Analysis of homelessness in USA vs Canada

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Introduction

Homelessness is a visible and concerning problem in many advanced countries, such as the United States. As a newcomer to this country, it was puzzling that such an affluent country seemed to have such a large number of homeless individuals. We sought to compare the statistics regarding homelessness to the measures the government takes to alleviate homelessness. To start, we are comparing two countries: the USA with its neighbor, Canada. As a visual artist, learning to create compelling static and dynamic (interactive) content with Python and d3 is essential. In the future, the interface created can be expanded to compare the USA with other countries.

Research Goal

Creation of Python analysis tools and visual representations within a Jupyter notebook to allow the comparison of homelessness statistics between two countries (the United States and Canada) and communicate how little is known visually. Explore the relative numbers and demographics of homelessness.

Methods

1. The work involved the development of a Jupyter notebook analysis in python with plot.ly for the creation of interactive graphs and analysis. Other visualization packages were also explored (Javascript-based d3 graph and the C# game engine, Unity3D).

2. There are numerous online resources (governmental and agency reports, new articles and the HUD datasets for the USA and Statistique in Canada provide raw data on homelessness). Extensive background research was required to find statistics that would allow a quantitative comparison between countries over similar time-scales.

python plotly

Summary Statistics/ Challenges

	Total Population (in millions)	Homeless (in thousands)	Homeless "Rate" (per 100,000)
USA	331	582	18
Canada	38	27	7

Shelters Types of US vs Canada in 2021

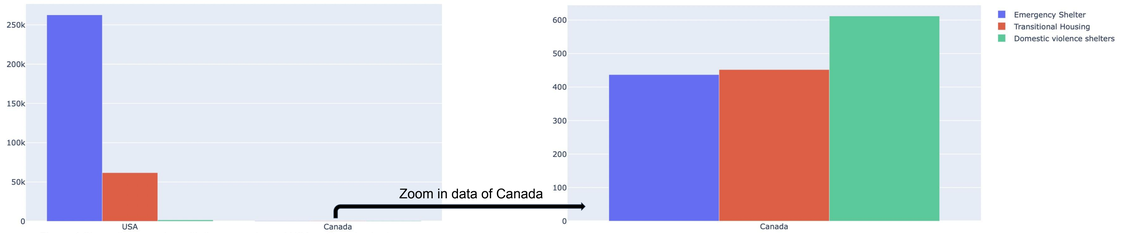

Figure 1 Shows the group bar with the comparison of USA vs Canada chart using plot.ly

Figure 2 Shows zoom in data of Canada using plot.ly

- There are a lot of "hidden" homeless that are not reported or known for a number of reasons.
- The homeless population rate is useful for comparing countries with a large population difference. [1]
- There are a lot of services, including home funding, social services, and job training. However, it required a great deal of research to break them down into different categories. It's not just the differences in country policy, but also the programs from thirty different organizations that are non-profit, private, and government. [5]
- Therefore, by focusing on the shelter homeless population, accuracy could be increased with different demographics, such as gender and age group.

Demographics

Gender

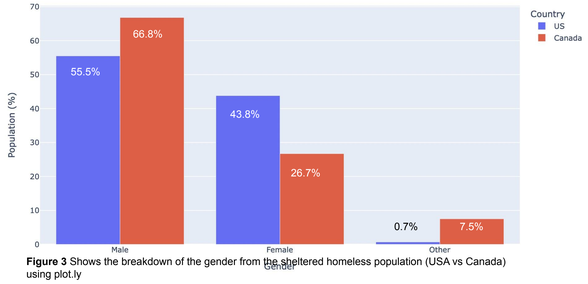

Figure 3 Shows the breakdown of the gender from the sheltered homeless population (USA vs Canada) using plot.ly

Age

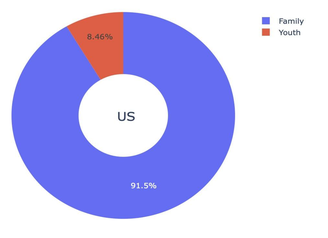

Figure 4 Shows a donut chart with the breakdown of age group (USA vs Canada) using plot.ly

- The figures above display the demographic of the homelessness quantitative data such as gender (female, male, other - transgender/ non-binary), and age (youth that range from 1-25 years old and the families that range 25 years old and above). The statistic values of the age group for US and Canada have similar results with only minimal difference.
- Canada has more data for the indigenous and non-indigenous rather than race breakdown.

Conclusion

Comparison of the USA to Canada was just a first step in better understanding why homelessness is such a visible problem in the USA. The Python visualization tools could be applied to other countries, although the differences in accounting for homelessness is difficult and not easily automated. Many federal and inter-agency reports on homelessness were scavenged in order to find the data needed to create quantitative comparisons in Python.

Even though the USA and Canada have many similarities, the differences in the methods used for counting homeless individuals and reporting those results varied enough in the USA vs Canada to make quantitative comparisons difficult. Accounting for the homeless population is a known problem which makes the assessment of the value and effectiveness of homeless services difficult.

Acknowledgments

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References