

GEO-SPATIAL DETERMINANTS OF HIGH HOMELESSNESS

Hafsa Aasi^{a*}

^a Center for Information Systems and Technology, Claremont Graduate University, Claremont, U.S.A.

* hafsa.aasi@cgu.edu

Keywords: critical GIS, qualitative GIS, spatial analysis, homeless, homelessness

Introduction

Despite extensive research on and efforts to address homelessness, it has persisted and even increased in many places in the world over time. The complex nature of this phenomenon has made it difficult to collect and analyze relevant comprehensive data with accuracy. The research that does exist on homelessness is often focused on a particular aspect of individual homelessness from the perspective of a particular discipline. A cursory literature review makes it clear that the studies on homelessness which make use of extensive data typically focus on a very small unit of geography, often limited to homeless individuals seeking support from a specific service provider location such as a food bank or a homeless shelter. This paper seeks to understand some of the geo-spatial aspects of homelessness that may be contributing to the persistence of state-level homelessness in the United States.

The definition of homelessness varies within and between regional and global communities of academic scholars, policymakers, and practitioners. This study uses the definitions and descriptors of homelessness established by the United States Department of Housing and Urban Development (HUD, 2019). While the literature has identified multiple pathways into homelessness, there is still no consensus on why more homelessness persists in some areas than in others. Some of the explanations are based on assumptions which remain largely unexamined. One such explanation for a higher occurrence of homelessness is based on an assumption that areas with temperate climates attract more homelessness. There is very little research testing this assumption. This paper seeks to test this very assumption using a mixed methods approach using both quantitative and qualitative methods. A related assumption is that people become homeless by choice (Dear & Gleeson, 1991; Dluhy, 1990). While this study will not be testing the assumption that homelessness is a choice, determining if homelessness is higher in more temperate states in the U.S. will help advance research in that direction. Another related assumption is that homeless people are highly mobile. This study will not be testing this assumption either. However, there is already a small body of research disproving this assumption (Parker, & Dykema, 2013; Wolch, & Koegel, 1993).

Before attempting to test the assumption that places with more temperate climates attract more homeless people, it is important to understand the definitions of climate and temperate climate which are being used in this study. The National Oceanic and Atmospheric Administration defines climate as the long-term average temperature and precipitation of an area (NOAA, 2016). A study attempting to offer clarity on the

concept of a temperate climate finds that 57.2 °F may be considered temperate for humans in a number of contexts (Bailey, 1964).

Method

To test the assumption that the homeless count is highest in the states with the most temperate climate, data was collected on a number of variables at the state level for comparison. Data on the 2020 total homeless, total unsheltered homeless, and total sheltered homeless was collected from HUD. Data on the 2020 state population count, percentage of black population, percentage of Hispanic population, the percentage of baby boomers, percentage of the population that is in poverty, the population density, the land area per square mile, and median home values was collected from the Census. The 2020 total homeless by state and the state population values were used to compute the number of homeless for every 10,000 people in the state population overall. Data on the 2020 Real GDP in millions of chained 2012 dollars was collected from the Bureau of Economic Analysis. The most recent available data (as of 2010) on the urbanization percentage by state was collected from Iowa State University's Community Indicator program. The 2020 data on the average annual precipitation, the average maximum July temperature, and the average minimum January temperature was also collected. Most of the data for Puerto Rico, Guam, and the Mariana Islands was missing or unavailable and was excluded. Likewise, some of the data for Hawaii was also missing or unavailable and was excluded.

A Spatial Distribution of Homelessness by State in the United States

The occurrence of homelessness by state is normalized and mapped to show the number of homeless per 10,000 people of the population. See the visualization in Figure 1.

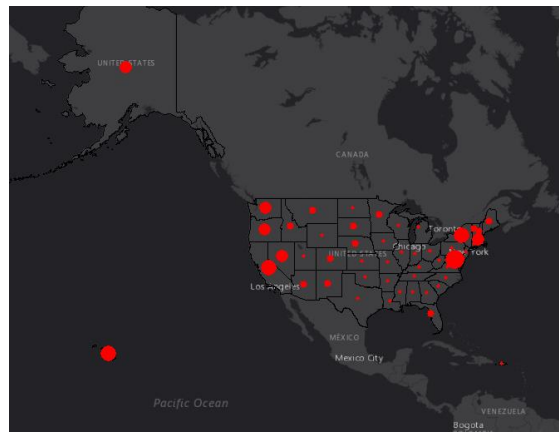


Figure 1: A snapshot of homelessness by state in the United States.

Results

The initial analysis revealed that the top ten states with the highest homeless count with high percentage of unsheltered homeless were the states that did not have harsh winters overall. On the other hand, even though New York and Massachusetts were among the top ten states with the highest homeless count in 2020, their percentage of unsheltered homeless was drastically lower than their warmer counterparts on that short list.

State	Total Homeless	Unsheltered	μJul.Max	μJan.Min	Precipitation
California	161,548	70.36%	92.0 °F	35.6 °F	12.07"
New York	91,271	4.99%	83.7 °F	19.7 °F	39.28"
Florida	27,487	46.10%	92.1 °F	50.8 °F	57.98"
Texas	27,229	48.52%	97.0 °F	38.7 °F	26.17"
Washington	22,923	47.18%	78.0 °F	29.0 °F	45.25"
Massachusetts	17,975	7.20%	84.6 °F	23.7 °F	42.40"
Oregon	14,655	60.57%	82.0 °F	28.6 °F	28.76"
Pennsylvania	13,375	13.88%	86.6 °F	24.4 °F	43.26"
Arizona	10,979	50.29%	97.8 °F	30.7 °F	6.56"
Ohio	10,655	17.31%	88.1 °F	28.2 °F	42.32"

Table 1: The top states with the highest homeless counts.

The top ten states with the highest homeless count per 10,000 people in the state population with high percentage of unsheltered homeless were not all the same as the states that had the highest total homeless count.

State	Homeless Per10k	Unsheltered	μJul.Max	μJan.Min	Precipitation
District of Columbia	92.52478083	10.24%	Missing	Missing	Missing
New York	45.18086976	4.99%	83.7 °F	19.7 °F	39.28"
Hawaii	44.37661439	56.52%			
California	40.85869008	70.36%	92.0 °F	35.6 °F	12.07"
Oregon	34.5860623	60.57%	82.0 °F	28.6 °F	28.76"
Washington	29.74972619	47.18%	78.0 °F	29.0 °F	45.25"
Alaska	26.57518295	11.49%	90.8 °F	35.3 °F	63.82"
Massachusetts	25.56929193	7.20%	84.6 °F	23.7 °F	42.40"
Nevada	22.22498514	61.00%	91.2 °F	24.8 °F	5.86"
Vermont	17.26076349	10.27%	82 °F	14.7 °F	40.21"

Table 2: The top states with the highest homeless counts per 10,000 people in the state.

Discussion and Conclusion

The top ten states with the highest homelessness change for the year 2020 depending on how the occurrence of homelessness is analyzed. California and New York remain in the top 5 states with the highest homelessness in both analyses. California, New York, Washington, Massachusetts, and Oregon remain amongst the top ten states with the highest homelessness in both analyses. These states have average minimum January temperatures below freezing, yet among them the unsheltered homelessness rates as percentages of their respective populations are higher in some states compared with others. Among the five states that appear in both analyses, California is the only state with average July maximum temperatures above 90°F. Further research is needed for a deeper understanding of the possible causes of higher occurrences of homelessness in some state over others. However, one thing is clear, a temperate climate alone is not enough to attract homeless people to a particular state.

Acknowledgements:

To be updated after review.

References

- Bailey, H. P. (1964). Toward a unified concept of the temperate climate. *Geographical Review*, 54(4), 516-545.
- Dear, M., & Gleeson, B. (1991). Community attitudes toward the homeless. *Urban Geography*, 12(2), 155-176.
- Dluhy, M. J. (1990, March). Community perceptions of the homeless: Factors in intervention strategies with the homeless. In *Social Work Research and Abstracts* (Vol. 26, No. 1, pp. 18-24). Oxford University Press.
- National Oceanic and Atmospheric Administration (NOAA). (2016, March 9). What's the difference between climate and weather? News & Features. Retrieved from <https://www.noaa.gov/explainers/what-s-difference-between-climate-and-weather>
- Parker, R. D., & Dykema, S. (2013). The reality of homeless mobility and implications for improving care. *Journal of community health*, 38(4), 685-689.
- U.S. Department of Housing and Urban Development (HUD). (2019, March 08). HUD's Definition of Homelessness: Resources and Guidance. HUD Exchange. Retrieved from <https://www.hudexchange.info/news/huds-definition-of-homelessness-resources-and-guidance/>
- Wolch, J. R., Rahimian, A., & Koegel, P. (1993). Daily and periodic mobility patterns of the urban homeless. *The Professional Geographer*, 45(2), 159-169.