TITLE*

SUBTITLE

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Abstract

ABSTRACT

Contents

*Code and data are available at: https://github.com/yangg1224/groupproject-.git

Table 1: First 6 rows Raw data

type	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Control	M5W	Toronto	Family Style	Franchise	11	Yes	No	1-10	20.11	No	No change	No change	44140
Control	L7C	Peel	Fine Dining	No	10	Yes	No	1-10	23.31	No	No change	No change	42217
Control	L7C	Peel	Family Style	No	2	Yes	Yes	1-10	16.74	No	No change	Decrease	37507
Control	L6A	York	Fast Casual	No	2	Yes	Yes	1-10	19.21	No	No change	No change	41194
Control	L6H	Halton	Premium Casual	No	1	Yes	No	1-10	15.22	No	No change	No change	56615
Control	L4Z	Peel	Fast Food	No	3	Yes	No	1-10	15.60	No	No change	No change	51303
Control	L7A	Peel	Premium Casual	No	5	Yes	No	10-20	12.53	No	No change	No change	42073
Control	L5G	Peel	Fine Dining	No	14	Yes	No	1-10	20.39	No	No change	No change	52774
Control	M3U	Toronto	Premium Casual	No	11	Yes	No	10-20	14.37	No	No change	Decrease	49883
Control	L0C	Durham	Family Style	No	7	Yes	Yes	1-10	15.88	No	No change	No change	37218

1 Introduction

2 Data

2.1 Intervention

2.2 Data Gathering Method

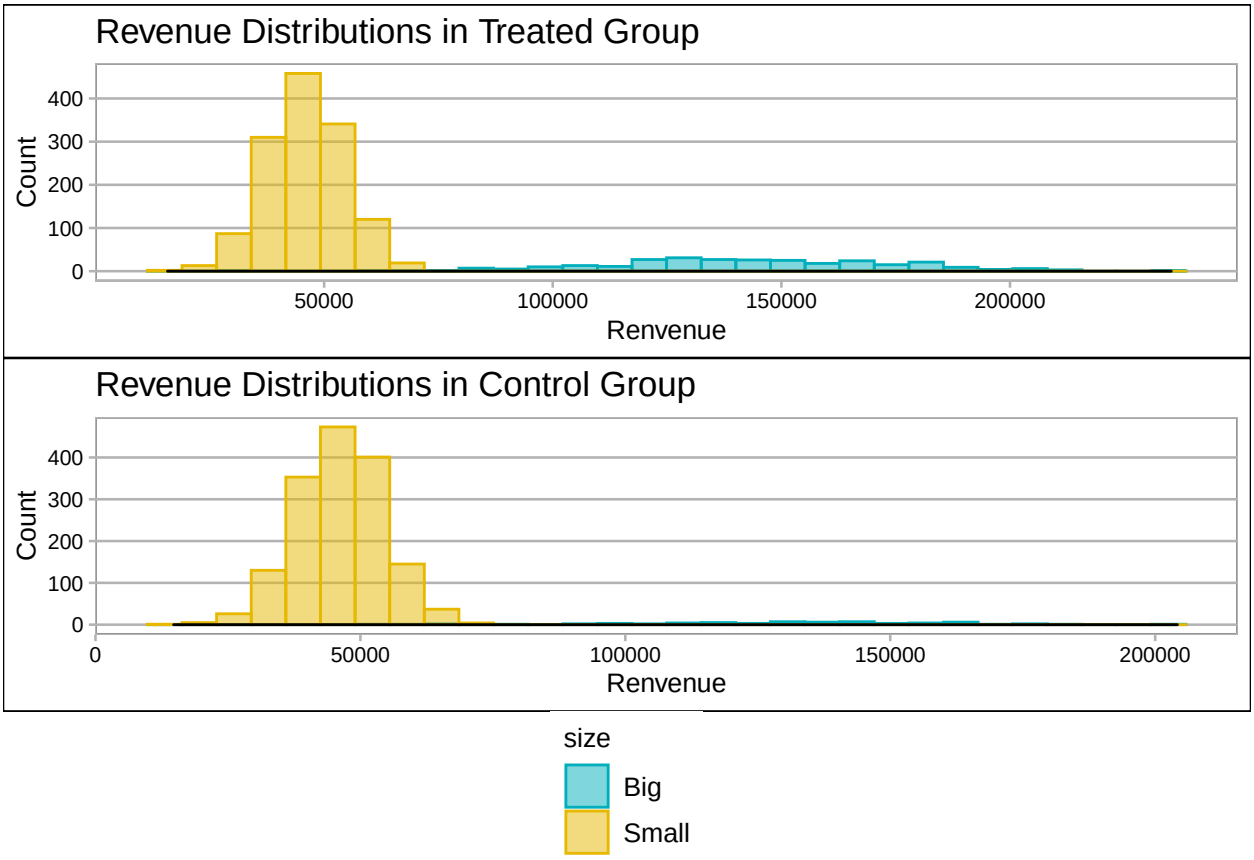
2.3 Descriptive Analysis

After discussing data gathering method, we sampled data in R (R Core Team 2020). We totally have **3274** observations, and 14 of following features according to the questionnaires.

- `type` : Categorical identifier [“Treated” or “Control”] for each observation
- `Q1` : First three digitals of the postcode
- `Q2` : Categorical identifier for distinguishing the type of restaurants
- `Q3` : Region name in GTA
- `Q4` : Describe whether the restaurant is a franchise (“Franchise” or “No”)
- `Q5` : The length of the operation years for each restaurant
- `Q6` : Describe whether the restaurant offer takeout service (“Yes” or “No”)
- `Q7` : Describe whether the restaurant offer delivery service (“Yes” or “No”)
- `Q8` : Number of employees in the restaurant (category type)
- `Q9` : Average employee hourly rate (CAD)
- `Q10` : Describe whether the restaurant has been a site of a potential COVID case (“Yes” or “No”)
- `Q11` : Describe the restaurant’s fixed costs change situation
- `Q12` : Describe the restaurant’s flexible costs change situation
- `Q13` : The restaurant’s past month revenue (CAD)

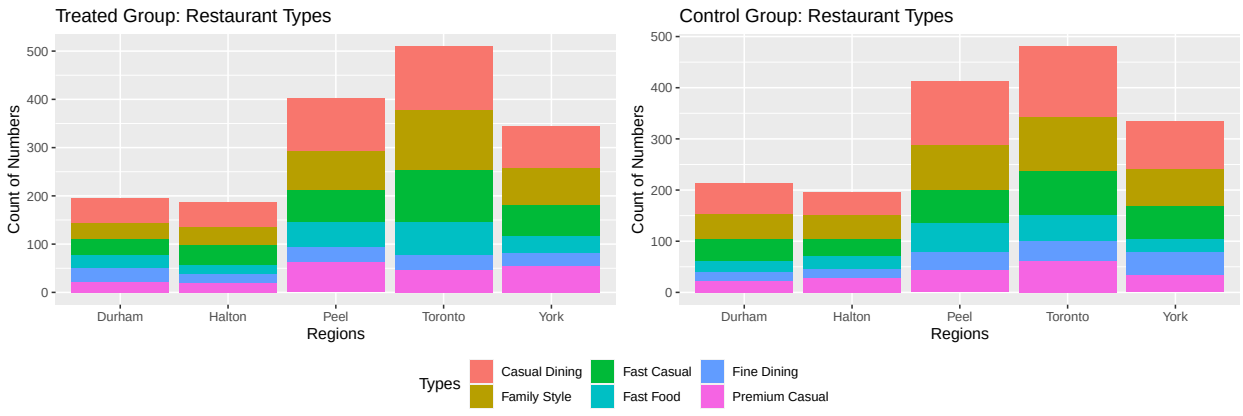
The first six rows of raw data is shown in the table1 below. (Table 1)

2.3.1 Revenue distributions group by restaurant size

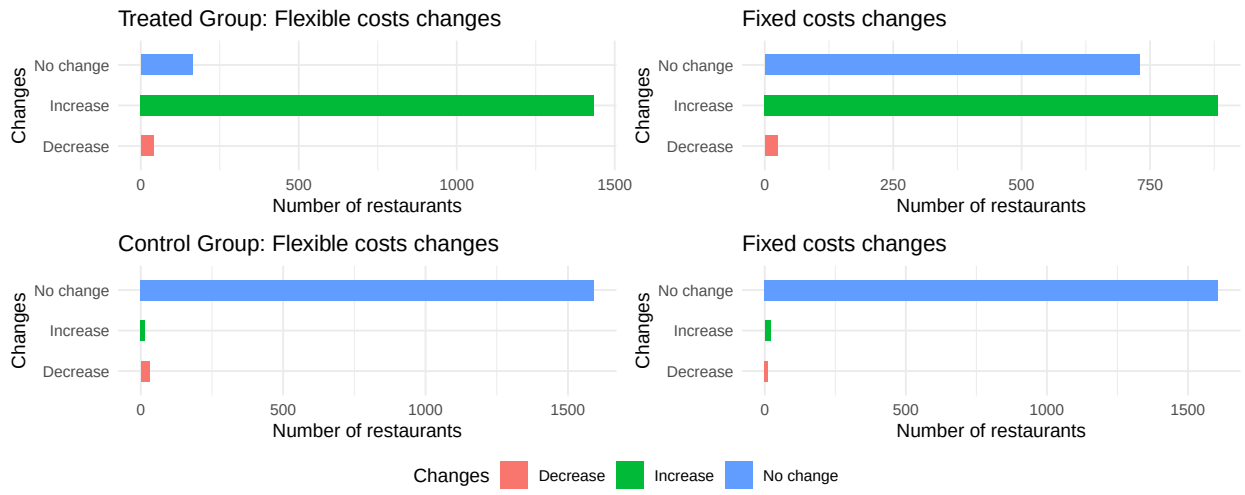


2.3.2 restaurant type by regions

```
## Loading required package: viridisLite
```

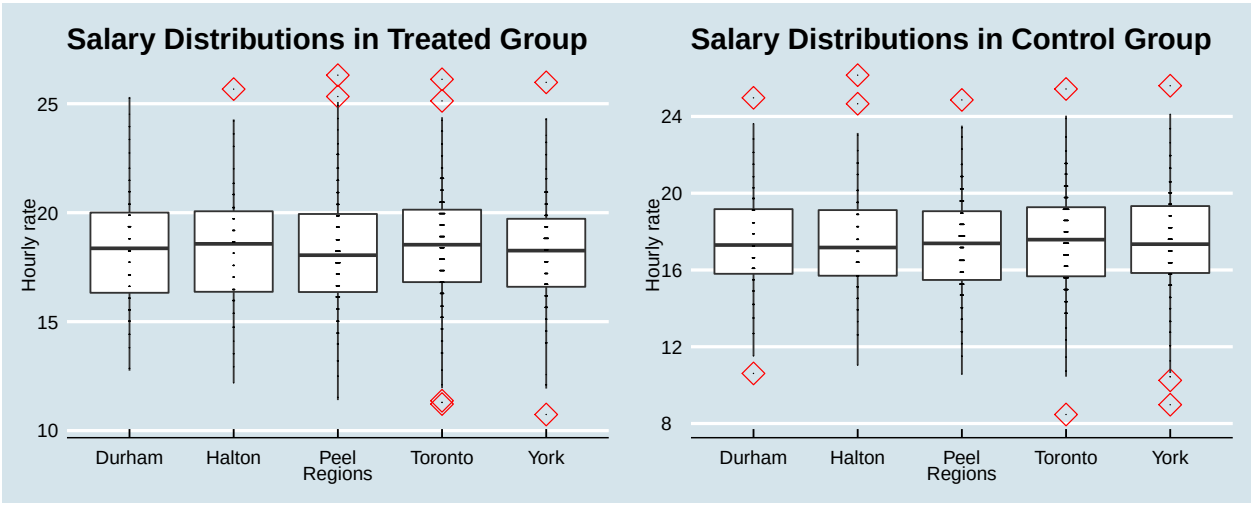


2.3.3 Flex and fiexed cost changes

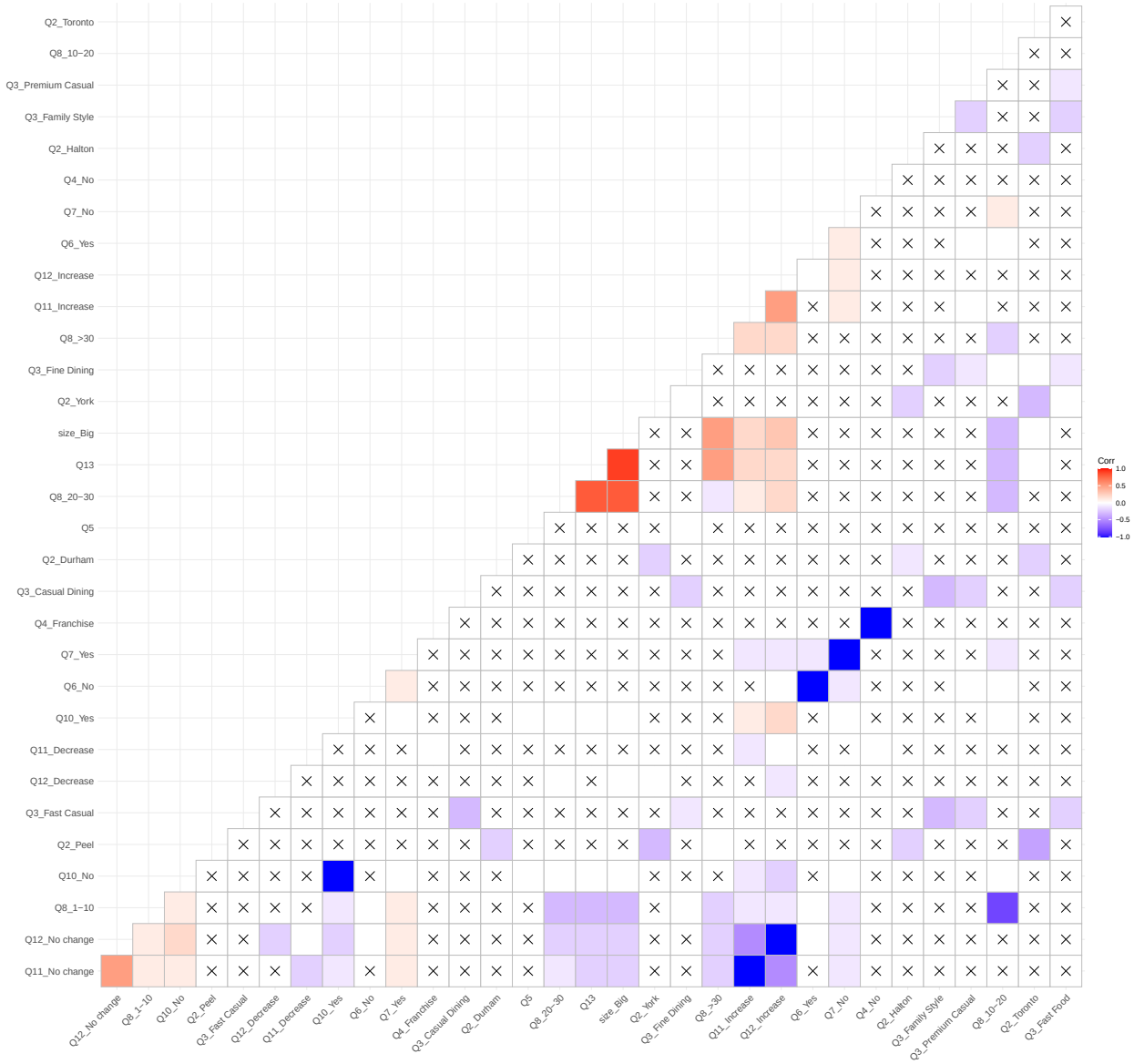


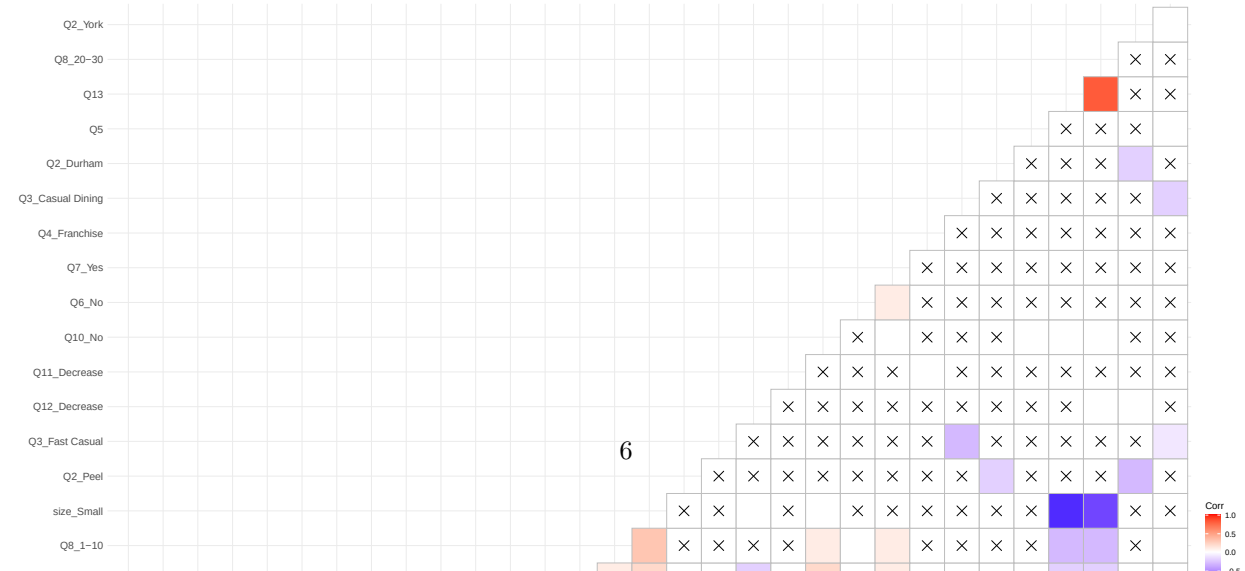
2.3.4 Distribution average employee salary

```
## `stat_bindot()` using `bins = 30`. Pick better value with `binwidth`.
## `stat_bindot()` using `bins = 30`. Pick better value with `binwidth`.
```

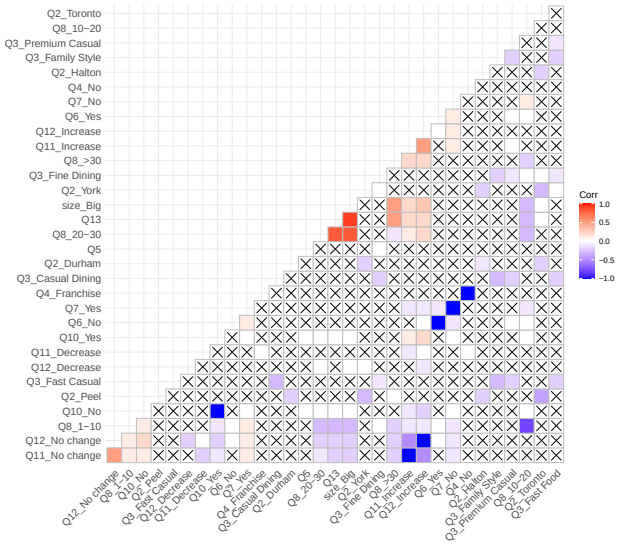


2.3.5 correlation matrix

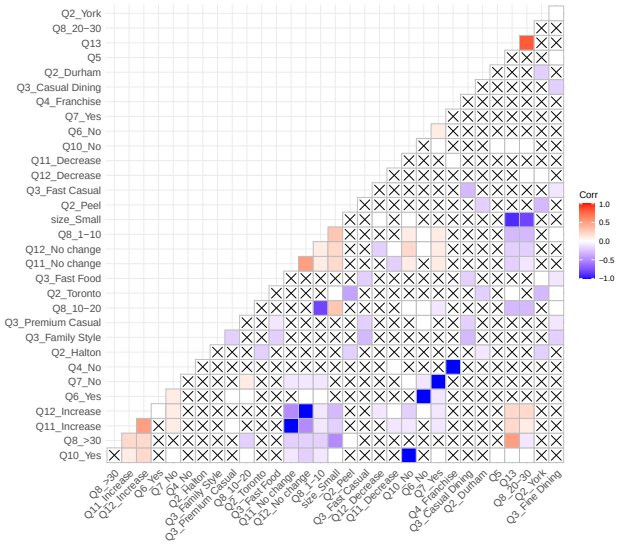




Big restaurant



Small restaurant



3 Discussion

3.1 Overview

3.2 Findings

3.2.1 Finding ONE

3.2.2 Finding TWO

3.2.3 Finding THREE

3.3 Limitation

3.4 Future Directions

Table 2: Detailed information for stratification

Region	Number of Restuarants	Proportion(%)	Sample Selected
Toronto	7500	29.58	48430
Durham	3260	12.86	21051
York	5553	21.90	35858
Peel	6235	24.59	40262
Halton	2803	11.06	18100
Total	25351	100.00	1637

Table 3: Estimated Cost

Components	Cost per unit	Total cost for each component
Printing Cost	0.05	738.95
Envelope Cost	0.15	4433.70
Stamp Cost	0.55	16256.90

4 Appendix

4.1 Appendix A

4.2 Appendix B

References

R Core Team. 2020. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.org/.