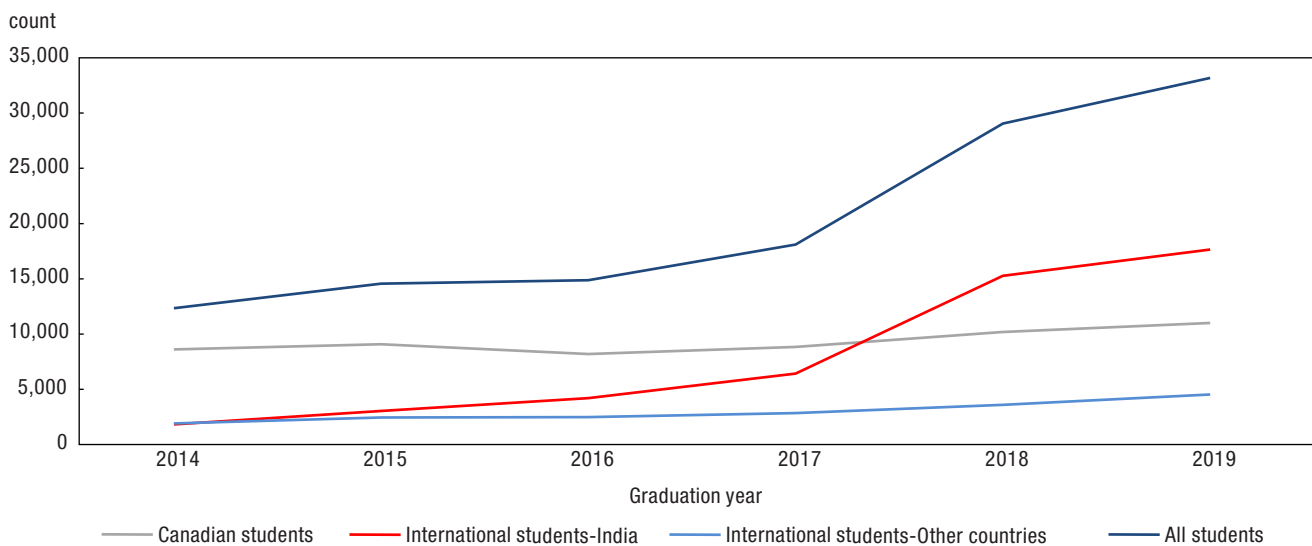
Over a six-year period, the share of graduations from a college postgraduate program more than doubled, rising from 6% to 13% of all college graduations between 2014 and 2019. This translated into a near tripling of the total number of graduations with college postgraduate credentials, rising by 20,000 to reach a total of 33,200 in 2019. In contrast, graduations

from non-postgraduate college certificates and diplomas saw a smaller increase, rising by 12,000 (6%), though they still made up over four-fifths of college graduations as of 2019.¹³

The rapid growth in college postgraduate credentials has been mainly driven by rising numbers of international students, particularly those from India. The number of graduations from these programs by Indian students grew nearly tenfold from 2014 to 2019, increasing from 1,800 to 17,700. More than half the increase happened from 2017 to 2018 (Chart 1).¹⁴

Indian international students made up over half (53%) of graduates from college postgraduate programs in 2019, up from 15% in 2014. This is a unique phenomenon among all post-secondary programs, as a small minority of other graduates were Indian international students. For instance, Indian students made up 12% of non-postgraduate college

Chart 1
Graduations with college postgraduate credentials by student type, 2014-2019



Source: Statistics Canada, Postsecondary Student Information System 2019/2020.

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certificates and diplomas - the credential with the next-highest share of Indian graduates.

In comparison, Canadian students constituted 33% of graduations from college postgraduate programs in 2019, far lower than their share of any other credential.¹⁵ The next-lowest was doctorate degrees, at 61%.

It should be noted that the data sources cover graduations during the period 2014 to 2019. They do not yet include data for the period during the pandemic, and therefore it cannot draw conclusions about how travel restrictions and changes in course delivery during the pandemic affected international student enrolments and graduations.

Both college postgraduate credentials and non-postgraduate college certificates and diplomas saw rapid growth in graduations by international students

Among international students, graduations from college postgraduate programs and non-postgraduate college certificate and diploma programs far outpaced the growth in bachelor and master degree graduations between 2014 and 2019 (Chart 2). As a result, college postgraduate credentials went from making up 9% of international student graduations in 2014 to 22% in 2019 - the same share as bachelor's degrees.

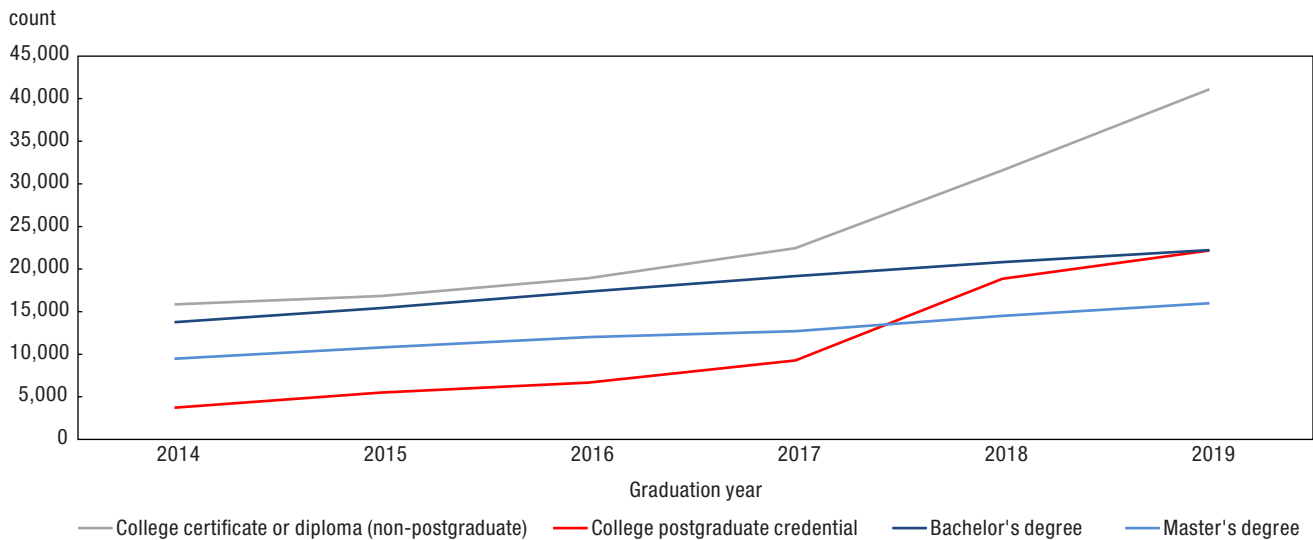
In the case of both types of college credentials, graduations of Indian international students accounted for a large share of the increase. Specifically, 86% of the increase in international students' graduations from college postgraduate credentials, and 77% of the increase

in their graduations from non-postgraduate college certificates and diplomas, were attributable to Indian international students.

In contrast, nearly all the growth in international student graduations with bachelor's degrees (96%) could be explained by increases in graduations of students from countries other than India. Bachelor's degrees were the most common credential type for international students from countries other than India, making up approximately 40% of their graduations in every year from 2014 to 2019, whereas in each of those years they made up 2% to 5% of graduations by international students from India.

For master's degrees, a slightly different story emerged. About half (48%) of the growth in international student graduations with master's degrees was attributable to Indian international students, with the other half being attributable to international students from other countries.

Chart 2
Graduations of international students by credential type, 2014-2019



Source: Statistics Canada, Postsecondary Student Information System 2019/2020.

International students were more likely than Canadian students to complete multiple college postgraduate credentials

Completing multiple college postgraduate programs was more common among international students than Canadian students. Specifically, over one-quarter (26%) of international college postgraduate students from India and 15% of other international students completed more than one college postgraduate credential. This compares to 2% of Canadian students in these programs.

The increased likelihood of international students having multiple postgraduate credentials is likely related to immigration policy incentives. Under the Post-Graduation Work Permit program, students who graduate from a full-time program of at least two years are eligible for a three-year work permit following graduation, while those graduating from a shorter program (8 months to less than 2 years) are eligible for a work permit equal to the length of their studies.¹⁶ Many college postgraduate credentials are one-year programs, and consequently, international students have to take two consecutive programs to qualify for the three-year work permit upon graduation. A longer work permit could afford more time to obtain work experience necessary to gain permanent residency.

The bulk of college postgraduate programs were completed in Ontario

The large majority of college postgraduate credentials were completed at Ontario educational institutions (85%), with the next-largest share being completed at those in British Columbia (10%).

This was even more pronounced among international students, with 90% studying in Ontario, compared to 81% of Canadian students. This reflects the larger number of college postgraduate programs in Ontario and British Columbia compared to other provinces, as well as the recruiting strategies of colleges and the choices of international students with respect to educational institution, field of study, and where in Canada they wish to live.¹⁷

International students also differed from Canadian students in some other characteristics. For example, while over two-thirds (69%) of Canadian students completing college postgraduate credentials were women, 60% of Indian international students who graduated from these programs were men.

Indian international students who completed college postgraduate programs were also younger: the majority (51%) graduated at the age of 20 to 24, compared to 40% of Canadian graduates and 22% of other international students. Less than 5% of Indian international student graduates from college postgraduate programs were age 30 or over, compared to 29% of Canadian graduates and 35% of international student graduates from other countries.

International students with college postgraduate credentials were highly concentrated in international business and business administration programs

International students who completed college postgraduate credentials were highly concentrated in a few specific fields of study. More than half (54%) of male international students and 41% of female international

students studied either international business or business administration, management and operations. This degree of concentration by field is not seen in any other credential type.

There was greater diversity in the fields of study for Canadian students with college postgraduate credentials. While business administration, management and operations was the most common field of study for Canadian men, only 9% studied this field. Among Canadian women, the most common fields were registered nursing specializations (15%)¹⁸ and human resources management and services (14%). Registered nursing specializations provide students with expertise in a particular field of nursing, such as critical care nursing or neonatal nursing.

Colleges in different jurisdictions specialize in different programs and fields of study. For example, college postgraduate programs in business are more common in Ontario colleges (53% of graduations vs 39% in British Columbia), while those in registered nursing specializations are more common at British Columbia colleges (33% of graduations vs 3% in Ontario).¹⁹

The well-being and economic outcomes of international college students are a topic that has received strong public interest

Media coverage of the social, economic and mental health challenges faced by international students at Canadian colleges²² raises questions about the likelihood of these students completing their programs, as well as their economic prospects following graduation. Economic challenges described in the media include: the high cost

Among Canadian students, a bachelor's degree was the most common prerequisite for a college postgraduate credential

College postgraduate programs typically require a post-secondary credential as an admission prerequisite. The admission requirements of these programs vary: some accept either a college certificate/diploma or a bachelor's degree, while others require a bachelor's degree. In other cases, some accept incomplete credentials or equivalent combinations of education and work experience.²⁰ Until now, previous research has not provided a pan-Canadian picture of the types of prerequisites most common among students. By integrating PSIS with 2016 Census data, this information is available for Canadian students who graduated between 2017 and 2019. However, this linked information is not available for international students, as few of these students appeared on the Census file.²¹

The large majority (72%) of Canadian graduates with a college postgraduate credential had previously completed a bachelor's degree. Another 23% had completed a non-postgraduate college certificate or diploma as their prerequisite.

Seven in ten (71%) Canadian students with a college postgraduate credential graduated in their 20s, with the median age at graduation being 26. This suggests that students generally completed their college postgraduate credential in relatively quick succession after their prerequisite credential.

of tuition and housing; limits on work hours; and, the resulting precarious socioeconomic position that can leave international students vulnerable to economic and even sexual exploitation. Increased pressure may also be felt in cases where families take out large loans to fund their children's studies, resulting in students feeling a strong need to succeed. Experiences of social isolation and racism may create further strain.²³

Although this analysis cannot speak to the mental health and social well-being of international students nor to the outcomes of students at private colleges, it can shed some light on the educational outcomes and transition to the Canadian labour market for international students. By examining international students' likelihood of graduating from their program, gaining permanent residency, finding work in Canada, and their earnings after graduation, new insights can be gained on the experiences of these students.

Graduation rates from college postgraduate credentials similar to those from master's degrees

Among students who started a college postgraduate certificate program²⁴ in 2015/16, 88% of international students and 82% of Canadian students successfully graduated within two years. This is similar to the graduation rate for those who started master's degrees²⁵ in 2014/15: 88% of international students and 84% of Canadian students in master's degree programs successfully graduated within four years. For comparison, 70% of international students and 73% of Canadian students who started an undergraduate degree²⁶ in 2012/2013 graduated within six years.²⁷

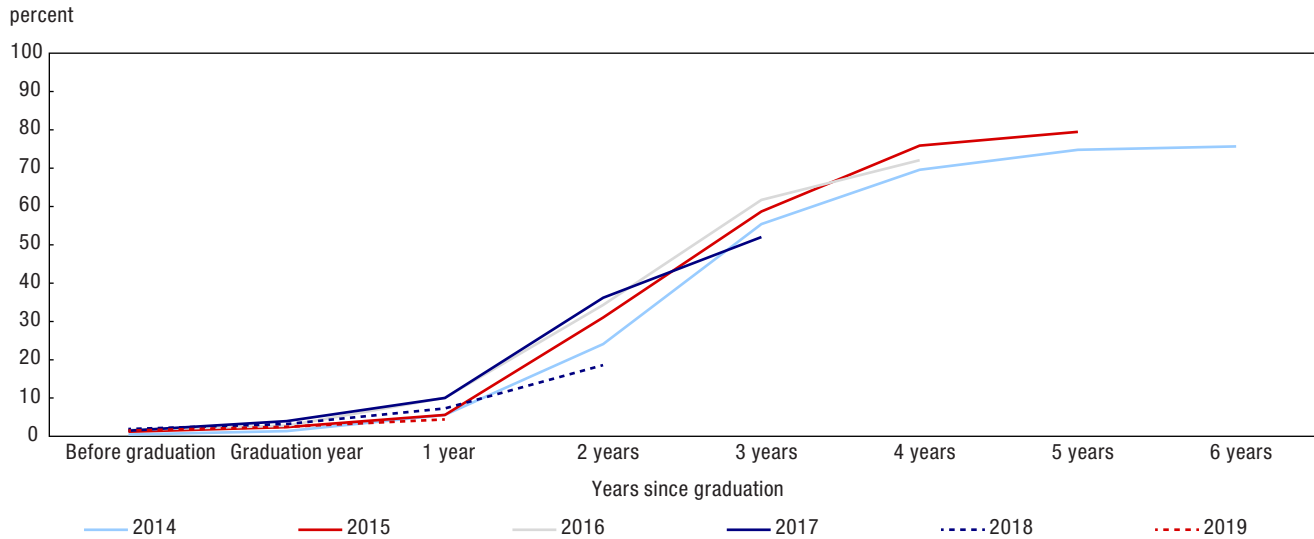
Over three-quarters of international students who completed a college postgraduate credential obtained permanent residency within six years of graduation

The goals of international students in completing a Canadian education vary. For some, a Canadian credential is desirable both for obtaining permanent residency in Canada, and for finding high-quality employment here. Others seek to obtain a Canadian credential and then return to their home country, for the experience of studying abroad and/or to improve their employment prospects at home. Therefore, rates of transition to permanent residency reflect not only the characteristics of a given credential, but the goals of the students completing it.

Over three-quarters of international students who completed college postgraduate credentials in 2014 or 2015 gained permanent residency within 6 years of graduation (Chart 3). For graduates in later

Chart 3

Transition to permanent residency by international student graduates from college postgraduate credentials, by graduation year and years since graduation



Source: Statistics Canada, Postsecondary Student Information System 2019/2020 and Longitudinal Immigration Database 2020.

years, the share obtaining permanent residency appeared to follow the same trajectory.

That said, rates of transition to permanent residency were lower in 2020, during the COVID-19 pandemic. The change was mostly due to the impacts of the pandemic, which reduced Canadian immigration levels.²⁸ However, immigration levels bounced back in 2021 to exceed their 2019 level,²⁹ so transitions to permanent residency may have increased in the following year. Indeed, in 2021, a special permanent residency program had 40,000 application spaces available for international students,³⁰ which were filled within the first day that applications were accepted.³¹

College postgraduate credentials were associated with higher rates of transition to permanent residency than bachelor's or master's degrees

College postgraduate credentials were associated with the highest rates of transition to permanent residency for international students who graduated in 2015 (Chart 4), with 80% becoming permanent residents within 5 years of graduation.³² The next-highest rates were among those who had completed a non-postgraduate college certificate or diploma (71%) or a master's degree (69%). In comparison, rates were notably lower, at 50%, for those who had completed a bachelor's degree.³³

Rates of transition to permanent residency within five years of graduation were higher for Indian international students than those from other countries. In 2019, 85% of Indian international students

with a college postgraduate credential became permanent residents, compared to 74% of other international students with this credential type. The likelihood of becoming a permanent resident was generally lower for those graduating with other types of credentials, though very similar for Indian graduates (over 80%). Among international students from other countries, 64% with a non-postgraduate college certificate or diploma, 64% with a master's degree or 49% bachelor's degree became permanent residents. This was partly related to country of origin. International students who graduated with a bachelor's degree were most commonly from China, France, and the United States, and less than half of these graduates became permanent residents.³⁴ The goal of some of those students may have been to obtain a Canadian credential and have the experience of studying abroad, without necessarily planning to immigrate.

Chart 4

Transition to permanent residency by international student graduates by credential type and years since graduation, for the population who graduated in 2015



Source: Statistics Canada, Postsecondary Student Information System 2019/2020 and Longitudinal Immigration Database 2020.

International students with college postgraduate credentials were more likely than those with bachelor's degrees to have earnings 4 years after graduation

Over three quarters (76%) of international students who graduated with a college postgraduate credential in 2015 reported earnings (wage income) four years after graduation. This was higher than the share among those with a non-postgraduate college certificate or diploma (67%) and nearly twice as high as among those with a bachelor's degree (41%).³⁵

Indian international students were most likely to have earnings four years after graduation, at 82% both for those with a college postgraduate credential and those with a non-postgraduate college certificate or diploma. In comparison, for international students from other countries, this figure was 69% for those with college postgraduate

credentials and 61% for those with non-postgraduate college certificates or diplomas.

The share of international student graduates with earnings are similar to the share who obtained permanent residency. It is possible that some of those who did not have earnings four years after graduation and had not obtained permanent residency within five years of graduation had left Canada by this point. However, the data sources used do not enable us to determine with certainty whether a student has left Canada or not.

Earnings from college postgraduate credentials were higher than those from non-postgraduate college certificates and diplomas, but lower than those from bachelor's degrees

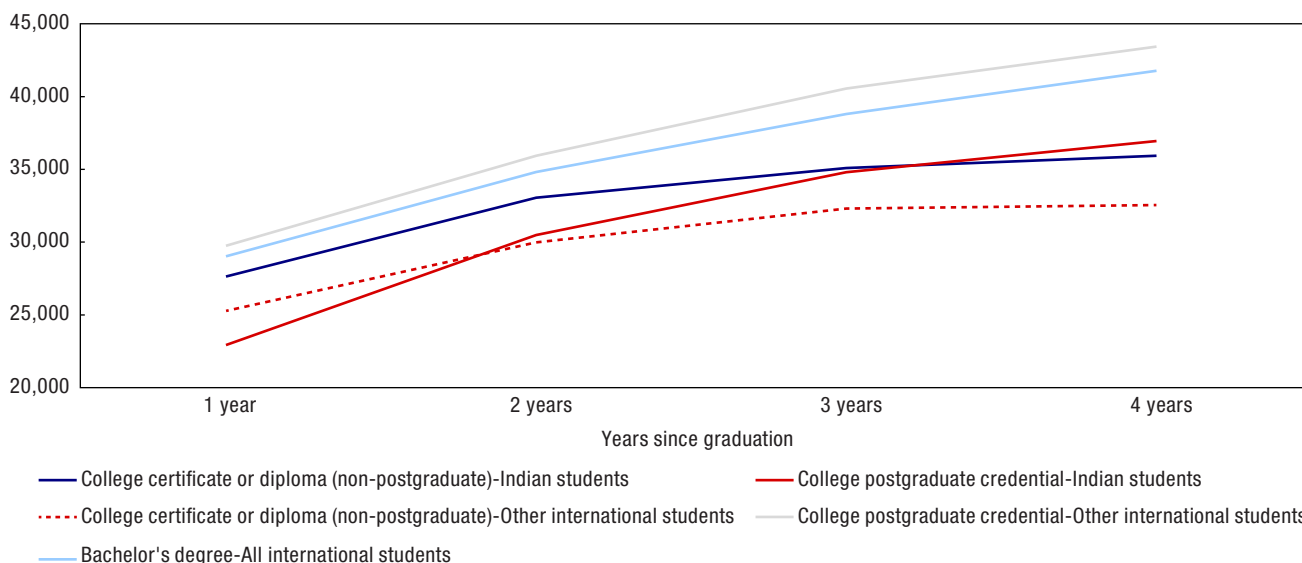
Students who completed a college postgraduate credential in 2015 had wage earnings, four years after

graduation, that were higher than those with a non-postgraduate college certificate or diploma, but lower than those with a bachelor's degree. This was the case for both Canadian students and international students. Canadian students earned, on average, \$39,000 with a non-postgraduate college certificate or diploma, \$51,000 with a college postgraduate certificate or diploma, and \$53,000 with a bachelor's degree. International students with a non-postgraduate college certificate or diploma earned similar amounts to Canadian students (\$38,000), but those with a college postgraduate certificate or diploma (\$44,000) or a bachelor's degree (\$47,000) earned less than Canadian students with those credentials. However, more detailed analyses reveal important differences by gender and for international students, country of origin.

Chart 5

Average earnings (2015 constant dollars) by credential type and years since graduation, for female international students who graduated in 2015

2015 constant dollars



Note: Earnings data for bachelor's degree are not disaggregated between Indian international students and international students from other countries because few Indian students obtained bachelor's degrees.

Source: Statistics Canada, Postsecondary Student Information System 2019/2020 and T1 Family File 2019.

Indian international students who completed a college postgraduate credential in 2015 had lower earnings than other international students with the same credential

While Indian international students with a college postgraduate credential were more likely than their peers from other countries to have earnings four years after graduation, their average earnings were lower (Chart 5; Chart 6). Specifically, Indian women who graduated with a college postgraduate credential in 2015 earned an average of \$37,000 four years later and Indian men earned \$45,000. This compares to \$43,000 among women from other countries and \$53,000 among men.³⁶

In contrast, among international students with a non-postgraduate college certificate or diploma

completed in 2015, Indian women earned more (\$36,000) than women from other countries (\$33,000); for men, earnings were similar between Indian students and other international students (\$41,000 for both).

Consequently, the earnings advantage of a college postgraduate credential over a non-postgraduate college certificate or diploma was much larger for international students coming from other countries than for those from India. For students who came from countries other than India, those with a college postgraduate credential earned over \$10,000 more than those with a non-postgraduate college certificate or diploma, while for Indian students the difference was much smaller: \$1,000 among women and \$3,000 among men.

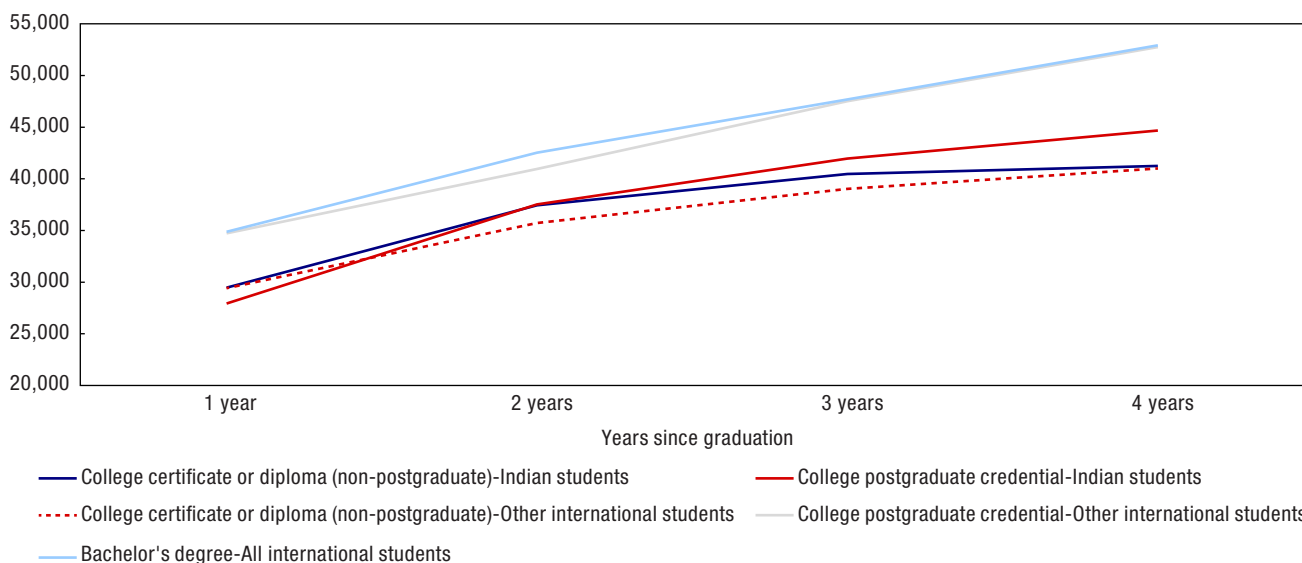
Likewise, while Indian international students with a college postgraduate credential earned much less than international students with a bachelor's degree (by \$5,000 among women and \$8,000 among men), international students from other countries who completed a college postgraduate credential had similar earnings to international students with a bachelor's degree.³⁷

In short, the earnings of a college postgraduate credential relative to other credentials were much more competitive among international students from countries other than India than among Indian international students. This could be related to the larger share of Indian students who had any wage earnings. It is possible that Indian students with lower post-graduation earnings are

Chart 6

Average earnings (2015 constant dollars) by credential type and years since graduation, for male international students who graduated in 2015

2015 constant dollars



Note: Earnings data for bachelor's degree are not disaggregated between Indian international students and international students from other countries because few Indian students obtained bachelor's degrees.

Source: Statistics Canada, Postsecondary Student Information System 2019/2020 and T1 Family File 2019.

more likely to stay in Canada than lower-earning graduates from other countries.

Field of study may also be a factor in earning potential. Indian international students were more likely than other international students (by 14 percentage points among men and 11 among women) to study in international business and business administration, management and operations. A further in-depth analysis would be necessary to study this possibility. For the current article, the sample size is insufficient to disaggregate the income analysis of these groups further by field of study.³⁸

It is also important to note that these findings pertain to international students who graduated in 2015 (a cohort which was chosen to enable analysis of income trajectories several years after graduation, since

post-graduation income growth plays as important role in the findings). In more recent years, the number of Indian international students completing postgraduate programs has increased rapidly, and the earnings trajectory of these graduates may differ from earlier cohorts. That said, analysis for earnings one year after graduation for students who graduated in 2015 to 2018 showed no major differences in income by year of graduation.

Canadian students who graduated with college postgraduate credentials had similar earnings to those with bachelor's degrees

Among Canadian students, college postgraduate certificates were associated with substantially higher earnings than non-postgraduate college certificates and diplomas,

with a gap of more than \$15,000 for women and a bit under \$8,000 for men between the two credential types four years after graduation (Chart 7).

Female Canadian students who completed college postgraduate credentials had similar earnings four years after graduation (\$50,000) to those with bachelor's degrees (\$49,000). Men who completed college postgraduate credentials earned an average of \$54,000 four years after graduation, approximately \$6,000 less than men with a bachelor's degree. The gap for men may be because men with a bachelor's degree are more likely to study certain higher-earning fields such as engineering.

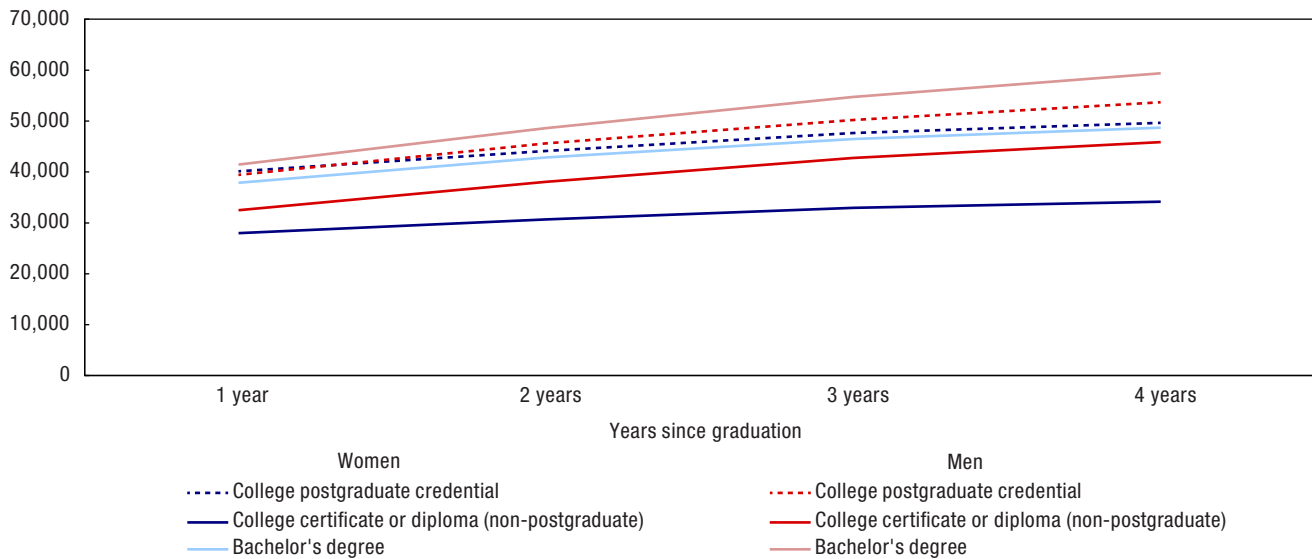
In contrast to international students, the share of Canadian graduates who had wage income four years after graduation differed only

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Chart 7

Average earnings (2015 constant dollars) by credential type, gender and years since graduation, for Canadian students who graduated in 2015

2015 constant dollars



Source: Statistics Canada, Postsecondary Student Information System 2019/2020 and T1 Family File 2019.

slightly between those with a college postgraduate credential (86%), those with a non-postgraduate college certificate or diploma (84%) and those with a bachelor's degree (82%).

Given that over two-thirds of those with college postgraduate credentials had previously completed a bachelor's degree (see [Box I](#)), one might expect their earnings to be higher than those with a bachelor's degree. However, findings are

consistent with prior research that those who complete a short credential after a bachelor's degree generally have similar or lower earnings to those who complete a bachelor's degree.³⁹ Two elements which play a role in this are earnings upon completion of a bachelor's degree, and field of study. Those who are in certain higher-earning fields of study, such as engineering and engineering technology, are less likely to complete subsequent

certificates or diplomas. Those who have relatively higher earnings a year after completing their bachelor's degree are, similarly, less likely than those with lower earnings to obtain a subsequent certificate or diploma, probably because they feel less need to do so.⁴⁰

Conclusion

College postgraduate credentials are a rapidly-growing credential type, making up 13% of all college graduations in 2019 compared to 8% in 2014. This growth was heavily driven by international students, especially those from India, with Indian international students making up the slight majority (53%) of those who completed college postgraduate credentials in 2019.

The outcomes of international students at colleges are a topic of public interest, given the rapid growth in this population, government policies to strengthen recruitment and retention, and the economic role they play in Canadian society during and after graduation. This analysis shows that eight in ten international students who completed college postgraduate credentials in 2015 obtained permanent residency within five years of graduation, and over three-quarters reported earnings four years after graduation. Among those with a college postgraduate credential, Indian international students were more likely to have

earnings four years after graduation (82%) than other international students (69%), and more likely to gain permanent residency within five years of graduation (85% vs 74%). It is possible that Indian students were more likely than other students to remain in Canada following graduation, but the data sources for this study are not sufficient to determine this.

Among international students with a postgraduate credential who had non-zero earnings, Indian international students earned less than those from other countries. This made a difference in the earnings associated with college postgraduate credential relative to other credentials. Indian international students with college postgraduate credentials earned a few thousand dollars more than those with non-postgraduate college certificates and diplomas. In contrast, other international students with college postgraduate credentials earned over \$10,000 more than those with a non-postgraduate college certificates and diplomas, and had similar or higher earnings

to international students with a bachelor's degree. One possibility is that Indian students with lower post-graduation earnings could be more likely to remain in Canada, compared to lower-earning students from other countries.

The distinct characteristics and outcomes of college postgraduate credentials, and their large share of international student graduations in particular, makes it important that future analyses of international students distinguish students in college postgraduate programs from those in college programs of other types. Specific analyses by country of origin are also important, given the notable differences in outcomes between students from India and those from other countries.

Katherine Wall is an analyst with the Canadian Centre for Education Statistics at Statistics Canada.

Data sources, methods and definitions

Data sources

The analysis uses data from the Postsecondary Student Information System (PSIS) on graduations in the calendar years 2014-2019. Analysis of graduates by credential type is based on the most recently-completed credential: thus, for example, the “bachelor’s degree” category contains only those who did not complete a subsequent credential after their bachelor’s degree. PSIS data for graduations in the calendar years 2014-2019 were also integrated with the longitudinal immigration database (IMDB) for analysis of transitions to permanent residency and with the TI Family File (TIFF) for analysis of income.

Linkage rates to the IMDB for international students who graduated in 2015 were over 95% for both Indian students and those from other countries. Linkage rates to the TIFF for students who graduated in 2015 were over 99% for Canadian students; 97% for Indian international students; and 85% for international students from other countries (90% for those with a college postgraduate credential or non-postgraduate college certificate or diploma; 82% for those with a bachelor’s degree).

PSIS data for graduations in the calendar years 2017-2019 were integrated with the 2016 Census to analyze prerequisite credentials Canadian students. Weights designed specifically for use with PSIS-Census linkages were used.

Methodology

All analyses are descriptive.

Earnings data from the TIFF uses wage income and is deflated using the core Canadian CPI, a less volatile version of CPI, so that all values are in 2015 constant dollars. The analysis examines the proportion of 2015 graduates who reported Canadian wage income four years after graduation, and their wage earnings over their first four years following graduation (2016-2019), as this provides a long enough time period to look at trends in income growth.

Definitions

Canadian students: Canadian students includes those who were either Canadian citizens or permanent residents at the time of their graduation, as classified in PSIS.

Non-postgraduate college certificates and diplomas: College non-degree credentials that do not typically require any postsecondary education as a prerequisite for program entry. Nearly all of these were from career, technical or professional training programs (87%), or were pre-university diplomas (12%). The “pre-university diploma” category consists of pre-university (CEGEP general) programs at Quebec CEGEPs.

College postgraduate credentials: College non-degree credentials that typically require a previous postsecondary credential as a prerequisite for program entry. This includes non-degree credentials in the following PSIS categories: “post career, technical or professional training programs” (which make up over 95% of college postgraduate credentials); “post-baccalaureate non-graduate programs”; “graduate qualifying programs (second cycle)”; “graduate programs (second cycle)” and “graduate programs (third cycle)”. Most college postgraduate credentials obtained during 2014-2019 were with post career, technical or professional training certificates (91%); certificates are typically from one-year programs. The share that were post-baccalaureate non-graduate diplomas (diplomas are typically from two-year programs) rose from 1% in 2014 to 5% in 2019.

Bachelor’s degrees: Credentials classified by PSIS as undergraduate degrees or post-baccalaureate non-graduate degrees, whether they are completed at a university or at a college; except for the exclusion of degrees in medicine, dentistry, optometry or veterinary medicine, since these have a much longer time to completion than a typical bachelor’s degree.

Earnings: “Earnings” or “wage earnings” refers to income from wages, salaries and commissions.

Notes

1. Deller (2020).
2. Deller (2020).
3. Over 90% are certificate (1-year) programs; see “Data sources, definitions and methods” section.
4. The Daily (2021).
5. Crossman, Choi and Hou (2021). Additionally, at the beginning of 2015, a new Express Entry application management system was introduced to streamline the immigration process for certain economic immigration programs. It assigned ‘points’ to applicants based on desired educational, labour market, and other characteristics. In 2016, the system was modified to assign additional points to applicants with Canadian postsecondary credentials. However, the number of points from a Canadian credential was small (15 to 30 points) compared to the number associated with other characteristics (between 100 and 200 points each for level of education, age, official language ability, and Canadian work experience). As such, this was unlikely to be the driving force behind increases in international students (Crossman and Hou, 2022).
6. Institute of International Education (2021); Kavilanz (2018).
7. Kavilanz (2018).
8. “Canada’s International Education Strategy (2014-2019).” <https://www.international.gc.ca/education/report-rapport/strategy-strategie-2014/index.aspx?lang=eng#2>
9. Bascaramurty, Bhatt and Rana (2021).
10. Bascaramurty, Bhatt and Rana (2021).
11. Bascaramurty, Bhatt and Rana (2021).
12. See, for example, Frenette, Lu and Chan (2019); Crossman, Choi and Hou (2021); Choi, Crossman and Hou (2021a); Crossman and Hou (2022); Crossman, Lu and Hou (2022).
13. Non-postgraduate college certificates and diplomas and college postgraduate credentials are the two most common types of college credentials, accounting for over 95% of college graduations
14. When the academic year rather than the calendar year of graduation is used, it shows that in the 2019/20 academic year the number of graduations from college postgraduate credentials by Indian international students declined slightly (16,895) compared to 2018/19 (18,865). This decline began in the autumn semester of 2019, prior to the COVID-19 pandemic; its cause is not known.
15. The credentials compared here and in the previous paragraph are: college postgraduate credentials; non-postgraduate college certificates and diplomas; university certificates and diplomas below the bachelor level; bachelor’s degrees; university certificates and diplomas above the bachelor level; degrees in medicine, dentistry, veterinary medicine and optometry; master’s degrees; and earned doctorates.
16. Immigration, Refugees and Citizenship Canada (2021).
17. Most (approximately 80%) international student graduates from colleges who remained in Canada after graduation stayed in the same province where they had studied. Choi, Crossman and Hou (2021b).
18. Registered nursing specializations encompass all of the CIP’s six-digit codes within 51.38 (registered nursing, nursing administration, nursing research and clinical nursing) except for 51.3801 (registered nursing).
19. ‘Business’ refers to CIP 2016 code 52, ‘Business, management, marketing and related support services.’ ‘Registered nursing specializations’ refers to all the codes in CIP 51.38, ‘Registered nursing, nursing administration, nursing research, and clinical nursing,’ except for code 51.3801 (general registered nursing programs).
20. Based on website information from colleges that are members of Colleges and Institutes Canada.
21. Many international students who completed college postgraduate credentials between 2017 and 2019 may not have even been in Canada at the time of the 2016 Census.
22. For example, Bascaramurty, Bhatt and Rana (2021); Heck (2021).
23. Bascaramurty, Bhatt and Rana (2021); Heck (2021).
24. Typically one year in length. In this section, “college postgraduate certificate programs” refers to “post-career technical or professional training certificate programs,” as defined by PSIS. These make up 91% of all college postgraduate credentials completed during 2014-2019. For more detail, see “Data sources, definitions and methods.”
25. Typically two years in length.
26. Typically four years in length.
27. Different start years are used, since the time-to-completion varies based on program length. For each program type, the most recent available data are used.
28. Statistics Canada (2021).
29. Statistics Canada table 17-10-0040-01. Canada admitted over 400,000 immigrants in 2021, compared to approximately 185,000 in 2020 and 340,000 in 2019.

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30. Immigration, Refugees and Citizenship Canada (2021a).
31. Immigration, Refugees and Citizenship Canada (2021b).
32. The graduation year 2015 is used as it allows for a long period of tracking post-graduation (5 years) and has a large sample size of international student graduates from college postgraduate programs than 2014 does (3,449, compared to 1,934 in 2014). Transitions to permanent residency largely levelled off around the fifth year after graduation.
33. Among those graduates who did not obtain permanent residency, 9% enrolled in (but had not yet completed) an additional postsecondary credential program following their graduation. This share varied from 2% among those who had graduated from a college postgraduate credential or bachelor's degree to 11% among those who had graduated from a master's degree.
34. Note that Chinese students who obtained a master's degree were much more likely to obtain permanent residency, with 71% doing so.
35. This section of analysis includes all students, not only those who linked to the tax file. Linkage rates were in most cases high (see "Data sources, definitions and methods" for more information).
36. All the analysis of average income includes persons who had non-zero wage earnings in the given year. The share of people who had non-zero wage earnings was relatively similar across years, so the sample was not restricted to only those who had income in all four years. This choice was made in order to avoid unduly reducing sample size.
37. Earnings data for bachelor's degree are not disaggregated between Indian international students and international students from other countries because few Indian students obtained bachelor's degrees.
38. The sample size for the analysis of average income is approximately 900 male and 600 female Indian international students with a college postgraduate credential and non-zero earnings, and approximately 600 male and 600 female international students from other countries with the same.
39. Ntwari and Fecteau (2020).
40. Ntwari and Fecteau (2020).

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