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The Role of Female Headed Households Caring for Children and No Spouse in Gentrification in Los Angeles

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CLAREMONT GRADUATE UNIVERSITY
2020

Approval of the Dissertation Committee

This dissertation has been duly read, reviewed, and critiqued by the Committee listed below, which hereby approves the manuscript of Jovita Murillo as fulfilling the scope and quality requirements for meriting the degree of Doctor of Public Health.

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Abstract

The Role of Female Headed Households Caring for Children and No Spouse in Gentrification in Los Angeles

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Gentrification is the "in-migration of a relatively well-off, middle- and upper-middle-class population" into a historically marginalized community (Centers for Disease Control and Prevention (CDC); Matsuoka et al. 2017). The literature treating it has repeatedly shown that it places cost- and rent-burdened residents at risk of displacement due hikes in housing prices and rent. Most such households are female-headed with children but without a spouse (FHHCCNS) (Colburn and Allen, 2018).

Given the lack of literature considering the how gentrification affects women, this descriptive study describes examples of gentrification in Los Angeles using multiple indicators from place-based census tract data that includes families headed by women with children but without spouses.

To gain an understanding of gentrification, a descriptive methodology is employed to show how these households are affected by gentrification. Census tract data is used to capture a descriptive snapshot of the situation in the last decade. The study's finding show that such families are critically affected by gentrification in ways not the same as others and so should be considered a critical variable in future investigations. If gentrification continues, as seems likely, we need to improve public health services and create policies to protect women and their

children from the ravages of displacement. It recommends measures to prevent their

displacement, eviction, and homelessness

Dedication

Esta tesis se la dedico a mis padres, Fidel Murillo y Maria Lourdes "Concha" León. Gracias por sus sacrificios y esfuerzos para poder darnos todo en la vida. Gracias Mami por enseñarme como ser luchona y abogar por mi y gracias Papi por darme tan grandes consejos y por ser tan trabajador.

Esta tesis tambien se la dedico a mi Nina. Nina muchas gracias por ser como nuestra segunda mama. Gracias por dedicar tu vida a mi y a mis hermanas y hermano. Te agradezco todo lo que has hecho por nosotros. Que quiero mucho y te admiro por ser una gran mujer.

This dissertation is for every person from marginalized communities. We often have to work much harder than others to enter and survive in academia, a space neither designed nor created for us. But our perseverance and commitment to bettering our communities helps us make our ways to the end of the tunnel. All of this is to say: if I can do it so can you— just surround yourself with people who believe in you.

This piece is dedicated to all self-identifying women who have to fight injustices and patriarchy. May we one day find equity and a world of opportunities created for us by us.

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CHAPTER 1: INTRODUCTION

Background

Gentrification is the "in-migration of a relatively well-off, middle- and upper-middle-class population" into a historically marginalized community (Centers for Disease Control and Prevention (CDC); Matsuoka et al., 2017). Transforming a poorer community into one more well-off involves economic growth, physical restructuring, and social and cultural changes (Chaskin and Joseph, 2013; Benton, 2014; Tran et al., 2020; Podagrosi et al., 2011; Matsuoka et al., 2017). Studies have demonstrated that low-income communities are more susceptible to gentrification due to disinvestment, disamenities, higher levels of poverty, and low educational attainment (Chaskin and Joseph, 2013; Gibbons et al., 2018; Powell and Spencer, 2002; Matsuoka et al. 2017; Lim et al. 2019; Wolch et al. 2014). When inequities are high and assets low, communities become susceptible to gentrification.

Although gentrification improves the value of neighborhood properties, it puts longer-term residents, particularly low-income ones, at risk of displacement due to hikes in housing prices and rent (Matsuoka et al., 2017; Benton, 2014; Tran et al., 2020; Podagrosi et al., 2011).

In Los Angeles, economic inequities have contributed significantly to gentrification (Chapple and Thomas, 2020). From 1990 to 2015, the number of gentrified neighborhoods increased drastically by 16% (see figure 1) (Chapple and Thomas, 2020; Maciag, 2015). The gentrification profile for Los Angeles often involves lower-income neighborhoods that were transformed into middle- to higher-income neighborhoods with higher home values and higher levels of educational attainment (Maciag, 2015).

Figure 1: Los Angeles Map of Gentrification 1990-2015 (Urban Displacement Project)
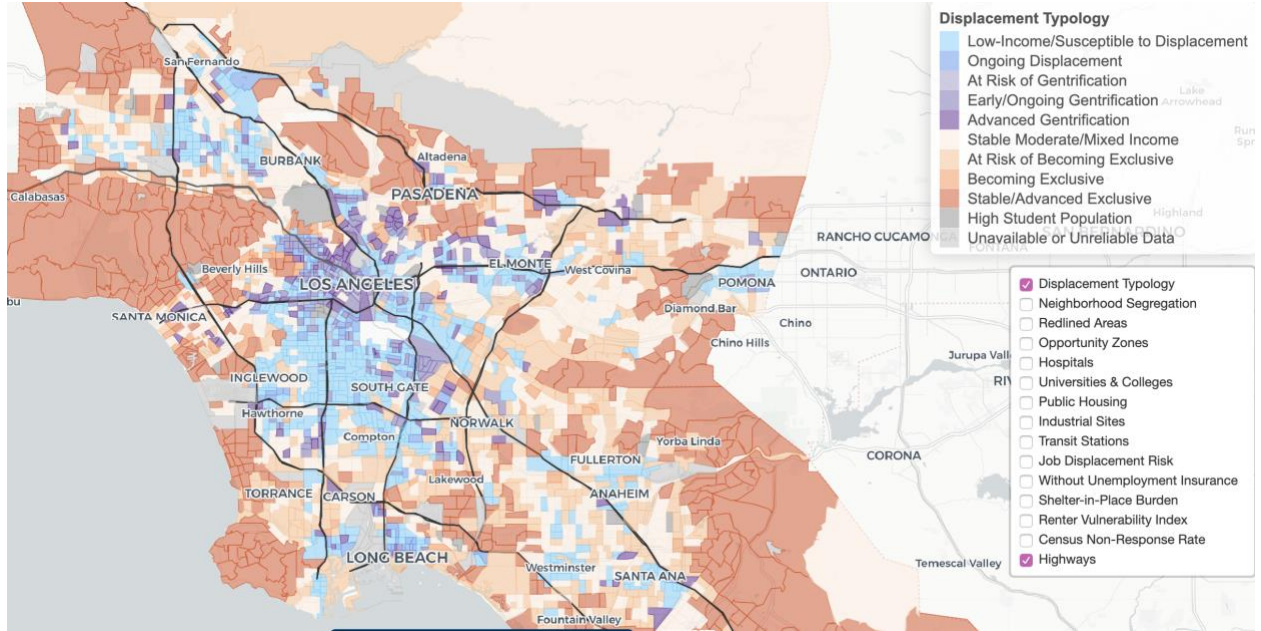
For low-income residents affected by gentrification, rent increases may affect their ability to meet other basic needs. Research shows that such households are at greater risks during and after gentrification (HUD: Displacement of Lower-Income Families in Urban Areas Report). The majority are female-headed households with children and no spouse (FHHCCNS) (Colburn and Allen, 2018).

Statement of the Problem, Significance, and Purpose

Since housing is a fundamental determinant of women's and children's health, measures have to be taken to preserve and protect FHHCCNS living in cities where gentrification occurs. When FHHCCNS are put at risk of gentrification, they become susceptible to losing their social support system and to eviction and homelessness (Desmond and Gershenson, 2017; Fullilove 1996).

To date, there is a lack of research in addressing the impact of gentrification on FHHCCNS. Having to uproot their families and move into unknown communities with no social support networks further destabilizes them socially and economically (Fullilove 1996).

Given all of these considerations, it is necessary to include FHHCCNS when evaluating the gentrification profile of Los Angeles. Since female-headed households have never been analyzed, this study aims to fill this gap in the literature by exploring the gentrification profile in Los Angeles by using multiple sociodemographic and economic indicators, including FHHCCNS. It uses place-based census tract data from the U.S. Census, American Community Survey.

Research Question

What is the gentrification profile of Los Angeles when combining multiple sociodemographic and economic indicators, including female-headed households caring for children with no spouse?

Definitions of Terms

Gentrification profile: A description of gentrification in Los Angeles

Female-headed households with children but no spouse (FHHCCNS): any self-identified female caring for children under 18-years old with no spouse present.

Gentrification: transforming a low-income community into high income via demographic, social, economic, and physical changes.

Neighborhood "upgrading" or "upscaling:" physical, economic, social, and cultural changes in a neighborhood due to gentrification.

Conclusion

This chapter addresses the importance of incorporating gender in gentrification research. The overall goal of this research is to show that FHHCCNS make up a critical sociodemographic indicator that should be used in studies of the effects of gentrification on communities. The following chapter will provide greater detail on the connections between gentrification, FHHCCNS, placed-based analysis, and the role of public health.

CHAPTER 2: LITERATURE REVIEW

Gentrification: The Theoretical Framework

According to the Centers for Disease Control and Prevention (CDC), gentrification is the "in-migration of a relatively well-off, middle- and upper middle-class population" into a historically disenfranchised community. Transforming a low-value community into a high-value one requires economic development, including investment, and the provision of amenities (Chaskin and Joseph, 2013; Benton, 2014; Tran et al., 2020; Podagrosi et al., 2011; Matsuoka et al., 2017). Research shows that communities suffering from disinvestment, generally ones with a low-income status, tend to experience higher levels of poverty, low educational attainment, and poor health outcomes (Chaskin and Joseph, 2013; Gibbons et al., 2018; Powell and Spencer, 2002; Matsuoka et al. 2017; Lim et al. 2017). When inequities are high and community assets are few, low-income communities become susceptible to gentrification, which becomes, in turn, yet another burden to bear by those who have historically experienced social and economic deprivation.

Although investment and economic development can make a community financially sound, it is well documented that another result is often the displacement of low-income residents due to increases in housing prices and rents (Chaskin and Joseph, 2013; Benton, 2014; Tran et al., 2020; Podagrosi et al., 2011; Matsuoka et al. 2017; Lim et al. 2017; CDC). Researchers have identified economic growth as one of the predictors of gentrification since it makes low-income communities susceptible to such change (see figure 2) (Benton, 2014; Tran et al., 2020; Podagrosi et al., 2011). In this study, economic growth is used as one measure of

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gentrification. It will be represented here by the proportion of renters, the proportion of the population below the poverty line, and median household income.

Similarly, researchers have identified physical restructuring or physical changes in a community as a indicator of gentrification (Benton, 2014; Tran et al., 2020; Podagrosi et al., 2011) (see figure 2). Physical restructuring involves the development of a community and the introduction of amenities by upgrading or upscaling the housing stock (Kennedy and Leonard., 2001; Tran et al., 2020). Physical changes often come from the development, renovation, or replacement of new housing units and the conversion of vacant properties (Benton, 2014; Kennedy & Leonard, 2001; Tran et al., 2020). In this study, physical restructuring, represented by the median number of rooms in a household, will be used as a measure of gentrification.

Perhaps the most consistent indicator of gentrification is a change in demographics that has been shown to cause a shift in the community's character (Benton, 2014; Tran et al., 2020; Podagrosi et al., 2011; Matsuoka et al., 2017; Lim et al. 2017). Some authors have argued that gentrification is "modern colonization" since there is an "out-migration of low-income people and people of color from their existing homes due to social, economic, or environmental conditions that make their neighborhoods uninhabitable or unaffordable" (Causa Justa: Development without Displacement: Resisting Gentrification in the Bay Area). The problem with gentrification is that it pushes out original residents from their homes into even more impoverished communities (Powell and Spencer, 2002; Gould and Lewis, 2012).

The loss that accompanies being displaced from an original community is often great. Fullilove (2016) theorizes that gentrification causes "root shock," the "traumatic stress response

to losing all or part of one's emotional ecosystem." Studies have repeatedly demonstrated that gentrification weakens social support networks and social cohesion, which are needed for families to thrive (Fullilove 1996; Popkin et al., 2004; Atkinson et al., 2000). Social cohesion, along with social capital, have been shown to lessen the stressors that come with poverty by creating supportive environments in which people help one another and foster a sense of community (Chuang et al., 2013; Seferiadis et al., 2015). In the absence of a support network, families, in particular female-headed households with children and no spouse, may experience greater stress, thus, damaging their health and overall quality of life.

The literature shows that the those residents most affected by gentrification are renters, people of color, households with children in poverty, local businesses, long-term residents, and low-income residents (CDC; Matsuoka et al., 2017; Tran et al., 2020; Zuk et al., 2018). However, gender continues to be overlooked in gentrification research.

Some authors have indicated that low-income communities with low educational attainment are at greater risk of gentrification (Zuk et al., 2018). School funding often relies heavily on local property taxes, which are influenced by property values. Property values in marginalized communities are so low that such neighborhoods attract high-income earners who have the means to pay for housing and much more. As high-income earners (who often have higher levels of education, income, and status) go into low-income communities, they transform and upscale them (Zuk et al., 2018; Brummet and Reed, 2019). Property values and school funding are both likely to rise.

Researchers have also found age distribution evidence gentrification as younger adults seem to be the largest group moving into low-income communities (Philadelphia's Changing Neighborhoods, 2018; Cohen and Pettit., 2019). Therefore, social and cultural shifts in low-income communities are significant aspects of gentrification (Benton, 2014; Tran et al., 2020; Podagrosi et al., 2011) (see figure 2). In this study, social and cultural factors will be used as evidence of gentrification. They will be represented by a variable constructed of a proportion of the population over 25 years of age with bachelors degree, the proportion of the population aged 25 and over, the proportion of the population that is non-Hispanic White, the proportion of the population that is made up of female-headed households with children and no spouse who are below the poverty line, and the proportion of the population that is made up of female-headed households with children and no spouse who are not living in poverty as defined by the census.

The variable FHHCCNS was selected to help fill the paucity of research studying the relationship between gender and gentrification. To address this gap, this descriptive study aims to explore the gentrification profile in Los Angeles using FHHCCNS in addition to multiple other sociodemographic and economic indicators.

Figure 2- Theoretical Framework: **Constructs of Gentrification**
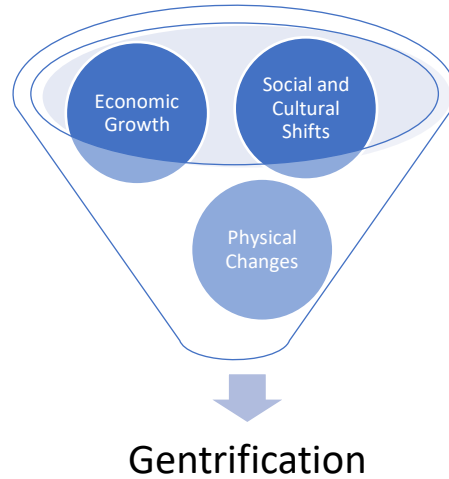
Female-Headed Households are at Greater Risk of Gentrification

      The term gender inequality was conceptualized to show the "feminization of poverty" (Pearce,1983). Pearce coined the term "Feminization of Poverty," to show that their unequal status in society makes women vulnerable to poverty when there is a change in "family structure, economic transformations, [and/or] government policies" (ibid). To capture this phenomenon, Medeiros and Costa (2008) propose splitting the unit of analysis into three different kinds of head-of-households to depict the relationship between income and the status of women. The types are male-headed households, households headed by married couples (often referred to as family households), and female-headed households (ibid). Using this strategy, researchers capture a better representation of women's socioeconomic status in society. For this study, the U.S. Census Bureau's definition of female-headed households families with no spouse will be used to identify any household maintained by a female (i.e., mother, grandmother, aunt, non-biological mother, other female relative) who cares for children with no spouse present with no reference to its in place relative to the poverty line (U.S. Census Bureau: Glossary).

Gender, marital status, race, social class, and geographic location (among many other sociodemographic variables) can determine the type of access one has to many private and governmental goods and services, as well as the overall quality of life. Hence, it is imperative to understand how FHHCCNS is affected by gentrification. Many studies have demonstrated that social class, income, and poverty have become the strongest predictors of health for women and children (McGibbon and McPherson, 2011; Doyal, 2000; Solar and Irwin, 2010). When FHHCCNS experience deprivation and are at risk of being displaced due to gentrification, it also puts them at greater risk of becoming homeless (Desmond and Gershenson, 2017).

Researchers have found that women susceptible to gentrification and displacement are generally low-income (Sakızlıoğlu, 2018; Bondi, 1991). A study examining the burdens of housing costs for different types of households shows that female-headed households are disproportionately renters (Colburn and Allen., 2018). Colburn and Allen (2018) use the U.S. Department of Housing and Urban Development (HUB) definition of cost-burdened and rent-burdened as spending 30% of one's income on housing and severely rent-burdened as paying more than 50%. They find that female-headed households have greater housing burdens and are more severely rent-burdened than male-headed households (ibid). Female-headed households with children are at a greater risk of being rent-burdened and severely rent-burdened than female-headed households without children (ibid). Studies have repeatedly demonstrated that gentrification mostly hurts low-income renters; it puts a very significant burden on FHHCCNS renting. It is imperative to highlight that the ratio of income-to rental housing costs in Los Angeles are considered the worst of any U.S. city (USC Social Work: Los Angeles Aging Report, 2015).

Similar findings are shown by Bors and colleagues' (2017) gender analysis. They explore the association between gentrification and the lack of affordable housing for women and girls in Durham County, North Carolina. Using the 2011–2015 American Community Survey, they find that single mothers are four times more likely to rent than are single fathers. They find that 59.7% of single-mother households are below the poverty line, and women of color led 84% of these households. Women of color were more susceptible to displacement since they were burdened by high costs of rent and often have to leave their communities in search of affordable housing.

A report on the status of women and girls in Los Angeles presents similar findings. Estimates from the 2012 American Community Survey reveal that poverty disproportionately affects "female-headed households, especially single mothers caring for children under the age of five" (City of Los Angeles: Mayors Report on Women and Girls). The report finds that the poverty rate for married-couple families was about 12% compared to the 34% poverty rate of female-headed households with no husband present (ibid). It is important to highlight that at 40%, Los Angeles has the highest proportion of single mothers in the state and nation, with California at 33% and the United States at 36% (ibid). Most single mothers identified as Latinas and African Americans (City of Los Angeles: Report on Women and Girls).

However, the Census Bureau recently released data showing that poverty rates dropped in 2018 by 1.7% in female-headed households and 2.5% for female-headed households with children. The article indicates that poverty rates among African American female-headed

household families decreased in 2018 but stalled for female-headed households with children under 18 (U.S. Census Bureau: Net worth of Households, 2015). Among Latinx, the poverty rate for female-headed households' with children under age 18 fell, as it did for those with a spouse present. The poverty rates for African American female-headed households making less than $25,000 decreased by 4.1% but increased for families making $75,000 (U.S. Census Bureau: Net worth of Households, 2015). The poverty rates among Latina female-headed households making less than $25,000 fell by 3% but stalled for families making over $75,000 (U.S. Census Bureau: Net worth of Households, 2015).

Although it appears that female-headed household are doing somewhat better, it is crucial to investigate the types of gains (if any) FHHCCNS have in relation to place (i.e., gentrified vs. non- gentrified neighborhoods). Since public health research shows that place matters, and because socioeconomic inequities have become the most vital indicators of health for women and children, this study argues that FHHCCNS should be a critical variable in the study of gentrification.

The Role of Public Health in Gentrification

Although gentrification is not intended to displace original residents, research has consistently shown that it does so (Benton, 2014; Tran et al., 2020; Podagrosi et al., 2011; Matsuoka et al., 2017; Lim et al., 2017). Moreover, displacement can have direct and indirect health effects (Tran et al., 2020; Matsuoka et al., 2017; Lim et al., 2017). Because studies have repeatedly demonstrated that low-income residents, especially renters, are being displaced due to hikes in the cost of housing, renters often have to choose between paying for shelter or meeting

other basic needs (Matsuoka et al., 2017, Lim et al. 2017). This only makes them susceptible to gentrifications' costs, such as displacement, which often leads to poor health (Matsuoka et al., 2017; Lim et al., 2017; Dragan et al., 2019). Research has found that renters are being displaced into more impoverished communities, which only exacerbates disparities (Powell and Spencer., 2002).

Since poorer households are more susceptible to the effects of gentrification, they displaced are sometimes forced into overcrowded or otherwise inadequate residences and housing conditions as they try to ensure themselves a place to live (Matsuoka et al., 2017). Overcrowding and poor housing conditions are linked to poverty, high mortality rates, infectious diseases, chronic diseases, and other physical health issues (Matsuoka et al., 2017; Bashir 2012, Jacobs et al., 2009; Dragan et al., 2019).

Mental health is also affected, as the lack of housing and financial instability are associated with stress and anxiety in adults and children (Dragan et al., 2019; Matsuoka et al., 2017). Indeed, displaced residents were six times more likely to be under care for alcohol-related admissions and about seven times more likely to be admitted for drug-related incidents (Lim et al., 2017). One possible explanation could be the stress that comes from being forcibly displaced and losing social support systems. Another study comparing the health of children in gentrified low-income neighborhoods with those in non-gentrified low-income areas found increased anxiety or depression among the former (Dragan et al., 2019). A possible explanation could be that children are exposed to the high levels of stress and anxiety exhibited by their parents in the wake of gentrification.

Because the conditions in which people live, play, and grow affect health and overall well-being, public health policy should protect vulnerable communities at risk of gentrification. Public Health Services should highlight the potential dangers that private investment and development have on women caring for children. Measures such as tenant protection policies and/or affordable housing are needed to mitigate the effects of displacement and other negative ramifications of gentrification on FHHCCNS.

Place-Based Analysis to Address the Effects of Gentrification on Female-Headed Households

Most place-based research examines the relationship between neighborhood socioeconomic characteristics and health through the use of geocoding and geographical level data (Krieger et al., 2002; 3M Corporation: The Development and Application of a Composite Score for Social Determinants of Health). This strategy has been embodied in a wide range of literature to study social inequalities in health (Geronimus and Bound, 1998; Krieger et al., 2002; 3M Corporation: The Development and Application of a Composite Score for Social Determinants of Health). Dr. Nancy Krieger has been a pioneer in monitoring socioeconomic inequalities and their relationships to health disparities at a geographical level by using census tracts, census block groups, and zip code data. Her study exploring associations with mortality rates and the prevalence of cancer uses geographical level socioeconomic data found that census tracts and block data captures outcomes better (Krieger et al., 2002). The authors find that these measures performed similarly for all outcomes but fail to detect gradients for zip code measures (Krieger et al., 2002). Census tracts and block groups may have more homogenous population due to their small size (Krieger et al., 2002; Krieger et al., 1997; Moore and Carpenter, 1999).

Research further suggests census tracts are better at capturing the socioeconomic changes effected by gentrification because they are small enough to capture information on more homogenous groups (Krieger et al. 2002; Krieger et al. 1997; Moore and Carpenter 1999; 3M Corporation: The Development and Application of a Composite Score for Social Determinants of Health). Census tracts aggregate several block groups into one tract and represent about 4,000 persons per tract (U.S. Bureau of the Census: ACS Design and Methodology).

Summary

If gentrification continues, as seems likely, we need to improve the targeting of public health services and create policies to preserve and protect women and their children from displacement. Investment decisions should not threaten already marginalized groups but ensure that programs promote good health by providing infrastructure for economic vitality and the creation of opportunities for women caring for children. It is also essential to explore how public and private investments can be leveraged to establish communities in which women and their children can thrive. Because concerns about gentrification and displacement run deep, public infrastructure projects can use some of the revenue from development to achieve broad social aims and reduce gender inequality. Creating a socially adequate infrastructure that uses economic vitality to invest in a community's health and overall well-being could help achieve gender equality and promote women's rights, but most important, prevent the most vulnerable from being displaced or homeless.

CHAPTER 3: METHODOLOGY

Research Design

This exploratory and descriptive study is intended to fill a gap in the gentrification research by examining the gentrification profile in Los Angeles using multiple sociodemographic and economic indicators that include FHHCCNS. Survey data is used to capture a descriptive snapshot of the current situation. No outcome data is analyzed.

Sampling

Because the unit of analysis is census tracts, GIS software was is used to match the census tracts, also known as the Federal Information Processing Standard Publication (FIPS) codes. There were 2,346 census tracts across Los Angeles County in 2008-2012 and 2013-2017 in the American Community Survey (ACS). However, 43 census tracts were removed because they had less than 500 residents, there was no data in the fields or cells, and/or they did not match the Department of Public Health, Service Planning Area (SPA) shapefile. Two-thousand-three-hundred and three census tracts were retained and used as the sample for this study.

Instruments

This study utilizes data from the American Community Survey (ACS) of the U.S. Census Bureau. It captures demographic, socioeconomic, and housing data at the census tract level. The ACS is carried out on an ongoing basis and provides detailed information about changes that occur in neighborhoods (US Census Bureau: ACS). Monthly samples are collected to produce annual estimates to create "five years of samples for small-area data" (i.e., census tract and census block data) (US Census Bureau: ACS). The 5-year estimates provide averages across the

entire 5-year span covered by the survey but do not reflect a specific point of time within that period (ibid). Research shows that because neighborhood changes can be small, 5-year estimates are better more reliable and precise (Tran et al., 2020; U.S. Department of Commerce, 2018). This study uses the ACS 5-year estimates collected in two periods: January 1, 2008 through December 31, 2012 and January 1, 2013 through December 31, 2017 since these are periods that captured the effects of the Crash of 2008 on the market for family-owned homes, which led to an increase in the rental market (Desmond, 2016). The market crashes accelerated gentrification in place like Los Angeles.

The variables used in this research are:

1. change in the proportion of the population over 25 years of age, coded as chg25over

2. change in the proportion of the population over 25 years of age and with a bachelors degree, coded as chgba

3. change in the proportion of female-headed households with children and no spouse, coded as chgnotpoorfems

4. change in the proportion of female-headed households with children and no spouse below the poverty line, coded as chgpoorfems

5. change in the proportion of the population below the poverty line, coded as chgbpl

6. change in the proportion of non-Hispanic White coded as chgwht

7. change in the proportion of renters, coded as chgrenters

8. change in median household income, coded as chgmedhhincome

9. change in the median number of rooms, coded as chgmedrooms

For the variable capturing median household income, the consumer price index was adjusted using the Census approach (U.S. Census Bureau: Annual Average Consumer Price Index Research Series (CPI-U-RS)).

Research Procedures

This study uses secondary, retrospective data from 2,303 census tracts. Some variables have been converted into percentage values. All variables have been recoded to capture the change between the two periods 2008–2012 and 2013–2017 (see table 1 and variables definition and coding attached). This process allows a Principal Component Analysis (PCA) to identify components with "similar gentrification degrees" (Benton, 2014; Tran et al., 2020).

Data Analysis

Since this study uses survey data to capture a descriptive snapshot of the current situation, a PCA was employed to reduce the number of variables and find patterns (Benton, 2014; Podagrosi et al., 2011; Tran et al., 2020). This allows the PCA to identify census tracts experiencing different degrees of "upgrading or upscaling" regardless of "whether they were occurring in poor, middle-income, or wealthy neighborhoods" (Podagrosi et al., 2011; Benton, 2014; Tran et al., 2020).

For the PCA, the change between two periods (2008–2012 and 2013–2017) has been converted into a percentage change. To determine the number of components to be retained, a scree plot of eigenvalues was used (Tran et al. 2020; Podagrosi et al., 2011). To get the PCA to generate a number of correlated factors, a promax rotation was performed (Tran, 2020). All

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statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) software (IBM website).

Ethical Considerations

The ACS uses de-identified, aggregated data that captures geographic-area and subgroup information for neighborhoods in the United States (Census ACS: Calculating Measures of Error for Derived Estimates).

Summary

This study is intended to fill a gap in gentrification research and demonstrate that using data on FHHCCNS contributes to a better understanding of gentrification in Los Angeles. The data provide a descriptive analysis of gentrification using census tract data from Los Angeles.

CHAPTER 4: RESULTS

Findings

This project began with research on all the variables to explore their relationships (Leech

et al., 2005). Cross-dependence between variables is necessary for a PCA to be meaningful

(Landgraf and Lee, 2019). Since different scales are used across these selected variables, z-

scores were created to standardize their metric. A correlation matrix was performed to check on

correlation pattern and collinearity issues (see table 3). To get the PCA to generate correlated

factors, a promax rotation was used (Tran, 2020). The original PCA contained 16 variables

capturing a change in each of two time periods (2008-2012 and 2013-2017). The PCA reduced

the number of variables; the "$\pm$ cut-off value" technique was used to retain large and moderate

factor loadings of ± 0.4 (Salkind, 2010). Based on these criteria, two variables with low loadings

on all components (a change in median gross rent and a change in median home values) were

removed from the original model. The pattern matrix for the final PCA model is presented in

Table 4.

Table 1- Gentrification Indicators Used to Measure Neighborhood Changes between 2008-2012 and 2013-2017, Los Angeles County Census Tracts, n=2,303

Gentrification Indicators	2008-2012	2013-2017	Change
Proportion of Population 25 years of age and over (%)	65.3%	67.7%	2.4
Proportion of Population 25 years of age and over with Bachelors degree (%)	18.2%	19.7%	1.5
Proportion of Female Headed Households with children and no husband BELOW THE POVERTY LINE (%)	31.4%	31.2%	-.20
Proportion of Female Headed Household with children and no husband (%)	14.6%	13.3%	-1.3
Proportion of Population Below Poverty Level (%)	17.5%	17.3%	-.20

Proportion of Population non-Hispanic White alone (%)	53.3%	51.9%	-1.4
Proportion of Renters %	51.5%	53.1%	1.6
Median Household Income (adjusted for CPI)$	$64,884.69	$65,823.92	939.22
Median Rooms	4.6	4.7	.10

Table 2- Summary Statistics of Gentrification Indicators Used to Measure Neighborhood Changes, Los Angeles County Census Tracts, n=2,303 (original PCA List)

Gentrification Indicators	Mean	SD	Min	Max
Change in population 25+	2.367	4.521	2.1825	2.5519
Change in bachelors degree in population over 25+	1.4220	5.012	1.2173	1.6268
Change in Female Headed Households with children and no husband below the poverty line	-.2804	29.01	-1.4657	.9049
Change in Female Headed Household with children and no husband	-1.3323	7.441	-1.6362	-1.0283
Change in Poverty Level	-.1783	7.776	-.4959	.1393
Change in White alone	-1.318	11.88	-1.8042	-.8329
Change in Renters	1.602	37.30	.0790	3.1266
Change in Median Household Income	939.21	12733.96	419.0976	1459.3398
Change Median Rooms	.0360	1.805	-.0378	.1097

Table 3- Correlation Matrix among Final PCA variables

	Change in proportion of renters	Change in median rooms	Change in proportion of population below the poverty line	Change in median household income	Change in female headed household with children and no spouse below the poverty line	Change in proportion of population over 25 years of age	Change in female headed household with children and no spouse	Change in proportion of 25 years of age and over with bachelors degree	Change in proportion of non-Hispanic Whites
Change in proportion of renters	1								
Change in median rooms	-.777**	1							
Change in proportion of population below the poverty line	-.111**	.097**	1						
Change in median household income	.033	-.063**	-.299**	1					

Change in female headed household with children and no spouse below the poverty line	-.055**	.062**	.292**	-.109**	1				
Change in proportion of population over 25 years of age	-.007	-.018	-.147**	.016	-.054**	1			
Change in female headed household with children and no spouse	-.026	.017	.107**	-.093**	.052*	-.245**	1		
Change in proportion of 25 years of age an over with bachelor degree	.010	-.036	-.063**	.081**	.024	.005	-.002	1	
Change in proportion of non-Hispanic Whites	.062**	-.041*	-.073**	.012	-.030	.027	-.029	-.018	1
All variables were Z transformed. **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).									

Table 4- Pattern Matrix of the Final PCA Model

Items	Components			
	1	2	3	4
Zscore(Change in proportion of renters)	.943	.011	.009	-.031
Zscore(Change in median rooms)	-.941	-.002	.000	-.011
Zscore(Change in proportion of population below the poverty line)	-.030	.771	.093	.028
Zscore(Change in median household income)	-.032	-.657	.036	.279
Zscore(Change in female headed household with children and no spouse below the poverty line)	.027	.657	-.080	.331
Zscore(Change in proportion of population over 25 years of age)	-.017	.007	-.795	-.045
Zscore(Change in female headed household with children and no spouse)	-.006	.018	.774	-.020
Zscore(change in proportion of 25 years of age an over with bachelor's degree)	.043	-.131	-.003	.798
Zscore(Change in proportion of non-Hispanic whites)	.073	-.139	-.034	-.468

All items in the final model had moderate to high factor loadings on extracted components. The

KMO sample was approximately .526 with a p<.000 significance level. This model show that

different components suggest different interpretations of gentrification. This model contains four

components that account for 61.9% of the total variance. The four components are defined below:

1. The 1st component captures physical and housing characteristics. The factor loadings for the proportion of renters is .923 and for median number of rooms is -.941. This component accounted for 21.0% of the variance explained.

2. The 2nd component captures exhibited economic characteristics. The factor loading for the proportion of FHHCCNS under the poverty line is .657. For the proportion of population below poverty line it is .771, and for median household income it is -.657. This component accounts for 37.7% of the variance explained.

3. The 3rd component captures social characteristics. The factor loading for the proportion of population over 25 years of age is -.795 and for FHHCCNS that do not fall below the poverty line is .774. This component accounts for 50.4% of the variance explained.

4. The 4th component captures socio-cultural and economic characteristics. The factor loading for the proportion of the population over 25 years of age with a bachelors degree is .798, and the proportion of population that is non-Hispanic White, is was -.468. This component accounts for 61.9% of the variance.

Discussion

All four components provide profiles of gentrification. Some depict social and economic characteristics, and others evidence more physical, sociocultural, and housing characteristics. Those including FHHCCNS contain more social and economic characteristics. Findings from this study support existing research about women and socioeconomic factors. Research has

repeatedly shown that women and men are perceived and treated differently in society (McGibbon and McPherson, 2011; Doyal, 2000; Solar and Irwin, 2010; Sakızlıoğlu, 2018; Bondi, 1991). This negatively affects women economically and socially (Sakızlıoğlu, 2018; Bondi, 1991; McGibbon and McPherson, 2011; Doyal, 2000; Solar and Irwin, 2010). Some scholars have argued that class and gender are connected not only "because gender inequality shapes class experience, but also as the formation of class embraces certain femininities and masculinities" (Sakızlıoğlu, 2018; Bondi, 1991). For this specific reason, the term female-headed household was created to capture women's unequal status in society, which makes them susceptible to gender inequality and poverty (Pearce, 1989). Researchers often use female-headed households to better represent women's socioeconomic status in society (Pearce, 1989; Medeiros and Costa, 2008).

Further, it is important to highlight that socioeconomic status determines the types of access, opportunities, earnings, services, and resources women will have during their lifetimes (McGibbon and McPherson, 2011; Doyal, 2000; Solar and Irwin, 2010). Research has consistently shown that socioeconomic status is a key factor in determining women's quality of life, as well as that their children (Adler and Newman, 2002; Eichener and Robbins, 2015). When the distribution of wealth is inequitable and socioeconomic inequities plague women, particularly women caring for children, it makes those caring for children susceptible to the negative impacts of gentrification. It also puts them at risk of displacement, eviction, and homelessness (Desmond and Gershenson, 2017)

Because there is a relationship between socioeconomic status and FHHCCNS, this study provides a better understanding of how FHHCCNS describes gentrification profiles in Los Angeles. This is the first study to evaluate how including FHHCCNS better describes communities before, undergoing, and after gentrification. Moreover, this study suggests a new profile of FHHCCNS living in Los Angeles.

Since public health research shows that place matters, and because socioeconomic inequities have become the strongest indicators of health for women and children, this research identifies those FHHCCNS as being at risk of gentrification. Public health policy has an obligation to keep the most vulnerable populations, including FHHCCNS, protected from the ravages of displacement, eviction, and homelessness.

Additionally, this study's findings support existing research about the patterns of gentrification in Los Angeles (Maciag, 2015). It finds not only housing and economic conditions, but also physical and sociocultural characteristics influence how gentrification affects people. The study shows components that exhibit sociocultural, physical, and housing characteristics. These are captured by four indicators of gentrification: the proportion of the non-Hispanic White population, the proportion of the population 25 years of age or older with a bachelor's degree, the proportion of renters, and the median number of rooms.

Yet it is essential to clarify that gentrification can have desired effects at both the neighborhood and individual levels. Research has demonstrated that gentrification improves neighborhood amenities and the provision of city services (Chaskin et al., 2013). Researchers

have found that the development that is part of gentrification leads to better housing quality, access to healthier food options, and new medical clinics (Balzarin 2014; Sullivan 2014; Chaskin et al. 2013; Gibbons et al. 2018). Most of the literature focuses on the increase in safety that gentrification brings to low-income communities as it helps reduce crime and makes communities more walkable (David et al., 2017; Balzarin 2014; Sullivan 2014; Chaskin et al. 2013; Gibbons et al. 2018). Other authors argue that gentrification significantly improves the built environment (Chaskin et al., 2013; Gibbons et al., 2018; Maantay et al., 2018). At the same time, however, displacement, an unintended consequence of gentrification, hurts many people, especially women with children and no spouse.

Although this study fills a significant gap by highlighting the importance of using FHHCCNS in gentrification research, census tract data lacks details about household that would be more helpful still. Perhaps more specific GIS measures and environmental assessments of households could help explain how households are affected by gentrification.

Additional research is needed, work that captures individual-level measures of sociodemographic and economic factors as well as family and social support characteristics and neighborhood or place-based environment data to develop a multi-level modeling analysis. A multi-level model may hold great promise. Further, an investigation of the proximal and distal influences of gentrification on behavioral, physical, and mental health and well-being is also necessary to show the impact of gentrification on health.

CHAPTER 5: CONCLUSION

Summary of Findings

This study addresses a gap in the literature by highlighting the contribution of data on FHHCCNS to gentrification research. It is the first to do so. One of the significant findings in this study is that FHHCCNS, both poor and non-poor, is a significant indicator of gentrification

In addition, the study is able to describe different interpretations of gentrification using components. Some capture social and economic characteristics, whereas others reflect physical, sociocultural, and housing features. Those that include FHHCCNS also include social and economic characteristics of gentrification. This finding is consistent with the literature on women and socioeconomic factors. Research has repeatedly shown that their gender often limits women's status in society (Sakızlıoğlu, 2018; Bondi, 1991; McGibbon and McPherson, 2011; Doyal, 2000; Solar and Irwin, 2010). It negatively impacts economically (Sakızlıoğlu, 2018; Bondi, 1991; McGibbon and McPherson, 2011; Doyal, 2000; Solar and Irwin, 2010). When economic and socioeconomic inequities exist with women generally on the lower part of that spectrum, women, particularly poorer women caring for children, are more susceptible to the ill effects of gentrification (Solar and Irwin, 2010; McGibbon and McPherson, 2011).

Implications

Although theoretical approaches have conceptualized gentrification using sociodemographic and economic indicators, this study shows clearly that FHHCCNS should be included as another significant indicator in studies of gentrification, so changing the gentrification profile for inner cities such as those in Los Angeles. This research also finds that

socioeconomic characteristics might be substantial drivers of the effects of gentrification on FHHCCNS.

Recommendations

Address Intersectionality by Incorporating Gender into Gentrification Research

Gender continues to be overlooked in most gentrification studies. Future research is needed to investigate how gentrification and displacement are experienced by women from all socioeconomic backgrounds, including those of different sexualities and locales (internationally and domestically). For example, the United Nations (UN) has created a special unit to address the "Human Rights of Internally Displaced Persons (IDPs)" (Beyani, 2014). A UN report assessing the protections of IDPs (Beyani, 2014) finds that women are at greater risk of displacement due to being "more susceptible to sexual and gender-based violence (SGBV)" (Beyani, 2014). Evidence shows that when women and children are displaced, their rights to housing, land, and property are restricted (Beyani, 2014).

Given that displacement is a global issue disproportionately affecting women and children, the United States can benefit from assessing how gentrification and displacement affect FHHCCNS by identifying the challenges of the displacement of women caring for children in the United States and institution policies to improve their wellbeing. Los Angeles would also benefit from creating a report on the intersectionality of class, gender, and gentrification, since disparities of income and wealth are becoming more significant in Southern California (Report on the Status of Women and Girls in California 2020; Sakızlıoğlu, 2018).

Increase Resources and Services for Women Caring for Children living in Gentrified

Communities

Targeted interventions are needed where gentrification is likely to lead to displacement (Matsuoka et al., 2017). By using a multisectoral approach to policy, the burden on women caring for children in areas affected by gentrification can be reduced through coordinated services provided by local organizations, non-profits, churches, hospitals, public agencies, and other entities. Low-income women and their children would benefit from easier and reliable access to food, clothing, healthcare, and homelessness services.

For example, Thurber and the authors discuss four case studies in four different US cities where social workers were involved in responses to gentrification. The social workers were able to buffer the negative effects of gentrification by providing social services to residents living in gentrified communities (Thurber et al., 2019). They assisted in finding affordable housing, provided resources, formed partnerships with public health, human services, and community development agencies, and empowered residents with the language needed to advocate for themselves (Thurber et al., 2019). Social workers offered a holistic approach to responding to gentrification by using multisectoral teams (Thurber et al., 2019). Los Angeles could benefit from using a multisectoral approach as an effective way to tackle the negative effects of gentrification.

In addition to these services, resources such as financial counseling, housing rights education, tenant counseling services, and rental- and utility-assistance programs can help

women fight the harmful effects of gentrification (Bixler, 2020; Matsuoka et al., 2017; Rose and Miller, 2016). For instance, the Housing Rights Center of Los Angeles, a non-profit civil rights organization, provides free landlord-tenant counseling, outreach and education, advocacy, and litigation services to secure housing for Angelinos "regardless of race, color, religion, gender, sexual orientation, national origin, familial status, marital status, disability, ancestry, age, source of income or other characteristics protected by law" (Housing Rights Center (HRC): About). It works closely with Neighborhood Legal Services of Los Angeles (NLSLA), provides free legal assistance and services to low-income populations dealing with eviction notices, limited public benefits, domestic violence, healthcare barriers, and worker and consumer rights (Neighborhood Legal Services of Los Angeles (NLSLA): About).

Also, a coalition called United Neighbors in Defense Against Displacement (UNIDAD), whose work is devoted to keeping families in their homes (UNIDAD: Who we are), works to reduce the "displacement of vulnerable populations" by promoting bidirectional learning and engaging residents in community-engaged planning and land-use (UNIDAD: Who we are). Programs like UNIDAD, NLSLA, and HRC can engage women caring for children in discussions about economic and physical development strategies in their communities (Bixler, 2020; Matsuoka et al., 2017; Rose and Miller, 2016). Women caring for children can benefit from knowing tenant protections, zoning codes, environmental standards (i.e., California Environmental Quality Act (CEQA), and other measures, so they know how to protect themselves and understand when and whom to make their arguments (Bixler, 2020; Matsuoka et al., 2017; Rose and Miller, 2016).

Maintain Tenant Protection Policies

In an effort to prevent displacement, cities have adopted policies to protects tenants (Matsuoka et al., 2017; Rose and Miller, 2016). The AB 1482, known as the Tenant Protection Act of 2019, was created to cap rent increase at 5% over the Consumer Price Index (CPI) or a local inflation indicator (Housing Rights Center: Just Cause Policy). It also requires landlords to show "just cause," such as failure to pay rent or a lease violation, eviction notices (Housing Rights Center: Just Cause Policy). These policies can protect tenants from being (forcibly) displaced and perhaps becoming homeless as a consequence.

More tenant-protection policies are needed to prevent evictions from becoming public records. Research shows that FHHCCNS are more likely to be evicted multiple times during their lifetime than any other group (Desmond and Gerhenson, 2017; Vasquez-Vera et al., 2017). It is imperative that women with no spouse caring for children can seek housing without being penalized for previous evictions. Overall, however, the most potent and effective way to prevent eviction is to provide affordable housing.

Expand Affordable Housing

COVID-19 is accelerating housing insecurity in many places. The most affected are people of color (Benfer et al., 2020). However, private and public sources are providing solutions to the housing problem. For example, Citibank recognizes that institutions like it are vital in addressing the racial wealth gap through housing and economic support (Citi: Racial Equity, 2020). Citibank has committed to invest $2.5 billion to the affordable housing bonds. It is the largest such private-sector investment in history (Citi: Citi Announces Inaugural $2.5 Billion

Affordable Housing Bond Issuance and Largest-Ever Social Bond, 2020). Citibank has promised

an additional $550 million to support people of color own homes and to hire minority developers

to develop affordable housing (Citi: Citi Announces Inaugural $2.5 Billion Affordable Housing

Bond Issuance and Largest-Ever Social Bond, 2020).

Similarly, the Los Angeles City Council voted to approve a $203 million bond funding

the construction of permanent affordable housing in historically low-income communities such

as South Los Angeles, Downtown, Koreatown, and Boyle Heights (LA Council Approves Bond

Funding For 6 Affordable Projects, 2020). By establishing affordable permanent housing, those

at risk as a result of gentrification would be able stabilize their housing and economic

circumstances.

Invest in Long-term Housing as a way to Stabilize Housing for Women Caring for Children

Research has demonstrated that Community Development Corporations (CDCs) and

Community Land Trusts (CLTs) can mitigate the effects of gentrification for women caring for

children (The New York Women's Foundation: The Impact of Gentrification on Women and

Families in Four Brooklyn Neighborhoods, 2020). Community Development Corporations

(CDCs) are non-profits that revitalize marginalized communities by developing affordable

housing (Roseland, 2012). Community Land Trusts (CLTs) are also non-profits that ensure the

land stewardship by promoting long-term housing initiatives (Roseland, 2012).

In New York City, the Office of Housing Preservation and Development has developed a

"New Neighborhood Pillars Program" to help community-oriented organizations get rent-

stabilized and unregulated buildings to protect current tenants and to keep housing affordable in

neighborhoods across the city (Deputy Mayor for Housing and Economic Development Alicia

Glen, 2017). This initiative is part of their anti-displacement efforts. It also works with

Enterprise Community Partners and community land trusts to secure and preserve funding as a

way to establish affordable housing to protect families from being displaced (Yang, 2019).

Improve Women's Socioeconomic Status

Socioeconomic factors must be considered as drivers of the effects gentrification on FHHCCNS.

Three are considered here:

Income and Pay Inequities

According to a report on the Status of Women and Girls in California in 2020, women

make up 46% of California's workforce. Close to 68% of California women work full-time or

part-time (The Center for the Advancement of Women at Mount Saint Mary's University :

Report on the Status of Women and Girls in California 2020). Yet on average, white men

continue earning more (The Center for the Advancement of Women at Mount Saint Mary's

University: Report on the Status of Women and Girls in California 2020). In California, the pay

gap is slowly closing as full-time female workers now average 88% of what men earn (The

Center for the Advancement of Women at Mount Saint Mary's University : Report on the Status

of Women and Girls in California 2020). Yet only White and Asian women have increased their

incomes. African-American women and Latinas continue to suffer from major economic

disparities in California and the rest of the US (The Center for the Advancement of Women at

Mount Saint Mary's University: Report on the Status of Women and Girls in California 2020).

Median income for White women is $61,848, Asian-American women $61,246, Black women $48,844, and Latinas $33,599 (The Center for the Advancement of Women at Mount Saint Mary's University: Report on the Status of Women and Girls in California 2020). Implicit biases, which influence attitudes and are often born of or lead to stereotypes, are one of the reasons why the gender wage gap exists. For minority women, racism, as well as sexism, contributes to the financial gap (Harvard School of Law: Counteracting Negotiation Biases Like Race and Gender in the Workplace 2020).

Wealth

Wealth is measured by the accumulation of assets, including ownership of property, businesses, vehicles, financial savings, and stocks and bonds (Eggleston and Munk, 2019). California is the state with the highest aggregate wealth in the US, with a net worth of $6.3 trillion (The Center for the Advancement of Women at Mount Saint Mary's University: Report on the Status of Women and Girls in California 2020). If this amount were distributed equally among all residents, each person would have close to $160,000 (The Center for the Advancement of Women at Mount Saint Mary's University: Report on the Status of Women and Girls in California 2020).

When homeownership is excluded, female-headed households have a net worth of roughly 60% of households headed by men (U.S. Census Bureau: Wealth and Asset Ownership, 2016). At a national level, women have accrued wealth that is 32% that of men's holding (The Center for the Advancement of Women at Mount Saint Mary's University: Report on the Status of Women and Girls in California 2020). Some factors contributing to the wealth disparities

among men and women is that women make less than men, take time from work to care for children and other family members, may be in positions that do not offer benefits (i.e., 401(k), health insurance), have limited access to mortgages, and may have larger student debts than men (McCulloch, 2017; The Center for the Advancement of Women at Mount Saint Mary's University: Report on the Status of Women and Girls in California 2020). Additionally, women have a harder time saving because of their low earnings, have more debt than men, and have lower credit scores, all of which diminish their ability to reach housing stability (Krawcheck, 2018; McCulloch, 2017; The Center for the Advancement of Women at Mount Saint Mary's University: Report on the Status of Women and Girls in California 2020).

Education

Women make economic progress when they obtain an education. A woman with some college experience makes twice as much as a woman with a high school diploma (U.S. Census Bureau: Median earnings in the past 12 months by sex by educational attainment for the population 25 years and over, 2018). A woman with a bachelor's degree makes nearly three times more than a woman who does not complete high school (U.S. Census Bureau: Median earnings in the past 12 months by sex by educational attainment for the population 25 years and over, 2018).

Although women outperform men in educational attainment, they still make less than men in the workforce (The Center for the Advancement of Women at Mount Saint Mary's University: Report on the Status of Women and Girls in California 2020). In California, improving women's socioeconomic status is a policy issue addressed by both government and

nonprofit policy groups. For example, the California Commission on the Status of Women and Girls started a statewide, multisectoral task force to examine the factors contributing to pay inequities and the gender wage gap (The Center for the Advancement of Women at Mount Saint Mary's University: Report on the Status of Women and Girls in California 2020). This initiative led to the creation of the CA Pay Equity Tool Kit, which provides resources to help employers and employees implement change (The Center for the Advancement of Women at Mount Saint Mary's University: Report on the Status of Women and Girls in California 2020).

In Los Angeles, the Los Angeles County Commission for Women (LACCW) provides a voice to all women, those from different "races, ethnic and social backgrounds, religious convictions, sexual orientation and social circumstances" (the Los Angeles County Commission for Women (LACCW): About us). The LACCW is now promoting programs, partnerships, and policies to bring financial and economic stability to women so they can reach optimal health and wellbeing (LACCW: Report on the Status of Women in Los Angeles County, 2018)

More Women in Positions of Power

To address gender and economic disparities, women have increased their political power. As Ruth Bader Ginsburg put it, "women belong in all places where decisions are being made." Engaging low-income women in political activities can help them highlight the racial, gender, and wage disparities they experience in the workforce and society. Further, organizations that offer political preparation, support, and financial resources are needed in areas where women caring for children are disproportionately affected by gentrification. By providing opportunities for training and civic engagement, more women can increase their political impact (The New

York Women's Foundation: The Impact of Gentrification on Women and Families in Four Brooklyn Neighborhoods, 2020). Agencies such as the New York Women's Foundation provide political training and financial resources for people considering runs for office (The New York Women's Foundation: Mission and Vision).

In Los Angeles, Mayor Eric Garcetti has prioritized gender equity initiatives. Through a data-driven approach, Garcetti has undertaken systematically identifying the inequalities women experience in government. Los Angeles is creating benchmarks to reduce gender disparities in government (The Center for the Advancement of Women at Mount Saint Mary's University: Report on the Status of Women and Girls in California 2020). It has resulted in more women commissioners than in Los Angeles history, now totaling over 50% (Report on the Status of Women and Girls in California 2020). The initiative has also ended all-male boards and commissions (The Center for the Advancement of Women at Mount Saint Mary's University: Report on the Status of Women and Girls in California 2020).

Limitations

This study limited its geographic focus to Los Angeles, thus limiting its generalizability to other locales experiencing gentrification. One of the significant limitations of this research is that it does not track individual residents who are excluded or displaced from communities. Another major limitation is that it rests on the assumption that the common thread connecting all observable variables to their corresponding common factors consists of sociodemographic and economic indicators that research has shown to lead to the negative consequences of

gentrification. This study relies heavily on a place-based statistical analysis of census tract data to show that female-headed households without spouses caring for children are a significant indicator of damage resulting from gentrification.

This research includes data from 2008, when the United States' Market Crash occurred. The Market Crash of 2008 led to foreclosures and housing instability (Bocian et al., 2012). The rental population increased due to the large numbers of foreclosures and evictions (Desmond, 2016).

Further, the U.S. Census Bureau, American Community Survey is subject to high standard errors.

Future Directions

Further research is needed on the dynamics of gentrification. It is challenging to analyze gentrification when there are multiple definitions, interpretations, and measures (Dragan et al., 2019; Smith et al., 2020; Benton, 2014; Tran et al., 2020; Podagrosi et al., 2011). The development of a model can help capture more aspects of gentrification (Bhavsar et al., 2020). More research is needed to capture the lived experiences or narratives of residents residing in gentrified communities to determine the impact gentrification is having on the health of residents who remain in their previous neighborhoods. More research is also needed on the effects of gentrification on children under 18 years old.

A longitudinal study is also needed, one that follows displaced residents, to determine how their families' experiences change over time. A closer examination should be given to

factors that also contribute to the impact of gentrification, such as amounts of green space or green gentrification and food insecurity (Smith et al., 2020)

In addition, more research is needed comparing census tract data with behavioral and health profiles at the aggregate level across the identified component groups. This kind of multilevel data (i.e., individual survey participants nested within census tracts where they live) is a useful approach to examine cross-level interactions (e.g., interactions between neighborhood or environmental factors at the level of the census tract level and personal characteristics at the individual level).

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