COVID-19 Closures Negatively Impacts Restaurant Revenue and Employment*

A random controlled trial, with surveys, to identify the impact of mandatory partial closures on Ontario restaurants

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Abstract

This report covers an experiment conducted by Petit Poll to test the impact of COVID-19 closures on Ontario restaurants. A randomized controlled trial was conducted and surveys were used to collect results. The data show that restaurant revenue and employee counts were negatively impacted by a mandatory two-week partial closure, and dine-in restaurants and restaurants owned by visible minorites were more negatively impacted. These results suggest that if more closures are necessary, Ontario should support restaurant owners by offering support for take-out services and minority-owned businesses.

1 Introduction

The COVID-19 pandemic has presented challenges that continue to test our resilience, creativity, and ability to recover. From online learning to curbside shopping, the changes are tangible on a local level. To better understand the impact of intermittent lockdowns on restaurant businesses specifically, and to provide the Ontario Ministry of Economic Development, Job Creation and Trade with evidence-based advice, Petit Poll conducted a comprehensive study of over 1,200 restaurants in 12 regions of Ontario. This report describes the experiment design and rationale, measurement strategies, data characteristics, main findings, recommendations, limitations, and broader implications. Importantly, the intervention revealed three key effects of closures: (1) closures had a negative impact on revenues and employment counts, (2) closures had a stronger negative impact on dine-in only restaurants, and (3) closures had a stronger negative impact on Indigenous or visible minority-owned businesses. These findings provide more detail to an already stark picture: while the health of Ontarians has to be prioritized, and the transmission of COVID-19 has to be aggressively contained, it is impossible to ignore the economic consequences of prolonged business closures. In particular, support for Indigenous and visible minority-owned businesses is imperative, as these populations continue to bear the brunt of systemic inequalities. Preparing and supporting dine-in establishments to transition to take-out only, and providing furloughed workers with vital financial support, must be equally prioritized.

2 Data

Analysis for this report uses the `R` statistical programming language (R Core Team 2020), and more specifically, the `tidyverse` package for data manipulation (Wickham et al. 2019). To facilitate a reproducible workflow, `here` is used to reference file locations (Müller 2020). Graphs and tables use features from `cowplot` (Wilke 2020), `finalfit` (Harrison, Drake, and Ots 2020), `lubridate` (Grolemund and Wickham 2011), and `kableExtra` (Zhu 2020). Finally, `bookdown` is used to format the report (Xie 2020).

*Code and data are available at: github.com/amycfarrow/ontariorestaurantclosuresexperiment.

Table 1: Cluster sample randomly selecting Local Health Authorities from strata based on population size

Group	Large	Medium	Small
Treatment	Hamilton	Haliburton, Kawartha, Pine Ridge District	Algoma
	Simcoe Muskoka	Windsor-Essex County	Timiskaming
Control	Durham Region	Southwestern Ontario	Brant County
	Region of Waterloo	Sudbury and Districts	Northwestern Health

In addition to survey data collected by Petit Poll, this report relies on publicly available federal census data ("Census Profile, 2016 Census" 2017) and data from provincial public health departments (Government of Canada 2020).

This section presents details on the data collection approach and methods, and the steps taken to ensure accuracy.

2.1 Methodology

This experiment used two-stage stratified cluster sampling for survey data collection, a process by which a population is divided into groups, or stata, and subsequently divided into clusters. A random sample is drawn from each stratum and each cluster (Gertler et al. 2016).

The population was all restaurants in Ontario.

A list of Ontario local health authorities (LHAs) was used to identify units that carry out food inspections of restaurants. Using census data from 2016, these LHAs were sorted by population size, and the list was stratified into equally sized strata: small LHAs (population of less than 150,000), medium LHAs (population of 150,000 to 400,000), and large LHAs (population of more than 400,000). The stratified LHAs produced the frame, or list of units of interest from which to draw a sample, at the cluster level.

From each stratum, two LHAs were randomly sampled to participate in the treatment, and two LHAs were randomly selected to participate in the control. This was the sample at the cluster level. This sample is shown in Table 1.

The clusters were used because pandemic shutdowns operated based on LHA, and the goal was to recreate the effect as closely as possible.

The stratification was used because there were very differently sized LHAs, and randomly selecting only 12 LHAs from a list of 33 left too high a likelihood of nonequivalent treatment and control groups. Given the limitations of cluster sampling, stratifying the clusters by size helped ensure the experiment would be representative of Ontario.

#TODO: ADD STUFF ABOUT STATISTICAL PROPERTIES OF CLUSTER AND STRATIFIED SAMPLING. CITE TEXTBOOK READING

Once the treatment and control LHAs were selected, each corresponding Food Inspection unit was contacted, and a list of all registered restaurants in each LHA was obtained. Each restaurant was listed by name and address. Once collected into one dataframe, this was the frame at the unit level. A sample of this frame is shown in Table 2.

A simple random sample of 15% of the treatment list and 15% of the control list was randomly selected to be surveyed. This was the sample at the unit level.

This selection was used to create a panel, so the same restaurants would be surveyed for the first survey and the second survey. Attempting to sample only 15% of the restaurants allowed time and money to be spent on follow-up and multiple methods of data collecting, reducing the non-response bias.

Table 2: Example segment of the unit level sampling frame

name	address	unit	group
Lani Kai - Restaurant	11382 Highway 17 N Batchawana ON P0S 1A0	algoma	treatment
Parkwood Tea House Restaurant	270 Simcoe St N Oshawa ON L1G 4T6	durham	control
Wayne's Mediterranean	5-100 Mearns Ave Bowmanville ON L1C 1P9	durham	control
Kl's Red Ginseng Tea	Unit 1C-833 Upper James St Hamilton ON L9C 3A3	hamilton	treatment
The Krown Kafe	952 QUEENSTON RD STONEY CREEK ON L8G 4A8	hamilton	treatment
SMOKEHOUSE EATERY & PUB, THE	6 OLIPHANT ST BRIGHTON ON K0K 1H0	haliburton	treatment
McDonald's	40 King William St Huntsville ON P1H 1G3	simcoe	treatment
Oliver's Coffee	440 Ecclestone Dr Bracebridge ON P1L 1Z6	simcoe	treatment
Sportsman's Inn Resort & Marina (Anchorage)	37 Channel St Killarney ON P0M 2A0	sudbury	control
Windsor Palace	12 Amy Croft Dr Tecumseh ON N9K 0A1	windsor	treatment

The randomly sampled restaurants were all assigned ID numbers in a random order.

The table for surveys was used to generate 2,006 mailers to be sent to each restaurant on the list. Each mailer was a small envelope containing a sheet that invited the restaurant owner to participate, explained the survey, provided a link to the survey, and provided a QR code that went to the same place as the link. There was also a copy of the survey contained in a mailer envelope and a contact number, allowing restaurant owners to complete the survey by phone or mail if they did not feel able to complete it online. If there was no response within two weeks, the restaurant was contacted by phone, and again five days letter if there was no response. This procedure was repeated for Survey 1 and Survey 2.

Each link and paper survey was personalized to the restaurant's ID number. The link lead to the survey, which asked for confirmation of the last three digits of the restaurant's postal code. This was to ensure that no mailing mistakes were made, and to prevent duplicate data collection. Once verified, the survey-taker was given the main survey.

This survey cost $6,711.18. A detailed breakdown of costs can be found on Appendix A.

The data from the survey was tied to the ID number and last three digits of the postal code, but not the restaurant name or address, and the restaurant owner's name was not collected. This was to ensure data privacy. The identifying information was kept in a separate dataframe (Table for Surveys) than the survey answers (Survey 1 Data, Survey 2 Data).

A project timeline can be found in Figure 1.

Survey 1 was conducted June 3rd to 27th 2021, and it asked about the month of May 2021. The survey can be found online by clicking here: 2021 Ontario Restaurant Survey 1.

Survey 1 Data was used to confirm that the two-stage stratified cluster sampling had created treatment and control groups that were roughly equivalent.

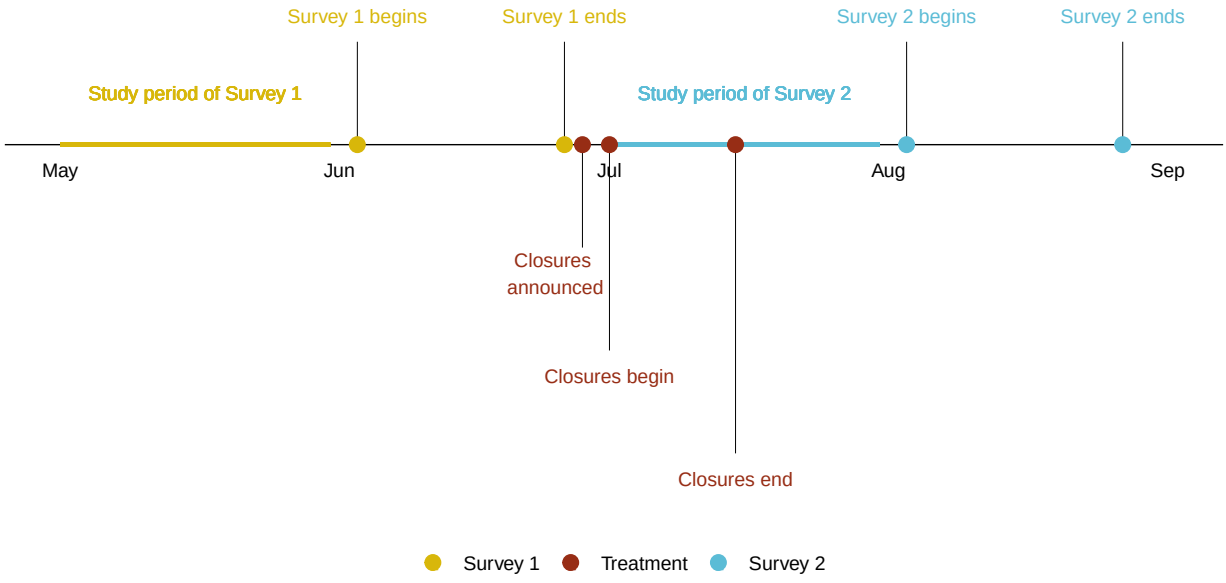

Figure 1: Timeline of restaurant closure experiment with surveys

Survey 1 collected the following data:

- Demographic information
  - Disability status: According to the UN Convention on the Rights of Persons with Disabilities, persons with disabilities are described as having "long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others."
  - Indigenous status: According to the Government of Canada, Indigenous people include "First Nations (North American Indian), Métis or Inuit and/or those who reported Registered or Treaty Indian status, that is registered under the Indian Act of Canada, and/or those who reported membership in a First Nation or Indian band".
  - Visible minority (non-Indigenous) status: "Visible minority" is defined by the Government of Canada as "persons, other than aboriginal peoples, who are non-Caucasian in race or non-white in colour."
  - Gender identity
- Type of service provided (dine-in, take-out, or both)
- Revenue in May 2021
- Employees
  - Number of full-time employees (30 hours/week or more)
  - Number of part-time employees (less than 30 hours/week)

The demographic information was collected so that disparate impacts on different communities could be identified. Revenue and number of employees were collected as measures of the restaurant's performance and impact on the local employment levels. These were the primary indicators of interest, due to the Ontario Ministry of Economic Development, Job Creation and Trade's focus on economic stability and employment levels.

After Survey 1 data was collected, on June 28th, shutdowns were announced for the six treatment LHAs. The shutdowns ran from July 1st to July 14th, inclusive. This length of time was considered to be the minimum effective length for a shutdown to stop circulation of the virus. During the shutdown, all restaurants in the treatment LHAs were officially banned from offering dine-in and patio services. Take-out and delivery were

permitted. This type of partial shutdown was selected because it has been the mandated type of shutdown during the Grey level, or lockdown, of the provincial COVID-19 response framework (Government of Ontario 2021a).

To date, mandated closure enforcement has included issuing fines from $750 to $100,000 to businesses found in violation of the province of Ontario's emergency orders (Wilson 2020). Additionally, provincial offences officers, including police officers, have the authority to disperse crowds indoors as well as outdoors (Ministry of Health 2021).

Because it is very difficult for a restaurant to move location in under two weeks, the control and treatment groups were effectively separated.

Survey 2 was conducted August 3rd to 27th 2021, and it asked about the month of July 2021. The survey can be found online by clicking here: 2021 Ontario Restaurant Survey 2.

Survey 2 followed a similar format as Survey 1, with the addition of a question about closures. It collected the following data:

- Demographic information
  - Disability status
  - Indigenous status
  - Visible minority (non-Indigenous) status
  - Gender identity
- Type of service provided (dine-in, take-out, or both)
- Closures (none, temporary, or permanent)
- Revenue in July 2021
- Employees
  - Number of full-time employees (30 hours/week or more)
  - Number of part-time employees (less than 30 hours/week)

The scope of this experiment required a structured questionnaire that was easy to distribute, easy to answer, cost effective, reliable, and that provided flexibility of mode of response, including online, over the phone, or on paper. With these features in mind, a survey was an appropriate choice. However, due to the rigidity of pre-determined questions, the survey format might lack potential depth, reducing complex circumstances to simple data points that are easier to collect, manage, and analyze. To account for this, the questions were carefully designed to gather, exactly and only, the necessary data for our study.

2.2 Results[1]

Reaching restaurant owners to better understand their businesses, and the impact of closures, was a crucial component of this experiment. Approximately 40% of individuals selected to participate completed or partially completed the surveys. This section provides an overview of the data gathered from each survey.

2.2.1 Survey 1

#TODO: HOW CAN WE PLOT MORE RAW DATA?

The initial survey provided a clear description of the characteristics of the treatment and control groups. As indicated in Table 3, the groups are equivalent, showing no notable differences across any of the variables studied. It was necessary to collect data before the intervention to ensure that the treatment and control groups were in fact comparable.

Survey 1 data was used to effectively establish a baseline for comparison. In addition to the use of random selection of participants and random assignment to either treatment or control, establishing a baseline allows for an accurate estimation of the counterfactual. The counterfactual – or the representation of what would

[1]More information about the Survey 1 and Survey 2 results can be found in the report *Data for the Ontario Restaurant Closures Experiment*.

Table 3: Summary statistics for treatment and control baselines

		Treatment	Control
		N (%) = 392 (50.0)	N (%) = 392 (50.0)
Service type	dinein	25 (6.4)	23 (5.9)
	both	241 (61.6)	231 (59.1)
	takeout	125 (32.0)	137 (35.0)
Owner has disability	yes	2 (0.5)	2 (0.5)
	no	385 (98.2)	386 (98.5)
	nonanswer	5 (1.3)	4 (1.0)
Owner identifies as woman	yes	59 (15.1)	63 (16.1)
	no	329 (83.9)	327 (83.4)
	nonanswer	4 (1.0)	2 (0.5)
Owner is Indigenous	yes	4 (1.0)	4 (1.0)
	no	386 (99.0)	384 (98.2)
	nonanswer	0 (0.0)	3 (0.8)
Owner is a visible minority (non-Indigenous)	yes	22 (5.6)	30 (7.7)
	no	367 (93.9)	356 (91.5)
	nonanswer	2 (0.5)	3 (0.8)
Revenue	Mean (SD)	70117.3 (38823.8)	69198.2 (33456.7)
Number of full-time employees	Mean (SD)	8.1 (4.5)	8.0 (3.9)
Number of part-time employees	Mean (SD)	4.3 (2.4)	4.3 (2.1)

have happened had the intervention not taken place – is essential to measuring, and reporting on, the effect of the mandated restaurant closures.

The baseline distributions for reported revenue in the treatment and control groups, based on information from May 2021, can be found in Figure 2. The baseline distributions for number of full-time and part-time employees in the treatment and control groups, also based on information from May 2021, is shown in Figure 3.

2.2.2 Survey 2

#TODO: HOW CAN WE PLOT MORE RAW DATA?

The second survey results showed marked differences between treatment and control groups in most variables. A summary of these results is found in Table 4. Naturally, a salient difference is found in service type, with dine-in restaurants decreasing due to mandated shutdowns – the intervention itself – with 7% of restaurants in the control group providing dine-in service, and only 4% in the treatment group. Similarly, the mean revenue decreases noticeably for the treatment group ($45,959.60) compared to the control group ($70,675.60). The mean numbers of employees, both full-time and part-time, show a decrease as well, from 8 and 5 respectively in the control group, to 5 and 3 for the treatment. A visual representation of the differences between treatment and control groups for revenue and number of employees can be found in Figure 4 and Figure 5 respectively.

#TODO: ADD SENTENCE ABOUT REST OF VARIABLES?

3 Discussion

Petit Poll commends the Ontario Ministry of Economic Development, Job Creation and Trade for its commitment to learn more about the impact of restaurant closures in the province. This study has uncovered three main findings, supplemented in this section by a series of recommendations. Additionally, this section

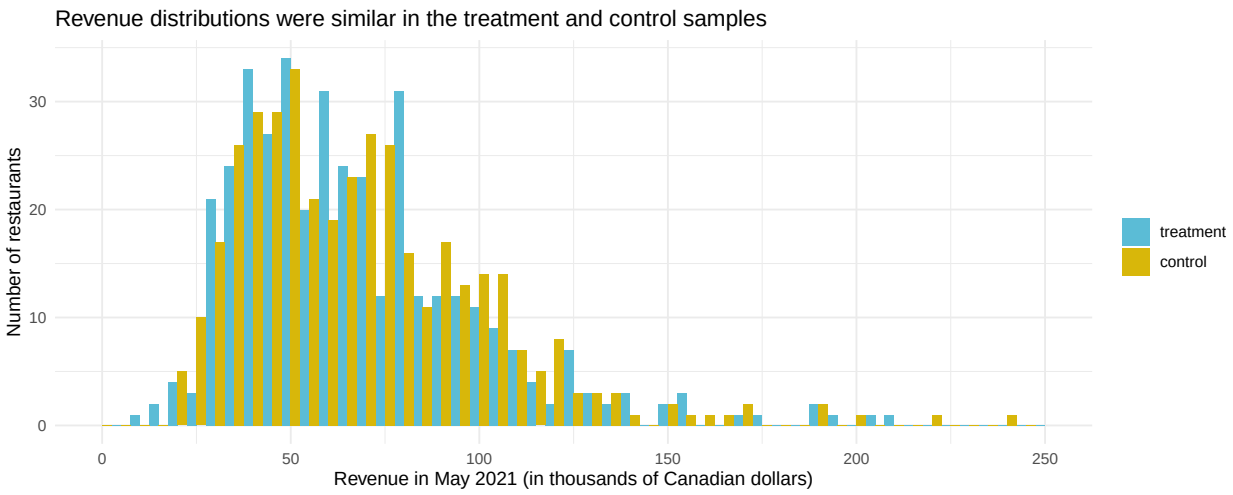

Figure 2: Revenue distribution for treatment and control baselines, from Survey 1

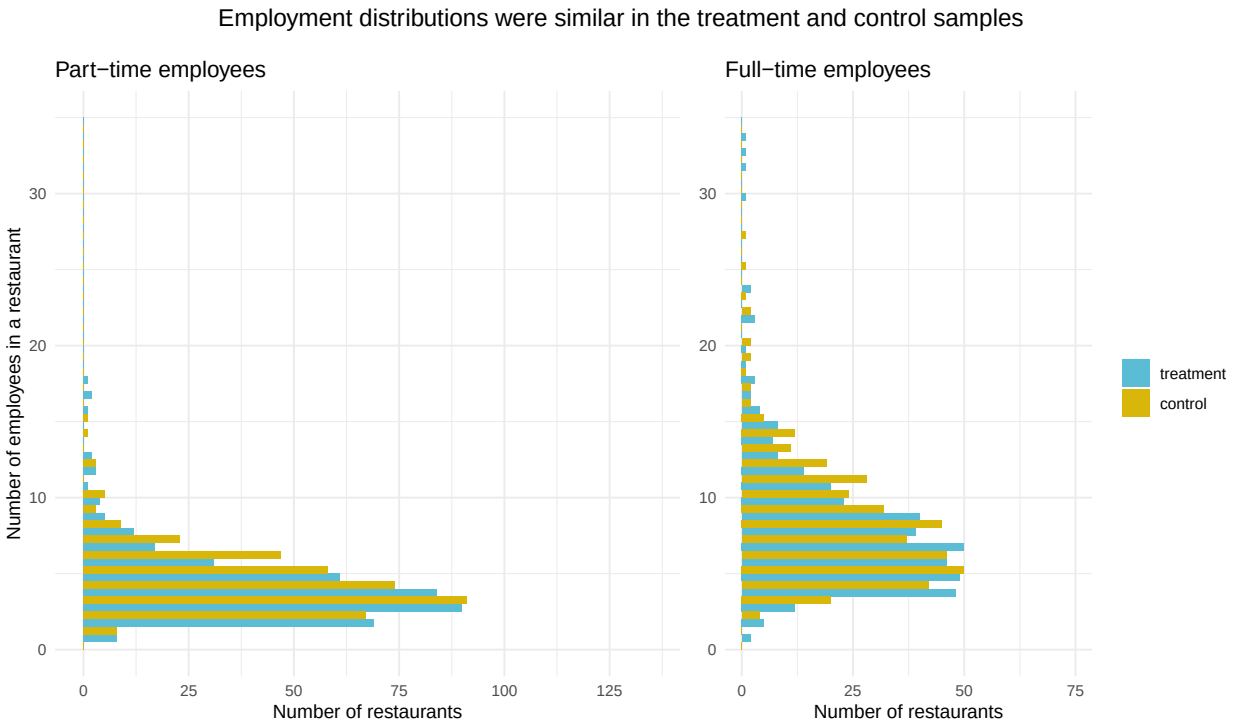

Figure 3: Employment distribution for treatment and control baselines, from Survey 1

Table 4: Summary statistics for treatment and control groups post-treatment

		Treatment	Control
		N (%) = 408 (51.3)	N (%) = 387 (48.7)
Service type	dinein	16 (3.9)	27 (7.0)
	both	258 (63.4)	247 (64.2)
	takeout	133 (32.7)	111 (28.8)
Owner has disability	yes	4 (1.0)	1 (0.3)
	no	399 (98.0)	381 (98.4)
	nonanswer	4 (1.0)	5 (1.3)
Owner identifies as woman	yes	65 (16.0)	58 (15.0)
	no	337 (82.8)	325 (84.2)
	nonanswer	5 (1.2)	3 (0.8)
Owner is Indigenous	yes	4 (1.0)	5 (1.3)
	no	403 (98.8)	376 (97.7)
	nonanswer	1 (0.2)	4 (1.0)
Owner is a visible minority (non-Indigenous)	yes	28 (6.9)	38 (9.9)
	no	377 (93.1)	344 (89.4)
	nonanswer	0 (0.0)	3 (0.8)
Closure	none	235 (57.7)	383 (99.5)
	temporary	172 (42.3)	1 (0.3)
	permanent		1 (0.3)
Revenue	Mean (SD)	45959.6 (28892.6)	70675.6 (35646.6)
Number of full-time employees	Mean (SD)	5.2 (3.3)	8.0 (4.1)
Number of part-time employees	Mean (SD)	3.0 (1.9)	4.7 (2.4)

elaborates on relevant ethical considerations, potential biases and limitations. The final section presents some initial thoughts for future related research.

3.1 Overview

Understanding the impact of COVID-19 closures on small businesses can help the Government of Ontario prepare to rebuild once the immediate health threat is contained. In particular, the contributions of restaurant businesses to the local economy have to be studied in terms of employment and revenue generation. According to The Associated Press, there was a 20% decline in employment in the restaurant, hotel, and entertainment sector between November 2019 and November 2020(Wiseman and Olson 2020). The National Restaurant Association reports a total loss industry-wide of $120 billion between March and May 2020 alone (Jones 2020). Although these figures are based on United States data, the findings from our experiment show a similarly concerning reality in Ontario.

The experiment, which consisted of an initial survey, a two-week restaurant closure intervention, and a second survey, revealed that the impact of closures is not distributed equally across service types, nor across restaurant owner demographics. Swift action to protect and uplift the local economy, particularly dine-in restaurants and restaurants owned by Indigenous peoples or members of visible minority groups, will be crucial in the upcoming months.

3.2 Findings

To prevent a misleading estimate of the counterfactual in this experiment, the effects of the intervention are not evaluated by comparing the survey results before and after the intervention, but rather by comparing the treatment and control groups after the intervention. The following subsections provide further detail on each of the main findings.

3.2.1 Closures had a negative impact on revenues and employment counts

As noted in the results from Survey 2, the intervention led to a noticeable difference in reported revenues. The mean reported revenue for the treatment group was $45,959.60 and $70,675.60 for the control. The revenue distribution for both groups is show in Figure 4.

The mean number of employees, both full-time and part-time, show a decrease as well, from 8 and 5 respectively in the control group, to 5 and 3 for the treatment. Figure 5 shows further detail of this finding.

With these effects in mind, Petit Poll supports the Government of Ontario's programs in benefit of small businesses: the Ontario Small Business Support Grant, the Personal Protective Equipment Relief Grant, and the current Property Tax and Energy Rebate Grants (Government of Ontario 2021b). Additionally, based on the evidence shown in this report, it is important to consider developing provincial financial support programs for furloughed employees, in addition to standing federal programs like Employment Insurance, that directly address the negative impact of COVID-19 closures. Ensuring the protection of workers in the restaurant industry specifically, not only physically as the spread of the virus is contained, but economically with financial aid will be crucial to the success of mandated closures.

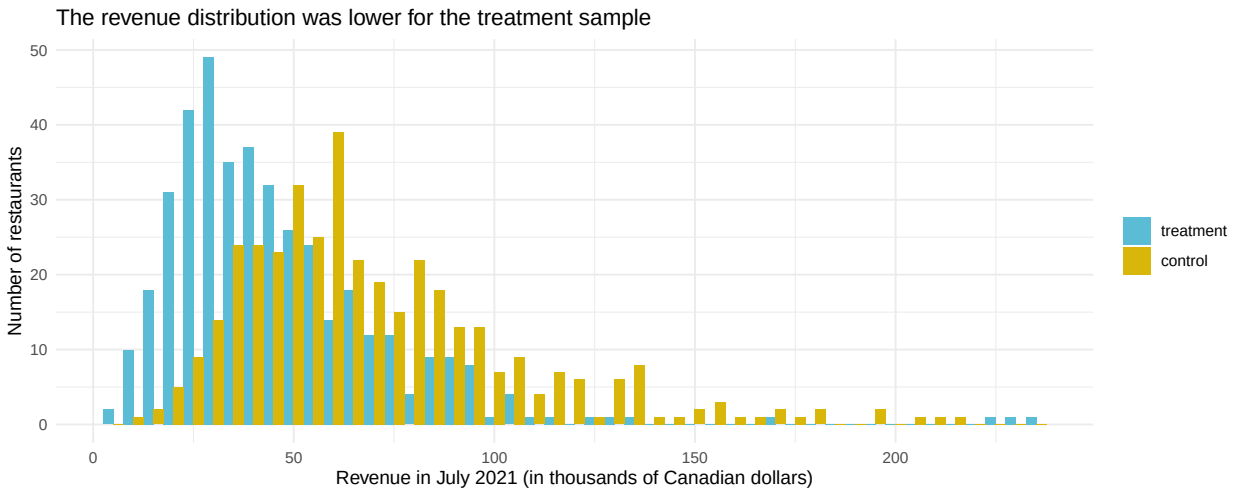

Figure 4: Revenue distribution for treatment and control groups, from Survey 2

3.2.2 Closures had a stronger negative impact on dine-in only restaurants

It is worth noting that the negative impact on revenue was not equally distributed across the three types of establishments. Compared to the control group, treatment group dine-in restaurants suffered significant losses in average revenue. Restaurant owners in the treatment group who only offered dine-in service reported a mean revenue of $34,609.40, those who offered both take-out and dine-in service reported $42,889.41, and those who offered only take-out service reported $53,156.02. The control group reported $67,744.79, $70,062.17, and $72,860.20 for dine-in only, both, and take-out only respectively. Figure 6 shows a comparison of revenue distributions for restaurants offering dine-in service, take-out, or both.

The effect of mandated closures is attenuated for take-out only restaurants. This indicates that providing restaurant owners with support to transition their regular operations to take-out only service should be considered. The City of Toronto-funded Digital Main Street, created by the Toronto Association of Business Improvement Areas, might serve as an exemplary approach. The program provides businesses with the tools and information to build an online presence. The free program includes an online learning platform, training programs, and dedicated support staff (Digital Main Street 2021). A parallel provincial program aimed directly at restaurant owners who wish to transition out of dine-in only service might help alleviate the economic pressures of COVID-19 mandated closures, while maintaining the necessary health emergency

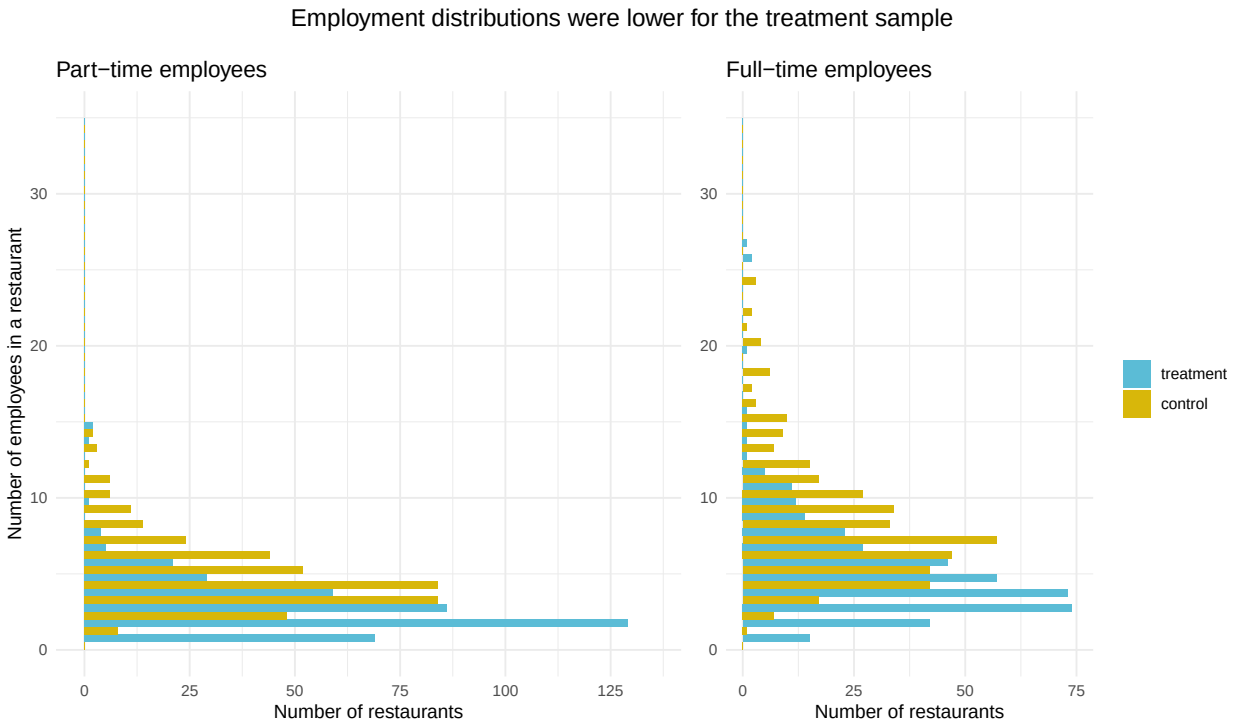

Figure 5: Employment distribution for treatment and control groups, from Survey 2

protocols.

3.2.3 Closures had a stronger negative impact on Indigenous or visible minority-owned businesses

The negative impact of mandated closures was not distributed equally across restaurant owner demographics either. As indicated in Figure 7, treatment group restaurant owners who identified as Indigenous or as members of a visible minority group reported a larger loss in average revenues, compared to the control, than those who did not identify as Indigenous or a visible minority. The mean revenue for those who identified as visible minority or Indigenous in the treatment group was $28,749.17, and it was $47,572.93 for those who did not. In the control group, the mean revenue for those who identified as Indigenous or as members of a visible minority group was $73,983.60, and it was $70,777.57 for those who did not.

Protecting populations that face systemic inequalities is absolutely imperative to the success of any proposed pandemic response. Following the approach of the federal government might be a fruitful start. Currently, the Government of Canada offers interest-free loans and non-repayable contributions to Indigenous-owned businesses (Government of Canada 2021b). Further, the federal government has announced and collected applications to the Black Entrepreneurship Program, an initiative to ensure Black-owned businesses thrive (Government of Canada 2021a). Petit Poll recommends Ontario take similar, yet bolder, steps to ensure Indigenous and visible minority owners are not left behind during the COVID-19 pandemic. To do so, restaurant industry-specific interest-free loans, non-repayable contributions, free educational programming, mentorship, and additional supports should be extended to Indigenous and visible minority restaurant owners across the province.

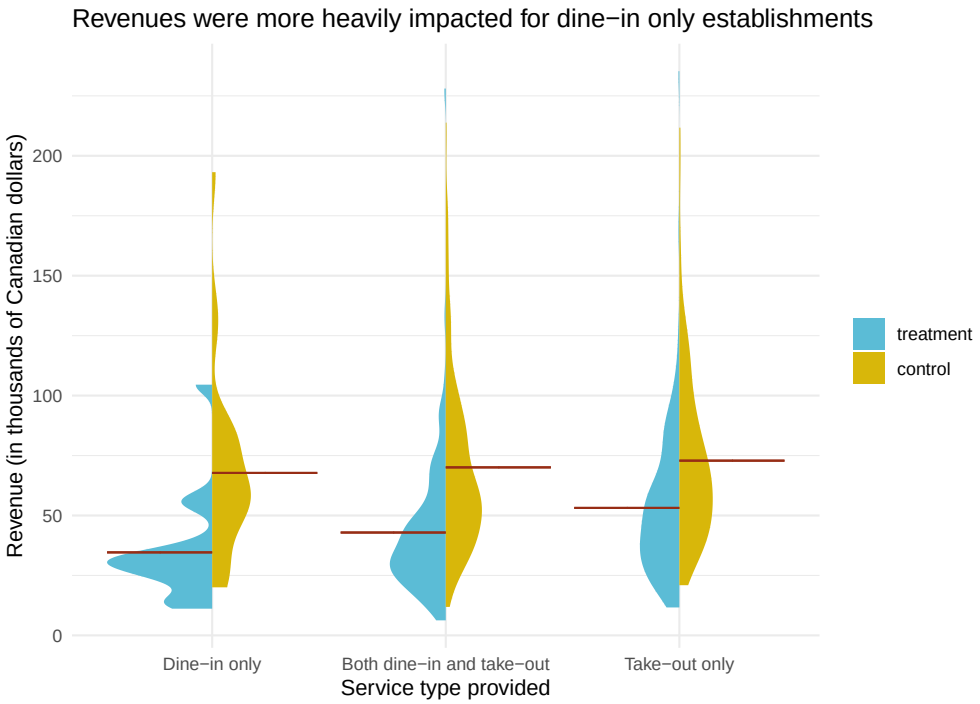

Figure 6: Survey 2 revenue distributions for service types with means marked

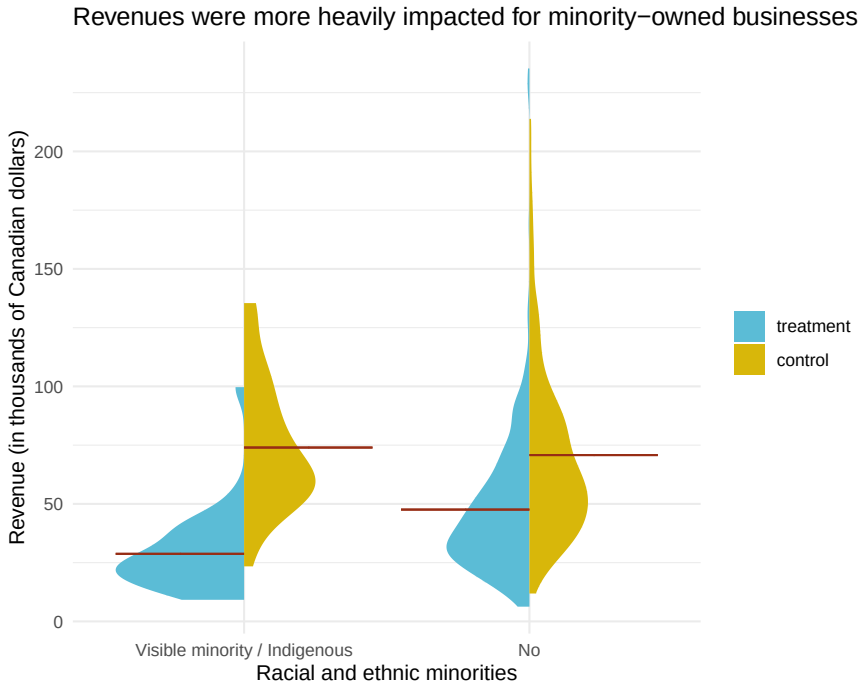

Figure 7: Survey 2 revenue distributions for minority status with means marked

3.2.4 Implications

The findings from this experiment uncover the negative impact that mandated closures have on restaurant businesses specifically. In a national emergency, these effects have to be contextualized by assessing the impact on a broader societal level. As the COVID-19 pandemic continues to test our resilience, it is important to consider the economic inter-dependencies that rely on the health of restaurant businesses. As noted in Forbes (2014), a key feature of neighbourhood desirability is access to a wide range of shops and restaurants. Restaurant closures, leading to vacant commercial lots, might have a negative impact on the real estate market, setting off an unfortunate ripple effect that could destabilize the economy further. Preventing the permanent closure of restaurants might prove to be a worthwhile investment in the months following the pandemic.

On an individual level, these findings point at the importance of employment. Gainful employment is directly tied to psychological wellbeing, with experts citing work as one of the most important determinants of quality of life, second only to personal relationships. (Snyder, Lopez, and Pedrotti 2011) During a crisis that has the potential to severely impact the population's mental health, ensuring individuals retain their employment is vital. Employment, aside from providing an income and the possibility of financial independence, fosters a positive network of social support — a crucial social determinant of health (Wilkinson and Marmot 2013). Prioritizing efforts to establish positive networks of social support seems particularly necessary during a pandemic that requires measures of physical distancing.

These examples provide a mere glance at the economic and social implications of our findings. To better understand these implications on a micro and macro level, Petit Poll recommends the Ontario Ministry of Economic Development, Job Creation and Trade, consult with relevant government authorities and departments.

3.3 Ethics

This experiment would not have been possible without the participation of hundreds of restaurant owners. It is Petit Poll's greatest priority to ensure all studies adhere to the highest ethical standards, especially when involving human participants. Ethical requirements for this project, particularly the survey portion, included:

- Anonymity, by determining that collecting the restaurant owner's name was unnecessary, and processing survey data with numerical IDs rather than the restaurant name or address.
- Confidentiality, by employing a professional data management account throughout the entirety of the project.
- Informed consent, by providing a clear explanation of the purposes of the study, the nature of the survey, and contact details should participants require additional information.
- Voluntary participation and disclosure, by allowing respondents to engage or refuse to engage in the study and allowing non-response of demographic questions.

Additionally, in order to reduce potential biases, the survey portion of this experiment used a thoroughly-tested questionnaire, a robust methodology, expert interviewers, and invested in following up with selected participants who did not initially respond.

#TODO: talk a bit more about who might have been excluded

3.4 Limitations

Although great care was taken with every step of the design of this experiment, with the goal of gathering data that would accurately represent current conditions, the authors acknowledge to following limitations.

Cluster sampling has inherent constraints that might affect external validity, including the reduction of the population, in this case the entirety of restaurant business in Ontario, to smaller groups, potentially affect representation. This may lead to a higher potential of sampling error and biases, as the factor by which the population is clustered might introduce unforeseen conditions. However, cluster sampling by local health authority population sizes was necessary as the goal of this experiment was to replicate current protocols

for mandated closures, which have been dictated by local health authorities. The ethical implications of experimenting in the entirety of the population proved to be unsound, as the negative effects of closures would have been exacerbated. Sampling was necessary to understand the impact while containing its potentially devastating effects.

A second limitation arises from the decision to use food inspection records to collect information on current restaurants. We acknowledge that this process would effectively erase from our study all businesses that do not currently operate in accordance to the legal requirement to properly license a restaurant business. As such, should the Ontario Ministry of Economic Development, Job Creation and Trade need to understand the COVID-19 impact on non-licensed restaurant businesses, we recommend further research.

#TODO: TALK ABOUT SURVEY NON-RESPONSE AND HOW IT AFFECTS ACCURACY. CITE READINGS. Figure 8

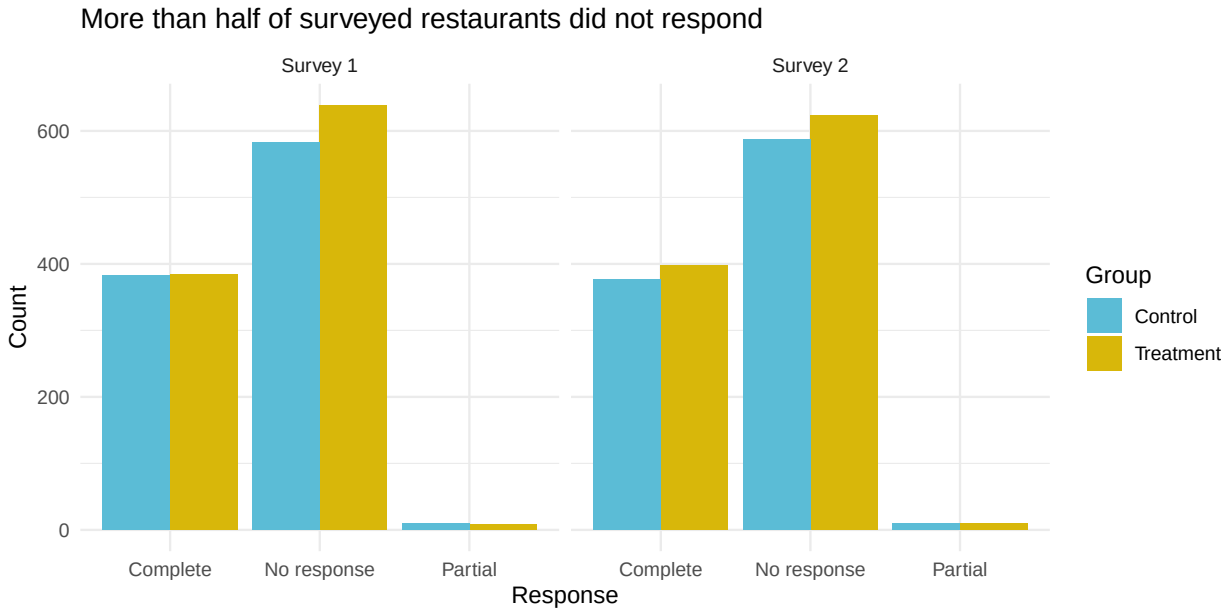

Figure 8: Non-response and partial response rates for Survey 1 and 2

#TODO: TALK ABOUT THE ISSUES WITH SELF-REPORTED INFORMATION. CITE READING.

3.5 Future Directions

#TODO: TALK ABOUT POTENTIALLY USING PROPENSITY SCORE WEIGHTING TO MAKE SURE THAT THE RESULTS REFLECT ONTARIO'S RACIAL DEMOGRAPHICS. SEE DATA_SIMULATION FILE FOR COMPARISON OF ONTARIO, TREATMENT, AND CONTROL. CITE READING.

#TODO: TALK ABOUT RESEARCH INTO HOW TO EFFECTIVELY SUPPORT BUSINESSES

This experiment collected information about restaurant owners in Ontario to study the economic and social impact of closures on a business level. To understand the effects on an individual level, questionnaires that are aimed at employees would be a feasible adaptation of this study.

Finally, this experiment did not differentiate between independent restaurant businesses and franchises or chains. To better develop support programs, it might be advantageous to deliberately inquire about the type of business model under which the restaurant operates. As this experiment revealed, dine-in and visible minority-owned restaurants were the most affected by closures. Understanding whether take-out service is

more frequent in franchises, or if less members of visible minority groups own independent restaurants, for example, would allow for the informed allocation of funds towards targeted support programs.

Appendix

4 Appendix A

Table 5: 2021 Ontario Restaurant Survey Budget

Item	Cost	Description
Data Management	1300.00	Online survey management account fees
Phone Interviewer Wages	2000.98	1,203 calls (7 minutes on average) at $14.25/hr
Postage	3410.20	4,012 mailers at $0.85/ea
TOTAL	**6711.18**	

5 Appendix B

TODO: ADD A SURVEY SCREENSHOT. REFERENCE IN THE MAIN PAPER.

6 Appendix C

TODO: ADD A COMPLETE LIST OF SURVEY QUESTIONS AND OPTIONS. REFERENCE IN THE MAIN PAPER.

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