

2020 ENVIRONMENTAL
SCAN

Graduates in the Economy



COLLEGES ONTARIO | COLLÈGES ONTARIO

Graduates in the Economy

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Ontario college graduates: Competing in a disruptive world economy

1 HIGHLIGHTS

Over the past three decades, rising Ontario employer skill requirements led to 1.3 million more jobs by 2019 for those ages 15 to 44 with post-secondary credentials.

Meanwhile, adults ages 15 to 44 who don't have post-secondary credentials saw a drop of 875,000 jobs.

Adults who don't have post-secondary credentials have faced reduced employment in every sector.

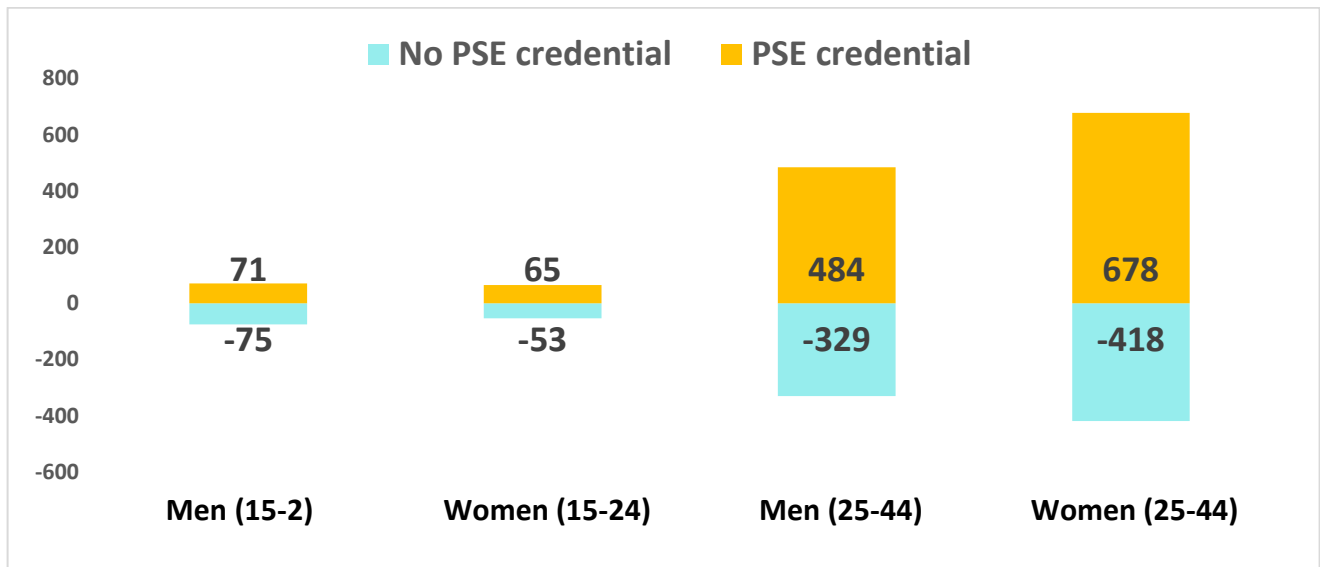
Ontario post-secondary students have been preparing for a disruptive economy by pursuing many pathways and emphasizing employment-ready credentials, including entrepreneurship and innovation.

College graduates continue to provide Ontario with a key competitive advantage over the U.S. They are three times as numerous, per capita and contribute to exports per capita at twice the U.S. level.

A higher share of Ontario young adults have post-secondary credentials than in any single state in the U.S. although the gap is widest compared with some southern states.

2 MATCHING SKILLS TO EMPLOYER NEEDS: PATHWAYS, ENTREPRENEURSHIP, INNOVATION

2.1 Ontario young adult employment shifts towards post-secondary credentials



Note: Ages 15 to 24 and 25 to 44, thousands, 1990 to 2019, Ontario.

Source: Statistics Canada Labour Force Survey, 2019, Table 14-10-0020-01.

Prepared by Colleges Ontario.



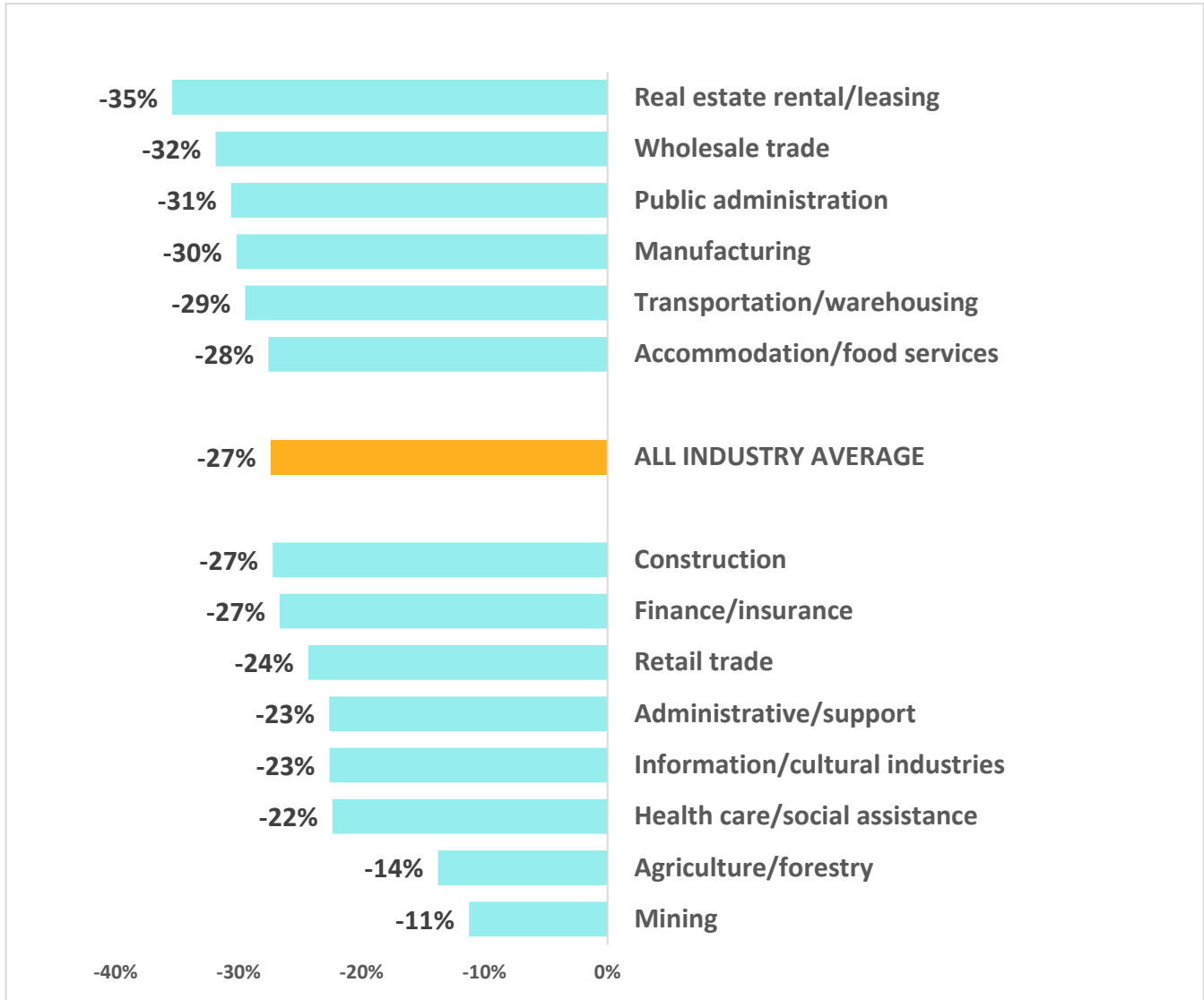
Over the past three decades, there has been considerable change in the educational attainment of Ontario's workforce, similar to that of many advanced economies.

Rising employer expectations have especially affected opportunities for young adults (ages 15 to 44).

In 2019, there were 1.3 million more jobs for those with post-secondary credentials compared with 1990.

Meanwhile, there was a decrease of 875,000 jobs during that same time period for those without post-secondary credentials.

2.2 Ontario young adults without post-secondary credentials: employment rates by industry



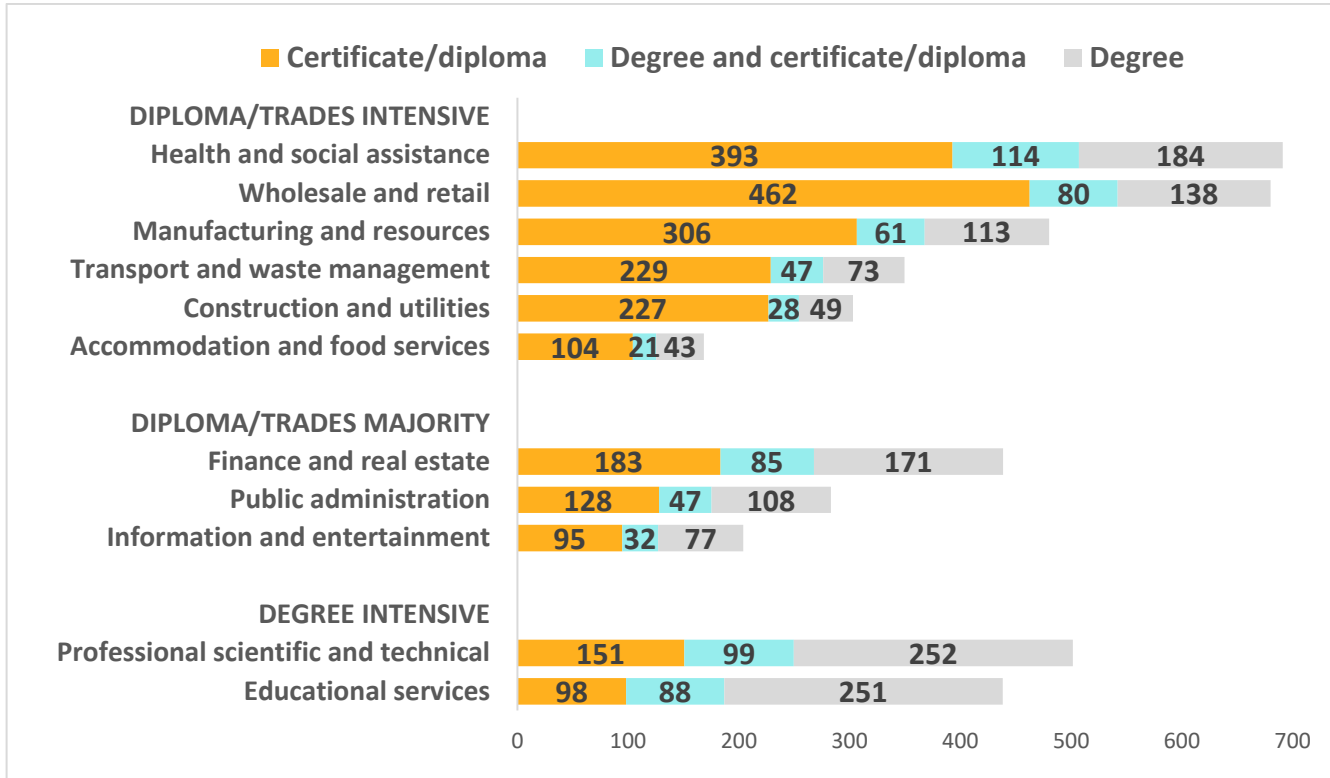
Note: Per cent employment change by industry, ages 25 to 34, 1990 to 2015, Ontario.
 Source: Special tabulation of the 2015 Statistics Canada Labour Force Survey.
 Prepared by Colleges Ontario.



Ontario employs fewer young adults without post-secondary credentials (ages 25 to 34) in every industry sector compared with 25 years ago.

On average, the drop is 27 per cent, with higher percentage declines in formerly traditional industries such as manufacturing, accommodation and food services.

2.3 Post-secondary graduates employed in Ontario industries



Note: Thousands of jobs, 2015, Ontario.

Source: Colleges Ontario, based on a special tabulation of the 2015 Statistics Canada Labour Force Survey and a special tabulation of the 2011 National Housing Survey.

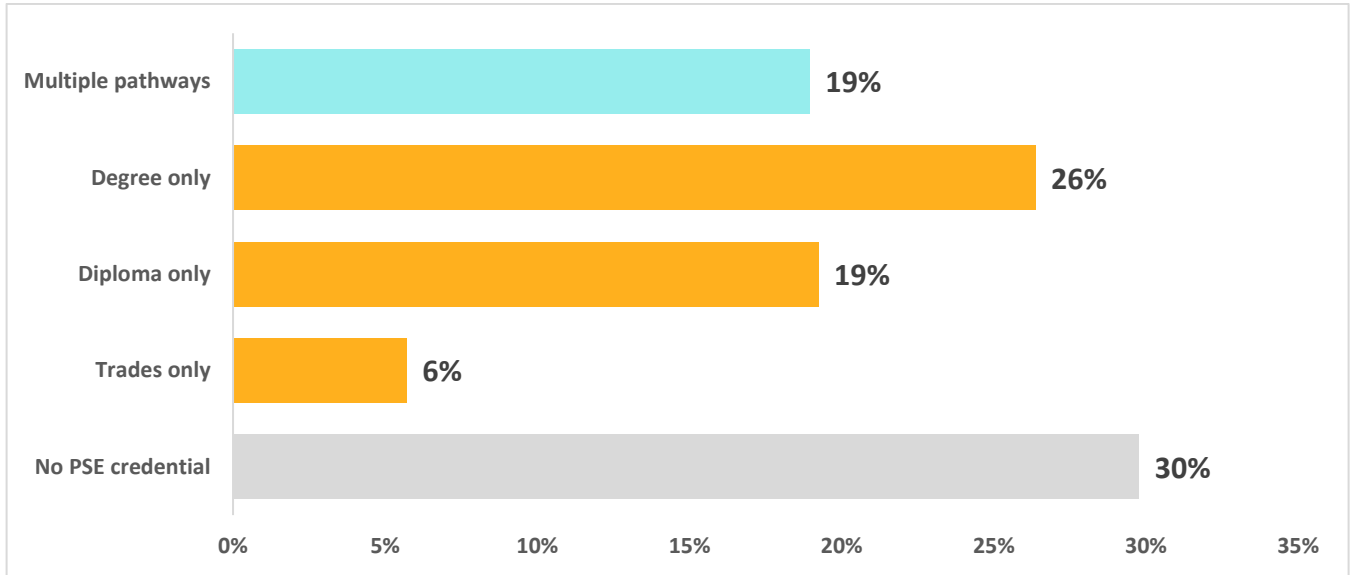
Prepared by Colleges Ontario.



Ontario's college diploma and trades graduates have high representation in export industries (manufacturing, resources and tourism), electric power generation and transmission, infrastructure, real estate, insurance and health care.

The broader public sector (educational services, health and social services, and public administration) and the professional, scientific and technical services sector each employ twice the concentration of people with degrees as the private sector.

2.4 Ontario young adults: single vs. multiple pathways to post-secondary credentials



Note: Ages 25 to 34, Ontario.

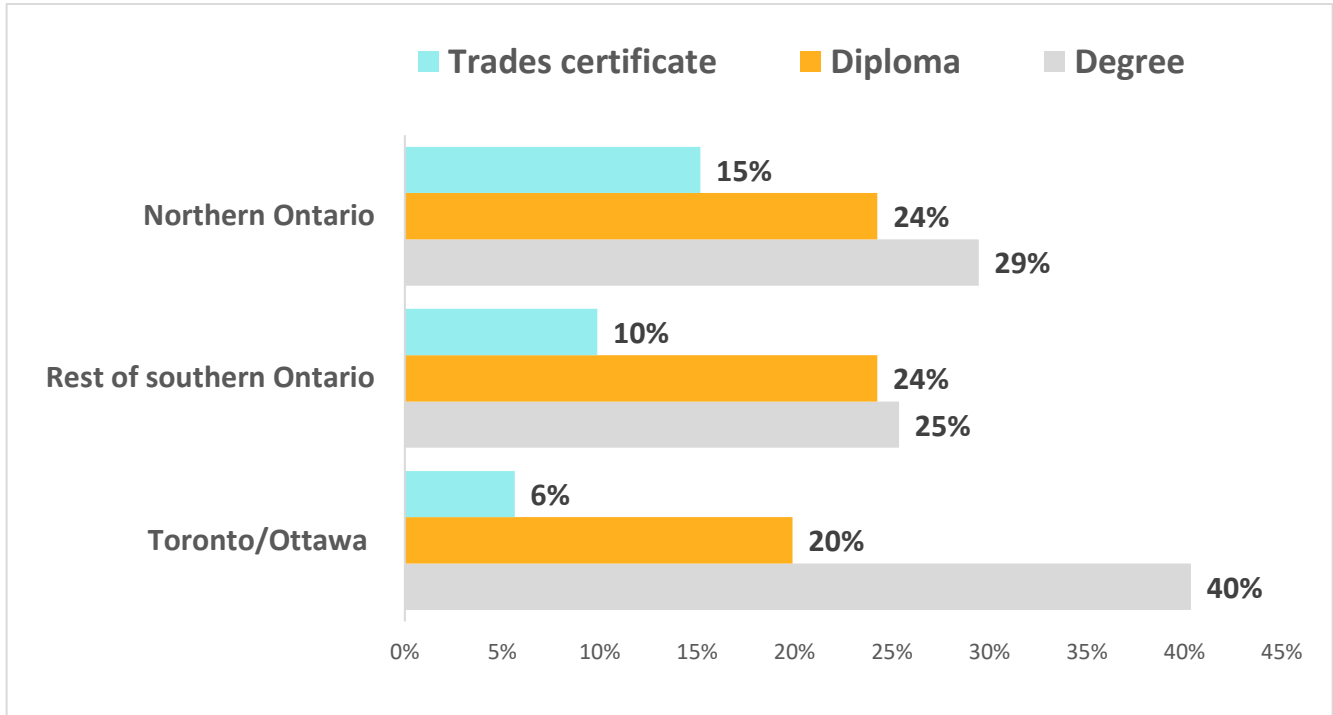
Source: Colleges Ontario, based on a special tabulation of the 2011 Statistics Canada National Housing Survey.

Prepared by Colleges Ontario.



One-fifth of Ontario post-secondary students select multiple post-secondary pathways, such as obtaining a post-graduate certificate after a post-secondary degree.

2.5 Ontario entrepreneurs with post-secondary credentials



Note 1: "Entrepreneur" includes only self-employed with employees.

Note 2: Per cent of total self-employed, 2016, Ontario data.

Source: Colleges Ontario, based on a special tabulation of the 2016 Statistics Canada Census.

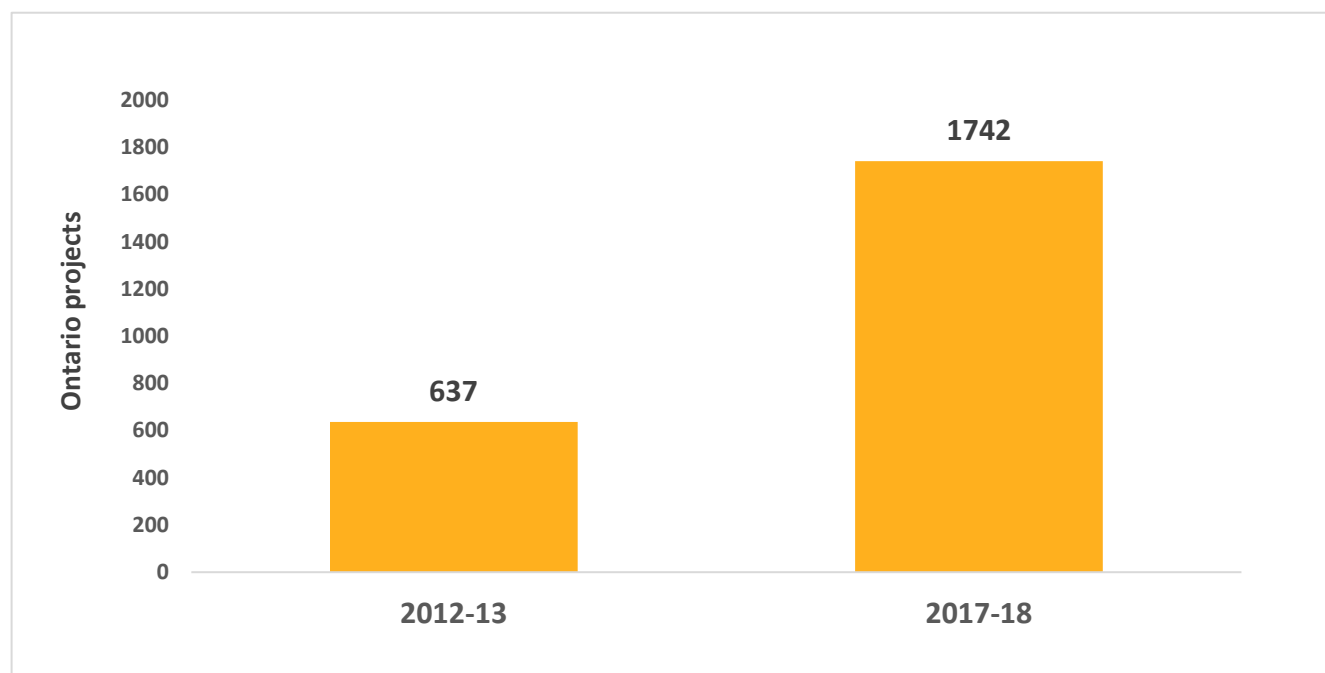
Prepared by Colleges Ontario.



About five per cent of employed Ontarians are entrepreneurs with employees and another seven per cent are self-employed without employees.

The educational attainment of entrepreneurs with employees tends to vary by the size of the community.

2.6 Ontario college applied research projects



Source: Colleges and Institutes Canada, annual survey of applied research, Ontario data.
Prepared by Colleges Ontario.



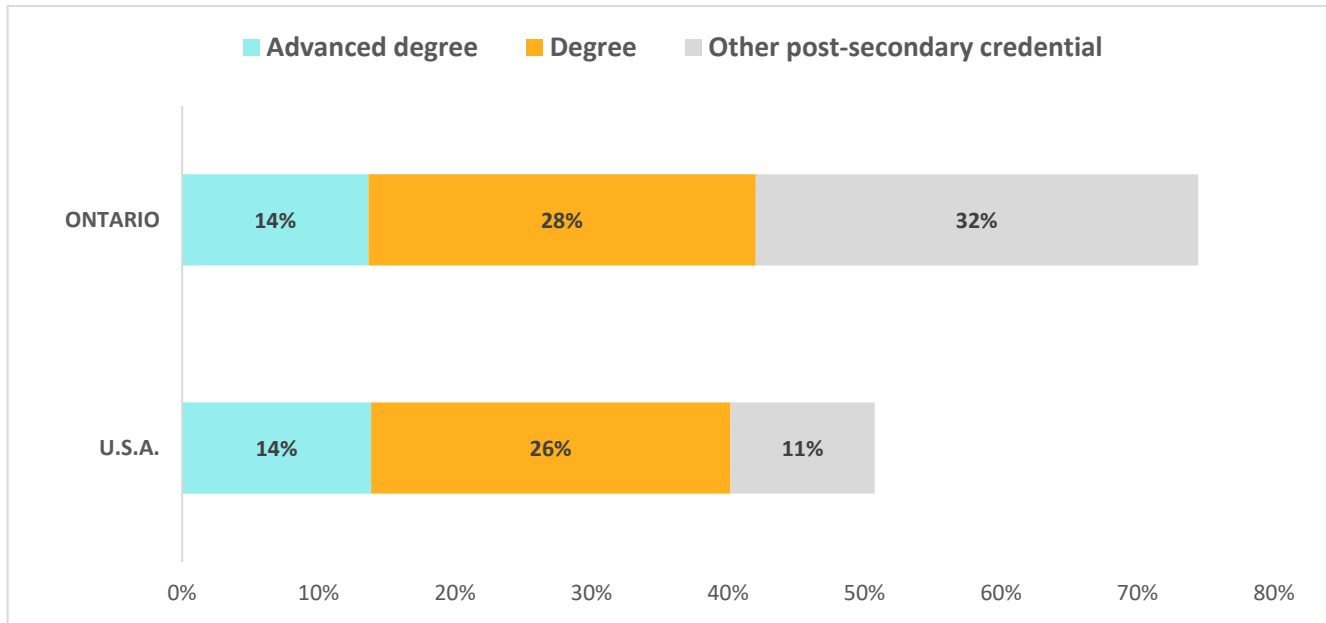
Over the past five years, applied research in Ontario colleges has grown quickly.

The number of clients increased over 170 per cent in five years to 1,742 in 2017-18.

Of these, two-thirds are small and medium-sized enterprises (SMEs), one-tenth are large companies and the remainder include non-profits, international clients and government.

3 ONTARIO'S COLLEGE GRADUATE ADVANTAGE COMPARED TO THE U.S.

3.1 Post-secondary educational attainment of young adults, Ontario compared to the U.S.



Note: Population ages 25 to 44 years, 2019, U.S.A. and Ontario.

Sources: U.S. Bureau of Labor Statistics, Table 10, 2019 and Statistics Canada, Table 14-10-0020-01.

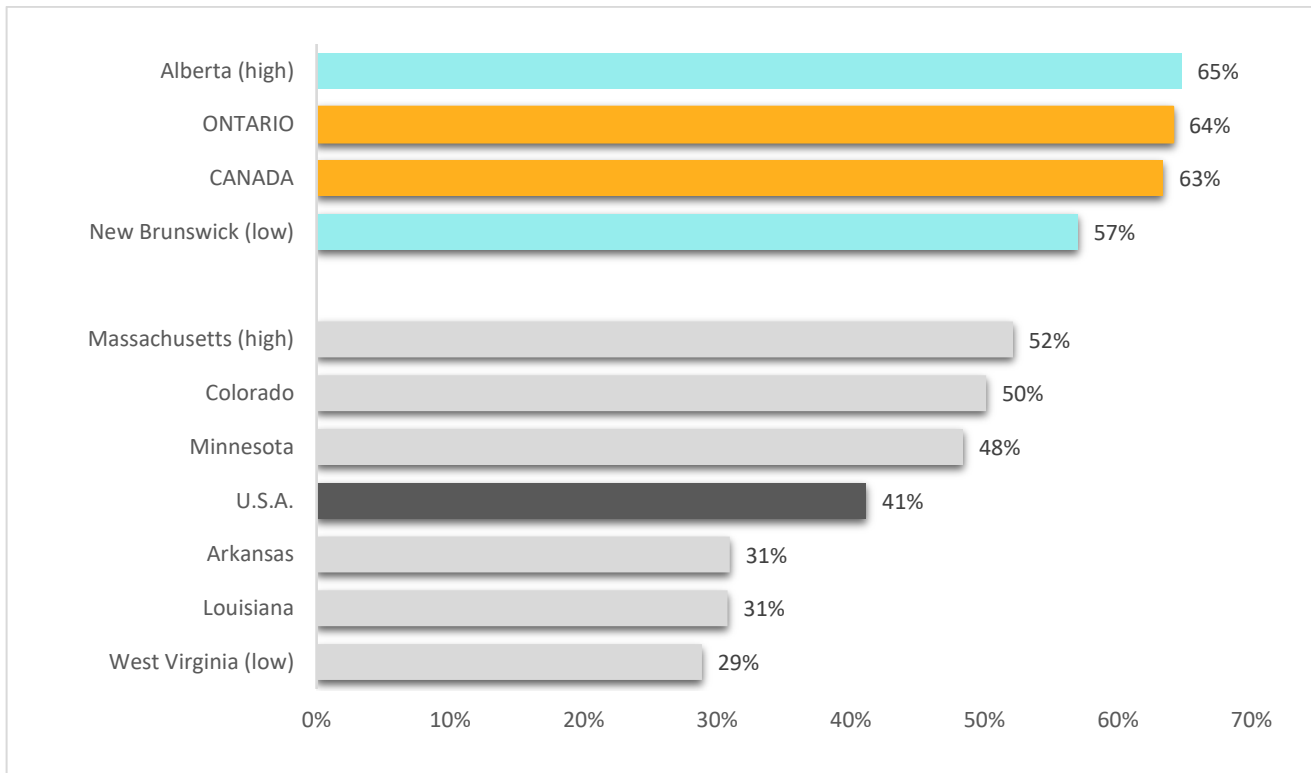
Prepared by Colleges Ontario.



A higher proportion of younger adults in Ontario (ages 25 to 44) have a post-secondary credential compared with their U.S. counterparts.

The difference is especially pronounced for shorter-term credentials, generally offered by colleges, as younger Ontarians are three times as likely to have obtained a credential.

3.2 Post-secondary educational attainment of adults: select Canadian provinces and U.S. states



Note: Population 25 years and older, 2018, U.S.A. and Ontario.

Sources: U.S. Census Bureau, 2018, American Community Survey, Table S1501 and Statistics Canada, Table 14-10-0020-01.

Prepared by Colleges Ontario.



The post-secondary educational attainment of Ontario’s population aged 25 or over is slightly higher than the Canadian average

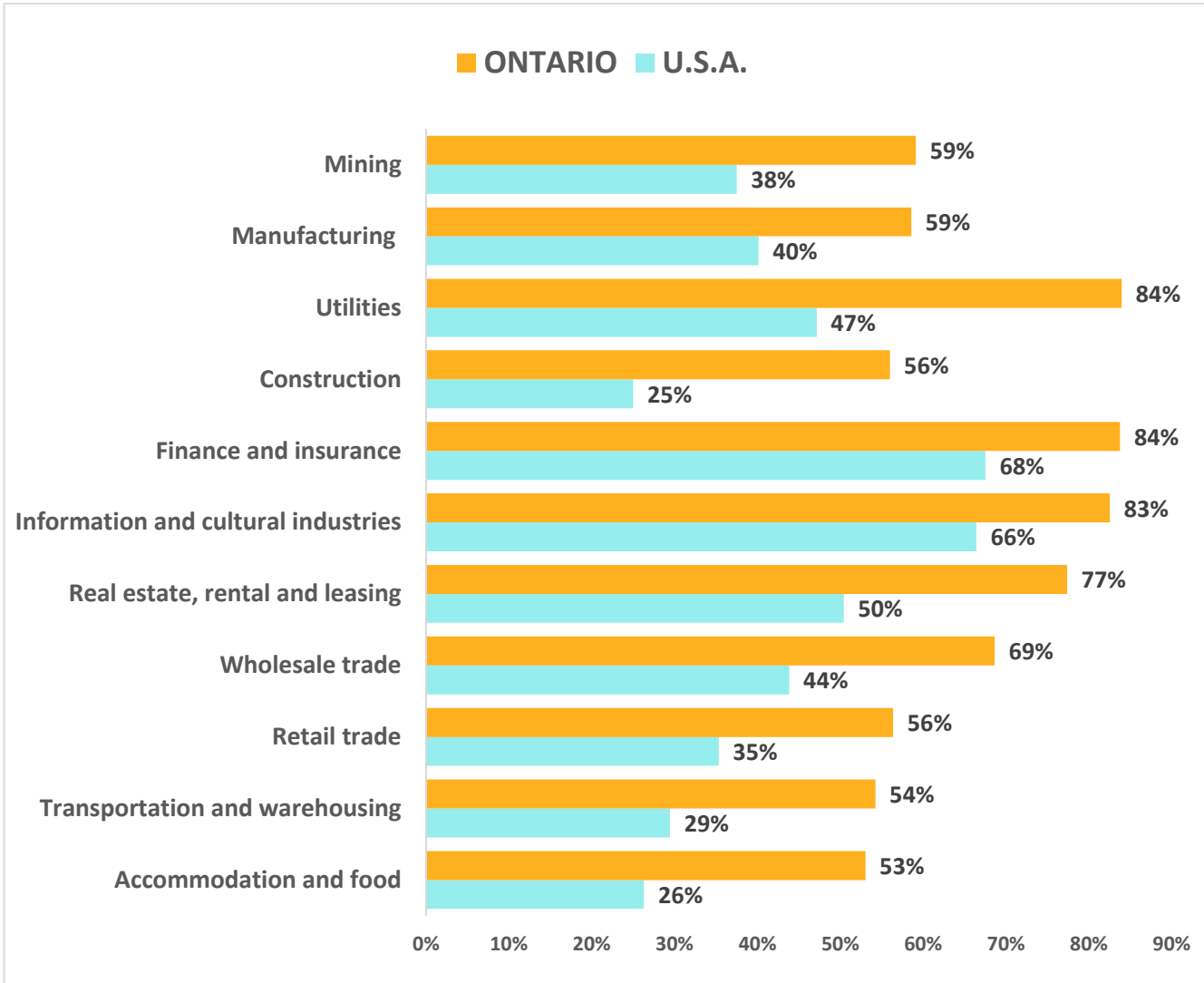
However, it is lower than in Alberta, where the adult population has Canada’s highest educational attainment level.

All provinces have adult populations with a share of post-secondary educational attainment that is higher than any U.S. state and much higher than the U.S. average.

There is huge variation by U.S. state.

Massachusetts has a moderately high post-secondary attainment rate by advanced economy standards, with high levels of advanced degrees. West Virginia’s rate (29 per cent) is the lowest in the U.S. and less than half the Ontario rate.

3.3 Post-secondary educational attainment by industry, Ontario compared to the U.S.



Sources: U.S. Bureau of Labor Statistics. Table 13, 2015 and a special tabulation of the 2015 Statistics Canada Labour Force Survey.
Prepared by Colleges Ontario.

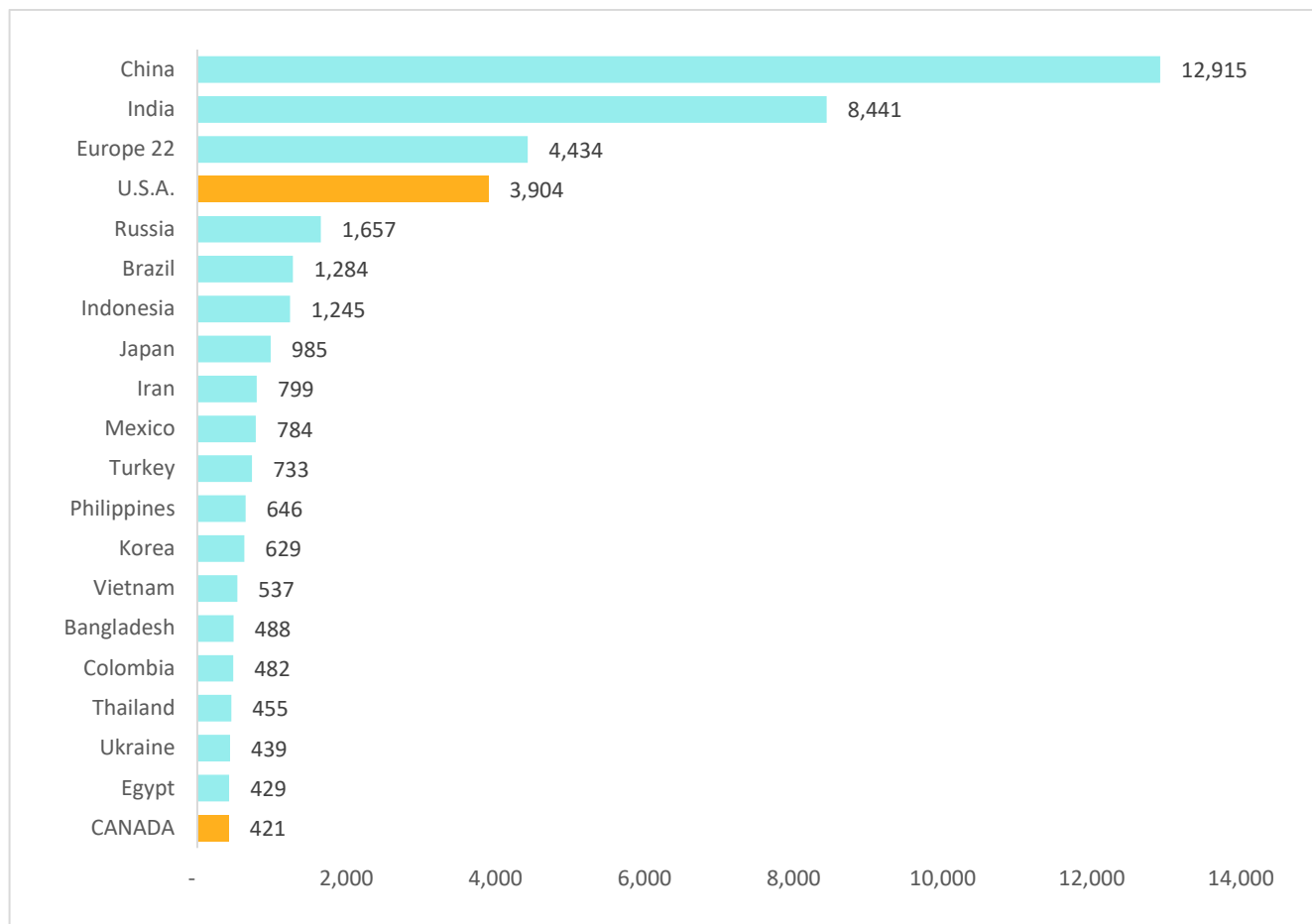


Ontario’s strong post-secondary education system – and especially its employer-oriented colleges – allows every Ontario industry to employ a significantly more skilled workforce than its U.S. counterpart.

Ontario manufacturers employ 19 percentage points more post-secondary graduates. Ontario information and cultural industries employ 17 percentage points more post-secondary graduates. In finance and insurance, it is 16 percentage points more.

4 ONTARIO'S POST-SECONDARY GRADUATES IN THE WORLD ECONOMY

4.1 Annual number of tertiary graduates worldwide



Note 1: 2018 data or latest available. Countries with the highest number of tertiary graduates.

Note 2: "Tertiary" education does not generally include apprenticeship programs.

Note 3: Europe 22 includes Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, the Netherlands, Poland, Portugal, Slovenia, the Slovak Republic, Spain, Sweden and the United Kingdom.

Source: UNESCO Institute for Statistics.

Prepared by Colleges Ontario.



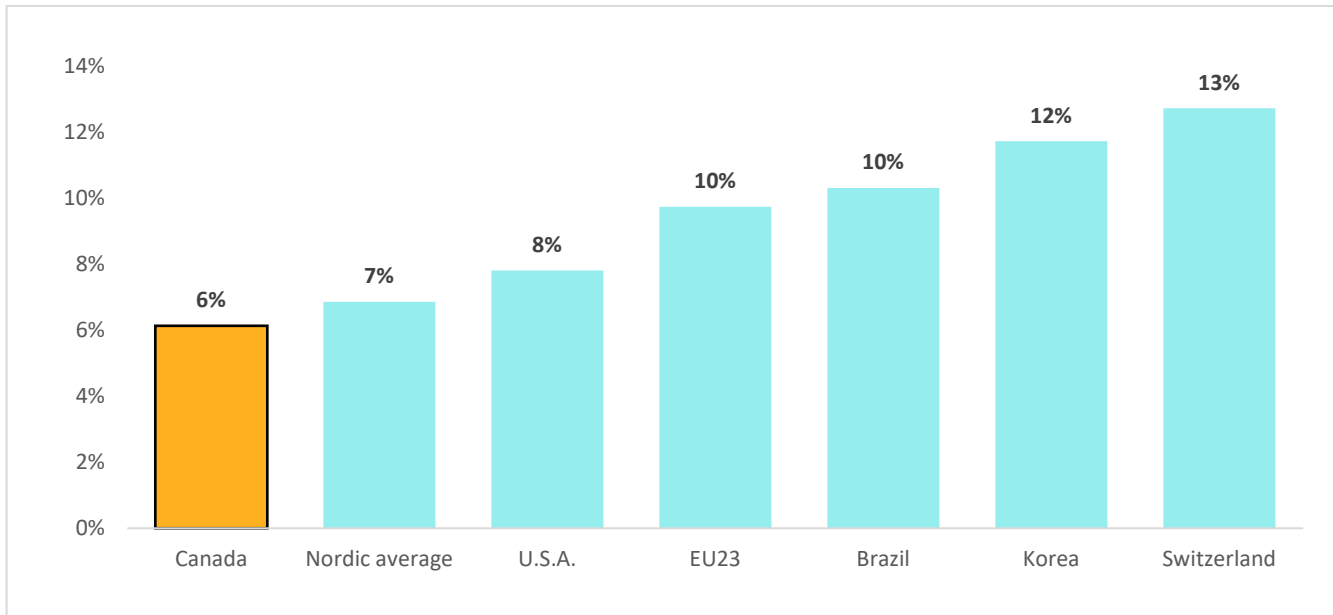
Canada produces about 420,000 post-secondary graduates annually or about one per cent of the world's total.

By comparison, the U.S. has four million post-secondary graduates annually and Europe has 4.5 million.

As a result of raising the proportion of its college-age population in higher education to over 20 per cent now from 1.4 per cent in 1978¹, China has 13 million graduates annually. India has also increased to over eight million graduates per year.

¹ China Education Center. <https://www.chinaeducenter.com/en/cedu.php>

4.2 Increasing post-secondary educational attainment – select countries



Note 1: Select jurisdictions, ages 25 to 34, 2008 to 2018.

Note 2: Nordic countries include Denmark, Finland, Iceland, Norway and Sweden.

Note 3: EU23 includes Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, Slovenia, the Slovak Republic, Spain, Sweden and the United Kingdom.

Source: Education at a Glance 2019, OECD Publishing, Table A1.2.

Prepared by Colleges Ontario.



While Canada has been a leader in post-secondary education, that lead is at risk due to rapid increases in the numbers of graduates in other countries during the past decade.

A key reason for rising post-secondary attainment in Europe is its process for ensuring comparability in the standards and quality of higher-education qualifications for 47 countries.

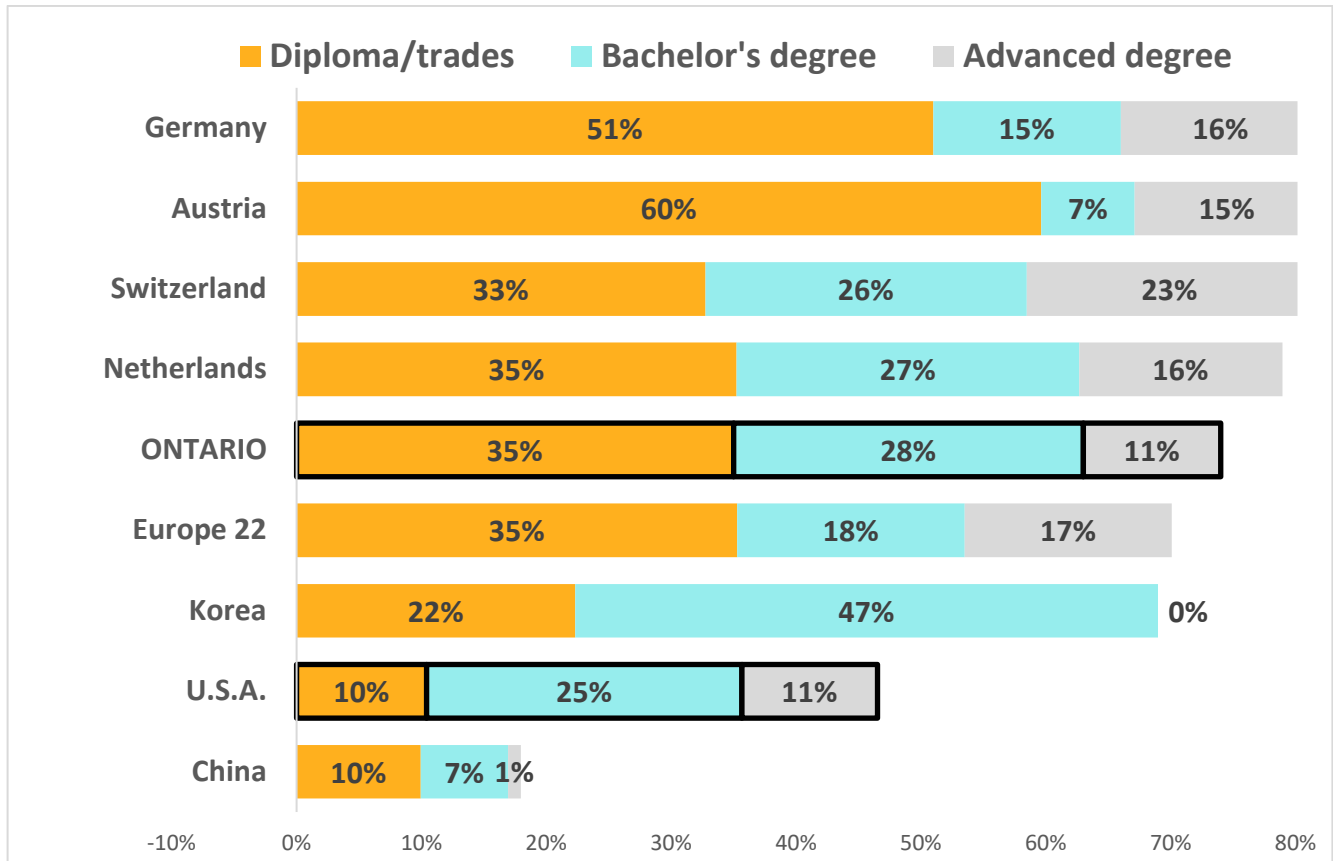
In most cases in Europe, it now takes three to four years to earn a bachelor's degree and another one to two years for a master's degree. In the Nordic countries and the U.K. and Germany, three-year bachelors' degrees are the norm.

In addition, the European Union believes that higher education and its links with research and innovation play a crucial role in individual and societal development. The E.U. believes higher education provides the highly skilled human capital and the engaged citizens that Europe needs to create jobs, economic growth and prosperity.

Accordingly, the Europe 2020 strategy has set a target that 40 per cent of young Europeans will have a higher education qualification² in 2020.

² https://ec.europa.eu/education/policies/higher-education/about-higher-education-policy_en

4.3 Post-secondary attainment of young adults: Ontario and select countries



Note 1: Select jurisdictions, ages 25 to 34, 2017.

Note 2: Diploma/trades includes both OECD-defined “post-secondary non-tertiary - vocational” (mainly apprenticeship programs) and “short-cycle tertiary programs” (mainly two- to three-year diplomas).

Sources: Education at a Glance 2018, OECD Publishing, tables A1.2 and A1.4 and Colleges Ontario estimates from a special tabulation of the 2014 Statistics Canada Labour Force Survey.

Prepared by Colleges Ontario.

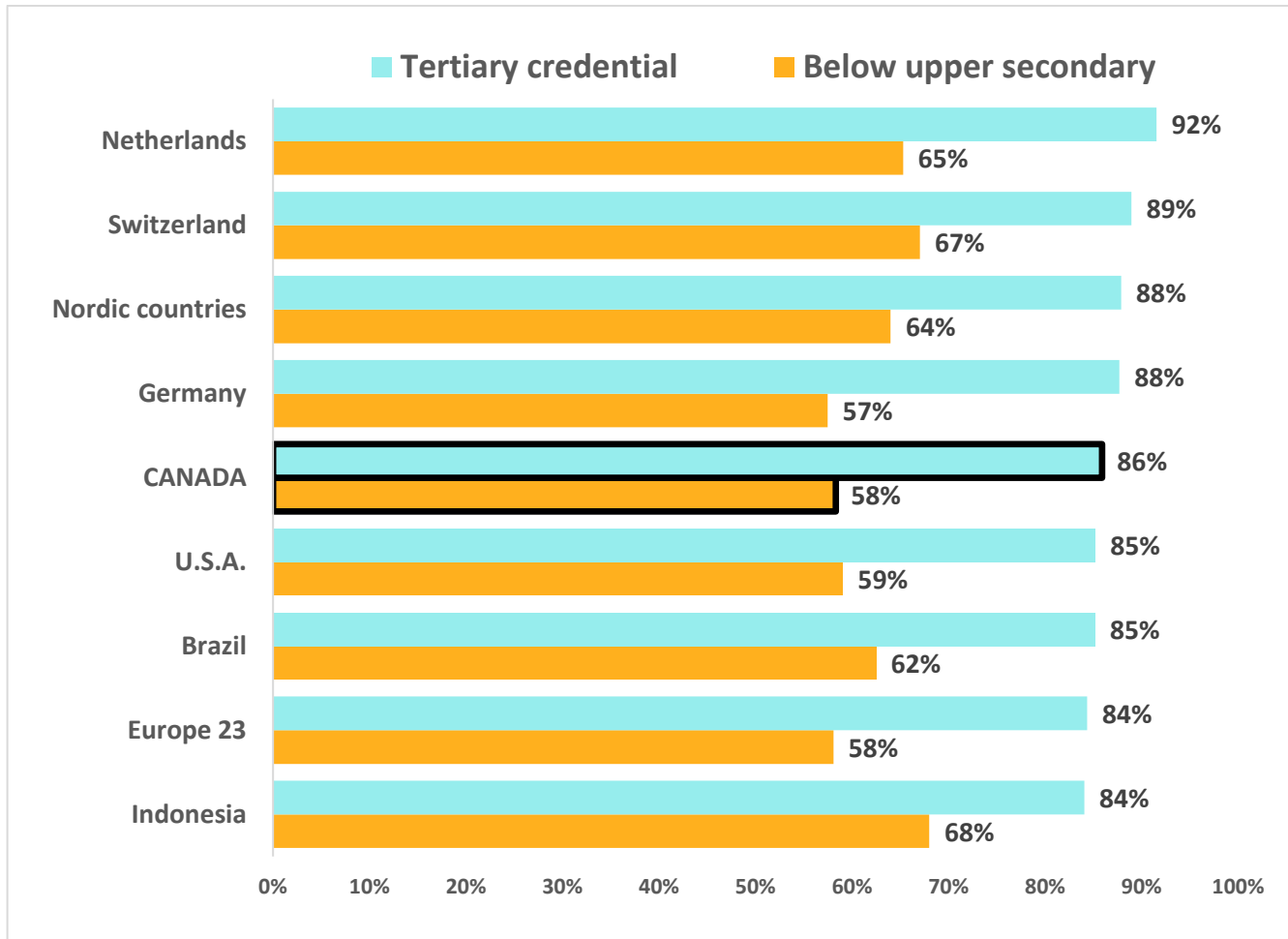


At one time, Ontario was considered to have one of the highest post-secondary completion rates in the world.

But when trades credentials are added to the OECD’s “tertiary” education rates for 25 to 34 year olds, Ontario’s position falls from second to 11th place, just ahead of the European average.

In contrast to Canada, Europe and Korea, the U.S. is in 30th place and lags in this broader measure of post-secondary educational attainment.

4.4 Employment of young adults with and without tertiary credentials, select countries



Note 1: Select jurisdictions, ages 25 to 34, 2018.

Note 2: Nordic countries include Denmark, Finland, Iceland, Norway and Sweden.

Note 3: Europe 23 includes Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, Slovenia, the Slovak Republic, Spain, Sweden and the United Kingdom.

Source: Education at a Glance 2019: OECD Publishing, Table A3.2.

Prepared by Colleges Ontario.

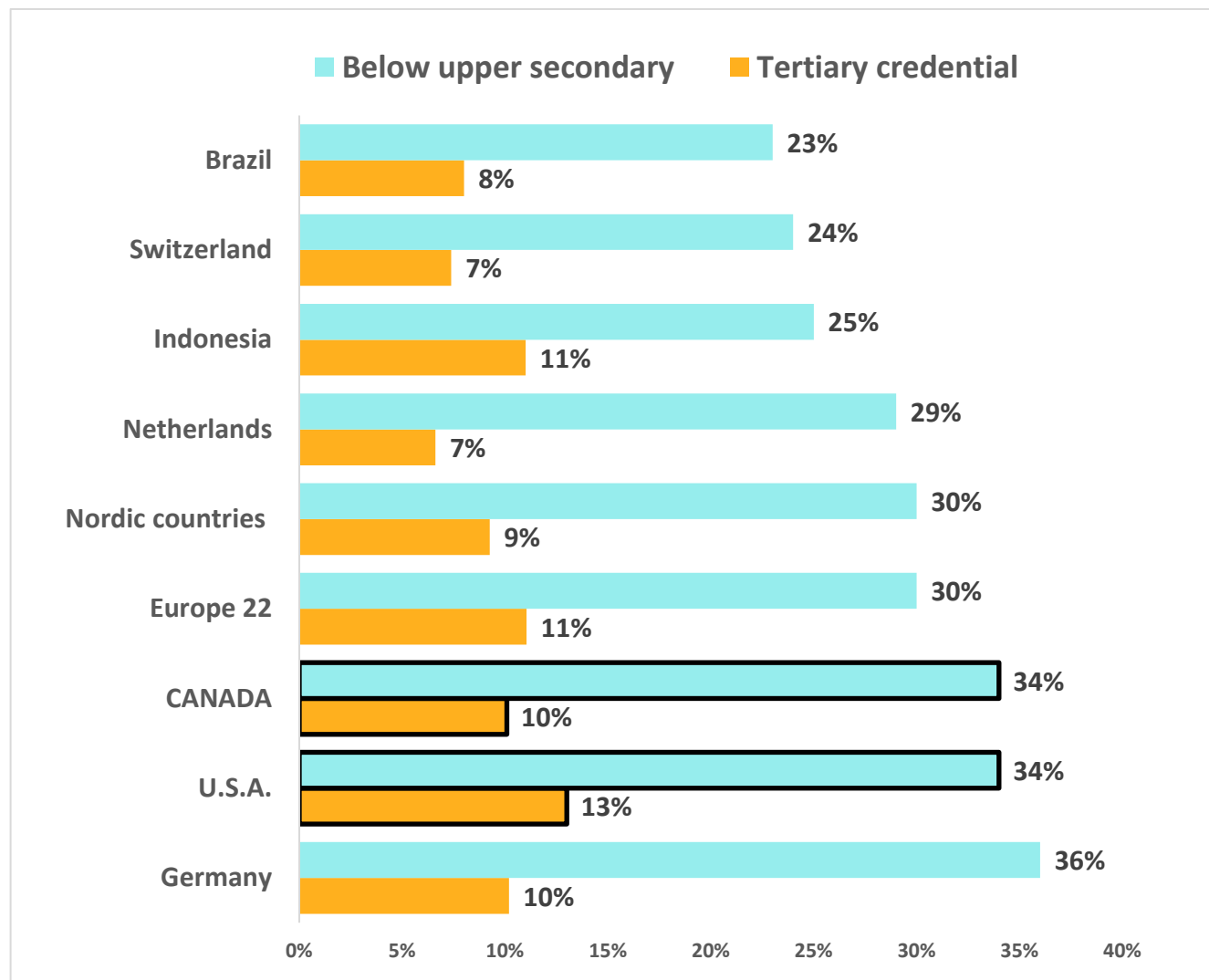


Workplaces have become more complex the world over, requiring ever more sophisticated and specific skill sets.

As a result, in many advanced economies, there is a 25 to 35 percentage point difference in employment rates between young adults (ages 25 to 34) with and without post-secondary credentials.

In Canada, while 86 per cent of those with a post-secondary credential are employed, only 58 per cent of those without post-secondary credentials are employed.

4.5 Inactivity rates of young adults with and without tertiary credentials, select countries



Note 1: Select jurisdictions, ages 25 to 34, 2017.

Note 2: Nordic countries include Denmark, Finland, Iceland, Norway and Sweden.

Note 3: Europe 22 includes Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, the Netherlands, Poland, Portugal, Slovenia, the Slovak Republic, Spain, Sweden and the United Kingdom.

Source: Education at a Glance 2018: OECD Publishing, Table A3.3.

Prepared by Colleges Ontario.

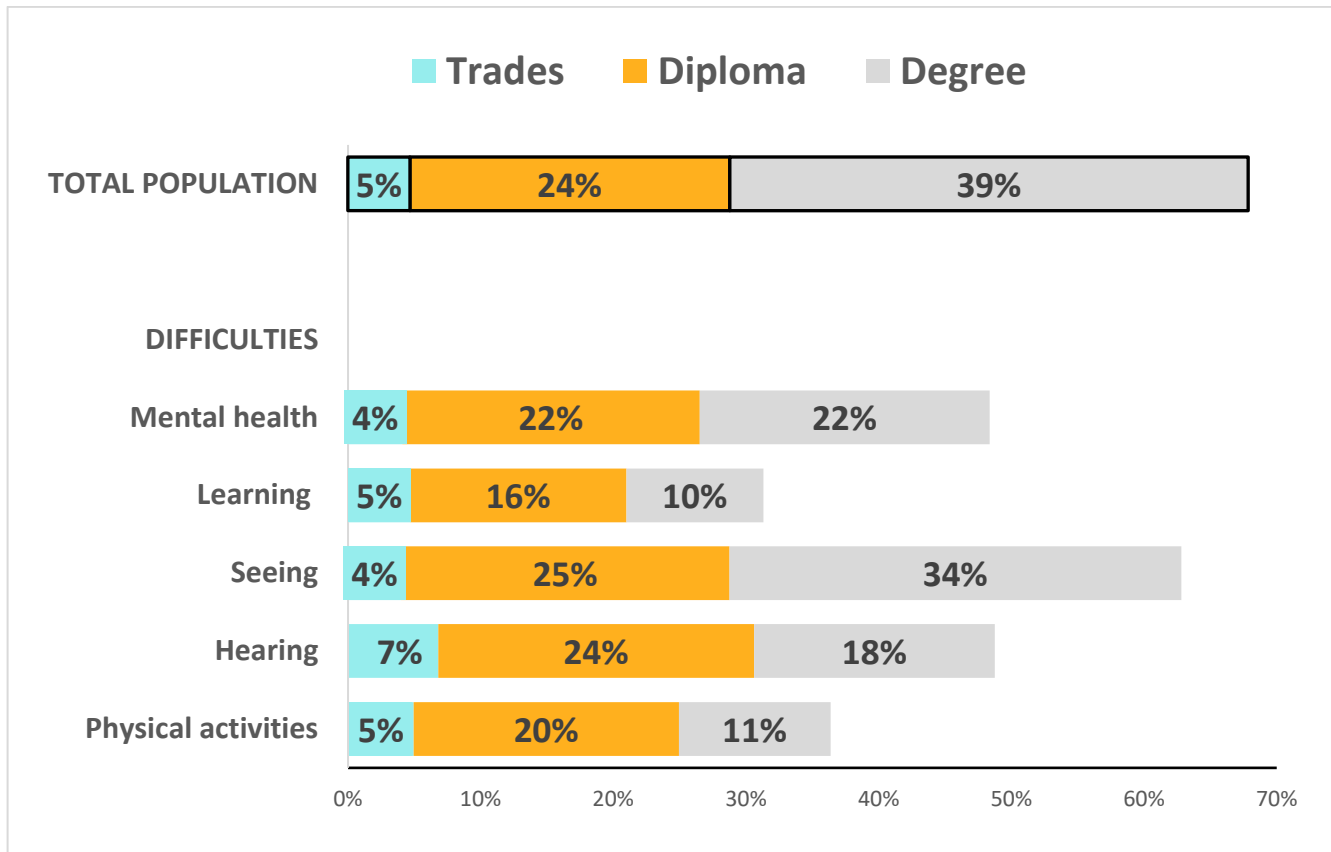


The huge difference in employment rates between those with and without post-secondary credentials is explained mainly by those who are inactive: i.e., neither working nor seeking a job.

In Canada, while 10 per cent of those with a post-secondary credential are inactive, a full one-third of those without post-secondary credentials are inactive.

5 EDUCATIONAL ATTAINMENT AND EMPLOYMENT OF ONTARIANS FROM UNDER-REPRESENTED GROUPS

5.1 Post-secondary educational attainment for young adults in Ontario – people with and without disabilities



Note: Ontarians, ages 25 to 34.

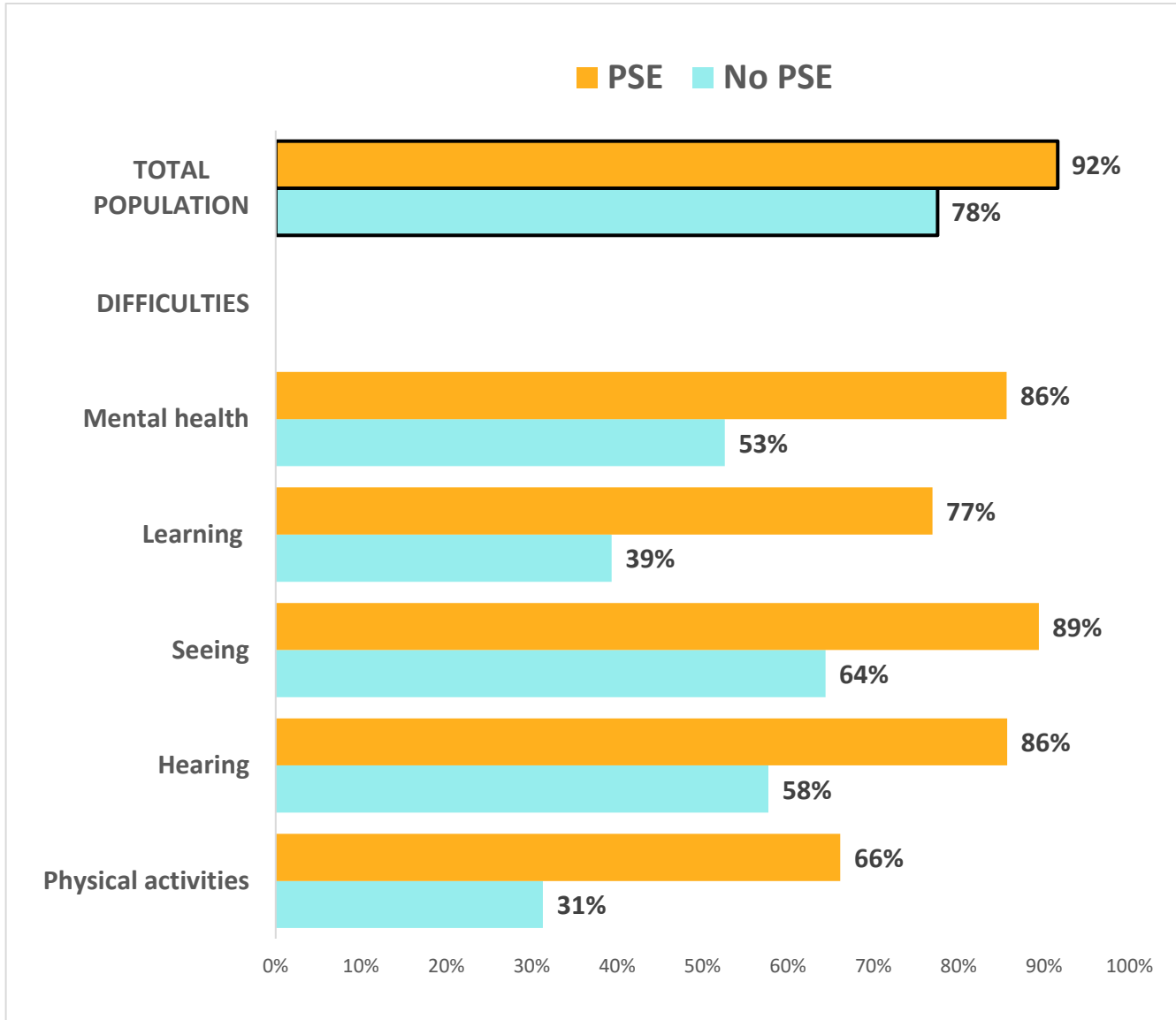
Source: Colleges Ontario, based on a special tabulation of the 2016 Statistics Canada Census of individuals facing difficulties in “activities of daily living.”



Young adults (ages 25 to 34) with disabilities are significantly less likely to have completed a post-secondary credential, especially a degree, than those without reported disabilities.

The data include individuals who reported experiencing one of the difficulties listed in the chart ‘often’ or ‘always.’

5.2 Employment rates of young adults in Ontario – people with and without disabilities



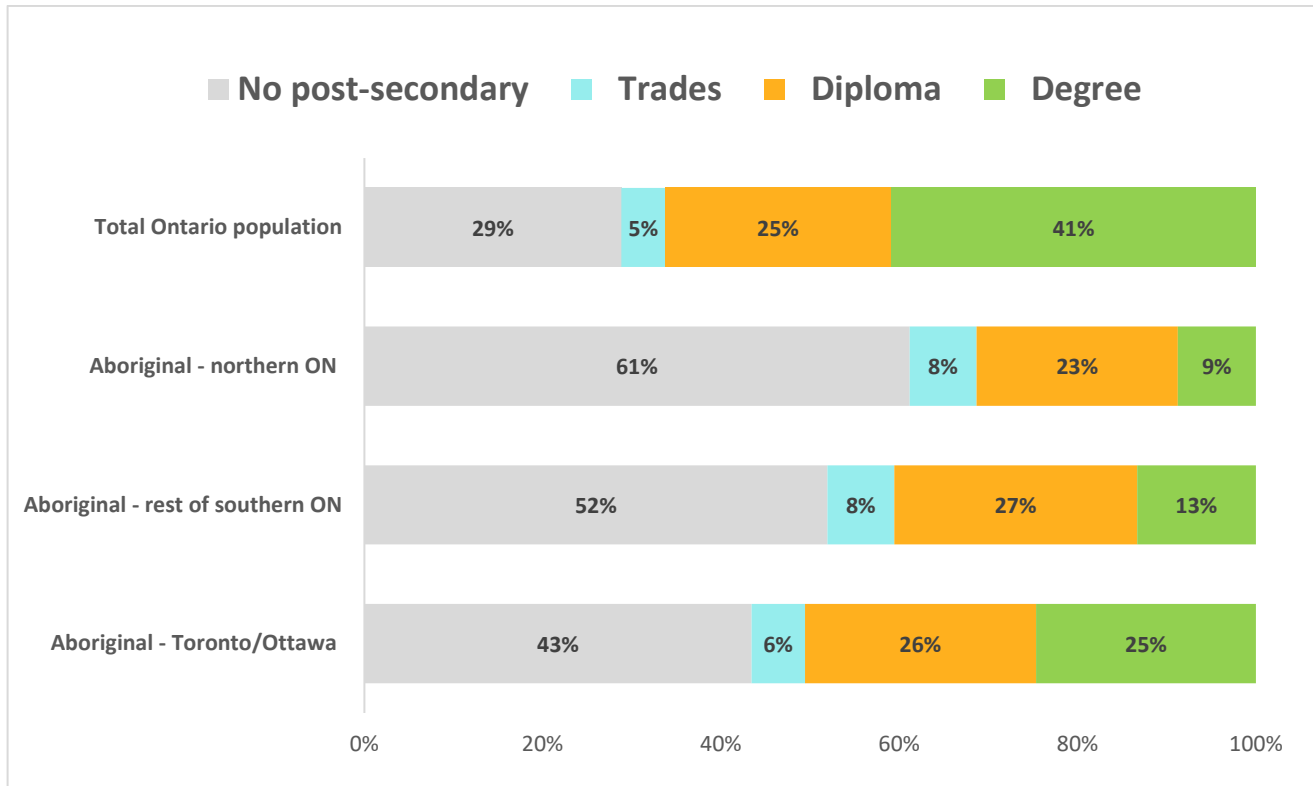
Note: Ontarians, ages 25 to 34. The employment levels in this chart and two that follow (sections 5.4 and 5.5) are significantly higher than the ones in the chart on Page 14 because the Statistics Canada census enumerates many individuals as employed who would not be considered employed in many other surveys. As well, “no post-secondary” is more inclusive than the term “below upper secondary” used by international agencies.

Source: Colleges Ontario, based on a special tabulation of the 2016 Statistics Canada Census.



Young adults (ages 25 to 34) reporting disabilities ‘often’ or ‘always’ are less likely to be employed than those with comparable educational attainment but without disabilities.

5.3 Educational attainment of young Aboriginals in Ontario



Note: Ontario, ages 25 to 34. Aboriginal identity includes persons who are First Nations (North American Indian), Métis or Inuk (Inuit), along with registered or treaty Indians and/or those who have membership in a First Nation or Indian band.

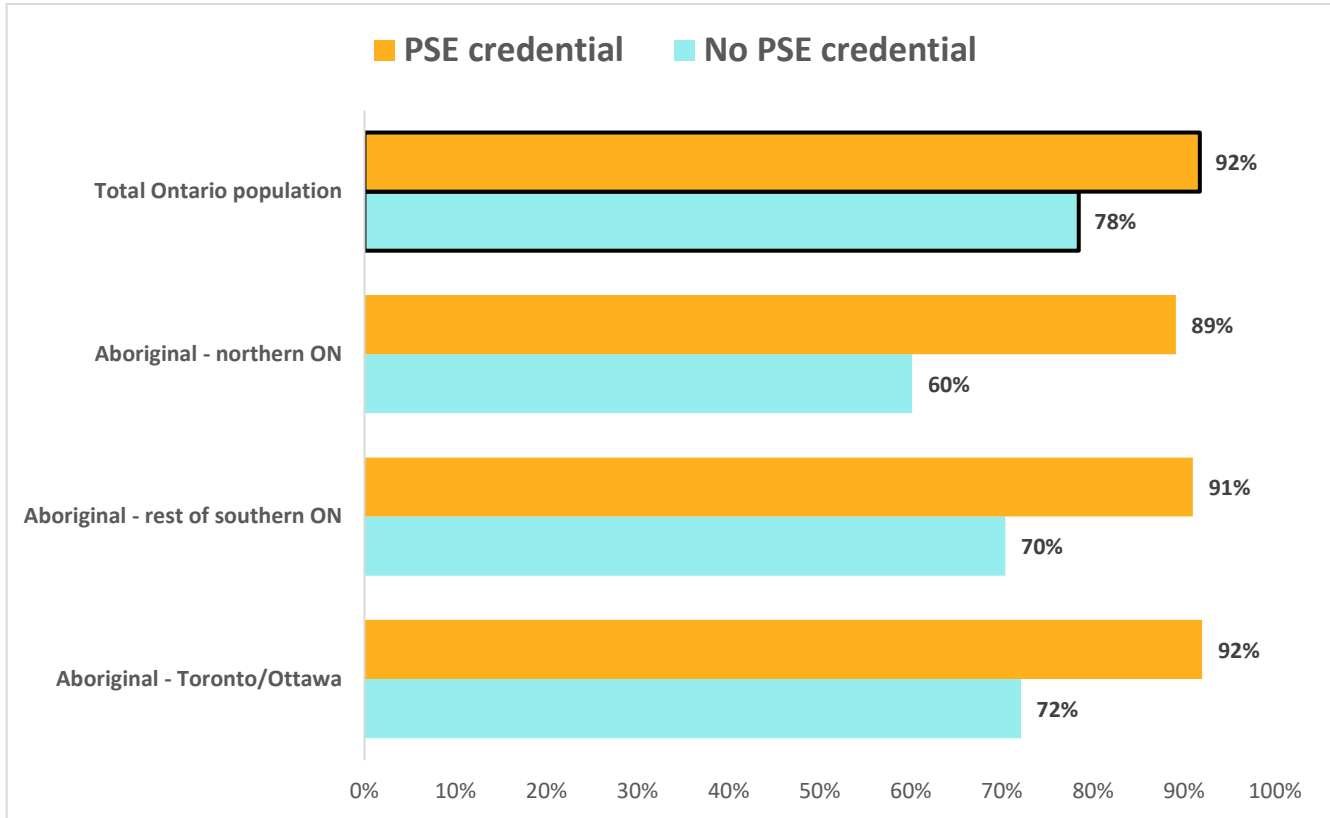
Source: Colleges Ontario, based on a special tabulation of the 2016 Statistics Canada Census of individuals reporting 'Aboriginal identity.'



Young adults reporting as Aboriginal are at least as likely as other young Ontarians to have completed a post-secondary diploma or a trade certificate.

However, they are only about one-third as likely to have completed a degree.

5.4 Employment rates for young Aboriginals in Ontario



Note: Ontario, ages 25 to 34.

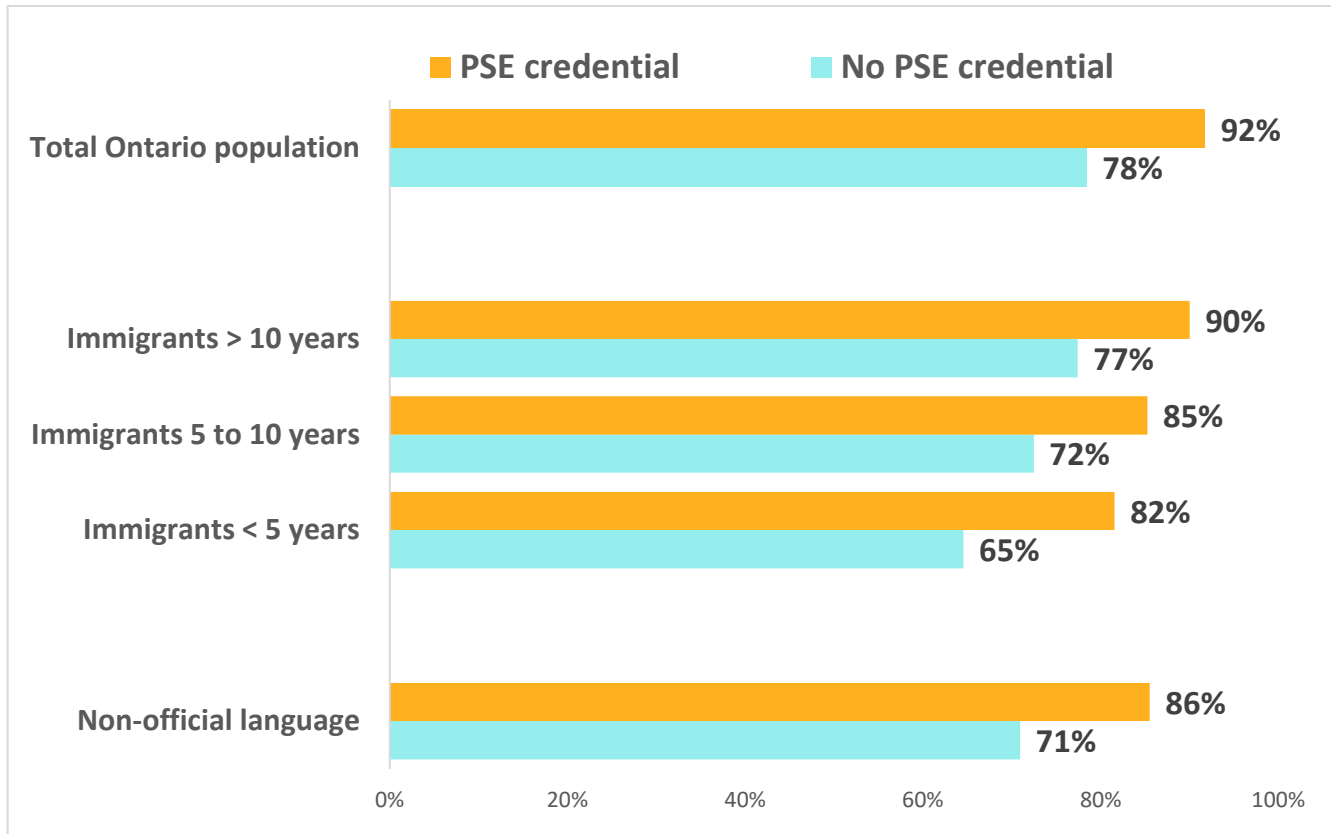
Source: Colleges Ontario, based on a special tabulation of the 2016 Statistics Canada Census.



Young adults reporting as Aboriginal with post-secondary credentials are almost as likely as other young Ontarians to be employed.

However, those who do not have a post-secondary credential are significantly less likely to be employed, especially in northern Ontario.

5.5 Employment rates for young immigrants and those who do not speak an official language



Note: Ontario, ages 25 to 34.

Source: Colleges Ontario, based on a special tabulation of the 2016 Statistics Canada Census.



Immigrants (ages 25 to 34) generally experience lower employment rates than the general Ontario population, even when educational attainment is taken into account.

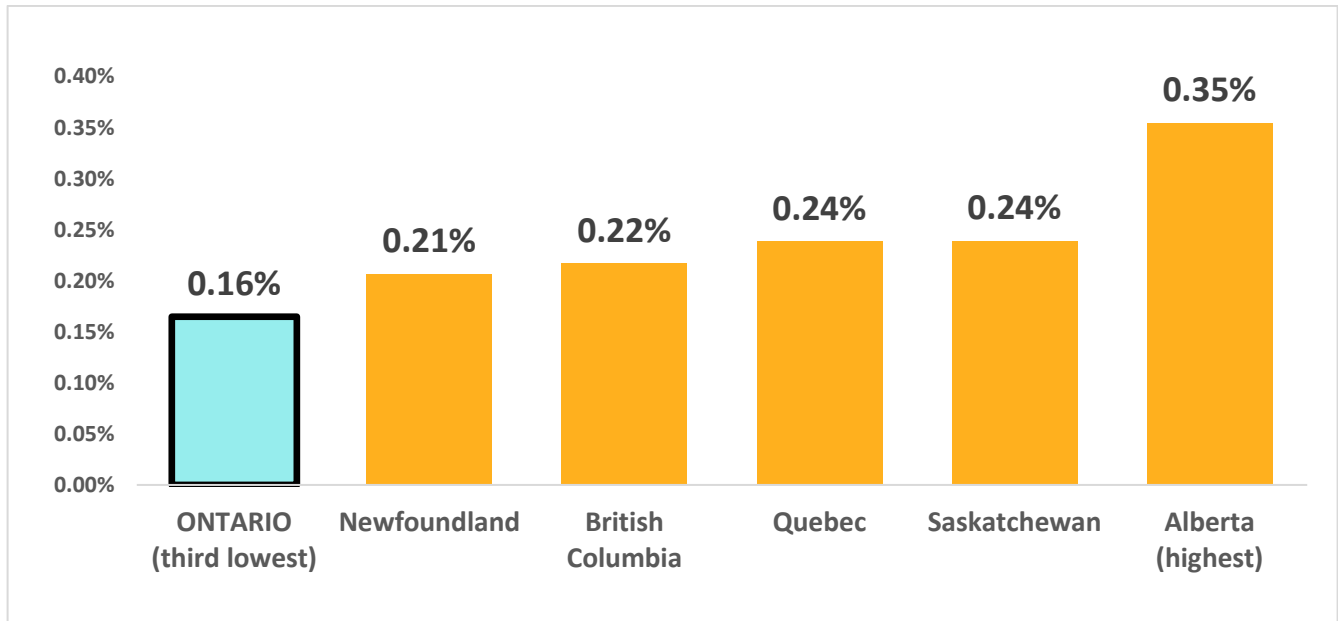
The difference is especially great for immigrants who have been in Canada less than five years.

However, once they have been in Canada at least 10 years, employment rates are almost the same as for all Ontarians with comparable post-secondary credentials.

Young adults (ages 25 to 34) whose mother tongue is not English or French are less likely to be working than those with comparable educational attainment whose mother tongue is an official language.

6 APPRENTICESHIP AND ADULT EDUCATION

6.1 Certification of tradespersons, Ontario compared to select provinces



Note 1: Apprentices who passed their certificates of qualification examinations in 2018.

Note 2: Newly certified tradespersons as a per cent of total provincial employment.

Source: Prepared by Colleges Ontario, based on Statistics Canada tables 37-10-0024-01 and 14-10-0018-01.



Apprenticeship is a specialized form of vocational education in which most of the formal skills training is provided by employers in the workplace.

Depending on the country, apprenticeship may range from a very large share to a negligible share of vocational education.

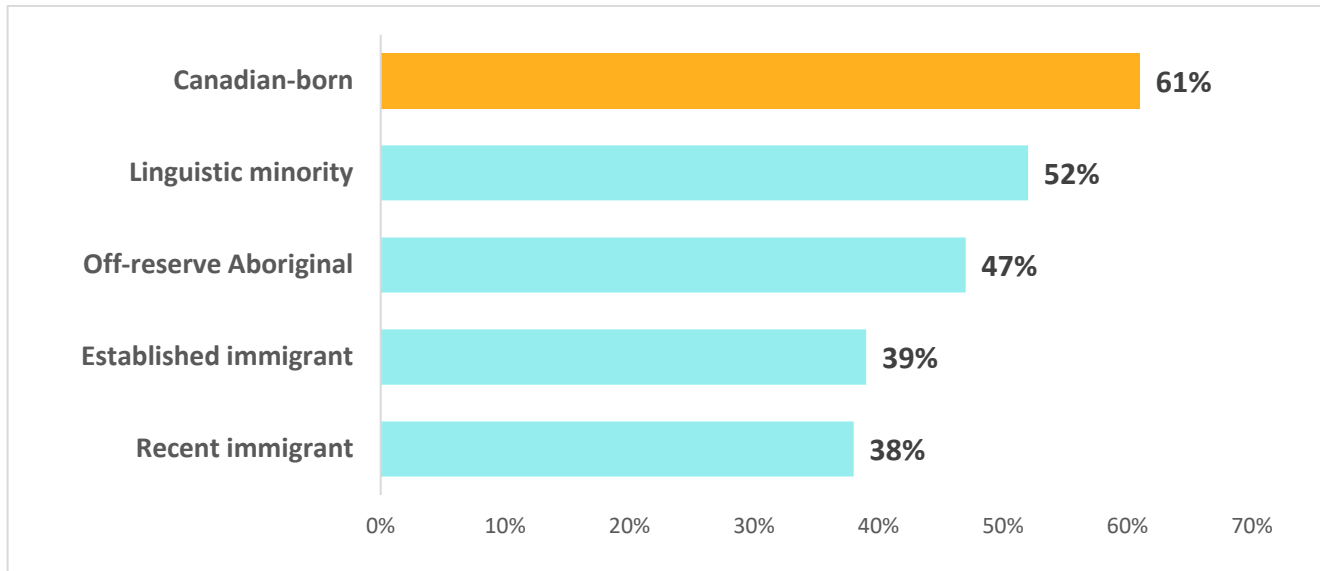
Apprenticeship in Canada represents a large proportion of vocational training only in a few industries, such as construction, resources and energy. For most sectors and for the large majority of students, vocational training is provided by post-secondary programs in colleges.

As a result of Ontario's unusually diverse industrial base, there are relatively few apprentices and tradespersons compared to other provinces.

Compared with Ontario, other provinces in 2018 had about one-third more apprentices on average (measured against the size of the workforce) who succeeded in passing their certificate of qualification to qualify as tradespersons.

New apprentices may have challenges with numeracy or literacy or may have disabilities that can impede their progress. In Ontario, about half of apprentices do not complete their programs to become registered tradespersons.

6.2 Adult literacy and numeracy rating for select Ontario populations



Note: Per cent scoring above level 2 in literacy and numeracy, 2012.
Source: Statistics Canada, 37-10-0055-01 (formerly CANSIM 477-0087), 2012.



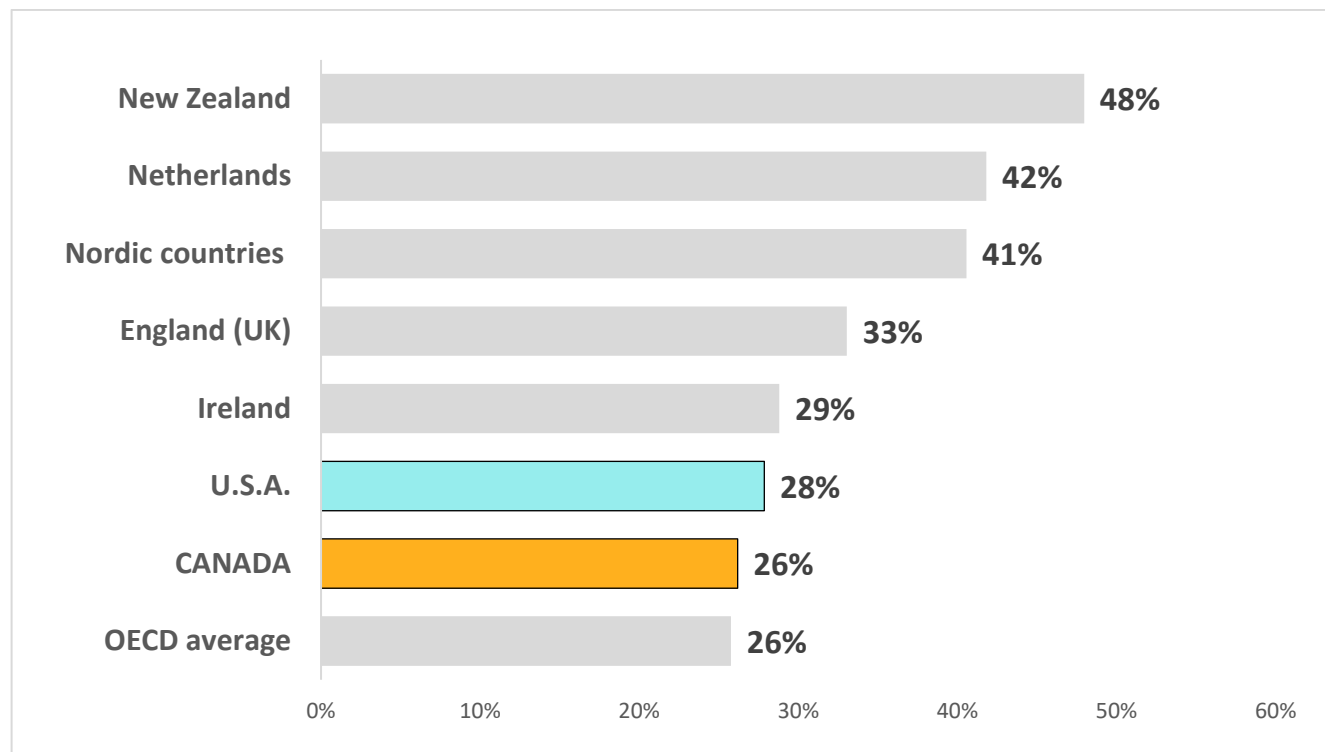
In Canada, three-fifths of adults score above level 2³ in literacy and numeracy, a level considered minimal for success in the workforce.

However, about two in five Canadian-born adults have only level 2 or lower levels of literacy and numeracy. Many of these individuals may experience difficulties in their careers.

Moreover, adults from under-represented groups are much more likely than Canadian-born adults to have literacy and numeracy levels below what is generally required for effective participation in the workforce.

³ At level 2, in mathematics, for example, students can interpret and recognize situations in contexts that require no more than direct inference. They can extract relevant information from a single source and make use of a single representational mode. Students at this level can employ basic algorithms, formulae, procedures, or conventions. They are capable of direct reasoning and making literal interpretations of the results.

6.3 Job-related education for adults without upper secondary credentials, select countries



Note 1: Annual participation rates, select countries.

Note 2: Nordic countries include Denmark, Finland, Norway and Sweden.

Source: Education at a Glance, 2016, OECD Publishing, Table C6.3 (web only).

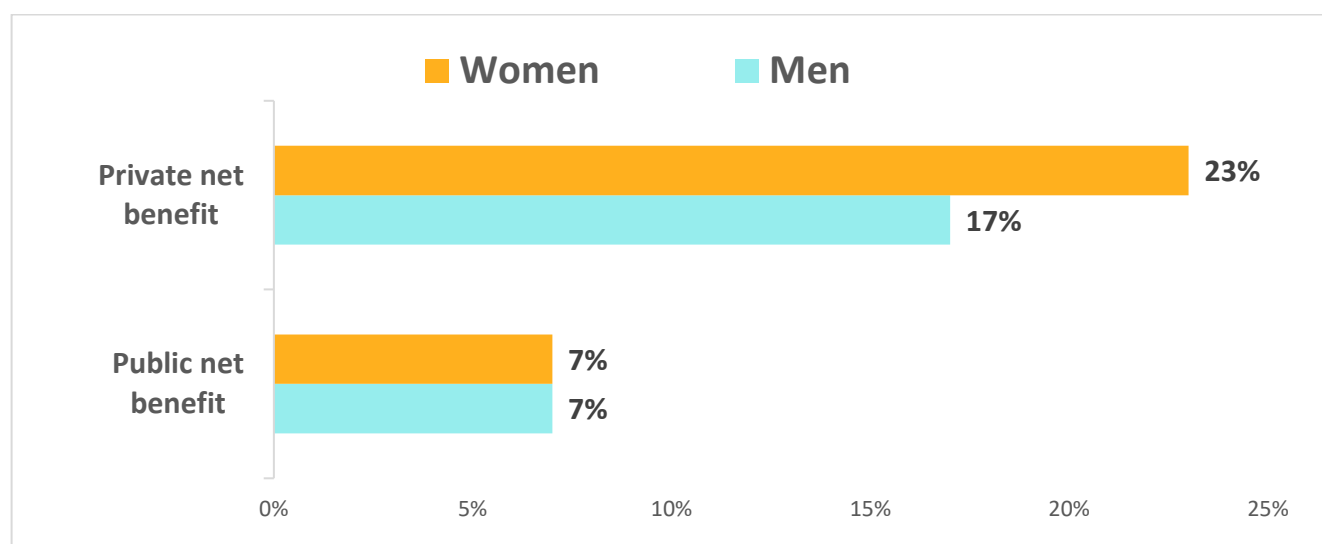
Prepared by Colleges Ontario.



Several countries – notably New Zealand, the Netherlands and the Nordic countries – are well ahead of other advanced economies in providing retraining to older workers without educational credentials.

By comparison, the U.S. and Canada are at the OECD average.

7 RETURN ON INVESTMENT IN CANADIAN POST-SECONDARY EDUCATION



Note 1: Net benefits are calculated as an internal rate of return, per cent, 2016.

Note 2: The data exclude OECD-defined “post-secondary non-tertiary,” i.e., post-secondary programs of one year or less, primarily apprenticeship programs that are included in Statistics Canada’s post-secondary data.

Source: Education at a Glance 2019, OECD Publishing, tables A5.1a, A5.1b, A5.2a, and A5.2b.

Prepared by Colleges Ontario.



The OECD states that⁴ :

- “Individuals completing tertiary education benefit from substantial returns on investment: they are more likely to be employed and earn more than individuals without tertiary education do.”
- “The public also benefits from a large proportion of tertiary-educated individuals through greater tax revenues and social contributions.”

For Canada, the OECD calculates that individuals receive a rate of return ranging from 17 per cent (men) to 23 per cent (women) while governments receive seven per cent on their investments in post-secondary education.

Another study⁵ concluded that Ontario college students receive a rate of return of 14 per cent while the Ontario government receives an internal rate of return of 20 per cent.

A third study⁶ examined special programs for at-risk Ontario college students. It concluded there is an 11 per cent return to students and a 14 per cent return to the Ontario government.

⁴ Education at a Glance 2014: OECD Indicators, OECD Publishing, Paris, Page 150.

⁵ Economic Modeling Specialists Intl., Demonstrating the Value of the Ontario College Sector: Analysis of the Economic Impact and Return on Investment of Education, 2014, Page 11.

⁶ Deloitte, Breaking Down Barriers to Student Success: Expanding a High-Performance Workforce, 2012, Page 2.