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UNDERSTANDING HOMELESSNESS IN CALIFORNIA COMPARED TO THE UNITED STATES AS A WHOLE

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UNDERSTANDING HOMELESSNESS IN CALIFORNIA COMPARED TO THE UNITED
STATES AS A WHOLE

By

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A capstone project submitted for Graduation with University Honors

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APPROVED

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Abstract

In California alone, taxpayers are allocating \$4.8 billion to state homeless programs. California has one of the highest homeless populations in the country, which is often purported to be due to the high cost of living or Democratic policies. This project uses two sources of data on homelessness from the United States Department of Housing and Urban Development between the years 2010 and 2019. The first is homeless population counts, and the second is a compilation of hand-collected data on federal program awards for homelessness. These data sets are normalized with population data from the United States Census Bureau. I conduct graphical and regression analysis for homelessness and potential contributing factors in California and the United States as a whole in order to characterize the trends and severity of homelessness in California and how it differs from other states as it relates to political standing and other correlating factors. The data demonstrates that homelessness has increased significantly in California, while decreasing in both Republican and Battleground states. Despite program awards increasing, the total beds provided for the homeless has decreased, which implies housing the homeless has become proportionately more expensive. Understanding these relationships will help lawmakers create more effective policies and programs intended to reduce homelessness.

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I would like to thank my Faculty Mentor, Dr. Bree Lang. Your knowledge and guidance were indispensable in this research and has allowed me to stretch in my academic and professional capacity.

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Introduction

California has incurred substantial economic costs due to the growing toll of the homeless population and affordable housing crisis, which have become greater than any state in America. According to the U.S Department of Housing and Urban Development, as of 2019, “California has more than half of all unsheltered homeless people in the country (53% or 108,432)” (Henry, 2020, p. 4). In order to find a solution, we must review the types of programs used to combat homelessness along with their costs, the homeless population counts, and general population throughout the United States.

Homelessness could be the result of a lack of affordable housing, inefficient allocation of spending on government programs, the decriminalization of homelessness, lack of healthcare, and policy limitations on programs. Additionally, real estate and property costs continuing to rise is potentially forcing more people onto the streets, while high taxes force businesses out of the state. Affordable housing has become expensive for state governments and housing developers, and building efforts have increasingly not met their goals (Fuller 2020). The Covid-19 pandemic may have made the situation in California even more unsurmountable.

Literature Review

Homelessness has increased largely due to housing costs. In 2019, there were 567,715 homeless people in the United States, according to the U.S Department of Housing and Urban Development (Henry, 2020). Homelessness is primarily in urban areas for most states and has decreased in recent years. However, in California there has been a 16 percent increase between 2018 and 2019, primarily due to the astronomical cost of housing (Henry, 2020). According to the Legislative Analyst’s Office (2019), in 2019, homes in California cost 2.5 times more than the rest of the country, with average monthly rent being 50 percent higher. Nearly 2.5 million

low-income households must pay over 30 percent of their income on housing (Legislative Analyst's Office, 2019). Affordable housing is scarce, and programs are slow to accept new applicants. About 800,000 households in California are in homes subsidized by the government or were given housing vouchers, while another 700,000 more households have been waitlisted to receive housing vouchers, with only half that amount being offered (Legislative Analyst's Office, 2019). The general lack of affordable housing has caused many to leave the state, while those who cannot afford to move risk homelessness.

There are many barriers in California preventing the building of affordable housing. Property and labor are more expensive than many places in the United States. Despite the high amount of government awards for permanent housing in California, most of it does not go towards construction. Instead, “around one quarter of the cost of building affordable housing goes to government fees, permits and consulting companies, according to a 2014 study by the California Department of Housing and Community Development” (Fuller, 2020, p. 1). Additionally, the California Environmental Quality Act has created a unique problem, allowing anyone to object to building projects, which delays building affordable housing and incurs high costs to resolve the lawsuit. This has culminated in the construction of affordable housing in California costing three times more, on average, than other states like Texas or Illinois. In San Francisco, it costs about \$750,000 to build just one unit of affordable housing, while housing in the rest of the United States costs \$240,000 on average (Fuller, 2020). These barriers have raised the cost of permanent housing without proportionally providing more beds for the homeless.

Emergency shelters and transitional housing have often been favored projects by local governments in the fight against homelessness, however they do little to solve homelessness when there is no transition to permanent housing. For example, LA county created “A Bridge

Home” program, which resulted in 31% of participants returning to live on the streets and only 15% moving to permanent housing (Oreskes & Smith, 2020). While the number of unsheltered homeless has increased, there has been a decrease in the number of transitional housing and emergency shelters (Henry, 2020). According to the University of Pennsylvania, the cost of shelters exceeds the cost of providing permanent housing. Shelters cost \$13,000 per bed each year on average, while permanent housing costs an average \$6,000 to \$8,000 per year to rent (Wong, 2006).

Another major contributor to homelessness is lack of healthcare, particularly for the moderately to severely mentally ill. A study in Philadelphia found that nearly a fifth of homeless adults had previously been treated for severe mental illnesses and were less likely to use shelters than other homeless populations (Culhane, 2008). Homelessness creates a heavy burden on the healthcare system. Nearly 33% of emergency visits are by chronically homeless persons, costing \$18,500 each year on average and up to \$44,400 in taxpayer dollars for each individual. Housing these populations has been shown to decrease general healthcare costs by 59%, emergency costs by 61%, and, for those with mental illness, a decrease in \$16,200 per individual for treatment costs each year (Garret, 2012). With housing programs costing on average \$17,200 per year nationally, this would essentially decrease taxpayer costs to a net \$1,000 per year for each housing unit (Culhane, 2008). Reduced tax burdens could allow businesses to expand in California and allow people to have more disposable income.

One of the biggest challenges California faces are the limitations to compel the homeless population to accept housing assistance. According to the Auditor of the State of California, people who have disabling mental illnesses are less likely to accept mental health treatment. Under the Lanterman-Petris-Short Act of 1967, also known as the LPS Act, involuntary

treatment is provided, typically lasting up to 72 hours (Howle, 2020). However, once this short-term treatment is complete, the individual is released onto the street again. This extensive treatment is provided to those at risk of harming others or themselves, which does not represent the majority of the homeless population with mental illness.

Many family members of mentally ill homeless individuals have sought conservatorship of their relatives, in which they have legal authority to take care of their affairs and require them to receive medical treatment so they will no longer be homeless. However, with the passage of the Assisted Outpatient Treatment Demonstration Project Act of 2002, also known as Laura's Law, the criteria for conservatorship have become severely limited. To be considered for conservatorship, the individual must be detained under the LPS Act for 72 hours eight or more times in a single year (Secretary of State, 2018). This drastically reduces the number of those eligible for conservatorship. The majority of the homeless can refuse treatment, without legal grounds to compel them off the street. This has been compounded by efforts to decriminalize homelessness in the name of civil liberties. A study by UC Berkeley found that 58 cities in California had "enacted at least 500 anti-homeless laws restricting sitting, standing, and resting in public places... begging, panhandling; and food sharing – nearly nine laws per city on average" (Hyatt, 2015, p. 9). These laws have since been limited to decrease the strain on the prison system. However, after being released from prison, which is usually a very brief stay, there is nothing to compel those arrested to be placed in housing or other rehabilitation programs.

In lieu of providing housing, some cities in the United States with high homeless populations have opted to migrate the homeless elsewhere. According to a study by The Guardian, programs to bus the homeless have existed since at least the 1980s and have even been used to move them away from psychiatric hospitals and highly televised events like the

Olympics (Outside in America, 2017). In some states, plane tickets are used to send people across or out of the country. This is especially the case in New York. These programs are often advertised as reuniting the homeless with family and friends. However, there is often no follow up to ensure they are in stable living conditions. The tickets are an inexpensive way for cities to reduce spending and artificially deflate their reported homeless population counts. These programs often do little to record who has been moved and where, which negates the accuracy of tracking homeless persons and how many have found housing (Outside in America, 2017). California is a popular relocation site for other states, which may explain why homelessness has increased in California and decreased elsewhere.

Data

In order to establish the relationship between political leaning and homelessness in California, Table 1 reports populations, potential contributing factors in homelessness, and homeless program awards for California, the average Democratic, Republican, and Battleground State, and the entire United States for the year 2019. This data was collected from the United States Census Bureau and The United States Department of Housing and Urban Development. The program awards were hand collected and compiled by CoC. All CoC data was collapsed by state. All program awards were adjusted for inflation by dividing by the CPI for each year, using values from the Federal Reserve Bank of St. Louis, with 2015 as the base year. Cost of living factors are adjusted for inflation by the Census Bureau. Political standing was determined by the 2012 and 2016 presidential election results, with states voting blue in both elections labeled Democratic, states voting red in both elections labeled Republican, and states voting once red and once blue labeled Battleground. The homeless rate is calculated by dividing homeless population by total population in percentage terms. The unemployment rate is calculated by

dividing unemployment population by civilian workforce population in percentage terms. Total beds refer to the number of beds provided through programs serving the homeless. Homeless populations are based on Point-in-Time data which counts the number of homeless persons in the last ten days in January (US Department of Housing and Urban Development 2022).

Table 1

Populations, cost of living factors, program awards, and total beds for the homeless in California, the average Democratic, Republican, and Battleground state, and the total United States for 2019.

	California Totals 2019	Average Democratic State 2019	Average Republican State 2019	Average Battleground State 2019	United States Totals 2019
Total Population	39,283,497.00	6,695,883.14	4,653,911.40	10,212,275.00	324,697,795.00
Homeless Population	151,278.00	18,154.14	4,236.23	10,968.75	562,184.00
Homeless Rate	0.39%	0.24%	0.10%	0.10%	0.16%
Unemployed Population	1,199,233	188,047	117,573	272,226	8,713,400
Civilian Workforce Population	19,790,474	3,470,349	2,272,443	5,085,566	163,555,585
Unemployment Rate	6.06%	5.15%	5.02%	5.13%	5.09%
Cost of Living Factors					
Median Gross Rent	\$ 1,503.00	\$ 1,191.57	\$ 859.41	\$ 936.88	\$ 1,008.33
Median Housing Value	\$ 505,000.00	\$ 317,190.48	\$ 172,954.55	\$ 178,250.00	\$ 233,176.47
Mean Income	\$ 106,916.00	\$ 97,420.38	\$ 76,455.46	\$ 80,345.38	\$ 85,698.25
Total Program Awards	\$ 408,998,558.85	\$ 59,561,570.26	\$ 16,871,146.00	\$ 59,706,708.00	\$ 2,099,611,862.17
Total Awards per Homeless	\$ 2,703.62	\$ 5,177.60	\$ 3,858.89	\$ 5,792.04	\$ 4,705.13
Total Awards per Person	\$ 10.41	\$ 8.92	\$ 3.41	\$ 5.60	\$ 6.02
Fraction Award Type					
Permanent Supportive Housing	76.14%	73.37%	62.60%	64.68%	69.49%
Rapid Re-housing	10.12%	13.12%	20.11%	19.85%	15.89%
Joint TH-RHH	3.64%	3.21%	3.81%	2.85%	3.23%
Transitional Housing	1.87%	2.41%	1.77%	2.50%	2.31%
Supportive Services Only	3.61%	3.16%	4.40%	3.52%	3.46%
HMIS	2.07%	1.89%	3.53%	2.61%	2.34%
Safe Haven	0.23%	0.36%	0.54%	0.80%	0.49%
CoC Planning Project Application	2.27%	2.42%	3.23%	2.86%	2.66%
Unified Funding Agency Costs Grant	0.05%	0.07%	0.02%	0.32%	0.12%
Total Awards	100.00%	100.00%	100.00%	100.00%	100.00%
Total Beds	46,306.00	11,437.24	3,539.91	8,795.63	388,425.00
Total Beds per Homeless	0.31	0.80	0.93	0.87	0.87
Total Beds per Person	0.0012	0.0018	0.0009	0.0008	0.0013

Table 1 establishes that California most closely follows the trend of Democratic States, albeit with higher prices and populations. The distribution of program award types in California most closely resembles the distribution in the average Democratic state, with nearly three-fourths of the funding going towards Permanent Supportive Housing, compared to roughly 60% in both

Republican and Battleground states. The state of California accounts for 19.48% of the total program awards in the entire United States.

Where California differs significantly from the average Democratic state is that California has much higher general and homeless populations and has a higher homeless rate when compared to the average Democratic state. Thus, despite having a much higher amount of program awards, California only has \$2,703.62 per homeless person, 52% less than is provided in the average Democratic state, and only has enough beds to serve about 30% of the homeless population, compared to 80% in the average Democratic state.

Program Award and Continuum of Care definitions from The United States Department of Housing and Urban Development are provided in Table 2.

Table 2

Continuum of Care and Program Award Definitions

Continuum of Care (CoC)	“The Continuum of Care (CoC) Program is designed to promote communitywide commitment to the goal of ending homelessness; provide funding for efforts by nonprofit providers, and State and local governments to quickly rehouse homeless individuals and families while minimizing the trauma and dislocation caused to homeless individuals, families, and communities by homelessness; promote access to and effect utilization of mainstream programs by homeless individuals and families; and optimize self-sufficiency among individuals and families experiencing homelessness” (US Department of Housing and Urban Development 2022).
Permanent Supportive Housing	“Permanent supportive housing is permanent housing with indefinite leasing or rental assistance paired with supportive services to assist homeless persons with a disability or families with an adult or child member with a disability achieve housing stability” (US Department of Housing and Urban Development 2022).
Rapid Re-housing	“Rapid re-housing (RRH) emphasizes housing search and relocation services and short- and medium-term rental assistance to move homeless persons and families (with or without a disability) as rapidly as possible into permanent housing” (US Department of Housing and Urban Development 2022).
Joint TH-RRH	“[Provides] both components, including the units supported by the transitional housing component and the tenant-based rental assistance and services provided through the PH-RRH component, to all program participants up to 24 months as needed by the program participants” (US Department of Housing and Urban Development, 2019).

Transitional Housing	“Transitional housing (TH) is designed to provide homeless individuals and families with the interim stability and support to successfully move to and maintain permanent housing. Transitional housing may be used to cover the costs of up to 24 months of housing with accompanying supportive services” (US Department of Housing and Urban Development 2022).
Supportive Services Only	“The supportive services only (SSO) program component allows recipients and subrecipients to provide services to homeless individuals and families not residing in housing operated by the recipient. SSO recipients and subrecipients may use the funds to conduct outreach to sheltered and unsheltered homeless persons and families, link clients with housing or other necessary services, and provide ongoing support” (US Department of Housing and Urban Development 2022).
HMIS	“A Homeless Management Information System (HMIS) is a local information technology system used to collect client-level data and data on the provision of housing and services to homeless individuals and families and persons at risk of homelessness” (US Department of Housing and Urban Development 2022).
Safe Haven	“Safe Havens serve as refuge for people who are homeless and have a serious mental illness... They close the gap in housing and services available for those homeless individuals who, perhaps because of their illness, have refused help or have been denied or removed from other homeless programs” (US Department of Housing and Urban Development 2022).
CoC Planning Project Application	“The broad categories for use of Planning Project funds ... include: coordination activities; determining the geographic area of the CoC; evaluation of CoC Program and ESG projects; participating in the consolidated plans of the jurisdictions in the CoC area; CoC application activities; monitoring recipients and subrecipients and enforcing compliance; developing a CoC system; and HUD compliance activities” (Watts, 2021).
Unified Funding Agency Costs Grant	“A Unified Funding Agency (UFA) is: An eligible applicant (the Collaborative Applicant) selected by the CoC, which has the capacity to fulfill the duties in 24 CFR 578.11, and Approved by HUD to apply for a grant for the entire Continuum of Care, and Is awarded a grant by HUD” (Mitchell 2022).

Descriptive Analysis

2010 to 2019 Percentage Change

In order to best measure the change in homelessness, cost of living factors, unemployment, program awards, and beds provided for the homeless, Table 3 depicts the percent change calculated between the years 2010 and 2019 for California, the average Democratic, Republican, and Battleground state, and the entirety of the United States. The homeless rate and unemployment rate were calculated as a percentage point change.

As seen in Table 3, the total population has increased in California by 7.22% and has had an increase in the homeless population by 22.51%, compared to an increase in total population of the average Democratic state by 5.63% and homeless population increase by 6.4%. In contrast, the average Republican state has had an increase in total population by 9.05% but a decrease in homeless population by -29.34%, while the average Battleground state has had an increase in total population by 6.16% and a decrease in homeless population by 37.58%. The United States has had an increase in total population by 6.81% and a decrease in homeless population of 10.88%. California has had the greatest homeless population increases while the rest of the country had a decrease.

Table 3

The percentage change between 2010 to 2019 in population, cost of living factors, program awards, and total beds.

	California Percentage Change	Average Democratic State Percentage Change	Average Republican State Percentage Change	Average Battleground State Percentage Change	United States Totals Percentage Change
Total Population	7.22%	5.63%	9.05%	6.16%	6.81%
Homeless Population	22.51%	6.40%	-29.34%	-37.58%	-10.88%
Homeless Rate ^a	0.05%	-0.04%	-0.04%	-0.06%	-0.04%
Median Gross Rent	31.04%	27.28%	27.56%	23.05%	26.75%
Median Housing Value	10.14%	9.40%	26.38%	8.85%	14.24%
Mean Income	28.07%	25.34%	25.07%	23.45%	24.96%
Unemployed Population	-26.98%	-26.80%	-26.48%	-33.83%	-28.60%
Civilian Workforce Population	8.29%	5.77%	7.79%	4.98%	6.20%
Unemployment Rate ^a	-2.93%	-2.20%	-2.06%	-2.97%	-2.26%
Total Program Awards	42.21%	25.20%	19.51%	11.03%	20.67%
Total Awards per Homeless	16.10%	46.39%	66.06%	49.59%	53.46%
Total Awards per Person	32.65%	9.70%	7.42%	4.44%	8.34%
Total Beds	-7.91%	3.58%	-21.35%	-22.78%	-7.96%
Total Beds per Homeless	-24.83%	2.76%	0.94%	3.96%	2.09%
Total Beds per Person	-14.11%	-13.37%	-24.38%	-28.93%	-18.93%

^a Homeless Rate and Unemployment Rate have been calculated as a percentage point change, subtracting the Rate in 2019 by the Rate in 2010.

The homeless rate accordingly has increased by 0.05% in California while the average Democratic, Republican, and Battleground states have all had reductions in the homeless rate. This may be related to homeless persons being bussed to California as part of state programs to reduce homelessness in other states. Rent and income have increased fastest in California when compared to the average Democratic, Republican, and Battleground states but is most closely trending with Democratic states. The unemployed population has decreased the most significantly in the average Battleground state but has had the slowest increase in civilian workforce population. The unemployment rate has decreased faster in California compared to the average Democratic state percentage.

The total program awards has increased by 42.21% in California, which is roughly twice as fast as the average Democratic state and the United States as a whole. However, the total awards per homeless person has only increased by 16.10% in California, whereas the average Democratic state has had a 46.39% increase, and the United States has had a 53.46% increase. Simultaneously, the total beds per homeless person in California has decreased by 24.83%, whereas the average Democratic, Republican, and Battleground states have all had increases in total beds per homeless. This implies that, despite receiving greater program awards, fewer beds are being provided to the homeless in California. This suggests the increasing cost of living has outpaced the amount of government support that can be given to the homeless.

Homeless Demographics

Table 4(a) provides a breakdown of the homeless population by age, gender identity, race and ethnic background, and whether an entire family is homeless and if they are a veteran or chronically homeless. Table 4(b) shows each of the overall homeless categories divided by the total homeless population. These are further broken down into the percentage of that category

that is unsheltered and sheltered. Compared to the political standings and the United States, California has the highest percentage of unsheltered homeless persons, at 72%.

Given the prevalence of shelters specifically for women, children, and families, it is unsurprising that these populations have a higher percentage sheltered than unsheltered. However, these populations have a greater percent of unsheltered persons than the rest of the United States.

There is also a significantly higher percentage of unsheltered homeless persons between the age of 18 to 24, which could be related to higher amounts of college-age students who are unable to afford housing in California and are homeless.

California has a lower percentage of homeless persons in families at 15%, compared to 30% in the entire United States. However, 22% of those families in California are unsheltered compared to 8% in the United States. 31% of the homeless population in California is Hispanic or Latino compared to 22% of the United States total of homeless persons.

Table 4(c) shows the percentage of California divided by the total populations in Democratic, Republican, Battleground states, and the overall country to see how many more homeless persons there are in California. California accounts for 40% of the overall homeless population in the Democratic states and 27% of the United States. There are 62% more homeless persons in California than in the Republican states combined, and 72% higher in California than the Battleground states combined. California has 52% of the United States' unsheltered homeless population and 30% of the United States' homeless veteran population.

Graphs

Figure 1 depicts the populations from 2010 to 2019 on a yearly basis. The United States has had a downward trend in overall homeless population, a peak in unemployed persons in 2013 followed by a decrease until 2019, and a steady upward trend in both total and civilian workforce populations. California most closely resembles trends of the average Democratic state, with the homeless population increasing after 2014, whereas in the Republican and Battleground states homelessness has a downward trend.

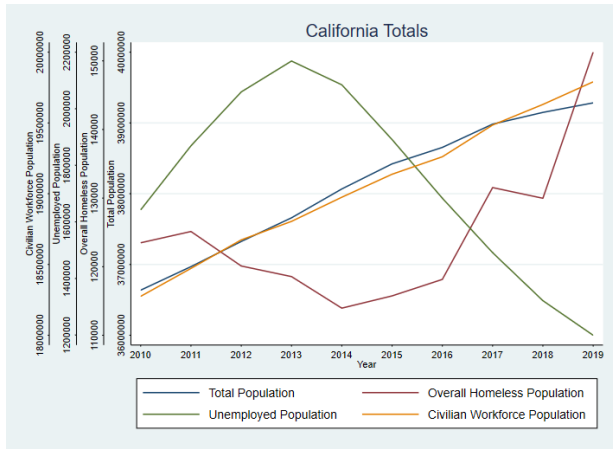
Figure 2 shows the homeless and unemployment rate from 2010 to 2019 on a yearly basis. All exhibit a peak in the unemployment rate in 2013 and a decrease until 2019. The average Democratic, Republican, Battleground states, and United States have experienced a downward trend in the homeless rate, whereas California has had an increase since 2014.

Figure 3 exhibits the median housing value, median gross rent, and mean income from 2010 to 2019 on a yearly basis. The median housing value in all categories except the average Republican state has had a trough in 2013 and increased until 2019. In California, the average Battleground state, and the average United States, the mean income has a steeper slope than median gross rent from 2016 to 2019, implying the mean income has risen at a faster rate than the median gross rent.

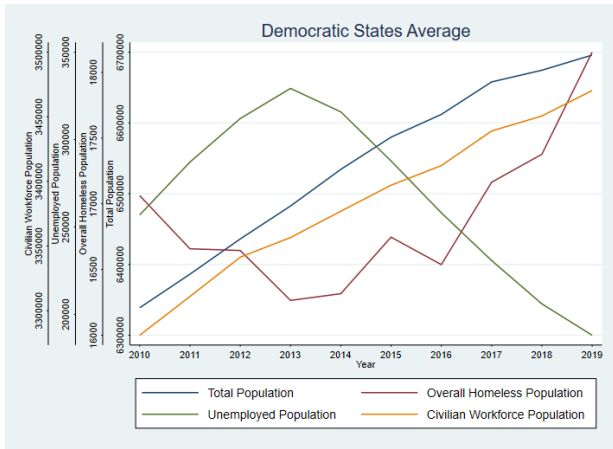
Figure 4 illustrates the program award value and total beds per person. All political groups have experienced an overall downward trend in beds per person and upward trend in total program awards per person. Figure 5 portrays the total program awards and total beds per homeless person. All categories have experienced an overall upward trend in program awards per homeless person. The beds per homeless person rate has a downward trend in California, and a volatile upward trend in all other categories.

Figure 1

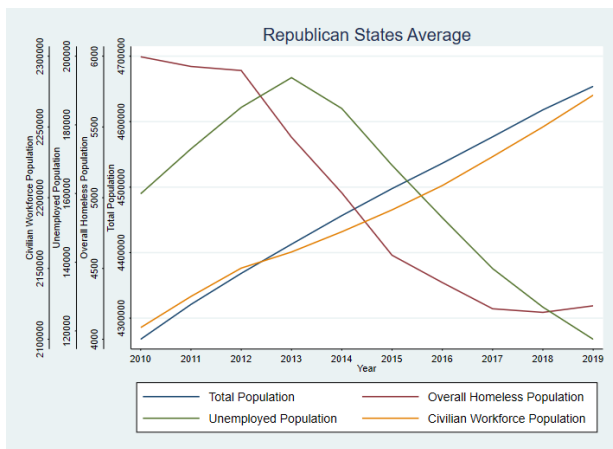
Trends in population for California, the average Democratic, Republican, and Battleground state, and the total United States from 2010 to 2019 (yearly).



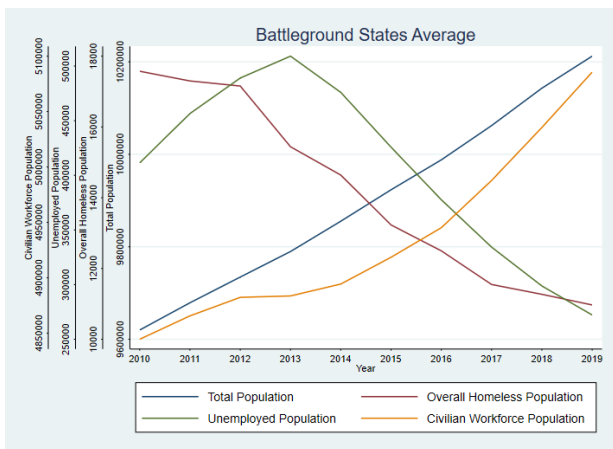
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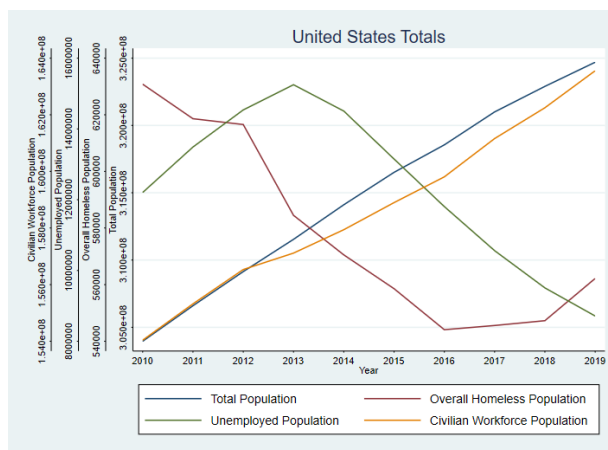
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(c)



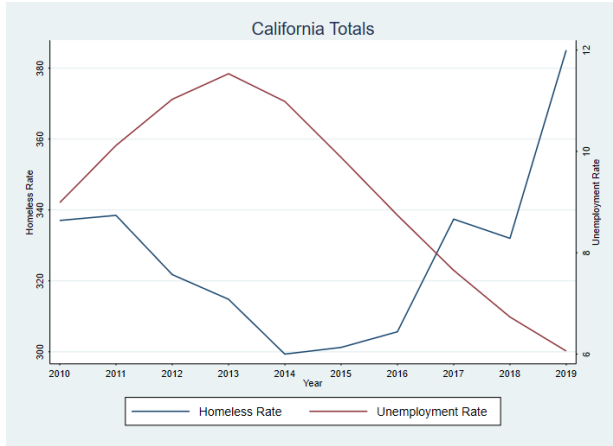
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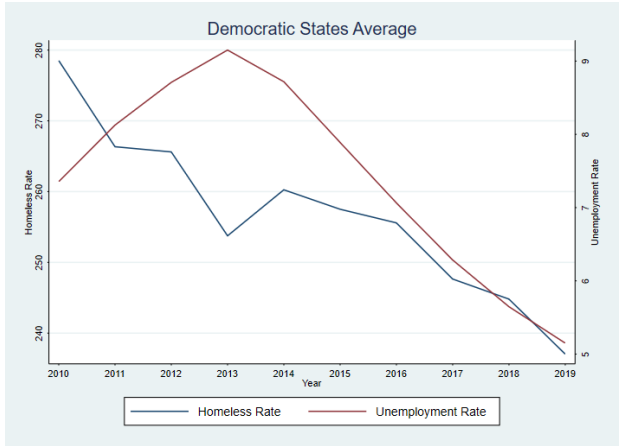
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Figure 2

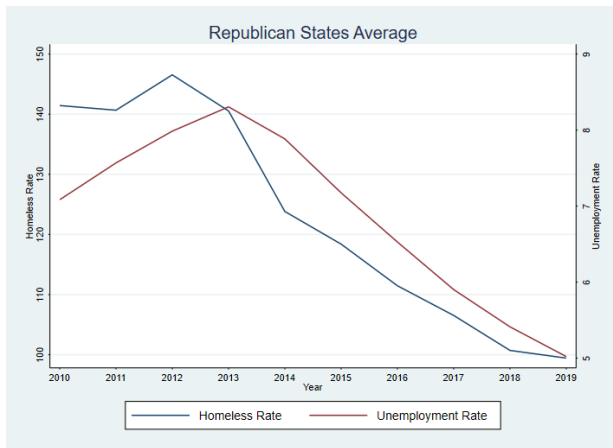
Trends in the homeless rate and unemployment rate for California, the average Democratic, Republican, and Battleground state, and the total United States from 2010 to 2019 (yearly).



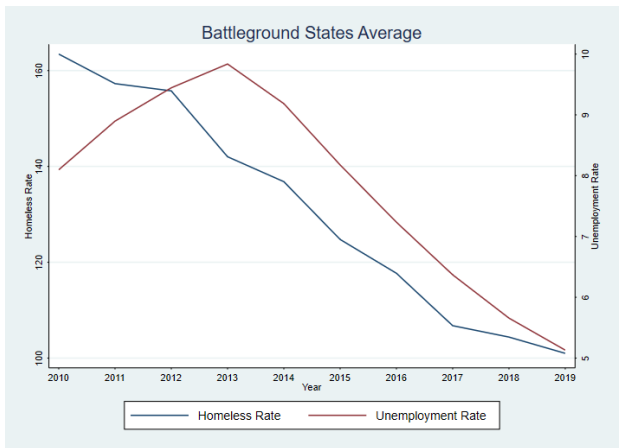
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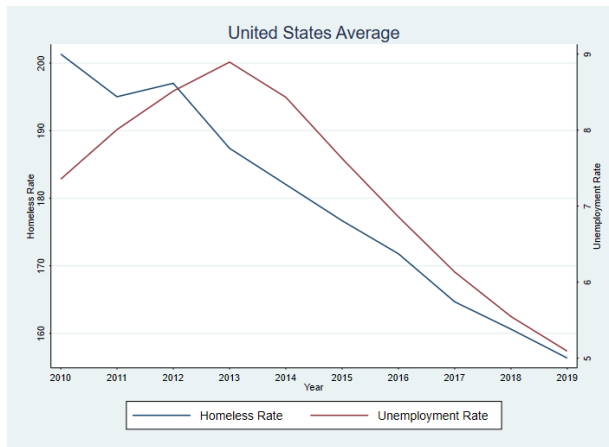
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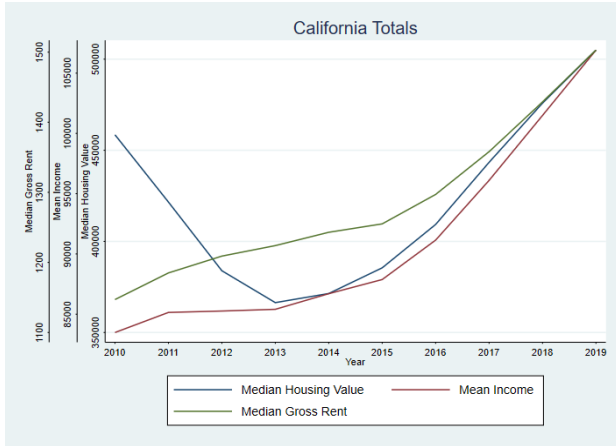
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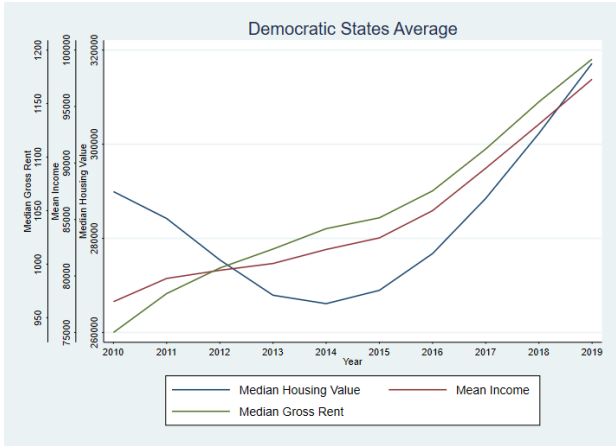
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Figure 3

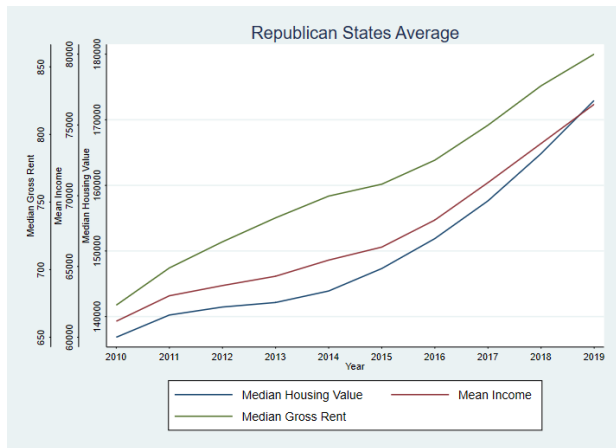
Trends in cost of living factors for California, the average Democratic, Republican, and Battleground state, and the total United States from 2010 to 2019 (yearly).



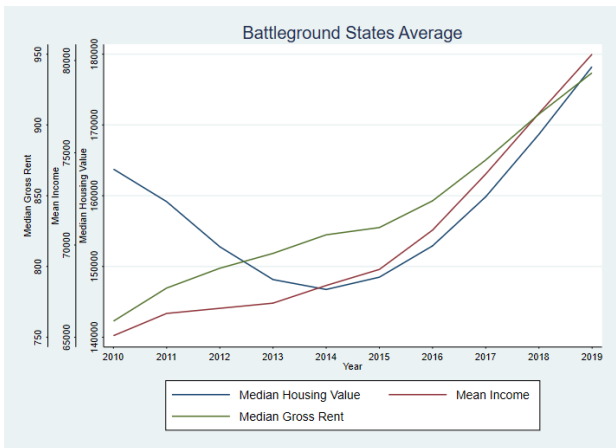
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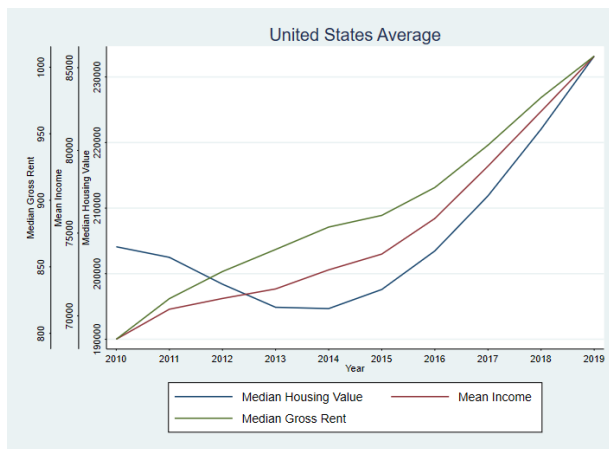
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(c)



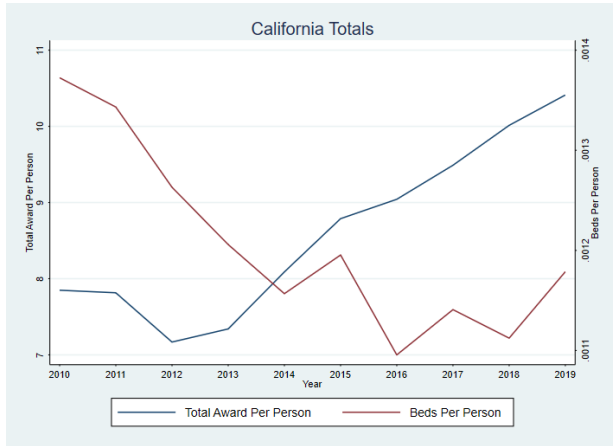
(d)



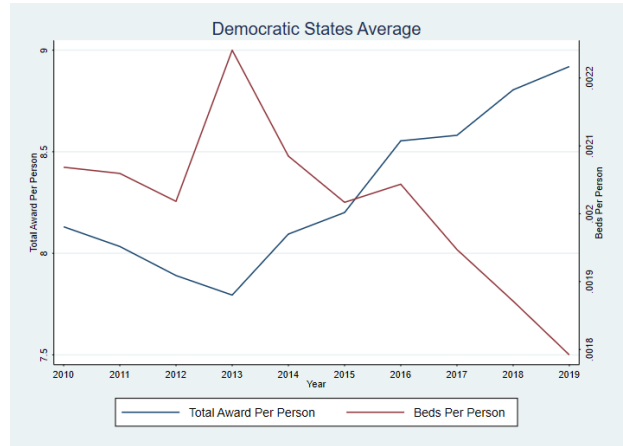
(e)

Figure 4

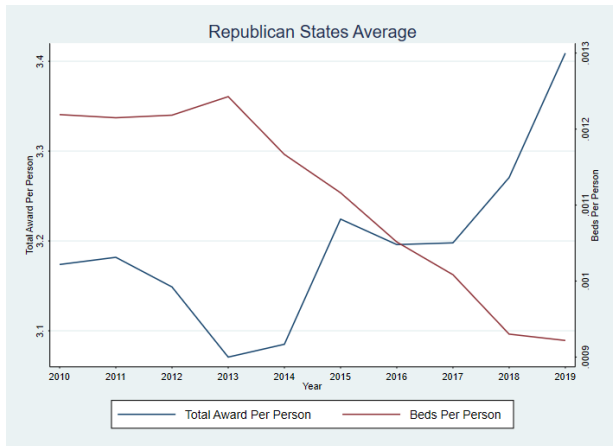
Trends in the total program awards per person and beds per person for California, the average Democratic, Republican, and Battleground state, and the total United States from 2010 to 2019 (yearly).



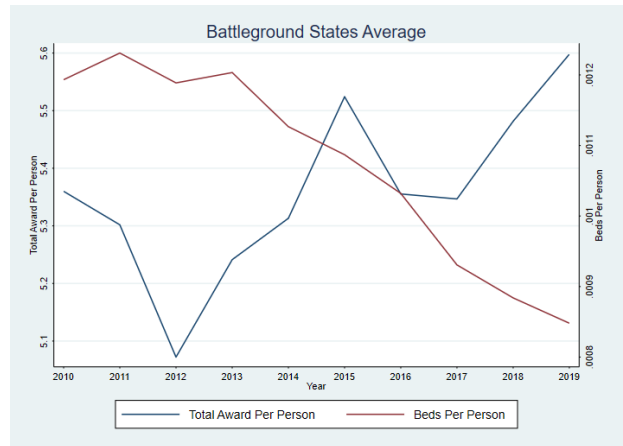
(a)



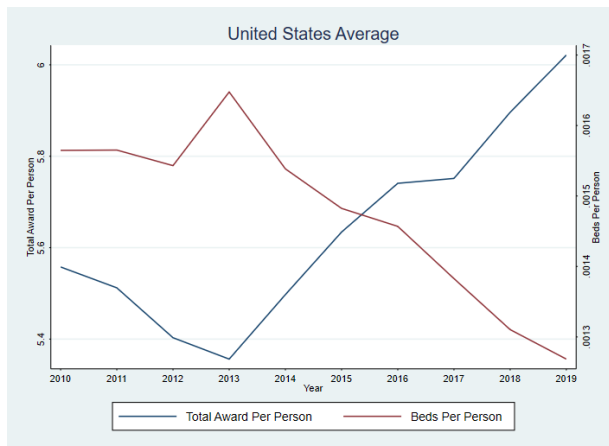
(b)



(c)



(d)



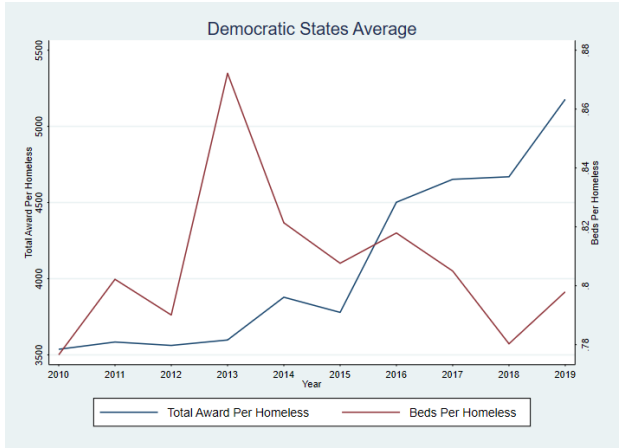
(e)

Figure 5

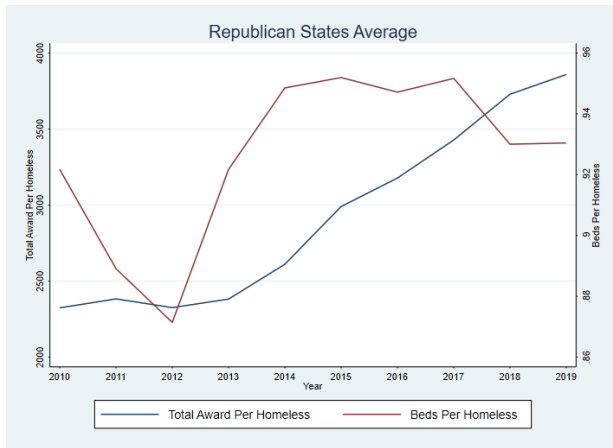
Trends in the total program awards per homeless person and beds per homeless person for California, the average Democratic, Republican, and Battleground state, and the total United States from 2010 to 2019 (yearly).



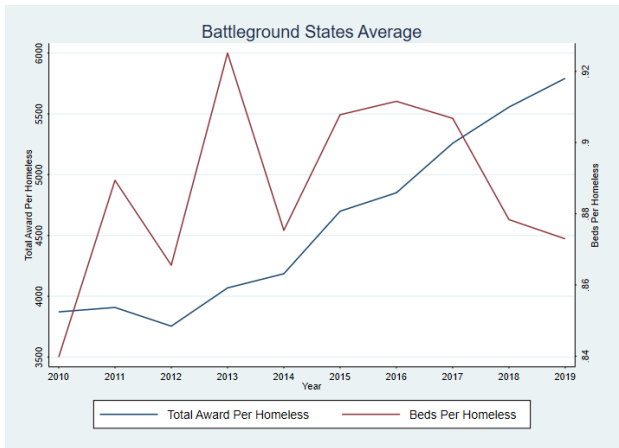
(a)



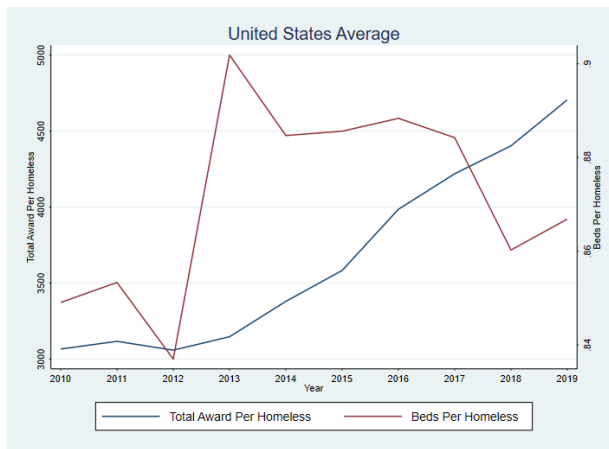
(b)



(c)



(d)



(e)

Empirical Specification

In order to determine which factors are correlated with the homeless population, regression analysis is executed. Two sets of regressions will be performed.

First, regressions will be done with and without state and year fixed effects for the entire United States in Table 5. This will determine whether there is a correlation between consecutive years and within individual states, indicating a time trend and whether states with higher populations, cost of living factors, and program awards inevitably have higher homeless populations. This will serve as a framework for the next regressions.

Second, regressions will be run for Democratic, Republican, Battleground states, and the entire United States separately in Table 6. All variables excluding homeless population, total beds, and median gross rent are shown in thousands for ease of interpretation. Regression 1, 2, 3, and 4 follow equation 1, with homeless population as the y variable with state and year fixed effects. These will determine the correlation between the homeless population and general populations, cost of living factors, and each type of program award.

$$\begin{aligned} y = & \hat{\beta}_0 + \hat{\beta}_1 unemployDiv1000 + \hat{\beta}_2 civworkforceDiv1000 + \hat{\beta}_3 tpopDiv1000 \\ & + \hat{\beta}_4 medianValueDiv1000 + \hat{\beta}_5 meanIncDiv1000 + \hat{\beta}_6 mgRent \\ & + \hat{\beta}_7 TotalBeds + \hat{\beta}_8 PermSuppHousCpiDiv1000 \\ & + \hat{\beta}_9 RapidRehousingCpiDiv1000 + \hat{\beta}_{10} JointTHRHH CpiDiv1000 \\ & + \hat{\beta}_{11} TranHousCpiDiv1000 + \hat{\beta}_{12} SuppServicesOnlyCpiDiv1000 \\ & + \hat{\beta}_{13} HMISCpiDiv1000 + \hat{\beta}_{14} SafeHavenCpiDiv1000 \\ & + \hat{\beta}_{15} CoCPlprappCpiDiv1000 + \hat{\beta}_{16} UnfuagcogrCpiDiv1000 + \hat{u}_i \quad (1) \end{aligned}$$

Regressions 5, 6, 7, and 8 follow equation 2, with total program awards as the y variable with state and year fixed effects. These will determine the correlation between program awards and homeless populations, general populations, and cost of living factors.

$$\begin{aligned} y = & \hat{\beta}_0 + \hat{\beta}_1 unemployDiv1000 + \hat{\beta}_2 civworkforceDiv1000 + \hat{\beta}_3 tpopDiv1000 \\ & + \hat{\beta}_4 medianValueDiv1000 + \hat{\beta}_5 meanIncDiv1000 + \hat{\beta}_6 mgRent \\ & + \hat{\beta}_7 TotalBeds + \hat{\beta}_8 OvrIHom + \hat{u}_i \end{aligned} \quad (2)$$

Using these two equations may indicate differences in the related variables, with general populations expected to influence homeless population more and cost of living factors expected to influence the program awards more.

Results

Table 5

Regressions for the entire United States with and without state and year fixed effects

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Homeless Population	Homeless Population	Homeless Population	Total Program Award (in Thousands \$)	Total Program Award (in Thousands \$)	Total Program Award (in Thousands \$)
Total Program Award (in Thousands \$)	0.121*** (0.0280)	0.188*** (0.0362)	0.126*** (0.0292)			
Unemployed Population (in Thousands)	-3.391 (2.945)	18.94** (8.685)	-3.157 (2.753)	-50.27*** (11.50)	4.483 (18.22)	-48.79*** (10.48)
Civilian Workforce Population (in Thousands)	59.18*** (6.737)	-11.05*** (2.784)	49.96*** (6.406)	-0.636 (24.14)	60.34*** (8.691)	5.066 (19.46)
Total Population (in Thousands)	-32.00*** (3.330)	5.203*** (1.438)	-27.61*** (3.215)	9.676 (12.07)	-26.80*** (4.317)	6.989 (9.676)
Median Housing Value (in Thousands \$)	27.31*** (8.002)	49.08*** (8.381)	9.045 (6.312)	-56.57* (32.34)	66.40*** (19.08)	-55.72** (22.31)
Mean Income (in Thousands \$)	-209.1** (96.50)	-195.4*** (58.89)	-72.07 (76.60)	-160.8 (241.4)	13.10 (138.8)	-527.5*** (199.3)
Median Gross Rent (in \$)	-4.921 (7.097)	-2.811 (4.441)	4.465 (6.187)	40.64*** (14.67)	-35.16*** (10.77)	51.00*** (14.09)
Total Beds	0.947*** (0.0628)	0.532*** (0.0725)	0.927*** (0.0619)	-1.923*** (0.328)	-0.00491 (0.213)	-1.865*** (0.312)
Homeless Population				1.459*** (0.261)	1.482*** (0.219)	1.443*** (0.247)
Constant	16,134*** (3,846)	5,018*** (1,934)	189.8 (1,572)	-16,713 (12,557)	5,754 (6,068)	2,922 (4,554)
Observations	510	510	510	510	510	510
R-squared	0.996	0.936	0.996	0.993	0.930	0.993
Fixed State Effects	Yes	No	Yes	Yes	No	Yes
Fixed Year Effects	Yes	Yes	No	Yes	Yes	No
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1						

Table 6

Regressions for Democratic, Republican, and Battleground states, and the United States

	Democratic States	Republican States	Battleground States	United States	Democratic States	Republican States	Battleground States	United States
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Homeless Population	Homeless Population	Homeless Population	Homeless Population	Total Program Award (in Thousands \$)	Total Program Award (in Thousands \$)	Total Program Award (in Thousands \$)	Total Program Award (in Thousands \$)
Unemployed Population (in Thousands)	-1.252 (9.908)	10.97*** (2.866)	-14.55** (5.729)	6.049 (4.351)	-70.71*** (7.476)	-9.695 (8.486)	-10.35 (8.434)	-50.27*** (11.50)
Civilian Workforce Population (in Thousands)	91.29*** (32.56)	27.59*** (5.402)	-18.16 (13.70)	39.36*** (9.331)	-37.14 (34.20)	31.27 (19.58)	79.51** (32.83)	-0.636 (24.14)
Total Population (in Thousands)	-41.82** (17.31)	-12.06*** (3.200)	-6.770 (5.292)	-20.54*** (5.007)	49.53*** (19.01)	-15.99* (9.471)	-34.43** (15.81)	9.676 (12.07)
Median Housing Value (in Thousands \$)	28.61* (15.54)	-32.69*** (8.431)	104.3*** (29.44)	6.881 (11.52)	11.43 (27.52)	88.91* (45.87)	-152.6** (70.81)	-56.57* (32.34)
Mean Income (in Thousands \$)	-263.4* (148.2)	38.05 (56.28)	-928.7** (422.6)	-255.8** (115.3)	487.3** (231.0)	-644.2*** (238.2)	612.8 (1,018)	-160.8 (241.4)
Median Gross Rent (in \$)	-18.25 (12.41)	-6.833* (3.853)	91.23*** (26.10)	8.942 (10.39)	-47.93*** (15.21)	22.17** (10.25)	-50.94 (90.80)	40.64*** (14.67)
Total Beds	0.540** (0.211)	0.288** (0.139)	0.671** (0.256)	0.978*** (0.132)	-0.861*** (0.297)	-1.959*** (0.726)	-0.326 (0.885)	-1.923*** (0.328)
Permanent Supportive Housing (in Thousands \$)	0.0888*** (0.0298)	0.0898*** (0.0309)	0.358*** (0.117)	0.155*** (0.0431)				
Rapid Re-housing (in Thousands \$)	0.169 (0.162)	-3.54e-05 (0.0583)	0.0561 (0.0998)	-0.00669 (0.100)				
Joint TH-RHH (in Thousands \$)	0.0147 (0.473)	-0.0833 (0.115)	-0.0145 (0.325)	0.540* (0.307)				
Transitional Housing (in Thousands \$)	-0.0390 (0.144)	0.0466 (0.0615)	0.263*** (0.0765)	-0.119 (0.120)				
Supportive Services Only (in Thousands \$)	0.348 (0.271)	0.468*** (0.171)	1.025*** (0.275)	0.487** (0.220)				
HMIS (in Thousands \$)	-2.080 (1.355)	0.840 (0.516)	-1.947 (1.794)	1.168 (0.778)				
Safe Haven (in Thousands \$)	-1.640** (0.715)	1.024 (0.711)	-1.116* (0.547)	-0.186 (0.383)				
CoC Planning Project Application (in Thousands \$)	-1.274 (0.847)	-1.296*** (0.357)	-1.353** (0.546)	-1.241** (0.549)				
Unified Funding Agency Costs Grant (in Thousands \$)	10.33 (9.617)	10.60*** (2.290)	0.236 (1.130)	2.053 (1.639)				
Homeless Population					0.437** (0.177)	-0.579* (0.294)	-0.114 (0.431)	1.459*** (0.261)
Constant	-15,348 (126,534)	11,148** (4,306)	38,230 (30,683)	9,583 (7,482)	12,439 (11,899)	18,295* (10,141)	55,176 (65,559)	-16,713 (12,557)
Observations	147	154	56	357	210	220	80	510
R-squared	0.999	0.998	0.998	0.998	0.997	0.991	0.993	0.993
Fixed State Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Discussion

Testing Fixed Effects

The results from the previous regression specifications with and without fixed effects are presented in Table 5. Regressions 1, 2, and 3 have overall homeless population as the dependent variable. Regression 1 includes state and year as fixed effects. When removing the state fixed effects in Regression 2, the correlation coefficient between overall homeless count and the total program awards become slightly higher but remains statistically significant. Therefore, across states as population grows, homelessness increases with it. However, as populations grows within individual states, they tend to have less homelessness. The coefficient on unemployed population becomes statistically significant and is positive, rather than negative without fixed effects. Thus, states with higher unemployment rates also have higher homelessness rates. The coefficient on total population also changes from positive to negative with the removal of fixed effects. This implies that states with larger populations tend to have less homelessness, but as an individual state's population grows, homelessness increases with it.

The median housing value and mean income retain their significance and direction even when state fixed effects are removed. The median gross rent is not statistically significant with or without state and year fixed effects.

Regression 3 has state fixed effects only. The R-squared is the same in regression 3 and regression 1, and the coefficients are very similar. This indicates that the time trend is not highly correlated with the overall homeless population.

Regressions 4, 5, and 6 have the total program awards as the dependent variable. Regression 4 has both state and year fixed effects. When removing the state fixed effects in regression 4, the unemployed population and total beds are no longer statistically significant,

while the civilian workforce population, total population, and median housing value become more statistically significant.

Regression 6 has state fixed effects only. The R-squared is the same as regression 4 and there are similar coefficients, apart from mean income, implying that the time trend is not highly correlated with the program awards.

Political Correlations

Table 6 presents the regression specifications with fixed effects but stratifies the sample by political group. The first four columns report coefficients for regressions with total homelessness as the dependent variable. An interesting finding is that there is no statistically significant relationship between homelessness and the unemployed population in Democratic states or the United States. In Battleground states, there is a negative relationship, while in Republican states there is a positive relationship. An increase in civilian workforce population in Democratic, Republican states, and the United States correlates to an increase in homelessness by 91, 28, and 39 persons, respectively. This could indicate that most homeless persons may not be counted as unemployed, since they may not actively be looking for a job or are already employed and are thus included in the civilian workforce. As the total population increases by one thousand, the homeless population decreases by about 42 persons in the Democratic states, and about 21 persons in the United States.

In Democratic states, a \$1,000 increase in median housing value corresponds with a 28 person increase in homeless population and a \$1,000 increase in mean income with a 263 person decrease, while median gross rent is not correlated. Thus, as income increases, homelessness decreases, while increasing home price has an association with a higher homeless population. In the Republican and Battleground states, where median housing values are over 50% less

expensive than Democratic states (54.53% and 56.20% less, respectively), there is a more significant relationship between homeless population and median housing value. A \$1,000 increase in median housing value is associated with a decrease in homelessness by 33 persons in Republican states and an increase by 104 persons in Battleground states. In Republican states, there is no statistical significance with mean income, and a negative relationship with median gross rent.

Of the program awards, for all political categories and the entire United States, an increase in Permanent Supportive Housing is positively correlated with an increase in overall homelessness, with a 0.08 person increase in Democratic states for every additional \$1,000. The number of total beds also has a positive correlation in all categories. An increase in Safe Haven is correlated with a decrease in homelessness for Democratic states, while an increase in Supportive Services Only has a positive correlation in homelessness for Republican, Battleground states, and the United States.

Total program awards are the dependent variable in the regressions presented in the last four columns of Table 6. In Democratic states and the United States, an increase in the unemployed population by 1,000 persons is associated with a \$70,710 and \$50,270 decrease in the total program awards, respectively. An increase in mean income by \$1,000 is associated with a \$487,300 increase in total program awards in Democratic states, and an increase in the median gross rent by \$1 is associated with a decrease in total program awards by \$47,930. An increase in overall homeless population by 1 person and in total population by 1,000 is correlated with a \$437 and \$49,530 increase in the total program awards, respectively. Civilian workforce and median housing value are not correlated with total program awards in Democratic States. As mean income increases by \$1,000, there is an increase in total program awards by \$487,300,

whereas a \$1,000 increase in median gross rent is associated with a \$47,930 decrease. As total beds have decreased by 1, the total program awards have increased by \$861, with a similar increase in the Republican states and the United States. This inverse relationship between total beds and total program awards indicates that the cost of providing beds to the homeless has dramatically increased relative to the awards.

In Republican states, there is no correlation between total program awards and unemployed or civilian workforce population, a negative relationship with homeless population, total population, and mean income, and a positive relationship with median gross rent and median housing value. The inverse relationship between homeless population and total program awards may be due to a higher allocation of funds for migrating the homeless to other states. On the other hand, there is a positive relationship between total program awards with civilian workforce in Battleground states, and a negative relationship with total population and median housing value.

The R-squared for Democratic states (0.997) is higher than the Republican states (0.991) and Battleground states (0.993). This implies that the independent variables represent the majority of what contributes to the total program awards in the Democratic states, but there are other significant factors in the Republican and Battleground states.

Conclusion

This study provides data that could inform policy makers of variables related to homeless population and provide more information on the effect of program award allocation. It collects data on population, homeless programs, and cost of living factors from the United States Department of Housing and Urban Development and the United States Census Bureau from 2010 to 2019. This data is interpreted through descriptive and regression analysis in order to find

the relationship between homelessness in California and political standing in the United States, along with what factors influence homelessness.

Homelessness in California trends similarly to homelessness in Democratic states. California only has about 12% of the United States' population yet has 27% of its homeless population. California has also had an increase in the homeless population from 2010 to 2019, while Republican and Battleground states, along with the United States had a decrease in the homeless population. While total program awards in California have increased two times faster than the average Democratic state, total awards per homeless person is roughly 50% less. The homeless rate in California has increased, while the average Democratic, Republican, and Battleground states have experienced a decrease. The rate of beds per homeless person has dropped by about 25%. As of 2019, California did not have enough beds for even a third of the homeless population, while the average Democratic state could provide beds for 80%. Nearly 75% of the homeless in California are unsheltered.

From the regressions for homeless population, it was found that an increase in average income and a decrease in median housing value were correlated with a decrease in homeless population for Democratic states, while median housing value and median gross rent were correlated with the homeless population in the Republican and Battleground states. The unemployed population is surprisingly not correlated with the homeless population in Democratic states; however, the unemployed population has an inverse relationship with the total amount of program awards. This could imply that some of the program awards are being used to help unemployed persons, such as supportive services. Because there is a positive relationship between the homeless population and the civilian workforce population, it may mean that many of the homeless persons are not actively looking for work or have jobs and are thus not

considered part of the unemployed population. Total beds have increased with the homeless population along with the largest program award category, Permanent Supportive Housing, in all political categories. However, as total program awards have increased, the total beds have decreased, which shows that beds have become more expensive compared to the increase in awards and are unable to keep up proportionally with the rising homeless population.

One limitation of this study is that Point-in-Time homeless population counts can significantly underestimate the actual population, as it is a survey based on finding people in a very limited amount of time. Thus, the numbers could be much higher than shown in this paper. The regression analysis is unable to conclude causation for homelessness, only correlation. It cannot be said that changes in income, civilian workforce population, or housing prices are directly responsible for changes in the homeless population.

Because there are clear differences in homeless statistics in states of different political standing, further research should be conducted to determine if this is related to the types of policies implemented by the state government. For example, given that minimum wage has historically been higher in Democratic states than Republican states, it should be studied as a potential cause of the increase in homelessness (Kinder, 2020). Also, because homelessness has increased significantly in California compared to other states, while the unemployed population has gone down, the migration of homelessness should be studied, particularly through local and state government bussing and airline programs to relocate the homeless and discover whether this contributes to the unusually high population in California.

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