Effects of COVID-19 Pandemic on Consumer Behavior in Retail Stores during April-June 2020

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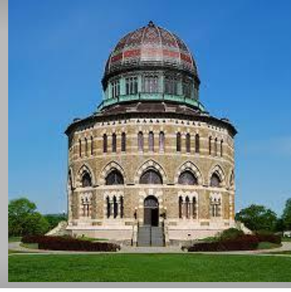


Introduction

- COVID-19 pandemic have increased consumers uncertainty about what, when and where they shop.
- In the US, more than 75% of consumers changed or tried new shopping methods because of COVID-19 (McKinsey & Company, 2020).
- In April 2020, consumer spending declined by 12.6% (Routley, 2020).
- In response to government mandates and/or with the hope of pleasing consumers (i.e., increase consumer's safety), retail stores have implemented a wide variety of changes (e.g., required masks, acquiring certification of cleaning standards, changes in store hours, etc.)
- This thesis seeks to analyze the effects that the most common policies aimed at limiting the spread of COVID-19 had on consumers' willing to shop at retail stores during first wave of pandemic (April-June 2020).

Literature Review

- The COVID-19 pandemic might have long-lasting effects, similar to those of the September 11th terrorist attacks, affecting consumer behavior (Standish and Bossi, 2020).
- Expanded shopping hours affects weekly consumer shopping patterns (Grünhagen, 2003).
- Access to the store, parking facilities, and hours of operation are also key factors affecting consumer expectations at convenience stores (Bianchi, 2009).
- Personal and psychological factors have a stronger effect than cultural and social factors on consumer behavior (i.e., willingness to buy) at convenience stores (Boulaouane, 2013).

Methods: *Survey Design and Data Collection*

- *Phase 1*- Interviews with retail stores managers to gather information about policy implementations.
- *Phase 2* - Questionnaire setup
  - Sociodemographic background: age, race, gender, and location during April-June 2020
  - Shopping behavior before, during, and after April-June 2020 and safety feeling
  - Impact of eight specific retail store policies, aimed at limiting the spread of COVID-19, on willingness to shop at a retail store (measured as frequency of trips per week)
    - Policies: Certification of cleaning standards (cleaning approved by professional cleaner), visibility of cleaning standards (hand sanitizer available), mask requirements, occupancy restrictions, modified store hours, modified store layout (promoting social distancing, curbside pickup available, and designated hours for at risk/elderly population
- *Phase 3* – Survey distribution and through Qualtrics® to the Union College community (students, faculty and staff) between February 18-28, 2021

Methods: Model

$$midpandemictripsperweek = \beta_0 + \beta_1(cleaningstandards) + \beta_1(cleaningstandards) + \beta_2(maskrequirement) + \beta_3(visability\ of\ standards) + \beta_4(occupancy) + \beta_5(hours) + \beta_6(layout) + \beta_7(curbside) + \beta_8(age) + \beta_9(location) + \varepsilon$$

where

$midpandemictripsperweek$ is the dependent variable representing a consumer's willingness to shop at a retail store during April-June 2020 measured as the number of trips per week.

cleantingstandards, maskrequirement, visibilityofstandards, occupancy, hours, layout, curbside, and elderlyhours, are variables reflecting the the extent to which each of the eight policy implementation affect willingness to shop (measured from 0-4)

Age measures how old the participants are in 2021.

smalltown, smallcity, and largecity are dummy variables that account for the size of the area where consumers were living during April-June 2020.

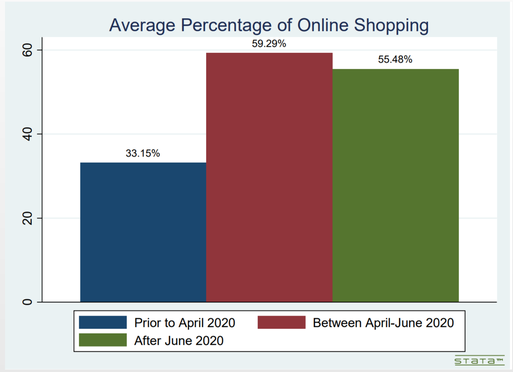
- This regression model is estimated through Ordinary Least Squares (OLS).

Preliminary Results: *Summary Statistics*

- A total of $N = 303$ responses were collected.

Table 1: Respondents' sociodemographic information

Variable	Units	Full Sample (N=303)
Age	Average age	36.34
Gender		
Male	34.98%	106
Female	62.71%	190
Other	2.31%	7
Race		
White/Caucasian	83.83%	254
Black	1.65%	5
Asian	4.62%	14
Hispanic	4.29%	13
Other race	5.61%	17
Relationship to Union College		
Student	46.53%	141
Professor	15.51%	47
Staff	37.95%	115
Residence area (April-June 2020)		
Rural area (≤ 2,499)	9.24%	28
Small town (2,500–49,999)	53.47%	162
Small city (50,000–249,999)	30.03%	91
Large city (≥ 250,000)	7.26%	22

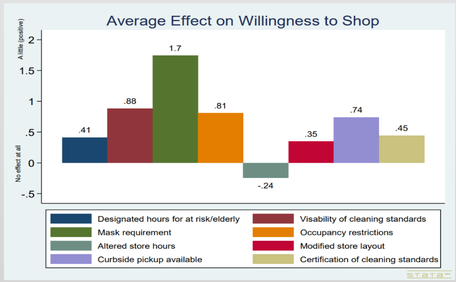


- 48.18% ($N = 145$) of total respondents indicate that changes in retail stores affected their willingness to shop during April-June 2020.

Table 2: Average weekly trips to retail stores during Covid-19 pandemic

	Average weekly trips to retail stores (N=145)
Before April 2020	3.81 (1.64)
During April-June 2020	1.96 (1.07)
After June 2020	2.63 (1.10)

Note: Values in parentheses are standard deviations.



Preliminary Results: *OLS Regression*

VARIABLES	(1) midpandemictripsperweek
cleaningstandards	-0.067
	(0.085)
maskrequirement	-0.024
	(0.068)
visibilityofstandards	0.022
	(0.086)
occupancy	-0.020
	(0.086)
hours	0.176**
	(0.079)
layout	-0.062
	(0.082)
curbside	-0.122**
	(0.054)
elderlyhours	0.009
	(0.075)
age	0.004
	(0.005)
smalltown	-0.017
	(0.284)
smallcity	0.149
	(0.302)
largecity	-0.000
	(0.391)
Constant	2.032***
	(0.355)
Observations	145
R-squared	0.114

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: Number of responses drops to $N = 145$ to only account for consumers who indicated policies had an effect on their willingness to shop

Discussion and Conclusion

- Descriptive statistics suggest that 7 of the 8 policy changes positively impacted consumers' willingness to shop. Being the requirement of masks the store policy with a higher impact, followed by the visibility of cleaning standards.
- However, preliminary regression results indicate that only curbside pickup and altered store hours had significant effects on the number of trips per week during April-June 2020.
- Further analysis to be conducted by incorporating other factors (such as self-safety feeling while shopping) that might affect willingness to shop as the significant coefficient for the constant in the regression indicates.
- Results cannot be generalized but might be helpful for retailers to gauge what changes affect consumers and how often they go to retail stores.

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