Demographic survey on Toronto shelter*

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1 Introduction

Homelessness is a pressing issue in major cities worldwide, and Toronto is no exception. Recent observations suggest a growing number of homeless individuals on Toronto streets, raising concerns about the dynamics of the shelter system, the demographics of those affected, and their pathways into homelessness. To address these concerns, this study aims to analyze the flow of individuals into and out of Toronto's shelter system, with a particular focus on understanding the origins and characteristics of the homeless population.By analyzing the patterns in shelter use, this study seeks to answer key questions such as: where are these individuals coming from, what are their demographic characteristics, and how frequently do they cycle through the shelter system? Understanding these factors is critical for identifying gaps in services and making data-driven policy recommendations to reduce homelessness in Toronto. The ultimate goal, in line with the City's vision, is to contribute to efforts that make homelessness in Toronto a rare, brief, and non-recurring experience.

In this paper, I will analyze key indicators such as the number of people returning to shelters after being housed, the rate of newly identified homeless individuals, and demographic breakdowns such as age, gender, and population groups (youth, families, refugees, Indigenous individuals, etc.). This analysis will help illuminate the pathways into homelessness and provide evidence for policies aimed at mitigating the problem.

This paper is organized into several sections, each contributing to a comprehensive understanding of homelessness in Toronto, based on the provided shelter system dataset. The structure includes an exploration of the dataset, visualizations of key metrics, analysis of trends and patterns, and a discussion of the implications of these findings.

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2 Data

2.1 Data Tools

All data analysis and visualizations were conducted using R (R Core Team 2023). Data was obtained from the City of Toronto's Open Data Catalogue (City of Toronto, n.d.) and included the Toronto Shelter System Flow dataset (Toronto Shelter & Support Services 2024). Visualizations were created using the ggplot2 package (Wickham 2016), with data manipulation carried out via dplyr (Wickham et al. 2023) and tidyr (Wickham, Vaughan, and Girlich 2024). Date handling was simplified with the lubridate package (Grolemund and Wickham 2011), and all R code was formatted using the styler package (Walthert et al. 2023). Guidance on storytelling with data was drawn from Telling Stories with Data (Alexander 2023).

2.2 Data Source And Measurement

The dataset Toronto Shelter System Flow(Toronto Shelter & Support Services 2024) used in this study is sourced from the Toronto Open Data Platform(City of Toronto, n.d.). It measures and tracks homelessness in Toronto by capturing information through a Shelter Management Information System (SMIS) that covers various services such as shelters, 24-hour respite sites, and warming centers funded by the City of Toronto. The data spans from January 2018 to September 2024 and includes individuals who have accessed any of these services in the past three months. The dataset updated monthly and published on the 15th of each month, provides monthly records on the movement of people into and out of these services, offering insight into the demographics, trends, and dynamics of homelessness in Toronto.

The table Table 1 shows the variables after data cleaning, showing 6 of the 604 observations. Due to space constraints we are only showing 2 age groups in this table. The variable "date.mmm.yyy." goes by month from 2018 to August 2024. The data covers different age groups: under 16, 16-24, 25-34, 35-44, 45-54, 55-64, 65 and over, and types of population: refugees, single adults, families, youth, and chronically ill. It tracks inflow and outflow: returned from shelter and returned from housing.

Table 1: Sample of cleaned lead data

Date	Population Group	Returned from Housing	Returned to Shelter	Age under 16	Age 16-24
Jan-18	All Population	46	494	1233	1111
Jan-18	Chronic	11	29	223	346
Jan-18	Refugees	4	32	914	241

Table 1: Sample of cleaned lead data

Date	Population Group	Returned from Housing	Returned to Shelter	Age under 16	Age 16-24
Jan-18	Families	0	14	1232	187
Jan-18	Youth	12	64	0	924
Jan-18	Single Adult	34	416	0	0

2.3 Data Selection

There are many databases on homelessness in Toronto, such as About Hostel Services: Homeless Shelter Locations(Toronto Shelter & Support Services 2019), but it doesn't distinguish well between population types, and we can't tell from it where homeless people come from. The data (Toronto Shelter & Support Services 2024) I chose has very complete age groupings and also divides the people who seek help from shelters like they return from housing or return to shelter. better still we can know more information about the homeless from this dataset such as whether they are refugees, single or have a family so that we can combine it with the literature to have a better discussion about the Homeless trends and causes of homelessness in Toronto.
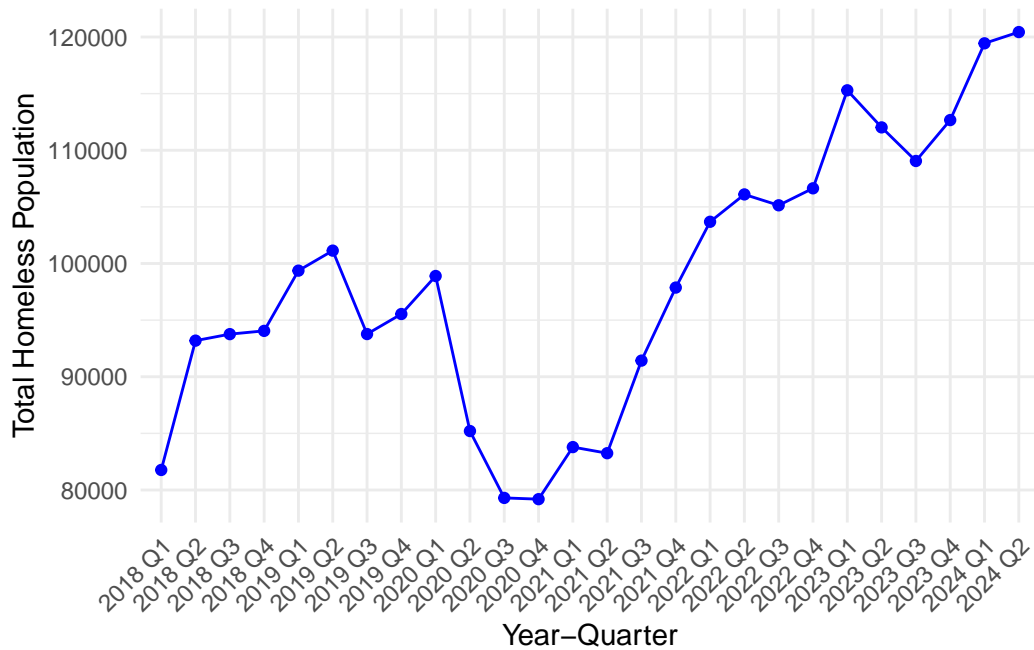
3 result

Figure 1: Total Homeless Population Trend by Quarter

Figure 1 shows the total homeless population trend from 2018 Q1 to 2024 Q2. The population rises until 2019, then sharply declines in 2020, with the lowest point falling below 60,000. From 2021 onward, the population steadily increases, reaching its highest point in 2024 Q2, exceeding 80,000.

Figure 2

3.0.1 firgure 2

visualizes the number of individuals returning to shelters across various population groups. Key insights:

The All Population group dominates again, with over 30,000 people returning to shelters. Non-refugees and Single Adults show similarly high returns, indicating that these groups have more difficulty staying housed. Chronic, Indigenous, and Families groups have fewer returns, although these groups may face other challenges in accessing shelter or permanent housing. Youth shows relatively low numbers of returns to shelters.

"' shows the trends in the number of actively homeless individuals across different population groups from 2018 to 2024. Key trends:
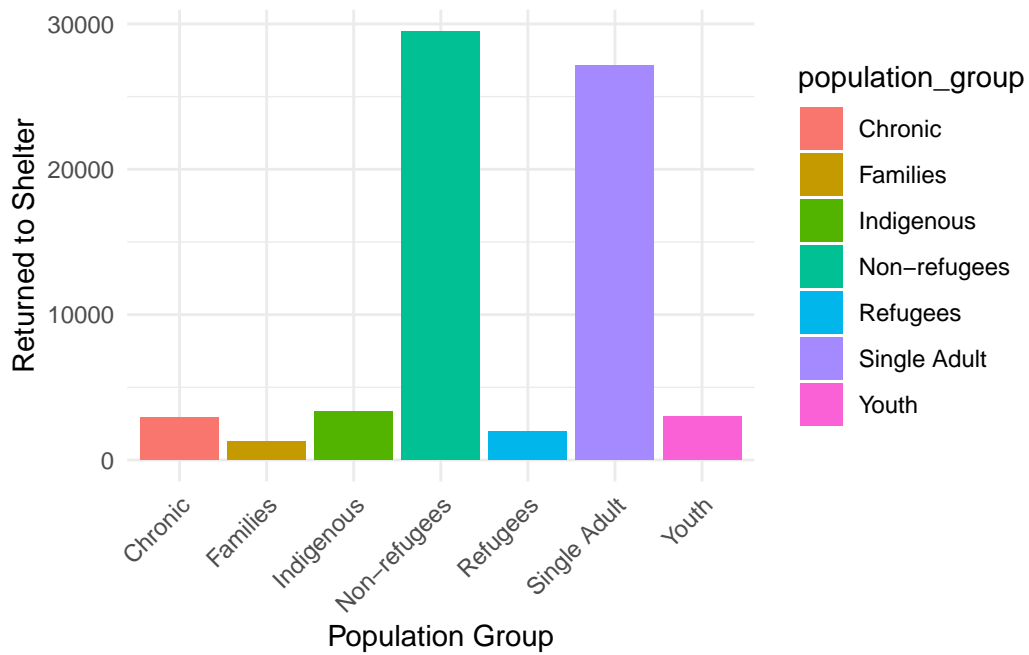
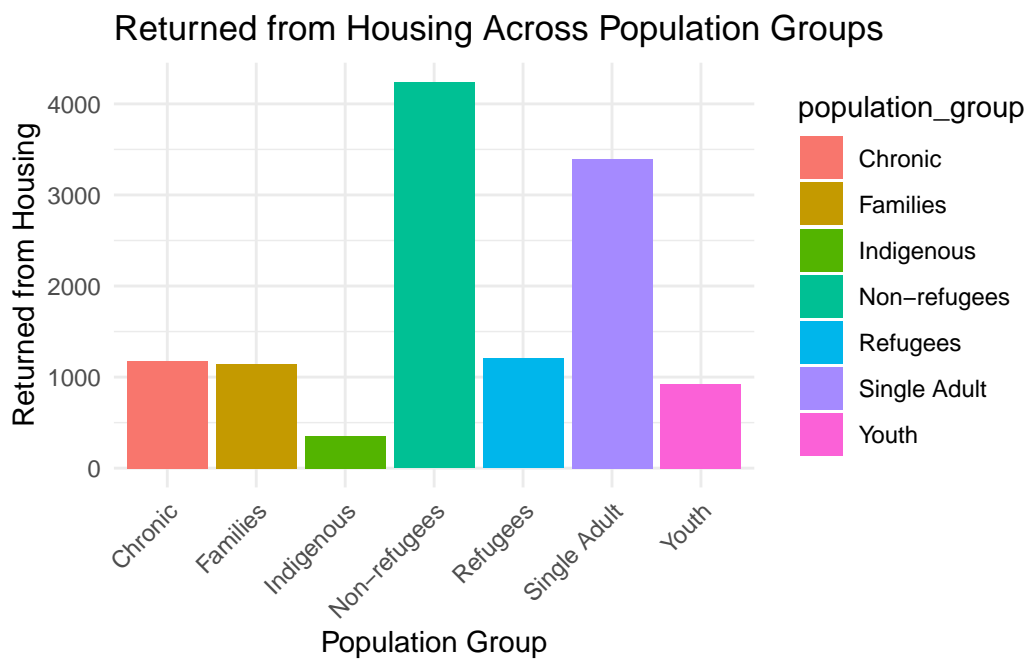Figure 2: Returned to Shelter Across Population Groups

Returned from Housing Across Population Groups

Figure 3: Returned from Housing Across Population Groups

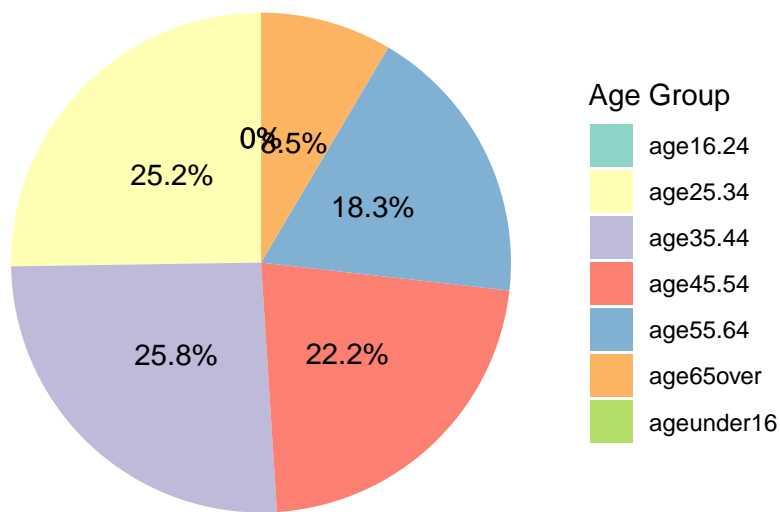# Age Group Distribution in Single Adult Population

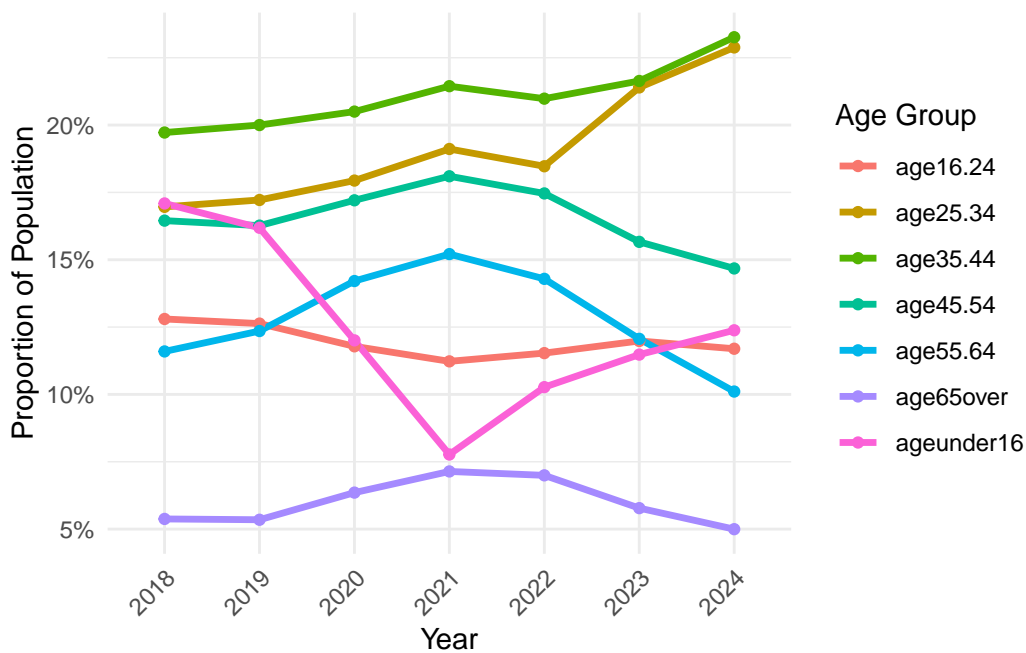Figure 4: Age Group Distribution in Single Adult Population

Figure 5: Trends in Age Group Proportions Over Time (Yearly)

The All Population group consistently has the highest number of actively homeless individuals over time, though there are fluctuations in the count. Non-refugees and Single Adults have seen a significant increase in actively homeless individuals since 2020, which may indicate worsening conditions or increased difficulty in accessing housing. Chronic and Families groups have more stable trends, while Youth and Indigenous groups show more modest and stable numbers. The trend highlights the overall increase in homelessness post-2020 for several groups, which could be linked to broader economic or social factors affecting housing availability.

4 Discussion

This analysis sheds light on the patterns and dynamics of homelessness in Toronto, drawing on data from the City's shelter system. The key findings indicate significant challenges for certain population groups in maintaining permanent housing, frequent returns to shelters, and a concerning rise in homelessness over time, particularly after 2020.

4.1 First discussion point

The Returned from Housing analysis revealed that individuals from the Non-refugee and Single Adult groups face persistent barriers in sustaining housing stability, with high return rates to shelters. This suggests that these groups may not be receiving sufficient support or resources, such as access to affordable housing, stable employment opportunities, or necessary mental health services. Additionally, the overall high return rate across the All Population group reflects the broader systemic issue of housing insecurity in Toronto, where many individuals struggle to transition from temporary shelters to permanent housing.

4.2 Second discussion point

The Returned to Shelter plot reinforced these findings, highlighting how certain population groups—particularly Non-refugees and Single Adults—are cycling in and out of the shelter system more frequently. This revolving-door effect suggests that while shelters provide temporary relief, they are not effectively breaking the cycle of homelessness for many individuals. The lower return rates for Chronic, Families, and Youth might indicate more successful interventions for these groups, though their continued presence in shelters points to a need for further long-term solutions

4.3 Third discussion point

The Trend of Actively Homeless Population Over Time provides a broader context for understanding how homelessness in Toronto has evolved. The significant rise in homelessness after

2020, especially among Non-refugees and Single Adults, may be attributed to the economic impact of the COVID-19 pandemic, including job losses, eviction increases, and reduced access to social services. This trend underscores the vulnerability of certain groups during times of economic instability and highlights the need for responsive, proactive policies that address housing affordability, economic security, and social support.

Appendix

.1 Dataset and Graph Sketches

Sketches depicting both the desired dataset and the graphs generated in this analysis are available in the GitHub Repository.

.2 Data Cleaning

The data cleaning process involved filtering out some of the columns from the raw dataset and renaming some of the data entries for clarity and simplicity.

A Additional data details

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