An Analysis of Homelessness, Age Groups, and Gender Demographics in Toronto's Shelter System*

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Toronto's shelter system and homeless population has experienced significant growth over recent years. Using Toronto's shelter system data from the City of Toronto's Open Data Portal, this paper analyzes the trends of different demographics that utilized shelters from 2018 to 2023. This paper reveals the age group that visits shelters the most, the trend of the average number of individuals who are actively homeless using shelters, the average number of people who return to shelters after acquring housing, and the gap separating the average number of male and female shelter users from 2018 to 2023.

1 Introduction

Toronto's shelter system provides a temporary home to those who are in need of one. The system is essential for Toronto's homeless population and refugees as the shelters uphold standards that support meals and laundry accommodations, mental health and harm reduction services, and a host of counselors to direct and aid individuals acquire permanent housing. Although the shelters provide a multitude of services and aid to secure permanent housing for the unhoused, there are still many who return to shelters after securing housing.

The affordable housing crisis is directly contributing to Toronto's shelter availability crisis. As Toronto's housing market has skyrocketed in the past few years, it is no wonder why Toronto's shelters are receiving significantly more visitors. According to CBC News, an estimated average of at least 273 individuals were turned away from shelters in June 2023, which was a record high for Toronto shelters (Draaisma 2023). The amount of families seeking warm beds has been

*Code and data are available at: https://github.com/IreneeeH/STA302-Term-Paper-1.git

unmatched and as Toronto's winters can be extremely frigid, shelter availability is becoming increasingly more critical.

The goal of this paper is to analyze the demographics that utilize Toronto's shelter system. Analyzing different age groups that utilize shelters are of particular interest. In addition, this paper is also concerned with the actively homeless population and different demographics, such as refugees and single adults, that stay in shelters. Analyzing and studying Toronto's shelter system data can reveal those within society that are struggling the most with securing housing.

The remainder of this paper is structured as follows: the Data section details the collection and processing of Toronto's shelter system data. The following Results section displays tables and graphs that help illustrate trends found in the data. The final Discussion section analyzes and draws conclusions from the tables and graphs exhibited in the previous section.

2 Data

2.1 Sources

The data utilized in this paper was retrieved from the City of Toronto's Open Data Portal (*Opendatatoronto: An r Package for Accessing Open Data from Toronto*, n.d.). The statistical programming language R was used to retrieve, clean, and process the data (R Core Team 2022). In particular, the following R packages were used: opendatatoronto and tidyverse (Wickham et al. 2021) for data acquisition, janitor (Firke 2023) and knitr (Xie 2023) for data cleaning and processing, and ggplot2 (Wickham 2016) for creating figures.

3 Toronto Shelter System Data

The shelter system data acquired from the City of Toronto's Open Data Portal provided monthly statistics of Toronto's shelters from January 2018 to December 2023. For each month, the data set included information for the entire population, chronic visitors, refugees, families, youth, single adults, and non-refugees. The information of interest for each of those demographics are the number of individuals that returned to shelters after previously acquiring housing, those that are new to the shelter system, those that are actively homeless, those that identify as male and female, and the number of individuals in each age group in that demographic. The age groups consist of visitors under 16, 16 to 24, 25 to 44, 45 to 64, and 65 years of age or older.

4 Limitations

The website for the City of Toronto's Open Data Portal's data for Toronto's shelter system stated that there were limitations to the data set (Portal, n.d.). A limitation of the data is that the data excludes individuals who do not sleep in shelters or who use other resources for shelter, such as public infrastructure and buildings open all hours.

Table 1: Sample set of Toronto shelter system data from 2018 to 2023

Date	Population Group	Returned from Housing	New to Shelter	Actively Homeless	Age Under 16	Age 16-24	Age 25-44	Age 45-64	Age 65+	Males	Females
Jan-18	All Population	46	1106	7958	1233	1111	2901	2291	422	4963	2912
Jan-18	Chronic	11	317	2532	223	346	716	1000	247	1632	870
Jan-18	Refugees	4	651	2408	914	241	961	270	22	1219	1177
Jan-18	Families	0	561	2277	1232	187	687	153	18	968	1308
Jan-18	Youth	12	116	924	0	924	0	0	0	571	312
Jan-18	Single Adult	34	429	4757	0	0	2214	2138	404	3424	1292
Jan-18	Non-refugees	42	455	5550	319	870	1940	2021	400	3744	1735
Feb-18	All Population	78	947	8132	1271	1094	2971	2364	432	5093	2959
Feb-18	Chronic	11	217	2541	202	362	707	1017	253	1652	862
Feb-18	Refugees	8	490	2491	965	253	951	303	19	1264	1214
Feb-18	Families	4	435	2336	1268	197	688	167	16	1007	1328
Feb-18	Youth	19	91	893	0	893	0	0	0	556	301
Feb-18	Single Adult	55	421	4903	0	0	2283	2197	416	3530	1330
Feb-18	Non-refugees	70	457	5641	306	841	2020	2061	413	3829	1745

Table 1 displays a sample of the Toronto's shelter system data.

5 Results

6 Average Number of Indivduals for each Age Group

Figure 1 demonstrates that individuals age 25 to 44 enter shelters the most on average, followed by individuals age 45 to 64, then those under 16, and then those age 16 to 24. Additionally, individuals 65 and over enter shelters the least on average.

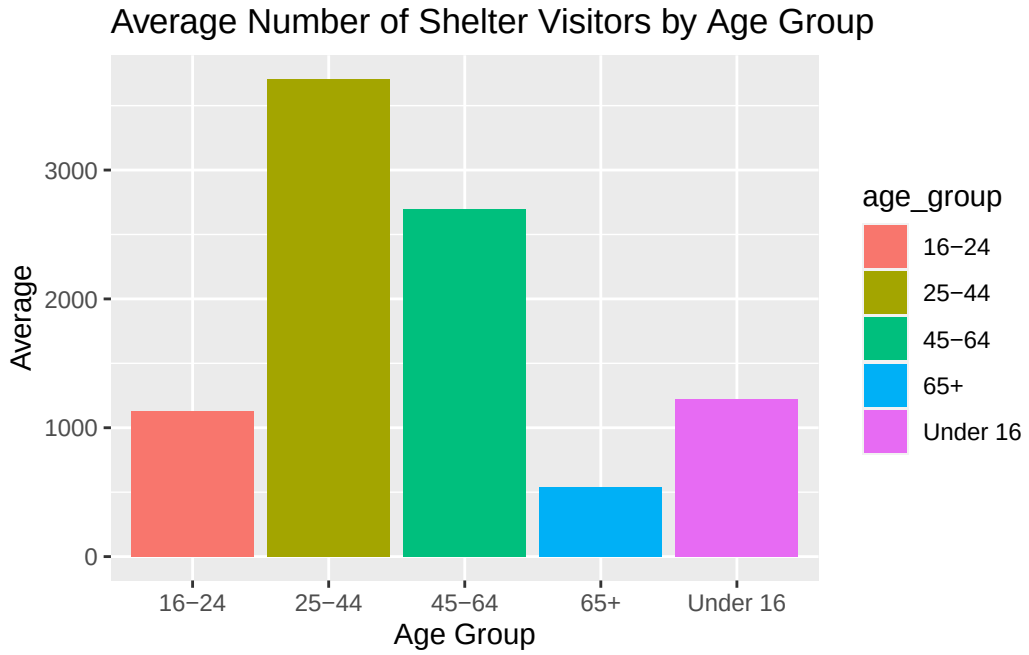

Figure 1: The average of all shelter visitors in each age group over 6 years from 2018 to 2023

7 Average Number of Actively Homeless Indivduals

Figure 2 demonstrates that the average number of actively homeless individuals increased from 2018 to 2019, significantly decreased from 2019 to 2020, remained almost unchanged from 2020 to 2021, experienced a sharp increase from 2021 to 2022, and increased more from 2022 to 2023. Additionally, the average in 2023 reached a high of almost 10500 actively homeless individuals.

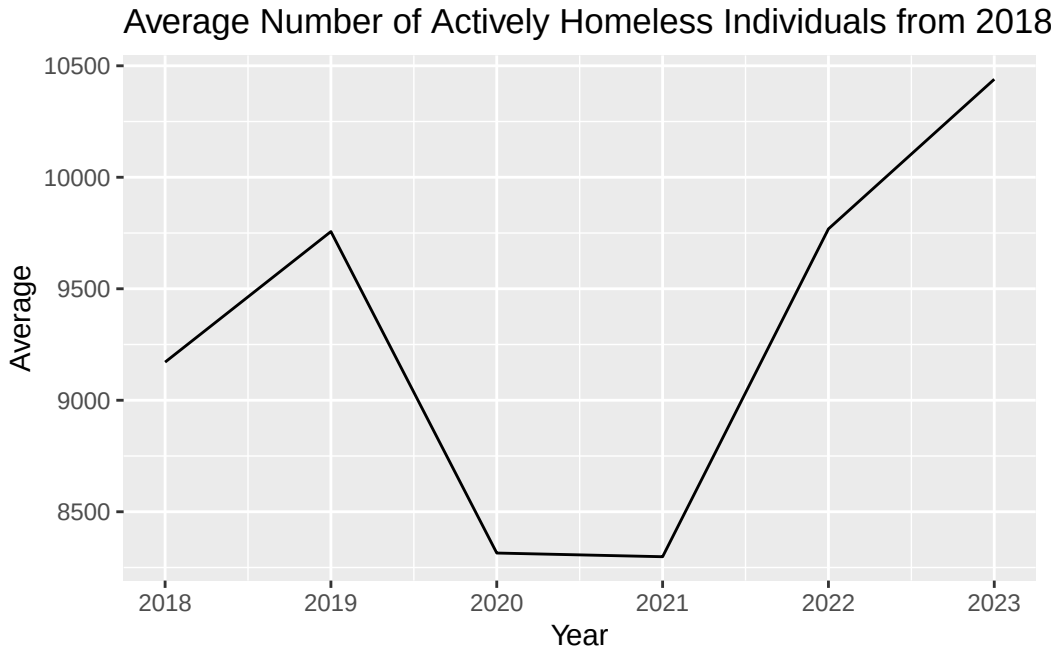

Figure 2: The average number of actively homeless people from 2018 to 2023

8 Average Number of Shelter Returners

Figure 3 illustrates that the average number of individuals who return to shelters each year increased each year from 2018 to 2021, then the average began to decrease from 2021 to 2022 and significantly declined from 2022 to 2023. In addition, less than 60 individuals returned to a shelter in 2023.

9 Average Number of Males and Females

There is an average of over 5000 male individuals in shelters each year; whereas for female individuals, there is an average of less than 4000. Figure 4 illustrates how every year, the average number of male shelter users is significantly higher than that of female users. Additionally, from 2020 to 2021, the average number of male shelter users increased while the average number of female shelter users decreased. In regards to other annual intervals, the average for males and females both increase from 2018 to 2019, decrease from 2019 to 2020, and increase from 2021 to 2023.

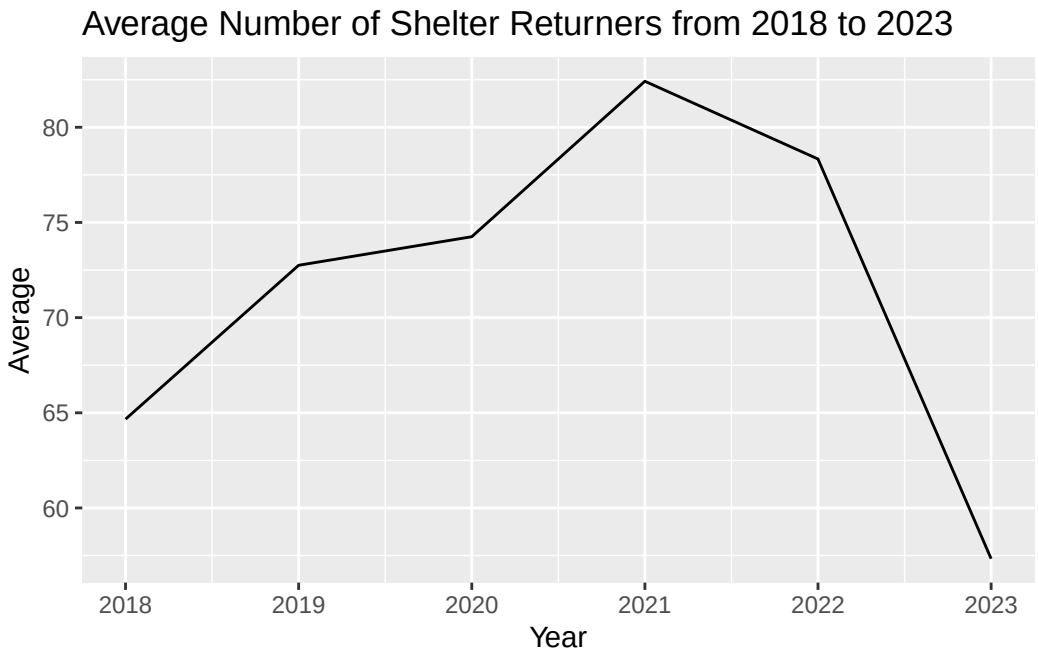

Figure 3: The average of number of visitors who returned to shelters from 2018 to 2023

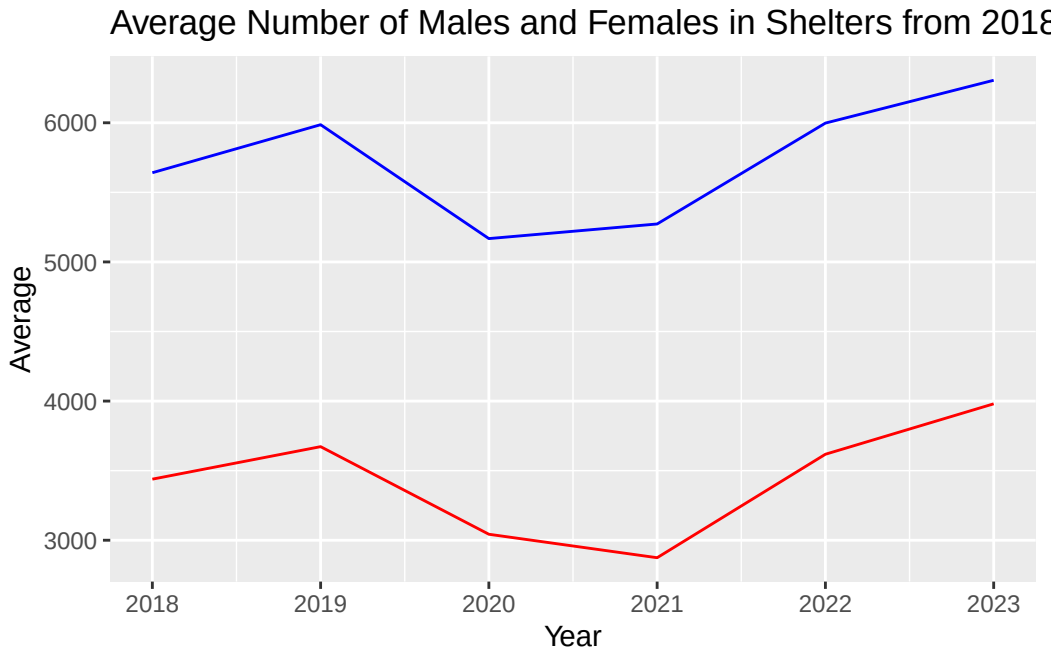

Figure 4: The average of male and female shelter visitors from 2018 to 2023

10 Discussion

10.1 Weaknesses and next steps

Weaknesses and next steps should also be included.

Appendix

References

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