Evaluation of Homelessness in US Metro Areas

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Project Concept and Goals

This project is an attempt to gain a better understanding of homelessness in the U.S..

Our goal is twofold:

1. Discover factors that contribute to the risk of homelessness and analyze their relationship with the homelessness rate.
2. Quantify the impact of homelessness based on lives affected and the dollar value spent addressing it.

The purpose of this visualization is to assist stakeholders in identifying the factors that contribute highly to homelessness in their cities and accordingly formulate policies to combat this issue. It also would enable them to compare and contrast policies with other cities and measure effectiveness.

Target Users

Organization	User Persona	Use Case
NGOs	Coordinators/Budget Manager	Specific to NGOs under our categories, use for money prioritization, optimize aid and assistance programs
Policymakers	Legislators and Staff	City specific use cases for financials, predicting of future homelessness rates
Homeless Shelters	Managers	Overview of what is most important, how to properly assess needs,
Advocacy Groups	Commissioners	Where to advocate, time prioritization, find categories most pertinent
General User	People with concern in homeless	How to vote, broader discussions about the state of cities and regions, knowledge and understanding

Discussion/Links

S.No.	Description	Link
1.	UBC study analyzing the effect of cash injections on homelessness in Vancouver	https://www.pnas.org/doi/10.1073/pnas.2222103120
2.	A literature review of intercity and intracity homelessness studies that inspired the categorization of factors in our analysis	https://www.tandfonline.com/doi/full/10.1080/10511482.2019.1684334?scroll=top&needAccess=true

3.	Pew Research Center study on how housing prices affect homeless populations and demographics.	https://www.pewtrusts.org/en/research-and-analysis/articles/2023/08/22/how-housing-costs-drive-levels-of-homelessness#:~:text=A%20new%20analysis%20of%20rent,homelessness%20rises%20when%20rents%20rise.
4.	Homelessness rates from 2007-2022 by race, ethnicity, gender, veteran status, age. Disability status	https://www.hudexchange.info/resource/3031/pit-and-hic-data-since-2007/

Team Roles

- PM direction, data sourcing and cleaning, and programming/analysis will be shared within each topic group
- Group A - Kyle, Daniel, Jacob
  - Housing, Macroeconomics, and Policy/Political climate
- Group B - Sarah, Manya, Lawrie, Parvati
  - Safety nets (welfare program information), demographics, Public health

Data Profile

I. Inputs

- HUD Data: PIT details demographics for sheltered and unsheltered homeless populations. HIC details inventory of available housing such as number of beds in emergency shelters, transitional housing, or safe havens.
  - 2007 - 2022 Housing Inventory Count by CoC (XLSX)
  - 2007 - 2022 Housing Inventory Count by State (XLSX)
  - 2007 - 2022 Point-in-Time Estimates by CoC (XLSX)
  - 2007 - 2022 Point-in-Time Estimates by State (XLSX)
- Median income by city for each year (2010-2022) from Census Bureau
  - Regional trends, chronological trends

- ○ Merge with socio-political factors for cross comparison and multivariate
- Federal Housing Finance Agency: House Price Index Datasets that includes quarterly as well as yearly sales price data for houses in metropolitan cities. They also record loan purpose data which can help to understand how home loans and refinancing affects the ability to keep a home.
- House Rental Estimates from Office of Policy Development and Research which contains the median rents for different counties and states. It should be noted that these are not fair market rents and the methodology for their calculation has been detailed by the authors in their documentation.
- City voting numbers along party lines (summary of political climate)
  - ○ Various government sources of public election data, e.g. YouGov or Ballotpedia

II. Outputs

- **Rate of homelessness per capita**, reported by metropolitan statistical area (mapped to nearest metropolitan statistical area from rate of homelessness per capita from HUD continuum of care regions)
- **Impact of homelessness**: homeless deaths per capita, spending on homelessness by MSA per capita

Anticipated Results

We plan to display hypothesized predictive factors (leading indicators) for homelessness, trends in homelessness over time, and lastly, trends in impact variables: death and spending. Ideally, we plan to have a dashboard of multiple overview pages for each of the topics (housing prices, macroeconomics, safety nets, policy, and demographics), with additional visualizations created to zoom in on specific details.

If possible, we may also investigate multivariate relationships between hypothesized predictor variables for their combined impact on homelessness. Other items that we will aspire to address, but may be out of scope due to time constraints, data availability, or other reasons: diving deeper into how public health and public policy climate affect rates of homelessness. We have quite a large scope, and may need to filter to produce optimal timely results.