How Society Reacts to Changes in the Homeless Population?

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Abstract:

This paper investigates how fluctuations in the homeless population impact the number of homeless shelter beds available in the future. I analyze how the public response differs between two distinct homeless populations; the sheltered and the unsheltered homeless. The data used in this study comes from the United States Department of Housing and Urban Development (HUD) point-in-time (PIT(e) 4 (nt) 9 ((e) (be) 4 (t) 4 (nd) -10u-2 (g7i) -24 () -2 (e) -10(() -( ) -10 i) -2 () -2 (t) -2 (m) -2

years, with a spike in the early to mid 1980s. Graph 1 shows how the total homeless, unsheltered homeless, and sheltered homeless populations have changed since 2012. There is a spike trending upward in the unsheltered population from 2014 until 2020. In 2014 the unsheltered homeless population for the entire United States was 171,080 and grew to 222,061 in 2020. This is a 29.7% increase over these years. Oppositely, the sheltered homeless population decreased from 398,867 in 2014 to 353,592 in 2020. This is a 11.4% decrease between these years. There is an increase in the number of total homeless which is reflected in the graph, indicating an overall increase in homeless starting in 2016. The total homeless population was 544,394 and became 575,653 in 2020. This is a 5.7% increase over these years. This information is crucial to understanding which population is changing and whether society is addressing the correct group

The total homeless population has remained relatively consistent over this time period but shown an overall increase, Graph 1 indicates that fluctuations in the unsheltered homeless population are larger and therefore more impactful. There has been a slight decrease in both homeless populations since 2012 but they have remained relatively consistent since then (HUD, 2022). Complementing this growth in homelessness, the corresponding literature has similarly increased (Giano *et al*., 2019). Data have also become readily available. HUD started the PIT count in 2007 which has supported new literature on homelessness. The HUD PIT count is assisted by the Continuum of Care Organization (CoC) which collect data consistently to analyze homelessness. These include the number of sheltered homeless, unsheltered homeless, family homeless, and individual homeless; the sum of all categories is total homeless. An individual experiencing homelessness can fit into two categories, either unsheltered or sheltered and either individual or family. They are then counted towards the total homeless population (Hanratty, 2017).

For individuals experiencing homelessness, there are many correlating negative impacts on their health. There is evidence that homelessness and housing vulnerability are associated with diminished mental and physical health (Gaderman *et al*., 2013). Other evidence suggests that there are increased rates of illness found in those experiencing homelessness as well as poor living conditions when housed (Sanchez, 2010). States and cities also greatly benefit from a decrease in homelessness. For example, Shelfosky (2020) finds negative effects of homelessness in cities with large populations, including physical damage on physical areas and psychological issues for those experiencing homelessness. One suggestion for the distribution of federal grants is to account for local needs when giving grants to various organizations, like the CoC Organization (Lee, 2021).

Homeless shelters are one type of aid towards homelessness. This is one of the most popular responses to homelessness as variations of shelters exist throughout the world. In the United States, some shelters are funded by the federal government, some are funded by state governments, and others are privately funded.[3]

This paper investigates how fluctuations in the homeless population impacts the number of homeless shelter beds in the future. The estimates are a numeric measure of the public's response to changes in the homeless population. I also analyze how this public response differs across two distinct homeless populations; the sheltered and unsheltered homeless. Specifically, the null hypothesis is that society does not change the number of shelter beds when there is an increase in the homeless population. This is tested against an alternative hypothesis where society changes the number of beds when the homeless population fluctuates. After controlling for housing prices, population, the unemployment rate, and political preferences at a state level, I estimate that an additional one hundred total homeless correlates to an increase in 25 beds the following year, indicating that 25% of need is met. Separating this number into the two distinctions between the types of homeless, I find that in response to the sheltered population 55% of the need for beds is addressed the following year. While the response to unsheltered population is much smaller around 5%, this means that society does not use the change in the unsheltered homeless population as an important factor in whether there should be a change in the number of shelter beds that are available.

Literature Review:

In the academic literature there are many studies investigating the predictors of homelessness, particularly in the last decade as more data have become available. For example,

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[3] https://www.profitableventure.com/homeless-shelter-government-grant-loan/

the academic literature has studied substance use, mental illness, unemployment, and poverty as potential predictors. While these potential causes have long been studied, recent articles have provided more depth (Giano et al., 2019).

Many factors have been studied for a correlation and causal effect on patterns of homelessness. For example, one factor that has been studied extensively and shown to have a significant impact on homelessness is local median rent in a given community (Hanratty, 2017 & O'Flaherty et al., 2004). As rent rises in an area, it becomes increasingly difficult for an individual to generate sufficient income to live there. Both papers also found inconsistent and insignificant relationships between homelessness populations, poverty rates, and unemployment rates (Hanratty, 2017 & O'Flaherty et al., 2004). This lack of a statistical relationship is interesting because it makes intuitive sense that more homeless correlates to higher poverty and unemployment rates. However, these rates are dependent on data from the U.S. Census, which likely does not account for people experiencing homelessness. Another issue is the definition of unemployment. The economic definition of unemployment requires that an individual be actively seeking work, which some homeless are not. There have also been studies on the influence of the minimum wage on the level of homelessness. Yamagishi (2021) estimates that a ten percent increase in minimum wage in Japan resulted in a 2.5 to 4.5 percent increase in median rent. The

provide access to housing rather than access to jobs. The Homeless Emergency Assistance and

In the early stages of intervention, focus was placed on providing services for people who are experiencing homelessness. While necessary, this work does not address root causes or enable society to decrease the number of homeless. The McKinney-Vento Homeless Assistance Act was first implemented in 2000 by President Bill Clinton; this came after the 1987 Stewart B.

indicate that the majority of shelter beds are used by homeless that remain homeless and do not help to reduce the total number of people that are experiencing homelessness.

One article looked at two hypotheses that had been virtually unstudied in relation to homelessness: the degree of entrepreneurial activity and the amount of labor market freedom in an area. The findings show that areas with an increased degree of entrepreneurial activity and

population data are most commonly used as independent variables in regressions because the ultimate goal is to see how changes in these numbers cause society to react through a change in the number of shelter beds.

The sheltered individuals or families must fit HUD's definition for 24 CFR 578.3 of the Homeless Definition Final Rule: "An individual or family living in a supervised publicly or privately operated shelter designated to provide temporary living arrangement (including congregate shelters, transitional housing, and hotels and motels paid for by charitable organizations or by federal, state, or local government programs for low-

general or for specific populations of the homeless and which does not require occupants to sign

leases or occupancy agreements." (HUD, 2012). Safe Havens are defined as "a form of

supportive housing that serves hard-to-reach homeless persons with severe mental illness who

come primarily from the streets and have been unable or unwilling to participate in housing

supportive services." (HUD, 2012). Safe Havens are no longer supported under HEARTH. While

HUD does not fund any new Safe Havens, it continues to fund those existing prior to 2009. For

these reasons there are relatively few Safe Havens in the data set but this category is still

important to include. Transitional Housing shelters are limited to agreements and leases that do

not exceed 24 months. The number of beds in these shelters, which is the dependent variable in

this analysis, is aggregated in each state-year combination.

The goal of the estimation is to examine factors that influence the provision of beds in

homeless shelters. Specifically, I analyze how a change in the number of homeless impacts the

provisions of beds the following year. This marginal effect represents a numeric estimate of

society's response to homelessness through the provision of beds. I use a variety of other

explanatory variables to isolate the impact of changes in the number of homeless on the future

provision of beds. For example, the unemployment rate for each state and year is included in this

regression, these data come from the United States Bureau of Labor Statistics. The summary

statistics of the unemployment rates can be seen in Row 6 of Table 1. I also include data on state

population each year which comes from the United States Census. These annual measures are

considered estimates, but are believed to be reliable accounts of population fluctuations. This

variable allows controls for the large differences in population across states such as Californoia

and Vermont. Row 7 of Table 1 describes summary statistics of the state populations. I also use

Housing Price Index (HPI) data for each state and year which controls for differences in costs of

living across states and time. The summary statistics for HPI are shown in Row 5 of Table 1.

Finally, I include a measure of political affiliation in each state and year. Without an obvious

annual measure, I use the percentage of Democratic voters in the previous presidential election.

To assess society's reaction to homelessness, I use multiple linear regressions each with fixed effects for all states. The dependent variable is the number of beds, which provides a better fit of the data than the number of shelters. The two regression models are only different through the independent variables that count the number of homeless; the first regression uses the total number of homeless as an independent variable. In the second regression, the total is replaced with two controls: the number of unsheltered homeless and sheltered homeless. The differences in results between these regressions is important to understanding how the different populations impact states' response to homelessness. The independent variables that measure the level of homelessness – total homeless, unsheltered homeless, and sheltered homeless – are lagged by one year. Lagging these variables accounts for the time delay of society's response to changes in the homeless population. This method also mitigates concerns about dual causality between the number of homeless and the provision of beds. The other independent variables in the regression model account for various indicators that could explain a change in homelessness or homeless shelter beds. These include a proxy for political affiliation, Housing Price Index as a proxy for affordability in a state, the unemployment rate in a specific state in the given year, and a population estimate.

In order to isolate the effect of homeless on the provision of beds, I include a variety of other independent variables. In addition to state-level fixed effects, there are dummy variables, labeled as $year_t$ below, for each year for patterns across the country but specific to a particular year.

For state s and year t, the equation of the first regression is:

$$Beds_{s,t} = \beta_0 + \beta_1 TotalHomeless_{s,t-1} + \beta_2 Democrat_{s,t} + \beta_3 HPI_{s,t} + \beta_4 UnemploymentRate_{s}$$

For state s and year t, the equation of the second regression is:

$$\text{Beds}_{s,t} = \beta_0 + \beta_1 \text{UnshelteredHomeless}_{s,t-1} + \beta_1 \text{ShelteredHomeless}_{s,t-1} + \beta_3 \text{Democrat}_{s,t} +$$
$$\beta_4 \text{HPI}_{s,t} + \beta_5 \text{UnemploymentRate}_{s,t} + \beta_6 \text{Population}_{s,t} + {}_t \delta_t \text{year}_t + {}_s + {}_{s,t}$$

Results:

These two regressions use different independent variables of interest. In the first regression Total

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The difference between 6 and 55 is vast and implies that the response is linked more to the sheltered homeless population than to the unsheltered. The r squared value for this regression is 0.996 which is similar to the first regression and emphasizes the explanatory power of the variables in this regression. When looking at Graph 1 in the introduction, it is obvious that the unsheltered homeless population is increasing, so if the majority of the influence on society's decisions comes from the sheltered homeless, it may not be addressing the right problem. While running correlation matrices on all of the variables, only one relationship was notable, this was with a value of 0.995 between sheltered homeless and shelter beds. This high correlation is confirmed by the regression which indicates that as the sheltered population moves, the number of beds moves similarly.

Separating the total number of homeless into sheltered and unsheltered homeless populations improves the fit of these variables, making each significant at the five percent level. This shift also improves the fit of the other estimates, in the first regression only the unemployment rate and population are significant. In the second regression, not only do the unemployment rate and population variables

Table 2: Regression Results
* indicates significance at the 10% level
** indicates significance at the 5% level

Total Beds	**Column 1** Regression 1	**Column 2** Regression 2
Total Homeless$_{t-1}$	0.241* (p value = 0.070)	–
Unsheltered Homeless$_{t-1}$	–	0.064** (p value = 0.001)
Sheltered Homeless$_{t-1}$	–	0.549** (p value < 0.001)
Democrat	-28.453 (p value = 0.126)	-21.437* (p value = 0.095)
HPI	2.021 (p value = 0.306)	4.532** (p value = 0.001)
Unemployment Rate	277.69* (p value = 0.051)	288.424** (p value = 0.004)

Population   -

population. I can also assume that these regressions account for homoskedasticity by including the robust standard errors function in the fixed effects regression. The fourth assumption is no perfect multicollinearity, and none of these variables are perfect functions of one another. With an r squared value so close to one, there is not much room for omitted variables. There is still a chance of omitted variable bias within these regression models as there are choices that the homeless population makes that cannot be included in the model. Such as, there are decision making ideas that cannot be measured that could change the variables. Another example of an omitted variable is the climate on a given day which may increase the number of sheltered homeless as opposed to unsheltered homeless but would likely not have a large impact on the total number of beds the next year.

Conclusion:

In conclusion, society responds to homelessness through adding or taking away shelter beds the next year. The availability of shelters and shelter beds are functions of a state's population, HPI, political affiliation, unemploymen

international level. The only way for this to work externally is if there are similar variables like

unemployment rate and HPI that can be found within the new country. This analysis could be extended to

answer a potential endogeneity question. Two approaches that could be possible are a vector

autoregression or an independent variable regressions. The lagged effects of total beds being in the next

year is the way this analysis accounts for the implicit endogeneity issue. Overall, society uses the

sheltered homeless population as a strong factor in changing the number of beds available the following

year and meets approximately 24% of the need for a change in the total homeless population.

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