Where do Graduates Work? The Methodology

Data

To investigate where postsecondary credential holders work in Ontario's labour market, we employed data from Statistics Canada's 2021 Census of Population. The data provides characteristics of the Canadian population and is drawn from a sample of one quarter of the Canadian population. The target population includes everyone who lived in Canada (in private dwellings in the provinces and territories) on the survey's reference date.

For this project, we accessed the Individual Public Use Microdata Files (PUMF) version of the 2021 Census of Population data from ODESI (Statistics Canada, 2023). This file contains a 2.7% sample of anonymous responses to the 2021 census questionnaire. The sample in this file was selected using a two-phase sampling plan applied to the sample of census long-form respondents. In the first phase, the sample of census long-form respondents were split into three parts, or frames, representative of the entire country. In the second phase, the records for the individual PUMF were selected from the first of the three frames (Statistics Canada, 2023).

Analytic Approach

Given a focus on postsecondary education outcomes, we drew on specific variables related to occupation and field of study. Six variables were used to create our sample: (1) broad occupational category; (2) Classification of Instructional Programs 2021: Major Field of Study, for primary groupings (3) highest level of education attained; (4) school attendance, whether a person attended full time or part time at any accredited education institution or program at any time during the census collection dates; (5) place of work province; and (6) age group.

In the analytic sample, we created a new highest level of education variable with nine categories: (1) no certificate, diploma or degree; (2) high school diploma or equivalency certificate; (3) college credential below degree level; (4) university certificate or diploma (5) apprenticeship certificate; (6) bachelor's degree; (7) degree in medicine, dentistry, veterinary medicine or optometry; (8) master's degree; and (9) doctorate degree. This new highest level of credential was created to be consistent with Ontario's postsecondary education system, where baccalaureate credentials are typically offered at universities[1]. However, for our analysis, we used category (3) college credential below degree level and category (6) bachelor's degree to examine credential holders from the university and college sector.

To ensure the analytic sample is representative of the working-age population, we excluded respondents who reported attending school during the period of the census. We also restricted the sample of census respondents to those within the working-age population of 25 to 64 who reported having worked in Ontario.

To examine the data, we conducted descriptive analyses of all occupational categories and field of study categories to find the proportion of college credential below degree level holders and

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[1] Note, college bachelor's degree holders make up a small proportion of baccalaureate PSE graduates. For example, in Ontario, about 2.3% of bachelor's degrees awarded in 2019-20 were from colleges (HEQCO, 2023).

bachelor's degree holders working in the various occupations. Because of the nature of our census respondents, we applied sample survey weights to ensure good representation of the target population. The estimated population size of the sample was 2,396,094.

The analytic results as shown in the data visualization are organized by three age categories (25 to 34, 35 to 44 and 45 to 64), which correspond to three lifecycle stages of a career (early, mid and late). The central tendencies (i.e., median) within each sample variable, including age category, were calculated to investigate the distribution of respondents across the sample. For example, in the age category, the 2021 census results skew toward later career individuals, with 49% of respondents from the 45 to 64 age group. Ages were separated in the interactive data visualization so that results can be examined with age and, by proxy, experience or years spent in the labour market in mind.

We've included sample characteristics of the data below to show how respondents were distributed within the selected credentials. Tables 1, 2 and 3 show the percentages of all respondents across occupational categories, college credential below degree level holders by field of study and bachelor's degree holders by field of study.

Sample Characteristics:

Table 1: Occupations, Total	
Legislative and Senior Managers	1.8%
Business, Finance and Administration	18.9%
Natural and Applied Sciences Related	13.1%
Health	10.1%
Education, Law and Social, Community and Government Services	16.1%
Art, Culture, Recreation and Sport	3.2%
Sales and Service	11.5%
Trades, Transport and Equipment Operators and Related Occupations	7.9%
Natural Resources, Agriculture and Related Production Occupations	0.4%
Manufacturing and Utilities	2.8%
Middle Management	14.2%

Table 2: College Credential Below Degree Level Graduates by Field of Study	
Education	0.99%
Arts, Communications and Technologies	5.1%
Humanities	1.2%
Social and Behavioural Sciences and Law	10.1%
Business, Management and Public Administration	25.8%
Physical and Life Sciences and Technologies	0.9%
Mathematics, Computer and Information Sciences	5.4%

Architecture, Engineering and Related Trades	20.8%
Agriculture, Natural Resources and Conservation	2.3%
Health and Related Fields	17.9%
Personal, Protective and Transportation Services	9.5%

Table 3: Bachelor's Degree Graduates by Field of Study	
Education	6.9%
Arts, Communications and Technologies	3.7%
Humanities	9.6%
Social and Behavioural Sciences and Law	21.4%
Business, Management and Public Administration	21.3%
Physical and Life Sciences and Technologies	6.3%
Mathematics, Computer and Information Sciences	6.9%
Architecture, Engineering and Related Trades	13.3%
Agriculture, Natural Resources and Conservation	1.1%
Health and Related Fields	8.9%
Personal, Protective and Transportation Services	0.46%