

Methodology

For this research, we used the public use microdata files (PUMF) of the Labour Force Survey (LFS) between January 2018 and May 2020 to demonstrate the economic impact of COVID-19 on Canada's tech workers. The LFS uses National Occupational Categories (NOC) to classify people working in different professions and collects monthly self-reported employment information using a probability-based sampling method to measure labour market conditions in Canada.

The 4-digit NOC of tech occupations used in this sensitivity analysis was established in [our 2019 report exploring tech workers in Canada](#). While tech workers exist across Statistics Canada's occupational categories (2-digit NOCS) and therefore are not mutually exclusive, many of them are concentrated in NOC 21 (Professional Occupations in Natural and Applied Sciences) and NOC 22 (Technical Occupations Related to Natural and Applied Sciences) categories. Moreover, the LFS does not provide 4-digit level NOC, which makes it impossible for the researchers to differentiate and track changes related to all tech occupations. Therefore we focused on COVID-19's impact on workers whose NOC code begins with 21 or 22.

We first characterize the number of tech workers we will miss using the broad occupational categories. To accomplish this, we first calculated the total number of Canadians in tech occupations as previously defined (n=941,865). Then, we calculated the percentage of tech workers whose 2 digit NOCS is not 21 or 22. Approximately, 16.18 percent (or 152,445) of tech workers will be excluded from the study as a result of using the LFS.

We then understand how many non-tech workers we capture using the broad occupational categories. We calculated the total number of individuals with occupations classified into NOC 21 or 22. We then identified workers who do not have tech occupations within the population (n=7,505) based on our tech occupation definition. 46.83 percent (or 3,515) of the population turned out to be individuals who do not work in tech occupations.

Non-tech workers who are classified into NOC 21 or 22 still work in occupations that are more tech intensive than non-tech workers in the general population. When measured using the tech intensity score calculated in our [earlier report](#), the mean tech score of non-tech workers whose NOC code begins with 21 and 22 is 101.30, which is significantly



higher than the average score of non-tech workers in the general population (m=209.62). Furthermore, the top 75 percent of the non-tech workers in NOC 21 and 22 have a score of 116.53, while the top 25 percent of the most technically intensive workers in the general population has a score of 126.64. This implies that though many in NOC 21 and 22 are not tech workers, their work is still tech-adjacent and related more to technology use than other occupations.

Further, using an approach from [our earlier COVID-19-related research](#), we looked at the distributional significance of the month-to-month employment variation as compared to the month-to-month employment variation for each of the demographic labour condition cells from January 2018 to February 2020 (the pre-pandemic period).



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