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Spatial Accessibility of Resources and Services for the Homeless

Emergent Research Forum (ERF)

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Abstract

This paper builds on prior studies on homelessness which make the case for and incorporate its spatial dimension. Homelessness has been a significant subject of interest to researchers, policy makers, politicians, government entities, non-profit organization, and numerous other stakeholders for decades now. The persistence of homelessness in the United States despite the existence of supportive resources and services calls for a deeper understanding of the accessibility of those services and resources in order to better understand why homelessness still exists here in this day and age. This paper builds out a spatial accessibility index of resources and services (SAIRS) that can help the homeless. The SAIRS index is inspired by, and an adaptation of the Social Vulnerability Index (SoVI) first developed to determine the social vulnerability of people in different parts of the United States to environmental hazards. Unlike the SoVI, the SAIRS index is being built for homeless individuals.

Keywords

Spatial, accessibility, spatial accessibility, homeless, homelessness.

Introduction

This paper builds on prior studies on homelessness which make the case for and incorporate the spatial dimension. Homelessness has been a significant subject of interest to researchers, policy makers, politicians, government entities, non-profit organization, and numerous other stakeholders for decades now. The persistence of homelessness in the United States despite the existence of supportive resources and services calls for a deeper understanding of the accessibility of those services and resources in order to better understand why homelessness still exists here in this day and age.

Background

Before the persistence of homelessness in the United States can be studied, it is important to first understand how homelessness is defined and identify the resources that can help the homeless.

Defining Homelessness

Since there are numerous definitions of homelessness in both academic literature and in different government entities and non-profit organizations, for the purposes of this study the most relevant definition was determined to be one from the United States Department of Housing and Urban Development (HUD). HUD operates as a federal agency with an overarching mission to ensure greater access to affordable housing, which also includes efforts to prevent and minimize incidences of homelessness in the United States. HUD defines a chronically homeless person as someone who is: 'a homeless individual with a disability who lives either in a place not meant for human habitation, a safe haven, or in an emergency shelter, or in an institutional care facility if the individual has been living in the facility for fewer than 90 days and had been living in a place not meant for human habitation, a safe haven, or in an emergency shelter immediately before entering the institutional care facility. In order to meet the

“chronically homeless” definition, the individual also must have been living as described above continuously for at least 12 months, or on at least four separate occasions in the last 3 years, where the combined occasions total a length of time of at least 12 months. Each period separating the occasions must include at least 7 nights of living in a situation other than a place not meant for human habitation, in an emergency shelter, or in a safe haven. Chronically homeless families are families with adult heads of household who meet the definition of a chronically homeless individual. If there is no adult in the family, the family would still be considered chronically homeless if a minor head of household meets all the criteria of a chronically homeless individual. A chronically homeless family includes those whose composition has fluctuated while the head of household has been homeless.’ (Defining-Chronically-Homeless-Final-Rule.pdf, n.d.)

Identifying Resources for the Homeless

A thorough list of resources that can help the homeless with the myriad of both their imminent and long-term needs have been identified in a number of studies in the literature (Aasi 2021). Together these studies make it clear that the resources that may be helpful to homeless individuals depend a lot on the location and demographics of those homeless individuals and the life events that led to their becoming homeless. (Aasi 2020). These resources include food, shelter, healthcare, rehab facilities, job preparation and placement services, education services, social ties and even the locations the homeless individuals consider their home.

Accessibility

For the purpose of this study, definition of accessibility proposed by some researchers is that is a simultaneously active and passive measure of opportunities perceived by the typical individual to meet their needs in the study area (Cheng, Bertolini and le Clercq 2007). Conventional concepts of accessibility are unable integrate the nuances of human spatial behavior in the complexities of urban environments beyond distance, impedance, and mobility. Conventional concepts and measures of accessibility are focused on the accessibility of places using gravity models in terms of how close or far a location is in travel distance and time. There are also conventional accessibility measures that focus on the cumulative opportunities. However, the continued use of these approaches is compounding missed opportunities to incorporate contemporary urbanism, the complexities of human spatial behavior, recent advances in technology, and the inextricable co-dependence of individuals on information technologies for communication (Kwan and Weber 2003).

Local governments, non-profit service providers, and volunteers might be able to improve the efficiency and effectiveness of their allocation of resources to help the homeless by using GIS and spatial analysis to understand the accessibility of such resources for the homeless individuals they aim to help combined with data-driven targeted outreach efforts. In order to gain a nuanced understanding of accessibility of resources that help the homeless, the walkability and immediate neighborhoods of the resource and service locations must be analyzed along with the best available data on the homeless populations and the availability of the resources they might seek or benefit from. Yet service providers must also conform to the practical realities of zoning restrictions for the placement of homeless shelters so their planning efforts should also include site suitability modeling. To the extent that such data is available, the spatial behaviors and activity spaces of homeless individuals should also contribute to an understanding of accessibility of the resources that can help them.

The HUD mandated annual point-in-time count data suggests that unsheltered homelessness is concentrated in urban areas such as skid row in the city of Los Angeles. Residents of such areas are troubled by such concentrations of unsheltered homelessness in their communities and are often vehemently opposed to planned efforts to open shelters for that segment of the population. On the other hand, homeless individuals interested in exercising their agency to identify and physically access the resources and services that can help them are often limited to walking wherever they need or want to go. Spatial accessibility indices for the locations of resources and service that homeless people can benefit from could help improve the outreach efforts of service providers and volunteers.

Developing useful spatial accessibility indices requires understanding and incorporating the nuances of the problem domain being studied. Both existing research, legislation, and current practices must be considered to develop such indices. In the case of homelessness research, the mobility patterns of the

homeless are also of great interest. Therefore, literature on mobility patterns can help inform part of the development of a spatial accessibility index for the homeless. Incorporating the activity spaces of the homeless can also help advance our understanding of the spatial accessibility of the resources they may seek.

Spatial Accessibility of Shelter Beds

In order to do so, it is also important to cross-reference data on the existence of both the sheltered and unsheltered homeless population in the regions being analyzed. One researcher has already developed a Theil index to compute the spatial mismatch between homeless populations and the beds available for them across the CoCs in the United States and its territories. In this study, his technique is adapted to identify the spatial mismatch within Los Angeles County in the state of California for “the efficient and effective allocation” of beds for the homeless (Mast 2014).

Spatial Accessibility of Healthcare

One field that has been studying spatial accessibility is healthcare. Research suggests that the spatial and aspatial dimensions of analysis selected has implications for understanding neighborhood-level variations in access to primary healthcare. They have also pointed out that the spatial accessibility index should be developed with the understanding that individuals can cross the boundaries of geographic units of analysis and the actual supply of and demand for primary healthcare in different neighborhoods (Bissonnette, Wilson, Bell, and Shah 2012). These implications are further nuanced when the population of interest is that of homeless individuals. One particular group of researchers has identified “the failure to take into account an individual’s intimate connection with multiple geographic places (as) one of the main limitations of neighborhood and health studies” in the context of heart health, which is even more difficult to do for homeless individuals.

Some researchers propose assessing the spatial behavior of the study participants and their multi-place environmental exposures by visualizing and evaluating their route itineraries, travel destinations, activity spaces, daily mobility patterns, and travel and network activity place areas (Chaix et al. 2012).

Another study integrates a person- and place-based approach to create a spatially sensitive estimate of the local activity spaces of individuals using data captured via public participation GIS. Their study offers conceptual and methodological improvement in capturing the complexity of local activity spaces (Hasanzadeh, Laatikainen, and Kytä 2018). When the study subjects are homeless individuals, this can only be accomplished to a limited extent if service providers share their data frequently and have quality control processes in place to ensure de-duplication. The establishment of Continuum of Care across the nation along with the requirement that data be updated in HUD’s Homeless Management Information System (HMIS) can certainly help the federal government achieve a better understanding of homelessness. However, at smaller geographic levels, the organizations participating in the continuum of care must share data directly with each other to improve their understanding of the spatial accessibility of their services to the homeless.

Spatial Accessibility of Transportation

Another area of research that should inform the development of a spatial accessibility index for the homeless is that of transportation. While it is acknowledged that homeless people may have similar needs for transportation as their counterparts, homeless people do not have similar access to transportation. Through the analysis of focus groups and structured interviews, a recent study demonstrates that the daily travel patterns of the homeless offer an understanding of their active negotiation of their social and spatial exclusion (Jocoy et al. 2010).

Spatial Accessibility of Green Spaces

A recent study demonstrated inequities in the spatial access to parks across the United States at different granularities, the smallest being the Census tract and the largest being the national level. This study detailed the development of population weighted distance to demonstrate how potential park access varies by location and demographic (Zhang et al. 2011).

A different study uses a triangulation of methods including semi-structured and detailed interviews to understand the use of green spaces by the homeless in Lodz, Poland. The data in this study came from the City Office of Lodz, city streetworkers, and the homeless people themselves. The findings included the fact that not all homeless people feel condemned to urban green spaces. In fact, there are homeless people who prefer urban green spaces (Koprowska et al. 2020).

Spatial Accessibility of Jobs

With an increasing interest at the federal level in helping welfare recipients transition to self-sufficiency, the accessibility of job opportunities is extremely important for homeless individuals. A research study on spatial mismatch literature has influenced an increasing body of work in this area (Kain 2004).

Methodology

While the existing spatial analysis techniques used by researchers to study homelessness vary, this study endeavors to approach homelessness by computing a spatial accessibility index of resources that assist and support the homeless population in a given location.

Secondary data is provided by the Los Angeles Homeless Services Authority (LAHSA), the organization which conducts the largest point in time count of the homeless (PIT) annually in Los Angeles County, excluding the cities of Long Beach, Glendale, and Pasadena because they conduct their own PIT. The most recent PIT in Los Angeles County was conducted in February 2022. The PIT data for all census tracts in Los Angeles County was incorporated by LAHSA into a dataset including survey data from more than 2000 respondents by census tract. Data on the existence of the unsheltered homeless includes adults, youths, and families. The data on the availability of beds for the use of the homeless populations is provided by HUD’s 2022 CoC Housing Inventory Count Report. Some secondary data was also collected from news articles, etc. (Conklin 2021; CRA 2005; LAHSA 2020; Lekhtman 2019).

The construction of the spatial accessibility index of resources and services (SAIRS) that can help the homeless is inspired by and an adaptation of the Social Vulnerability Index (SoVI) first developed to determine the social vulnerability of people in different parts of the United States to environmental hazards (Cutter, Boruff, and Shirley 2003). Unlike the SoVI, however, the SAIRS index is being built for the nearly 2,100 unsheltered homeless individuals counted by LAHSA and its volunteers in the Skid Row area of the city of Los Angeles (LAHSA 2020) as shown in Table 1 below.

Location	Resource Type	Resource Capacity	Hours	Increases (+) or Decreases (-)
Skid Row	Soup Kitchens	300 daily (14.28%)	24/7	++
Skid Row	Shelters	1300 daily (61.90%)	vary	++++++
Skid Row	Free Clinics	Unknown	Vary	-----
Skid Row	Public Restrooms	600 daily (28.57%)	24/7	-----
Skid Row	Combined			----- (or -9)

Table 1. SAIRS Concepts and Metrics

Conclusion

The findings from this study are expected to yield a new spatial accessibility index that can help us better understand the geographic distribution of the homeless population and of the resources available to assist and support them. The findings from this study will have implications for a subsequent research endeavor, entailing the computation of an organizational effectiveness score of sites of nonprofit organizations which seek to serve and support the homeless for a given location of analysis.

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