

Study: Immigrant skill utilization: Immigrants with STEM education and trends in over-education

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In 2016, immigrants made up over one-third of Canada's population aged 25 to 64—the age group that is most active in the labour market—with at least a bachelor's degree, and over one half of those in that age group with a degree in the science, technology, engineering, and mathematics (STEM) fields. Two new studies by Statistics Canada examine the education-occupation match of immigrants with at least a bachelor's degree.

Based on the 2016 Census data, the study "[Skill Utilization and Earnings of STEM-educated Immigrants in Canada: Differences by Degree Level and Field of Study](#)" compares the likelihood of immigrant and Canadian-born workers with a degree in a STEM field to be working in a STEM-related occupation.

Among immigrants with a doctoral degree in a STEM field, the rate of employment in a STEM occupation (62%) was similar to the rate observed among their Canadian-born counterparts (61%). These immigrants earned about 9% less annually than Canadian-born workers with similar socio-demographic characteristics. About two-thirds (63%) of immigrants with a doctoral degree in a STEM field were educated in Canada, the United States, the United Kingdom, or France. Immigrants educated in these four Western countries had outcomes similar to those of the Canadian-born, while those educated elsewhere did less well.

In comparison, 39% of immigrants with a bachelor's degree in a STEM field worked in a STEM occupation, compared with 47% among Canadian-born workers with the same level of education. Immigrants with a bachelor's degree in a STEM field earned 28% less annually than their Canadian-born counterparts. About one-quarter of immigrants with a bachelor's degree in a STEM field were educated in Canada, the United States, the United Kingdom, or France.

When looking at field of study, immigrants with an engineering degree were much less likely to be working in a STEM occupation (48%) than Canadian-born workers (66%). Many occupations in engineering are regulated professions, and immigrants may face more difficulties with foreign credential recognition in these professions.

In comparison, immigrants and the Canadian-born educated in science and computer science had a similar rate of employment in STEM occupations. About 32% of immigrants with a science degree worked in a STEM occupation, compared with 30% of the Canadian-born. The share of workers with a computer science degree working in a STEM occupation was 54% for immigrants and 57% for the Canadian-born.

The second study, "[Recent Trends in Over-education by Immigration Status](#)," documents changes in education-occupation match from 2001 to 2016 for recent immigrants (arrived in Canada 1 to 10 years before the census) and Canadian-born youth aged 25 to 34. Both groups are new entrants to the Canadian labour market.

From 2001 to 2016, the number of university-educated workers aged 25 to 64 in Canada increased by 1.7 million, while the number of university-educated people in jobs requiring a university degree grew by 857,000. The larger supply relative to demand for university-educated workers likely affected recent immigrants disproportionately.

Over the 15-year period, about 60% of employment growth among Canadian-born youth with a university degree was for jobs that required a university degree. In comparison, among recent immigrants with a university degree, jobs requiring a university degree represented 30% of employment growth.

Among workers with at least a bachelor's degree, the proportion of those with a job requiring at least a bachelor's degree decreased from 46% to 38% among recent immigrants, but was stable at 59% among Canadian-born youth.



Definitions, data sources and methods: survey number [5228](#).

The research documents "[Skill Utilization and Earnings of STEM-educated Immigrants in Canada: Differences by Degree Level and Field of Study](#)" and "[Recent Trends in Over-education by Immigration Status](#)," which are part of the *Analytical Studies Branch Research Paper Series* ([11F0019M](#)), are now available.

For a visual summary of this work, see the infographic "[Over-education among immigrants in Canada](#)," which is part of the series *Statistics Canada — Infographics* ([11-627-M](#)).

For more information contact us (toll-free 1-800-263-1136; 514-283-8300; STATCAN.infostats-infostats.STATCAN@canada.ca).

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