The Rise of PRESTO Positively Impacts the Usage of the TTC for the Residents of Toronto*

Rachit Srivastava

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Abstract

With the rapid increase in digital commodities and on-the-go customer experiences for TTC (Toronto Transit Commission) Transit riders, a study was conducted to see the shift in transit fare sales in the past decade between physical fares (i.e. cash, tokens, or passes) and digital fares from PRESTO cards. When looking at the TTC sales matrix from year to year, there is an increase in usage of the TTC where most of the sales derive directly from the PRESTO sales rather than physical fares regardless of the type of fare; whether the fare pertains to a single-fare ticket or monthly passes. Similarly, the relationship between PRESTO sales and the sales for rail transits, like subway and SRT, perceived a positive increase in usage in the past decade, alluding to the riders being more interested in using the TTC for a more faster and efficient ride experience around Toronto. It is quite evident that Torontonians value the explicit interaction of being efficient and quick when it comes to using the TTC, by using this insight the TTC can slowly transition into using PRESTO as their main source of selling fares while increasing the development of subways to cater to the needs of Toronto's TTC riders.

Introduction

There has been a rise of TTC fares and the usage of the TTC transit by Torontonians in the past decade, giving rise to contactless smart cards encrypted with NFC called the PRESTO card which allows riders to use the TTC without the need for any physical fares. PRESTO is a payment system that works across the city of Toronto for all transit systems to make the experience of a rider more secure and convenient to help them commute from one place to another. While TTC is one of the main ways for people to commute and travel across the city, it will be great to see what aspects of TTC are more prevalent in Torontonian's riding experience. This will help hone onto a specific sector of TTC and help improve the experience further to lessen the pain for the TTC riders.

The study focused on assessing the total number of sales for PRESTO, a digital payment system for quick fares, and total number of sales for physical fares, like cash, tokens, passes, or tickets, for Torontonians from 2010 - 2020. This study was conducted by looking at a TTC dataset obtained from the Toronto Open Data Portal, that focused on illustrating the information about the sales of the fares for both digital and physical assets as well as distinguishing the amount of fares for the types of transits that TTC offers. Since the study aimed to look into the trajectory of the sales from a large period of time, looking at the characteristics of the total number of sales per year seemed to be the most appropriate data to analyze for this study. By visualizing this data over a period of time, it gives us a great sense of how the ticket sales increased or decreased in a specific portion of the TTC ecosystem while identifying the main reasoning for that relationship. When comparing these variables, it shows that there is an increase in the usage of the TTC from 2010 to 2020, where the majority of those sales came from PRESTO sales and Rail transit sales. This further elaborates on the behaviour of Torontonians while using the TTC service and its products as they are more inclined to take a type of transit that is convenient, fast, efficient, and gets them to their destination

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*Code and data are available at: https://github.com/levi24/PRESTO_VS_TTC

without any hiccups. The TTC can use this knowledge to further push their agenda in strengthening that specific sector in their roadmap to improve the experience further so TTC riders continue to utilize their services according to their liking.

Data

Model

```
#ttc_vs_presto_model <-
 # lm(x2019 ~ x1 + fare_media, data = ttc_clean_data)
#summary(ttc_vs_presto_model)
```

```
## Warning in row_spec(., 0, bold = TRUE): Please specify format in kable.
## kableExtra can customize either HTML or LaTeX outputs. See https://
## haozhu233.github.io/kableExtra/ for details.
```

```
## Warning in kable_styling(., full_width = F, latex_options = "scale_down"):
## Please specify format in kable. kableExtra can customize either HTML or LaTeX
## outputs. See https://haozhu233.github.io/kableExtra/ for details.
```

Table 1: Total Number of People Using PRESTO and TTC

Type of Fare	2019	2018	2017	2016	2015	2014	2013	2012	2011
PRESTO - ADULT SINGLE RIDE	166,871	110,950	67,829	27,397	13,323	9,862	8,194	4,399	1,13
CASH	26,287	32,251	36,045	41,536	48,873	49,120	48,623	46,467	43,7
TOKENS	21,669	46,974	76,106	102,073	110,945	111,157	112,360	117,962	124,
TICKETS	0	0	0	0	0	0	0	0	0
PRESTO - SENIOR SINGLE RIDE	11,203	5,587	2,728	680	210	6	0	0	0
PRESTO - YOUTH SINGLE RIDE	16,975	8,429	2,975	741	228	6	0	0	0
CASH	9,363	11,476	12,532	10,440	12,170	12,037	8,538	8,164	7,60
TICKETS	15,876	25,772	31,195	32,997	32,595	33,408	35,472	37,039	38,2
TICKETS	0	0	0	0	1,066	7,097	7,563	7,929	8,30
PRESTO - FREE CHILD RIDE	6,168	1,384	163	36	10	0	0	0	0
CASH	0	0	0	0	526	3,705	2,708	2,589	2,43

Results

Discussion

References

##Appendix dffare <- data.frame(fare = presto_vs_ttc$fare_media, twenty_nineteen = presto_vs_ttc$x2019, twenty_eighteen = presto_vs_ttc$x2018, twenty_seventeen = presto_vs_ttc$x2017, twenty_sixteen = presto_vs_ttc$x2016, twenty_fifteen = presto_vs_ttc$x2015, twenty_fourteen = presto_vs_ttc$x2014, twenty_thirteen = presto_vs_ttc$x2013, twenty_twelve = presto_vs_ttc$x2012, twenty_eleven = presto_vs_ttc$x2011, twenty_ten = presto_vs_ttc$x2010, two_thousand_nine = presto_vs_ttc$x2009) %>% with(dffare, sum(twenty_nineteen[fare == 'CASH']))

dffare