A New Housing First Approach to End Homelessness

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Variable	Conceptual Definition
Total Year-Round Homeless Beds (HIC)	**• All emergency shelters, including a youth shelter, a hotel or motel unit, and a campground space paid for with an emergency shelter voucher. • All transitional housing for homeless persons, including homeless youth. (HUD Exchange)**
Point in Time(PIT) Homeless Count	**The Point-in-Time (PIT) count is a count of sheltered and unsheltered people experiencing homelessness on a single night throughout the course of a month. ("Point-in-Time Count and Housing Inventory Count")**
Voucher Distribution	**The Number of subsidized transitional housing housing vouchers distributed by the US government. Vouchers consist of documentation that is given to unhoused individuals who are then tasked with finding third party housing organizations to accept their voucher.**
Emergency Shelter Beds (ES)	**Any facility, the primary purpose of which is to provide temporary or transitional shelter for the homeless in general or for specific populations of the homeless. (HUD, 2020)**
Transitional Housing Beds (TH)	**"Transitional Housing (TH) provides temporary housing with supportive services to individuals and families experiencing homelessness with the goal of interim stability and support to successfully move to and maintain permanent housing. Transitional Housing projects can cover housing costs and accompanying supportive services for program participants for up to 24 months." (HUD, 2020)**

Figure 1.0: Research Variable Codebook

The Importance of Ending Homelessness

This project's social challenge is ending homelessness through a housing-first solution. In 2023, the unhoused population has grown across the country and the solutions executed have shown unclear effectiveness in lowering the unhoused population for the longer term. A record-high number of unhoused individuals persist annually at around 580,000 (HUD, 2022). Homelessness must be reduced on the streets for many reasons, from ethical to economic.

Firstly, to discuss homelessness's health effects: Homelessness is associated with a higher risk of a wide range of health problems, including malnutrition, infectious diseases, substance abuse, mental illness, and chronic health conditions. Unhoused individuals often lack access to adequate healthcare and are more likely to use emergency rooms for medical care, which are typically costly and less effective than preventative care. Homelessness can also increase stress, negatively affecting mental and physical well-being (Hetherington, Hamlet,2018). Secondly, homelessness has economic effects on individuals and communities as homelessness includes direct costs such as emergency medical care, shelter, and food (Burt, Cohen, 1989) and indirect costs such as lost productivity and increased crime. Homelessness and decreased property values, reduced tax revenues, and increased demand for social services in areas suffering from it. (Gould, Williams, 2010) This increased use of social services and lack of return may strain government budgets. Thirdly, homelessness has social effects, as unhoused individuals may suffer from social isolation, discrimination, and societal stigma. This combination of factors can make it extremely difficult to escape homelessness as many of these factors feed into each other via debilitating positive feedback loops of homelessness.

Homelessness affects individuals and communities for the worse; therefore, it is essential to formulate possible solutions for homelessness so that the unhoused can ultimately transition outside

of homelessness and into stable housing. This issue will only worsen or persist with continued inaction at record rates.

Data Science to End Improper Housing Access

A data science approach would be best to tackle this problem not only to examine the predicted future homelessness rates but to monitor the effectiveness of existing housing-first policies. Since the central approach of this project is to end homelessness through a housing first approach, housing accessibility and rates of homelessness were studied amongst other factors. The meaning must be extrapolated from those numbers through comparison or another statistical model. Ultimately this will aid in filling the research gap of how effective a housing-first approach is in ending homelessness and in determining the adjustments that need to be made in policy from place to place.

The most effective approach to ending homelessness has been the subject of debate, with some critics questioning the "housing first" approach in prior decades. However, research within the last five years consistently states that "housing first" is the most impactful approach to addressing homelessness in the current socio-economic climate. The contributions of other factors will not be disregarded, but the focus will be primarily placed on proving that increasing housing accessibility is the most effective means of reducing homelessness. This project proposes a case study analysis of historical policy implementations and their effects on the unhoused population will either confirm that the premise of "housing first" with modifications is an effective combatant to homelessness or confirm that it is ineffective. Alongside that determination, research will be done to determine what needs to happen to maintain future reductions in homelessness.

The focus will be on the perspectives of the in-house population in the US only. There are two overall perspectives on the unhoused population in the US: the "punitive" and the "constructive

perspective." The punitive perspective views homelessness as a problem that requires regulation, punishment, and policing (Herring, 2019), while the constructive perspective views it as a neglected issue that requires government resources. Punitive approaches have been shown to support racism, exclusion, and bias and increase the prevalence of homelessness in areas where it is implemented (NCHJ, 2021). For instance, unhoused individuals and refugees are arrested on the spot in Paris, France. This approach has led to a 21% increase in their unhoused population from 2018-2019 (The Local, 2019). Those who support a constructive approach to ending homelessness in the US attribute it to individual demographic information (such as race and age) (Smartt, C, 2019), general nationwide financial instability, and economic standing on a state and city level (Calsyn, R. J., Roades, L. A. 1994). Some researchers also attribute mental illness presence and drug use as the most prevalent factors in homelessness (Scott, J. 1993). However, within the last five years, housing accessibility has been consistently identified as the most impactful factor contributing to homelessness reduction. (Baxter,2022)

The homelessness issue requires a balance between policy involvement and social perspectives that cater to individual circumstances. There is a general gap in knowledge and perspective backed by quantitative data. While evidence suggests that providing housing resources is effective at immediately housing unhoused individuals, there is insufficient evidence to confidently state whether or not housing-first approaches are an effective solution to ending homelessness. This research hypothesizes that providing effective housing accessibility, specifically where it is needed, decreases homelessness. The study will prove this by analyzing housing first effectiveness on a state level.

A New Housing First Approach

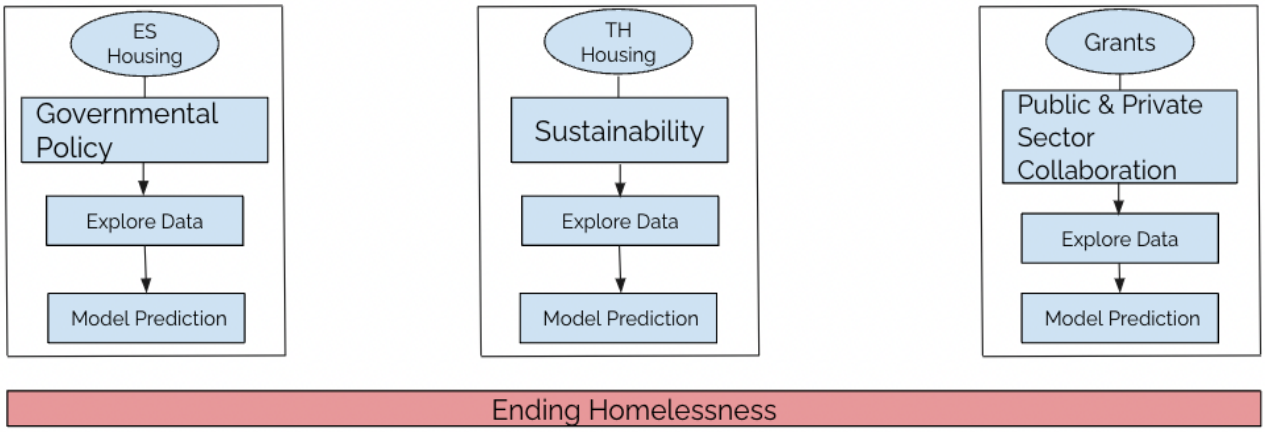

Figure 2.1: Graph of Dependencies

The theory is that with a targeted increase in housing access, homelessness will decrease. Ultimately, to prevent homelessness long-term, short-term crisis relief is needed to prevent individuals from being exposed to the cycle of homelessness. The pros of this theory holding up and the soon-to-be proposed solutions exceeding would be an overall substantial decrease in homelessness as shown in the 2020-2021 drop off. Resources and solutions are circumstantially applied based on the analysis of what aspect of housing resources are needed (either crisis support, short-term, or voucher usability) in each area. Ensures that there is no one size fits all solution and that each aspect of housing resources is given attention proportionally. The multi-faceted housing first framework of the research theory aims to mitigate ethical concerns and focuses on the long-term perspective of the existence of the unhoused population.

With a housing-first approach, the course of this study will investigate government policy by analyzing public beds, sustainability by analyzing government funding, and public and private sector collaboration by analyzing the amount of distributed and used vouchers. Researching the three first housing approaches in their aspect by creating the same model to test the future of the unhoused

population. A sustainable approach also requires a nationwide systematic effort that applies to specific situations.

With the gap in the research, addressing sustainable plans in action will be researched by analyzing the number of beds, allocation of money, and the number of vouchers. With a multi-dimensional approach state by state, the working networks from years of one-dimensional solutions examine a first-house approach. Using more substantial strategic providers of financial stability opens an opportunity for housing accessibility. In return, a positive cultural difference would exist, systematically improving the living conditions of the underprivileged members. Creating social net support "Europeans often share a more collectivist attitude compared to the American individualist tradition, with these differences are linked to stronger social welfare programs in Europe" (Toro, 2007) that can be found in other working models around the world but specifically applicable to the United States system. As the creation of a housing accessibility plan, a hypothesis is an increase of housing accessibility resources that will decrease the unhoused population in the US.

Focusing on a targeted approach through policy and an increase in private sector involvement, it is hypothesized that an increase in housing voucher usage will result. More financial collaboration would decrease the unhoused population by incorporating voucher acceptance quotas into third party housing organizations already provided government incentives. A more efficient process can be formed by successfully pinpointing the needs of the unhoused population issue in the form of a sustainable systematic approach. Now that an understanding of the motives of the theory of change is established a debriefing of data and analysis preparation is needed.

Data Debrief

All of the data in the research comes from the United States Department of Housing and Urban Development, which works to end homelessness nationwide. The data measures government policy, sustainably, and public and private collaboration to explain how the unhoused population, transitional housing (TH), and emergency shelter (ES) vouchers can capture a housing-first approach. The department does a yearly update on every data component at a county level nationwide, except for housing voucher acceptances, which are updated daily. The timeframe of each dataset is different but overlaps with each other in recent years as of 2021. The data collected is publicly available and easily accessed through the department website. For the research, the data is aggregated from a county to a state level to capture the national issue. The department's data is the best available information to measure homelessness but with a potentially inaccurate representation of smaller or subset populations in each state because of the support needed in a specific area of the country.

The specific United States Department of Housing and Urban Development (HUD) datasets that will be used are the National Point in Time (PIT) unhoused count, which is supplied directly by the HUD, and the National Housing Inventory Count (HIC) which is given to the United States Department of Housing and Urban Development by Continuum of Cares (COC). The government established a continuum of Cares programs to collect data and provide housing resources to the unhoused population. Both datasets consist of information state by state from 2008-2022.
State-by-state PIT unhoused count was used as a dependent variable to operationalize the unhoused population. To operationalize housing accessibility, two variables titled "Emergency Shelter Beds" (ES) and "Transitional Housing Beds" (TH) from the Housing Inventory Count will both be used as the independent variables. Emergency shelter beds include beds in the traditional thought of "unhoused shelters," in which rooms and facilities are filled with beds and areas for unhoused

individuals to sleep temporarily. Transitional Housing beds (TH) include any subsidized housing vouchers that were distributed to unhoused individuals. Other variables in the HIC dataset count forms of housing resources that are explicitly provided to the youth, unhoused individuals with a disability, and unhoused individuals with mental illness, but they will not be used in this stage of research because they each involve entirely different circumstances than purely housing access.

Findings and Analysis

The relationship between the independent variables (ES and TH) and dependent variables (Unhoused Population) seemed to change state by state and within each bed category. Each state has a very different relationship and correlation between the unhoused Population and the independent variables that measure housing access resources. This is expected because each state has different populations, economic circumstances, and circumstances of unhoused populations, so it could not be possible that each subset of housing impacts all states similarly. Some states seem to be more impacted by Emergency Shelter beds, others Transitional Housing beds. Regardless of which form of housing access is most impactful, over half of all states are seeing significant impacts from Emergency Shelters and Transitional Housing, which begins to trial evidence that the hypotheses are correct to at least some extent.

Understanding Results

An understanding of the correlation coefficient in the context of this research is needed to briefly explain the formatting of the results produced to comprehend the relationship between variables and how they changed within each level of analysis. A positive correlation higher than .25 indicates that the unhoused population increases as housing access increases in that particular state. This does not necessarily prove the formulated hypothesis that increasing housing access will

decrease the unhoused population. A negative correlation indicates the opposite; as housing access increases through the independent variables defined, the number of unhoused individuals decreases, which would support the hypotheses. Additionally, an area of uncertainty was defined within the range of -.25 to .25 correlation coefficients to categorize states without a clear relationship between housing access and the unhoused population.

For example, when observing New York's unhoused population, a strong inverse relationship with transitional housing beds (Figure 3.2) is shown, but a nearly opposite relationship exists in emergency shelter beds (Figure 3.1)

Relationship of Emergency Shelter Count and Unhoused Pop.

Correlation	State	Correlation	State	Correlation	State	Correlation	State	Correlation	State
-0.902	FL	-0.424	WV	-0.119	IA	0.26	MA	0.568	SD
-0.835	MD	-0.395	IN	0.023	MT	0.297	ID	0.595	VI
-0.748	OH	-0.374	NE	0.026	NH	0.304	NM	0.611	KS
-0.735	CO	-0.371	NV	0.048	NJ	0.354	ND	0.704	AK
-0.724	GU	-0.367	MI	0.058	WY	0.376	DC	0.742	MS
-0.699	IL	-0.365	UT	0.071	AZ	0.385	VT	0.772	PR
-0.699	TX	-0.345	TN	0.077	WA	0.41	GA	0.835	ME
-0.649	VA	-0.322	PA	0.178	OR	0.448	OK	0.842	DE
-0.623	SC	-0.32	WI	0.189	CA	0.467	KY	0.96	NY
-0.504	NC	-0.299	MN	0.195	RI	0.471	CT		
-0.503	AL	-0.257	AR	0.216	LA	0.497	MO		
-0.461	HI								

Figure 3.1

Relationship of Transitional Housing Count and Unhoused Pop.

Correlation	State	Correlation	State	Correlation	State	Correlation	State
-0.778	NY	-0.229	AK	0.4	VI	0.759	TX
-0.655	SD	-0.169	CA	0.497	MT	0.77	NV
-0.552	VT	-0.163	MA	0.5	NH	0.844	PA
-0.499	DE	-0.129	ND	0.503	HI	0.858	MO
-0.278	ID	0.035	ME	0.507	AZ	0.869	MD
		0.083	DC	0.521	TN	0.883	OH
		0.096	RI	0.54	UT	0.893	CT
		0.161	CO	0.551	NM	0.9	WV
		0.192	WA	0.567	NJ	0.902	NE
		0.197	WY	0.57	GU	0.904	WI
		0.221	MN	0.593	OR	0.915	GA
				0.638	MI	0.916	KY
				0.646	OK	0.936	AL
				0.669	AR	0.939	IL
				0.68	KS	0.946	IA
				0.689	MS	0.948	FL
				0.694	LA	0.948	IN
				0.707	SC	0.966	VA
				0.719	PR	0.967	NC

Figure 3.2

Both relationships show that in New York's case, emergency shelter beds do not effectively impact the unhoused population at the current rate they have been increasing. With a dramatic increase in emergency shelter housing access in New York and statistically similar states such as New York (such as DE, SD, VT), the relationship between this emergency shelter housing and the unhoused population will change. However, it could also be the case that the "red states" shown here (Figure 3.1) are not impacted by emergency shelter housing access overall because the circumstances that make up that state's unhoused population cannot be impacted by emergency shelter housing. It seems that in nearly two-thirds of states in the US, the unhoused population either is not impacted by emergency shelter housing (red states in Figure 3.1), or the impact is unclear (gray states in Figure 3.1). On the other hand, roughly one-third of states are impacted by emergency shelter housing and will therefore need to follow previous trends of increasing emergency shelter beds to continue to reduce and ultimately end the unhoused population whose circumstances relate to

housing access. A future examination of the makeup of unhoused populations state by state will further clarify why emergency shelter housing is more impactful in some states than others. However, directions for future analysis will be discussed later. What is more important is how the relationships between the unhoused population and beds change when switching to transitional housing.

The results shown in the transitional housing correlation table display nearly polar opposite relationships to what was shown in ES (Figure 3.2). It appears not only that most states either do not see an impact on the unhoused population with an increase of transitional housing beds(red states in Figure 3.2), or the impact is unclear(gray states in Figure 3.2). A more intriguing takeaway from this table is that in all states in which ES housing is not impactful, TH is. Referring back to the state of New York as an example, it is shown that transitional housing is much more impactful in reducing the unhoused population as the correlation coefficient is strong (Figure 3.2). This gives us the insight that transitional housing access is the solution in some states (green states), and again the reasoning behind why each subset of housing access is more effective state by state is hypothesized to be the circumstances that bring a majority of individuals in that state to be unhoused, which is a direction of future research.

Accounting for Voucher Acceptance

Before solutions can be suggested based on the relationships shown, some context about Transitional Housing Beds (TH) needs to be understood. Transitional housing vouchers have had meager acceptance rates state by state, which gives the indication that the relationships shown in TH are not truly representative of the impact transitional housing has on the unhoused population considering this transitional housing data consists of those vouchers that have been distributed, and not accepted and put into use. An increase in voucher use will better summarize the actual state of

the relationship it has with the unhoused population and solve a gap in ineffective policy action. However, state-by-state voucher usage will be further detailed in the "What This Means" section.

Emergency Shelter Predictions

After observing the correlations, a prediction was constructed using a simple linear regression that estimates the number of homeless individuals that can theoretically be housed yearly with every increase of one emergency shelter bed. For example, the result for Florida (-10.285) predicts that for every emergency shelter bed added annually (Figure 3.3), there are estimated to be ten homeless individuals that will be housed as a result of this ES bed being added. These predictions additionally bring the correlation values into the context of the problem.

Relationship of Emergency Shelter Count and Unhoused Pop.

Impact/ES Bed	State	Impact/ES Bed	State	Impact/ES Bed	State	Impact/ES Bed	State	Impact/ES Bed	State
-10.285	FL	-3.198	WV	-0.691	IA	0.225	MA	0.68	SD
-2.984	MD	-0.864	IN	0.018	MT	0.494	ID	2.023	VI
-2.439	OH	-1.362	NE	0.022	NH	0.374	NM	0.797	KS
-1.599	CO	-0.786	NV	0.367	NJ	1.325	ND	0.267	AK
-6.911	GU	-4.143	MI	0.207	WY	0.366	DC	3.852	MS
-1.476	IL	-0.291	UT	0.654	AZ	1.194	VT	6.703	PR
-6.737	TX	-0.844	TN	0.119	WA	8.131	GA	0.745	ME
-2.218	VA	-1.005	PA	0.766	OR	0.953	OK	2.771	DE
-2.509	SC	-0.918	WI	0.442	CA	3.485	KY	0.78	NY
-2.874	NC	-0.165	MN	0.477	RI	1.698	CT		
-3.321	AL	-0.448	AR	0.679	LA	3.071	MO		
-1.889	HI								

Figure 3.3

Summary

To summarize the relationships discovered in this research, over half of all states have an inverse relationship between some aspect of housing access (either ES or TH) and the unhoused

population. The critical relational changes are the nearly opposite relationships between emergency shelter housing and transitional housing state by state. Additionally, these relationships have been drawn under the assumption that transitional housing voucher usage is one hundred percent, and a dire need for acceptance to increase across the board is needed. This change in relationships and the relationships themselves will prove vital in suggesting solutions and stating conclusions considering that they provide evidence as to which form of housing is needed most state by state, and no single approach will be identical.

What This Means & The Acceptance Issues

Capturing a housing-first approach through the exploratory analysis results in a consistent theme that a one size fits all approach does not work. The theoretical framework (Figure 2.1) already suggested that a multi-dimensional is appropriate to address the exploratory findings that transitional housing (TH) to support government policy and emergency shelters (ES) to support sustainability alone are not equitable systems to end homelessness nationwide. The exploratory analysis suggests that transitional housing (TH) only works in nine states nationwide, with a positive correlation (Figure 4.1) in most states. A similar trend can be observed with emergency shelters (ES) in that the implication of the system works in 24 states (Figure 4.2), and the rest of the states have a negative correlation. A key finding when comparing transitional housing (TH) and emergency shelters (ES) is that the states with the same group of states that benefit from each program are different—suggesting that the framework is appropriate to capture the different situational factors in most states.

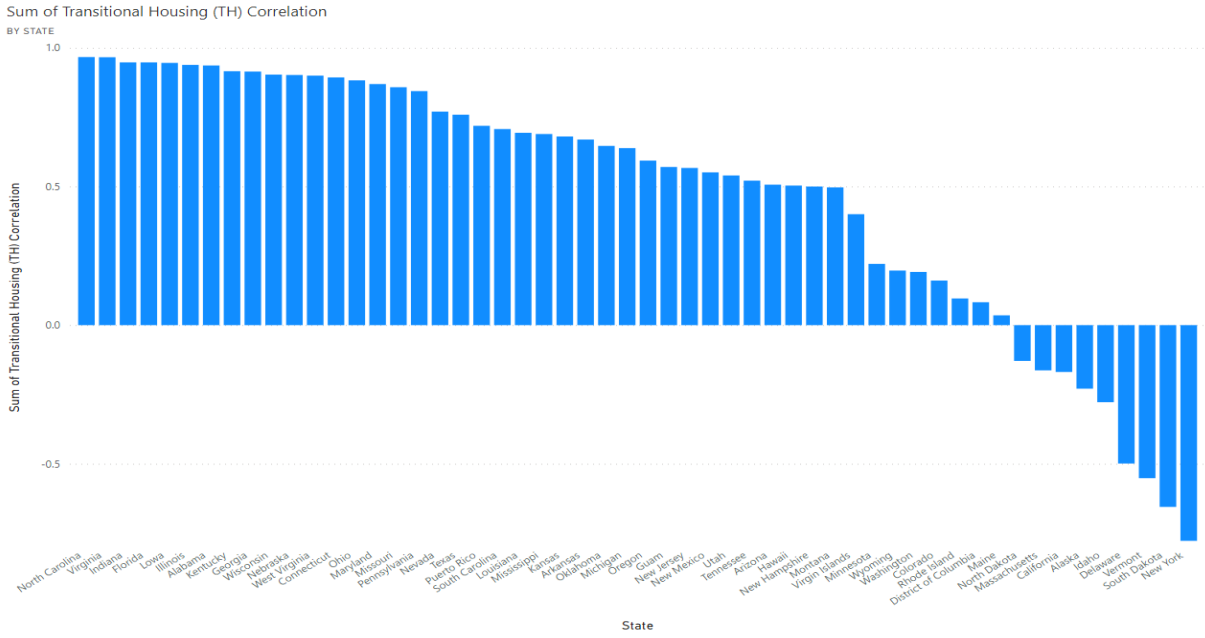
Sum of Transitional Housing (TH) Correlation
BY STATE
1.0
0.5
0.0
-0.5
Sum of Transitional Housing (TH) Correlation
North Carolina
Virginia
Indiana
Florida
Iowa
Illinois
Alabama
Kentucky
Georgia
Wisconsin
Nebraska
West Virginia
Connecticut
Ohio
Maryland
Missouri
Pennsylvania
Nevada
Texas
Puerto Rico
South Carolina
Louisiana
Mississippi
Kansas
Arkansas
Oklahoma
Michigan
Oregon
Guam
New Jersey
New Mexico
Utah
Tennessee
Arizona
New Hampshire
Hawaii
Montana
Virgin Islands
Minnesota
Wyoming
Washington
Colorado
Rhode Island
District of Columbia
Maine
North Dakota
Massachusetts
California
Alaska
Idaho
Delaware
Vermont
South Dakota
New York
State

Figure 4.1

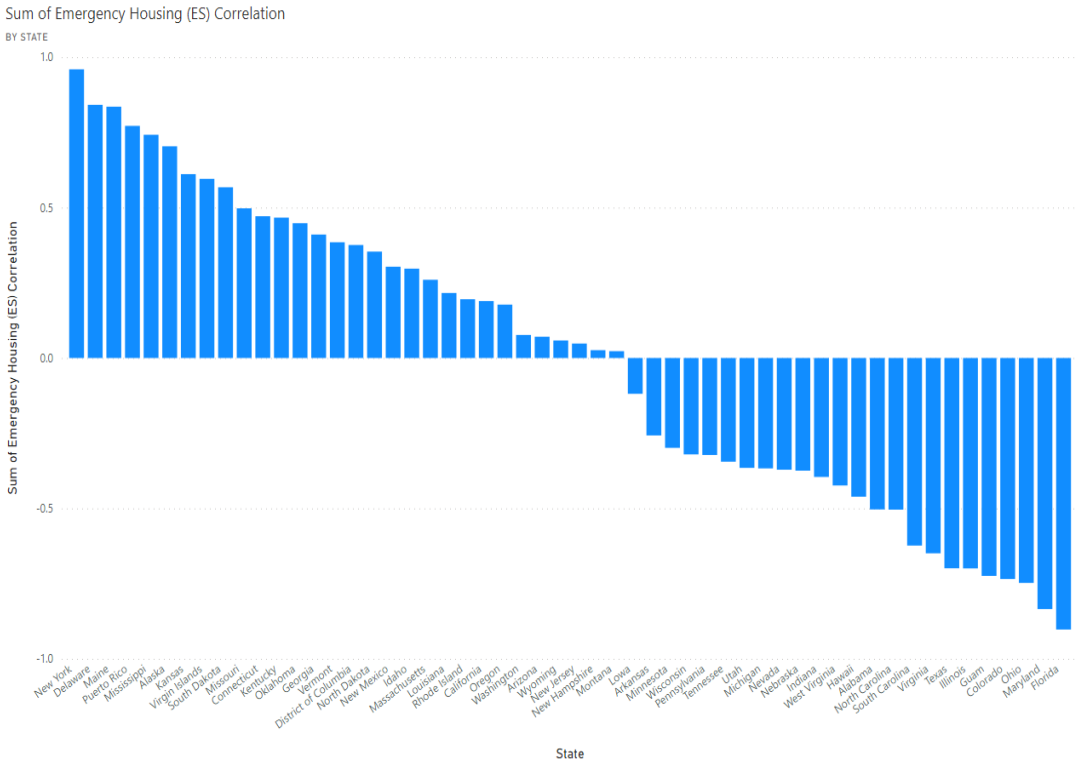

Figure 4.2

In addition, the support to improve emergency voucher acceptance for private and public collaboration needs more practical implications from the exploratory findings. The demand for emergency vouchers for the unhoused population is appropriate, but the acceptance of the vouchers fails at an average of 68% acceptance (Figure 4.3) nationwide. Collaboration between the private and public sectors is critical to supporting the housing infrastructure for the unhoused population. An increase in acceptance of the emergency voucher is encouraged to create and maintain a healthy infrastructure to provide housing. The research framework from the exploration analysis suggests that the approach is robust.

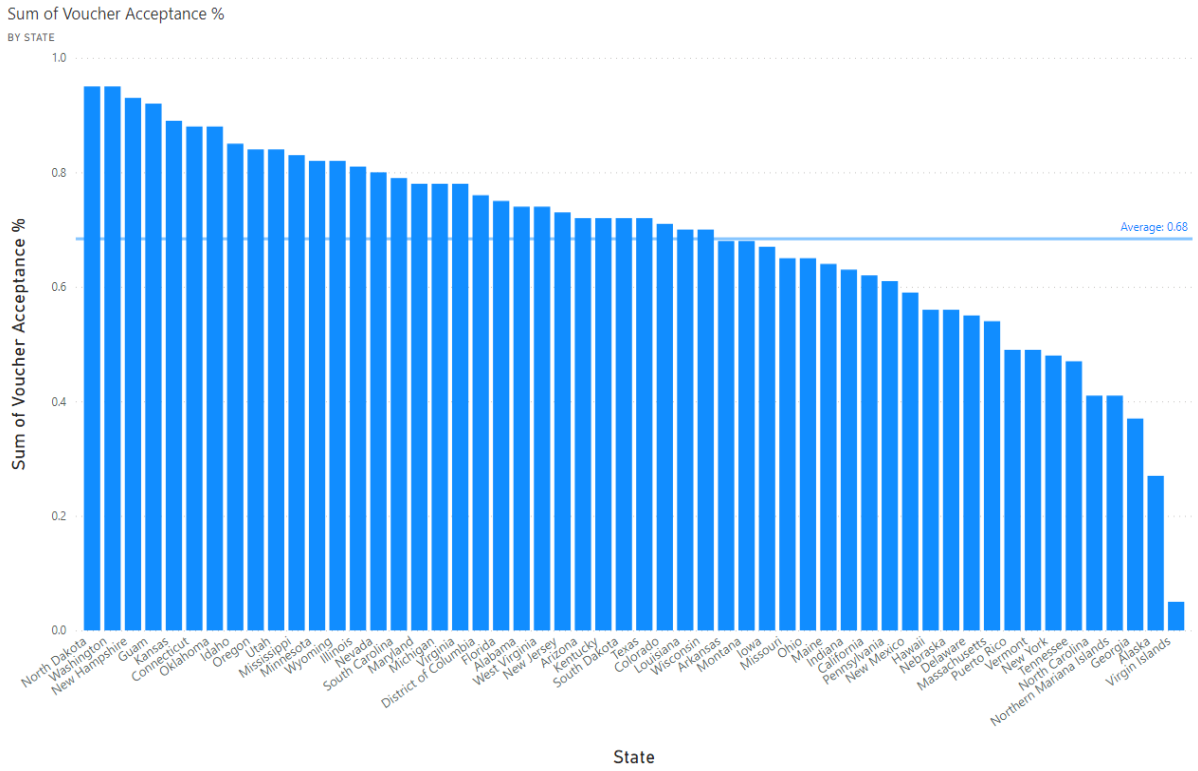

Figure 4.3

Solutions In Action

The "Ending Homelessness Act Of 2021" focuses on providing affordable housing that targets low-income households and rental assistance to help end homelessness. These findings are impactive to families that are not homeless but could potentially face a threat of losing interest in having stability. To have a long-term success rate in reducing homelessness, the focus must be aware of the current victims in society. A "housing first" approach of providing more transitional housing vouchers to every state would keep a roof over independent families seeking shelter instead of living on the streets.

With the help of the Biden administration housing platform that is already in place to protect low-income families, the homelessness rate will reduce by a year by providing funding to assist low-income families and people who currently do not have a place to stay. In this approach, building more affordable houses and shelters across the United States will be beneficial in the first step to ending homelessness. The focus of just expanding "rental assistance to every eligible household is central to any successful strategy to solve the housing crisis. Rental assistance is critical for helping the lowest-income people afford decent, stable, accessible housing" (Ending Homelessness Act 2021). Those policy implications are a subtle approach to those who are not currently homeless. The ethical issue in society needs to focus on the playing field of those currently in distress and those facing detrimental financial assistance. Homelessness is a combination of a crisis such as eviction or almost having no income in society. Substantial empirical evidence shows that homelessness is essentially a housing problem. Therefore, maintaining people who are in need of assistance by building more transitional housing that is temporary. This is better than insufficient shelter to provide stable, permanent housing. Unhoused people placed in these stable environments are far better at producing better results in presenting good mental health conditions that will lead back to the benefit of ethical change in the economy. Effective policies to provide more funds for shelters and transitional housing units will serve a need to end homelessness that relates to housing access.

Many researchers have described ending homelessness in many different ways, with a lack of consistency in the data provided to support their described solutions. Presenting the "housing first" approach seems to be misunderstood in the possibility of providing more housing in the communities with higher rates of unhoused people living on the streets and not in sustainable living conditions. Gaining more detailed data on the housing count for emergency sheltering and transitional housing throughout ten years shows the quantifiable impacts of providing more housing in these manners.

Focusing on a dynamic "housing first" approach is the start that leads to a domino effect of building more sustainable living conditions for low-income families, and individuals will end homelessness. In these sustainable environments, such as transitional housing or emergency shelters, individuals will have better living conditions that are supported to help practice frugality for better living situations. Once emergency shelters and transitional vouchers are targeted and applied based on the needs of each state, the yearly homelessness count will decrease due to a granular decrease. Now that quantitative evidence has been established, we must reflect on what could've been used and general limitations through the process of this research.

Reflecting On The Process

An understanding of the results and conclusions have been established, so now it is only appropriate to go back and explain any issues encountered in the process and associated with the conclusions. Other than issues of voucher acceptance that have been discussed, there were also significant data collection issues, accuracy concerns, issues defining the level of analysis, and ethical concerns.

Considering the limited available data on specificities of unhoused individuals, there were no aspects that measured the dependent variable other than purely the count of individuals themselves. Ideally, it would’ve been helpful to have data regarding individual information such as any history of income, race, age, disability status, and many others. However, as was discussed in previous research collecting data on unhoused individuals is an extremely restricted practice considering ethical concerns and difficult to begin with, due to unhoused individuals often having no forms of communication and being actively transient (Naeh, 2019). These data collection issues also overlap with concerns about accuracy count.

Whether or not these counts provided in the Point in Time homeless count or *any* unhoused population count are accurate is highly debated for the same reasons data collection is difficult, to begin with. The transient activity of unhoused individuals and their lack of forms of communication led previous researchers to believe that these counts change rapidly and therefore aren't accurate. These issues of data collection and accuracy slightly differ from analysis-related issues.

While performing preliminary analysis, there was a debate as to which scale is best to examine moving forward. The options were either to analyze homelessness on a national, state-by-state, or county-by-county level. Another level of analysis that needed to be defined was what variables to use. In previous research, variables such as housing availability, average pricing, income levels, and other economic factors were used as independent variables along with the unhoused population. Such economic factors do have an indirect effect on homelessness, but these aspects do not directly measure any aspect of the unhoused population. By taking the route of only including variables that are directly impactful, there is a generally lackluster number of variables overall. This decision of choosing less directly related variables as opposed to more indirectly related variables is a concept of "quality over quantity" and poses tedious data collection issues considering there are not many variables existing that directly impact and measure the unhoused population. These analysis concerns are quite different from both the data collection issues, as well as ethical issues that stem from the overall conclusions and suggestions.

Ethical Implications

The last primary concern that will be addressed is the impact of the recommendations and solutions on the unhoused population and the communities they reside. There is a concern that continuing to supply housing access resources as proposed will not work towards getting unhoused individuals back on their feet but rather continue the dependency unhoused individuals have on the

government to provide them with resources (Brown, 2021). This research argued that by properly supplying housing resources proportionate to the housing that is demanded by this analysis state by state, solutions would not promote a system of dependency but rather provide basic resources that have been needed for years. However, this did pose limitations, such as ruling out any analysis that wasn't stated by state or county by county so solutions could be as dynamic and multifaceted as possible. All primary concerns must be addressed and mitigated in these manners in order to provide effective solutions that don't do more harm than good.

Growth Of Knowledge

Each iteration of the research has added a layer of clarity to the framework's strength by specifying suggestions from data analysis results. Earlier versions of the research had broad suggestions with a less comprehensive understanding of the different governmental systems in place to aid the unhoused population. The knowledge about applying a housing-first approach has increased with the exportation of the U.S. Department of Housing and Urban Development data, producing national information on the unhoused population in each state. The current datasets in the research have the best information available to measure a housing-first approach. However, the research does not correctly represent specific cases of the unhoused population, potentially mischaracterizing the smaller subsets in specific counties nationwide. Throughout the research, all solutions maintain a stable structure with improvements in gathering more detailed solutions to end the unhoused population.

With voucher acceptance data that dates further back than 2020 and additional Continuum of Care data that dates back to the origination of Continuum of Cares (the mid-1990s) would be extremely useful by largening the sample size and data dimensions. Additionally, datasets that have detailed information about unhoused individuals themselves would assist greatly in the "why?" of

this project in explaining the reasoning behind each subset of housing access, proving more effective than another state by state. It may not be the case that this data doesn't exist. Rather, it is being withheld by Continuum of Cares due to the highly personal information it contains. This will also be an objective of the project continuation.

Going Forward

A more detailed layer of concept will describe the same fundamental framework that has been held throughout the research. To understand the financial cost of housing first approach an additional layer of cost for housing will be added to the research. Additionally, de-aggregating the data from the state by state to the county by county and re-conducting the analysis will give insight into specifically what housing access resources are needed at a county level considering there is significant evidence to suggest that unhoused populations are concentrated in large cities (Cournoyer, 2021). As well expands the complexity of the analysis by using predictive models to capture the unhoused people at a root level. In return, a more granular understanding of the issue will be obtained, and solving the issue at a macro level with even more dynamic solutions. Progressing forward in this manner will be much easier now that quantitative evidence has been established.

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Data Source Links:
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HUD Point in Time Homeless Count:
https://www.hudexchange.info/resource/3031/pit-and-hic-data-since-2007/
Census Population Estimates:
https://www2.census.gov/programs-surveys/popest/datasets/2010-2020/state/totals/