

The Effect of COVID-19 Pandemic to the Unemployment of Canadian Unskilled Workers

Background and Goal

The COVID-19 pandemic has made many people lose their jobs due to social-distancing mandates and lockdowns. The work situation has also gradually transformed from in-person setups to work-from-home ones. Therefore, it is reasonable for us to make an inference that the unskilled workers who have a higher possibility to work in-person before the pandemic will have a higher rate to be obsoleted, or to become unemployed, while the in-skill labor with higher education levels would not be affected much.¹ Therefore, we can interpret the change of employment rate in unskilled labor as the pandemic's causal effect on the Canadian unemployment rate.

Methods and Data Description

The research proposal collect data from the methodological report published by the Government of Canada to invoke the difference-in-difference model to make find the causal effect of the pandemic on the unemployment status for the unskilled (lower education level) Canadian citizens.² The Data is a survey of the Government of Canada asking questions on employment, family income, and other crucial factors that is highly affected by the pandemic. Alongside with the demographic traits (gender, language, province of residence ...), we focus on the employment part of the survey dataset.

We extrapolate the pandemic as the treatment to simulate a natural experiment and to assess the treatment effect. The survey has asked the participants' employment status before and during the pandemic. While we focus our analysis on the data during the pandemic, we will justify the common trend assumption with the data before the pandemic to make the diff-in-diff assumption available.

We will also impose the poststratification method with Canadian General Social Survey (GSS) to weigh our estimates, especially focusing on the control variables of provinces, language spoken, gender, and income level.

Limitations

One of the major limitations is that using education level to differ in-skill labor to unskilled one could make biases. The level of a participant's in-person workspace depends on job types, not on education. However, we cannot divide the in-skilled and unskilled labors with their occupation since the survey data does not include a systematic question to categorize the occupations of the participants.

¹ Nicole Bateman and Martha Ross, "The Pandemic Hurt Low-Wage Workers the Most-and so Far, the Recovery Has Helped Them the Least," Brookings (Brookings, November 9, 2021), <https://www.brookings.edu/research/the-pandemic-hurt-low-wage-workers-the-most-and-so-far-the-recovery-has-helped-them-the-least/>.

² The report *Implementation of the World Health Organization's Behavioural Insights COVID-19 Survey Tool in the Canadian Context : Rapid and Cost-Effective Monitoring of Public Perceptions, Knowledge and Behaviours : Final Report* could be find on: https://epe.lac-bac.gc.ca/100/200/301/pwgsc-tpsgc/poref/privy_council/2021/001-20-e/index.html.

Along with the paper *Using Sex and Gender in Survey Adjustment*, we also need to account for the sex-gender difference while imposing porstratification in our analysis.³

Questions for feedbacks

I would like to also include logistic regression since a participant's employment status is either employed or unemployed. In other words, to have a more insightful view, the combination of the logistic model and difference-in-difference model is required. Will it be too hard for the readers? Or should I just focus on one of them and have more elaboration in my limitation part.

³ Lauren Kennedy, et al. "Using sex and gender in survey adjustment." *arXiv: Applications* (2020).