Can We Bring Culture into the Large-Scale Study of Gentrification? Assessing the Possibilities Using Geodemographic Marketing Data*

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Abstract

Despite advances in quantitative methodology, many quantitative gentrification scholars rely on under-theorized and speculative presumptions about who gentrifiers are. This study uses Claritas PRIZM, a geodemographic marketing data source on the lifestyles and consumer habits of U.S. households, to augment a Census-based analysis of Chicago neighborhoods that gentrified from 2000 to 2017. PRIZM data reveal that the households moving into gentrified neighborhoods represent a range of lifestyles, calling into question the attribution of "gentrifier" to any particular social group or demographic category. In some cases, despite having the same social class positions, gentrifiers pursue varying interests, suggesting they have different effects on neighborhoods. Once lifestyle is accounted for, many assumptions about gentrifiers on which quantitative studies are built become inadequate. The paper's conclusion proposes ways in which scholars can integrate geodemographic marketing data into future gentrification research, but it also outlines reasons to be cautious when using the data.

Introduction

The number of cities experiencing gentrification has grown tremendously (Florida 2017; Lees, Slater, and Wyly 2007). This growth has combined with advances in the spatial econometrics and neighborhood effects literatures to produce a groundswell of quantitative studies of gentrification. The methods used to identify gentrified neighborhoods have become more sophisticated (Ding, Hwang, and Divringi 2016; Freeman 2005; Glaeser, Kim, and Luca 2018; Hwang and Sampson 2014; McKinnish, Walsh, and White 2010; Timberlake and Johns-Wolfe 2017), and innovations in causal inference have enabled scholars to better determine the causes and consequences of gentrification (Boustan et al. 2019; Brummet and Reed 2019; Dragan, Ellen, and Glied 2019). Despite these developments, one concept has remained surprisingly under-examined by the quantitative literature: gentrifiers themselves. Many quantitative scholars fail to analyze who gentrifiers are and how their lifestyle choices shape the gentrification process. This is a byproduct of heavy reliance on data sources such as the U.S. Census, which includes various demographic categories but indicates nothing about lifestyle or behaviors. Consequently, qualitative scholars are doing vastly more work studying gentrifiers than quantitative scholars are (Brown-Saracino 2009; Butler and Robson 2001; Lloyd 2010; Schlichtman, Patch, and Hill 2017).

The division of labor between quantitative and qualitative scholars would be fine were it not for the fact that most quantitative literature on gentrification implicitly presumes some concept of who gentrifiers are. In other words, many quantitative scholars rely on a tacit cultural model when studying gentrification. Quantitative studies often include quotes such as, "we assume that most of the lower-income gentrifiers move in earlier than the higher income gentrifiers since the latter are more risk-averse" (Blasius, Friedrichs, and Rühl 2016, p. 58) and

"younger householders without children might bear fewer costs of moving into…[gentrified] neighborhoods, as they may be more open to racially diverse neighborhoods…" (McKinnish, Walsh, and White 2010, p. 182). Many demographic data sources cannot speak to cultural details like risk aversion and racial tolerance, so such statements remain unverified by traditional demographic studies. A contrasting—mostly qualitative—literature demonstrates that gentrifiers have a wide variety of lifestyles and motivations for moving into gentrified neighborhoods (Brown-Saracino 2009; Butler 1997; Schlichtman, Patch, and Hill 2017). This cultural complexity is lost when quantitative scholars rely on monotonic models of gentrification such as the threshold model (Barton 2016) or the stage model (Blasius, Friedrichs, and Rühl 2016; Clay 1979), both of which presume a straightforward trajectory in which lower-class residents are replaced by culturally homogeneous higher-class residents. Different kinds of gentrifiers, nonetheless, can impede rather than hasten displacement (Brown-Saracino 2009), strengthen rather than weaken existing community (Gibbons, Barton, and Reling forthcoming), and promote the growth of distinct kinds of amenities in a gentrifying neighborhood (Somashekhar forthcoming). An additional branch of gentrification literature, frequently referred to as the supply-side theory of gentrification, claims that gentrifiers matter little to the gentrification process. Instead, real estate developers, the state, and related actors guide where gentrification occurs (Smith 1996). Even though supply-side concerns are important, the kinds of residents who live in a gentrifying neighborhood help determine whether and how gentrification unfolds (Butler and Robson 2001; Lees 1994; Ley and Dobson 2008; Zukin 2014). Regardless of theoretical orientation, if quantitative scholars of gentrification persist in making presumptions about gentrifiers' lifestyles and habits rather than measuring them, then gentrification will remain a "chaotic concept" (Rose 1984, p. 47), especially when studied at a large scale.

Can scholars integrate cultural variables into the large-scale study of gentrification? To address this question, this paper incorporates cultural measures about gentrifiers into a demographic analysis of gentrification. Specifically, I combine demographic data from the U.S. Census Bureau and geodemographic marketing information from Claritas to demonstrate that gentrifiers, even in the same neighborhood and in the same social class position, vary on key lifestyle characteristics that are commonly omitted by existing quantitative studies. The analysis highlights three notable kinds of gentrifiers: the first is younger, lower-income gentrifiers who share characteristics with what some scholars call early gentrifiers (Ocejo 2011); the second is older, upper-middle income renters who like to chase after the latest consumer trends; and the third is older, upper-middle income homeowners whose consumer habits revolve around children and family. Importantly, these three types of gentrifiers simultaneously live together in the same neighborhoods, and the latter two types have the same average income and education levels but are culturally heterogeneous. Once lifestyle is taken into consideration, the presumptions about gentrifiers on which many quantitative analyses of gentrification are built become inadequate.

This paper's primary goal is to problematize quantitative conceptions of who gentrifiers are. Unlike a qualitative case study that might do the same thing, however, this paper also suggests a quantitative way to move beyond that problematization, namely through the adoption of geodemographic marketing data. As will be shown, there are reasons to be cautious when using geodemographic marketing data to study gentrification, and the lifestyles revealed by the data must be validated by qualitative research before academics can regularly discuss the social categories that they represent. As a nationally complete data source, however, geodemographic marketing data provide an unprecedented ability to integrate sociocultural concerns into the quantitative analysis of gentrification, at least in the United States.[1] In the conclusion of the

paper, I elaborate on the costs and benefits of using geodemographic marketing data for gentrification research, and I suggest how the data can be used to enhance future scholarship.

Quantitative Research on Gentrification

Before any quantitative study of gentrification can proceed, it must operationalize gentrification. Scholars have operationalized gentrification at the neighborhood level using data from the U.S. Census (Hammel and Wyly 1996; Owens and Candipan 2019), housing surveys (Ellen and O'Regan 2011; Freeman and Braconi 2004), newspaper accounts (Barton 2016; Brown-Saracino and Rumpf 2011), retail directories (Glaeser, Kim, and Luca 2018; Papachristos et al. 2011), and Google Street View (Bader et al. 2017, Hwang and Sampson 2014), among other data sources. Studies sometimes go beyond neighborhood-level operationalizations to identify cities that are more susceptible to gentrification, using measures such as the percentage of a city's workforce in professional occupations or the number of same-sex couple households in a city (Florida 2014; Hartley 2013). Despite the comprehensiveness and diversity of these approaches, most quantitative studies simplify their conception of who a gentrifier is in the name of capturing nuanced differences in where gentrification occurs. (For a notable exception, see Barton and Cohen (2019).)

Simplifying one concept in order to add complexity to a related concept is reasonable and necessary in many empirical studies. Nevertheless, quantitative studies' reliance on two common operationalizations of gentrification reveals the dangers of oversimplification. The first operationalization is the threshold model of gentrification. Threshold models use changes in characteristics such as income, education, rent, and home value to argue that, where previously a neighborhood was not gentrified, now it is (Ding, Hwang, and Divringi 2016; Freeman 2005;

Gibbons, Barton, and Reling forthcoming; Timberlake and Johns-Wolfe 2017). Many scholars admit to the oversimplification involved in such a binary approach, which draws sharp boundaries between gentrified and non-gentrified neighborhoods (Barton 2016). Regardless of this admission, the threshold model has considerable limits. Once a neighborhood is gentrified by middle-class gentrifiers, for instance, those middle-class gentrifiers may be displaced by ultra-wealthy super-gentrifiers (Lees 2003). There is little reason *a priori* to believe that gentrification has an end point, in other words, and gentrification hardly, if ever, happens like the flip of a switch. Without a detailed account of the kinds of gentrifiers who move into or out of a neighborhood, the threshold model is unable to capture how a neighborhood may gentrify but then continue to experience the in-migration of various residents.

The stage model, strands of which have existed in the literature since the early days of gentrification research (Clay 1979; Kerstein 1990), is an improvement on the binary nature of the threshold model. Stage models typically start with the in-migration of "early" or "marginal" gentrifiers, who include artists, single mothers, LGBTQ people, and others willing to move into low-income urban neighborhoods for the cheap rents and abundant amenities nearby (Lloyd 2010; Ocejo 2011; Rose 1984; Sibalis 2004; Zukin 2014). Subsequent stages involve "late" gentrifiers, or wealthy members of the managerial class, who inflate rents and home values to the point that they are the only kinds of people who can afford to live in the neighborhood (Lees, Slater, and Wyly 2007, pp. 30-35). Unlike the threshold model, the stage model can address how neighborhoods continue to evolve after gentrification has begun, and scholars have started to operationalize the stages of gentrification using Census data (Blasius, Friedrichs, and Rühl 2016). When scholars categorize gentrifiers into groups such as early and late gentrifiers, however, they ignore the fact that people can gentrify neighborhoods in different ways. For

example, Brown-Saracino distinguishes between pioneers and social preservationists, the former of whom hope that longtime residents will be displaced but the latter of whom sometimes work to ensure that longtime residents stay in the neighborhood (2009). Schlichtman, Patch, and Hill add an additional type of gentrifier who engages in "ethical gentrification," whereby they commit to consumer habits and lifestyle choices that minimize their impact on the existing neighborhood (2017, p. 154).

Highlighting the distinctions between gentrifiers adds nuance to the stage model and exposes the problem of conflating a given stage of gentrification with a single social category such as the "gentrifying yuppie" (Delmelle 2015, p. 2; Morenoff and Tienda 1997, p. 64). More importantly, different types of gentrifiers moderate the effects of gentrification, which much quantitative scholarship fails to address. Research is beginning to show that the race of gentrifiers matters for how communities evolve and amenities grow in gentrifying neighborhoods, for example (Gibbons, Barton, and Reling forthcoming; Moore 2009; Somashekhar forthcoming). The consequences of gentrification also vary depending on how politically and socially organized gentrifiers are. A qualitative study of gentrifying neighborhoods in London found that ethnic diversity and neighborhood stability varied according to local gentrifiers' social capital (Butler and Robson 2001). In Battersea, for instance, wealthy, socially connected cosmopolitan elites moved in who had little concern for longstanding residents. Consequently, after gentrifiers moved in, there was rapid turnover in local schools, shops, and community institutions. In Brixton, on the other hand, gentrifiers were not politically and socially organized, in part because they valued existing institutions and did not hope to displace the local community. While strong community ties did not develop between Brixton's gentrifiers and longtime residents, gentrifiers' lifestyles and behaviors slowed the

gentrification process (Butler and Robson 2001, pp. 2151-2158). In short, while many quantitative studies can determine where gentrification has occurred, they cannot always predict what that gentrification means in practice. Different kinds of gentrifiers can have different effects on a neighborhood.

Not all quantitative research ignores differences in lifestyle between gentrifiers. Tim Butler used survey research to capture the various motivations of gentrifiers whose "reasons for living" in a gentrified neighborhood were "largely social ('friends in the area'), aesthetic ('the style of the architecture'), economic ('the relatively low cost of housing') and often largely accidental" (1997, p. 113). Survey research is a complicated method to study gentrification, however, for reasons that also make qualitative research on the topic difficult to do. Both kinds of research are expensive, time-consuming, and frequently require intensive study of a handful of neighborhoods. If a data source on the lifestyles and habits of gentrifiers was easily available on a large scale, then scholars could lay the foundation for a research program that bridges the study of gentrification and the study of gentrifiers.

Geodemographic Marketing Data and Gentrification Research

Geodemography is a branch of geography that classifies areas into categories according to whether households or individuals within those areas share similar social attributes (Singleton and Spielman 2014). Although rarely used in academic work (Burrows and Gane 2006; Goss 1995; Lang, Hughes, and Danielsen 1997; Voas and Williamson 2001), marketers regularly use geodemography because retailers, non-profits, politicians, and other practitioners tend to target advertising campaigns and social movement messages toward specific households and neighborhoods (Weiss 2000). Geodemographic marketing was invented by a sociologist named

Jon Robbin in 1974, who left his faculty position at New York University in order to found Claritas, the leading company devoted to characterizing the lifestyles and consumer habits of every neighborhood in the United States (Goss 1995). He is famous for stating, "Tell me someone's ZIP Code, and I can predict what they eat, drink, and drive—even think" (Weiss 1988, p. 1).

Robbin's theoretical foundation was the Chicago School of Urban Ecology's principle that similar people lived in proximity and formed distinct communities. His method of choice was cluster analysis, an outgrowth of factorial ecology, which was popular in urban studies in the 1950s and 1960s (Burrows and Gane 2006). Robbin was ultimately able to place all U.S. ZIP Codes into one of 40 lifestyle segments by applying cluster analysis to variables such as income, mobility, ethnicity, family stage, and type of housing stock (Weiss 1988, p. 11). These segments were nicknamed Potential Rating Index for Zip Marketers (PRIZM) segments, a name that continues to be used today, even though the data are now commercially available at the Census block group level. A Census block group typically contains 600 to 3,000 people, enabling geodemographic marketing to be conducted at fine geographic levels. Furthermore, today's geodemographic marketing approaches incorporate a wide variety of consumer data, media preferences, credit histories, insurance information, and other sources that can reveal the sociocultural positions of households in gentrified neighborhoods.

Since its founding, Claritas has expanded PRIZM data to include 66 lifestyle segments that are ranked by their "position on the socioeconomic ladder." A segment's rank is determined by "a composite score of income, home value, and educational achievement" among segment members (Weiss 2000, p. 179). Table 1 shows the names of all 66 PRIZM segments and the proportion of U.S. households that belonged to one segment over another in 2017. Segments

vary according to wealth, education, life stage, nativity, urbanicity, and other factors. Importantly, no urban segment includes only one racial group. Higher-SES segments often include Whites, Asians, or "Mixed" racial groups, while lower-SES segments tend to include Whites, Blacks, Asians, Hispanics or "Mixed" racial groups. The segments that include only one racial group are rural segments such as Country Squires or Golden Ponds, which are White.

[Table 1]

In short, there is great potential that PRIZM data can help bridge the sociocultural details of qualitative studies and the large-scale trends captured by quantitative analyses. The data's potential, however, comes with a notable drawback. Though Claritas relies on many sources of information to create PRIZM data, the company occasionally uses subjective assessments to gauge if a household is appropriately classified into a segment (Burrows and Gane 2006). These subjective choices are not reproducible. Appendix 1 has more details on how Claritas creates each PRIZM segment.

Data and Analytic Strategy

In order to empirically examine lifestyle segments in gentrified neighborhoods, this study proceeds in two stages. The first stage is a cross-sectional analysis of lifestyle segments that were prominent in neighborhoods after they gentrified. The second stage is a longitudinal analysis of those lifestyle segments that grew or declined over time as neighborhoods gentrified. Rather than attempt a causal argument, this paper is an exploratory study to determine how gentrification is related to different types of gentrifiers and their lifestyles. The analysis uses a combination of descriptive statistics and maps to make sense of changing lifestyles in gentrified neighborhoods.

In this study, I compare Claritas PRIZM data[2] to U.S. Census data on gentrified

neighborhoods in Chicago. I operationalize neighborhoods as Census tracts and use the

Neighborhood Change Database (NCDB) (GeoLytics 2019) to harmonize tract boundaries over

time. Although PRIZM data are available at the Census block group level, NCDB data are only

available at the tract level, so the Census tract is my primary unit of analysis. Claritas PRIZM

data on Chicago neighborhoods come from SimplyAnalytics (2020), which provides the data for

a fee. The latest PRIZM data available are from 2017, and the earliest PRIZM data available are

from 2010.[3] In addition to these data, I use demographic data from the 2000 Decennial Census,

the 2006-2010 5-Year American Community Survey (ACS), and the 2013-2017 5-Year ACS. In

the first stage of the analysis, which identifies prominent lifestyle segments in neighborhoods

after they gentrified, I conduct a cross-sectional analysis of the 2017 PRIZM data in

neighborhoods that gentrified from 2000 to 2017. Gentrification can be a slow process

(Beauregard 1990), so it is important to distinguish gentrified from non-gentrified neighborhoods

over a long timescale. In the second stage of the analysis, I investigate lifestyle segments that

grew or declined as a neighborhood gentrified from 2010 to 2017. While this time span is much

shorter than the time span used in the first stage of the analysis, I can only conduct a longitudinal

analysis using the earliest PRIZM data available, which are from 2010. Later in the paper, I show

that gentrification between 2000 and 2017 and gentrification between 2010 and 2017 followed

similar trajectories. Even in a time span of seven years, in other words, much can be learned

about how lifestyles changed in gentrifying neighborhoods.

There are several reasons why it is useful to investigate lifestyle segments in Chicago.

First, the founding theories of urban studies were tested and perfected in Chicago. The

intellectual significance of Chicago, its neighborhoods, and its communities endures today

(Sampson 2012). Second, in the 2010s, there was at least one Chicago household in each of Claritas' 66 lifestyle segments. The U.S. Census classifies Chicago as an urban place, but there are many housing types, housing arrangements, and lifestyles in Chicago, some of which are more suburban or rural in character (Kefalas 2003; Klinenberg 2015; Sampson 2012). Third, Chicago has been at the center of countless studies of gentrification, enabling one to draw on a robust body of literature to interpret how geodemographic lifestyle segments overlap with the boundaries of gentrified neighborhoods (Betancur 2011; Douglas 2012; Hwang and Sampson 2014; Papachristos et al. 2011). Fourth, since Chicago is the third largest city in the United States, many geodemographic marketers require specialized tools such as Claritas PRIZM to figure out their marketing strategies. The use of geodemographic marketing data in a city like Chicago, in other words, has almost certainly helped shape gentrification in addition to reflecting it. At least one academic study links retailers' use of geodemographic marketing data to gentrification (Webber 2007).

Because there is no standard way to identify gentrified neighborhoods, I operationalize gentrification using two commonly cited methods. The first comes from Ding, Hwang, and Divringi (2016), which I will refer to as the DHD method. The DHD method identifies all potentially *Gentrifiable* neighborhoods as those that, in the year 2000, had a median household income below that of the city of Chicago. A neighborhood whose median household income was above the Chicago median in 2000 was *Not Gentrifiable*. A *Gentrified* neighborhood was gentrifiable and experienced an increase in gross rent or median income above the citywide median as well as an increase in college-educated residents above the citywide median between 2000 and 2017. The DHD method has been used and adapted in a range of studies of gentrification (Carlson forthcoming; Gibbons, Barton, and Reling forthcoming; Somashekhar

forthcoming). Using this method, 130 of Chicago's 806 Census tracts gentrified between 2000 and 2017.

The second operationalization of gentrification comes from Timberlake and Johns-Wolfe (2017). I refer to this operational definition as the TJW method throughout the paper. To identify gentrified neighborhoods using the TJW method, one must first create a socioeconomic status score in 2000 and 2017 comprised of four neighborhood-level measures: percentage of residents not in poverty; percentage of residents over the age of 25 with greater than a high school degree; percentage employed in professional or technical occupations; and average family income. Then, each neighborhood's score in each time period is ranked and broken into quintiles. A tract in one of the lowest three quintiles in 2000 is considered *Gentrifiable*. If a gentrifiable tract jumped by at least two quintiles from 2000 to 2017, then the neighborhood is considered *Gentrified*.[4] Other quantitative operationalizations of gentrification are similarly based on transitions between quintiles (Ellen and O'Regan 2011; McKinnish, Walsh, and White 2010). Furthermore, the indicators used by TJW are based on ones used by other scholars (Hackworth 2002; Hammel and Wyly 1996). Utilizing this method, 53 of Chicago's 806 neighborhoods gentrified between 2000 and 2017.

The DHD and TJW methods described above are specific to the first stage of the analysis, in which I conduct a cross-sectional investigation of lifestyle segments in gentrified neighborhoods in 2017. In the second stage of the analysis, where I conduct a longitudinal study of change in lifestyle segments, I reproduce the DHD and TJW methods to identify neighborhoods that gentrified between 2010 and 2017. Naturally, the number of neighborhoods that gentrified from 2010 to 2017 was smaller than from 2000 to 2017, which I elaborate on later in the paper.

All examples of media consumption, hobbies, consumer habits, and other lifestyle preferences discussed in this study come directly from Claritas' descriptions of each PRIZM segment. Some examples also come from the Lifestage and Social Groups to which each segment belongs. Lifestage and Social Groups are umbrella categorizations that combine segments according to life course stage and social habits. With a subscription to Claritas 360 or SimplyAnalytics, one can get access to all lifestyle segment, Lifestage, and Social Group descriptions. In order to expand on Claritas' own segment descriptions, some marketing scholars have conducted further research on PRIZM segments, noting additional examples of each segment's food preferences, drinking habits, car purchases, and banking patterns, among other lifestyle characteristics (e.g. Moss, Kirby, and Donodeo 2009; Weiss 2000; Zuccaro and Savard 2010).

Who Lives in Gentrified Neighborhoods?

Before analyzing the geodemographic marketing data, it is important to understand the characteristics of neighborhoods that gentrified between 2000 and 2017 according to the DHD and TJW methods. Table 2 has summary statistics of key variables in Chicago neighborhoods broken out by gentrification status. All summary statistics followed received wisdom, and both the DHD and TJW methods revealed a similar story about gentrification. Not gentrifiable neighborhoods were better off than gentrifiable neighborhoods on a variety of measures, and gentrified neighborhoods experienced the largest jumps in income, housing unit value, percentage college educated, and housing unit rent. In addition, the table includes racial measures showing that, on average, gentrified neighborhoods became Whiter, even though race was not a component of the operational definitions of gentrification. The increased Whiteness of

gentrified neighborhoods also follows received wisdom (Betancur 2011; Owens and Candipan 2019; Sutton 2020).

[Table 2]

Importantly, the TJW method identified less than half the number of gentrified neighborhoods as did the DHD method. Figure 1 makes clear this disparity. The figure provides maps of Chicago's gentrified neighborhoods according to each operational definition. The second panel, which shows TJW's gentrified neighborhoods, has far fewer neighborhoods colored black than the first panel, which shows DHD's gentrified neighborhoods. Nonetheless, the locations of gentrified neighborhoods are similar across both methods, and many of those neighborhoods have been extensively studied by qualitative scholars. Gentrified neighborhoods include locations such as Wicker Park, Logan Square, West Town, the South Loop, and Uptown (Betancur 2011; Douglas 2012; Lloyd 2010; Wilson and Sternberg 2012). More concretely, Moran's *I* statistics for gentrified neighborhoods using the DHD and TJW methods are respectively 0.28 and 0.30, suggesting similar degrees of spatial clustering among gentrified neighborhoods identified by both methods. All in all, both methods tell analogous stories about gentrification in Chicago.

[Figure 1]

Turning to the geodemographic marketing data, Table 3 identifies the segments that were most prominent in gentrified neighborhoods in 2017 according to both the DHD and TJW methods. As mentioned earlier, the numbering of segments is intended to correspond to a segment's position "on the socioeconomic ladder" (Weiss 2000, p. 179). Therefore, it is unsurprising that higher-SES lifestyle segments appeared in Not Gentrifiable neighborhoods, while lower-SES segments appeared in Not Gentrified neighborhoods. Gentrified neighborhoods

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present some complicated findings to untangle, however. Using both operational definitions of gentrification, Urban Achievers, Bohemian Mix, and American Dreams households were the most prominent segments in gentrified neighborhoods. In many respects, Urban Achievers represent early gentrifiers. They are more likely to rent than own their homes, are generally under 35 years old, have only some college education, and have a median household income of $38,825,[5] all of which suggest they have limited financial and human capital. At the same time, this group has high cultural capital. Urban Achievers tend to read New Yorker magazine, patronize bars and restaurants at high rates, and appreciate soccer, which is more popular outside of the United States than within it (Markovits and Hellerman 2001).

[Table 3]

Bohemian Mix households also fit many of the characteristics attributed to gentrifiers. Similar to Urban Achiever households, Bohemian Mix households are more likely to rent than own, "live in funky rowhouses and apartments," and "are early adopters who are quick to check out the latest movie, nightclub, laptop, and microbrew." Unlike Urban Achievers, however, Bohemian Mix households are richer, older, and more educated. They earn $58,943 on average, can be up to 55 years old, are typically college educated, and frequently work in white collar occupations. Moreover, Bohemian Mix households' consumer tastes include those associated with wealthier populations, such as driving Audi S4s, shopping at The Gap, and watching foreign movies.

American Dreams households share a similar social class position with Bohemian Mix households. American Dreams households' median income is $59,780, and exactly like Bohemian Mix households, they are typically under 55 years old, college educated, and in white collar occupations. Unlike Bohemian Mix households, however, American Dreams households

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are more likely to own rather than rent, and their consumer habits largely revolve around home

and family. American Dreams households are inclined to buy "kid-friendly technologies and

adult toys like campers…[and] their media tastes lean towards cable networks targeted toward

children." While Bohemian Mix and American Dreams households share a similar age range,

median income, education level, and occupational profile, in other words, their lifestyles differ.

Depending on how gentrification is operationalized, roughly 45% to 52% of households

in gentrified neighborhoods are either Urban Achievers, Bohemian Mix, or American Dreams.

Nevertheless, these three lifestyle segments are well-represented in not gentrifiable

neighborhoods as well. American Dreams households are even found in large numbers in not

gentrified neighborhoods. Rather than demonstrate that gentrifiers are a unique group of

individuals, Table 3 demonstrates that they come in several varieties that are comparable to

people living outside of gentrified neighborhoods.

One exceptional lifestyle segment in gentrified neighborhoods is Multi-Culti Mosaic

households. As the 54th of 66 segments, this lifestyle is fairly low on the socioeconomic scale of

geodemographic marketing segments. According to Claritas, Multi-Culti Mosaic households are

"first-generation Americans who are striving to improve their lower-middle-class status." The

presence of Multi-Culti Mosaic households in gentrified neighborhoods could mean one of two

things. First, their presence suggests that some gentrifiers are not middle-class or upper-middle-

class residents. The gentrification literature does show how poorer groups such as working-class

single mothers can drive gentrification in some neighborhoods (Rose 1984). Second, the

prominence of Multi-Culti Mosaic households may be vestigial. These households may have

been extremely common prior to gentrification but dwindled in number after gentrification. A

cross-sectional analysis of lifestyle segments cannot reveal how particular lifestyles may have

grown or declined in gentrified neighborhoods. Therefore, it is necessary to analyze trends over time.

Changes Over Time in Gentrified Neighborhoods

The previous section was a cross-sectional analysis of lifestyle segments in Chicago neighborhoods at the end of a gentrification process lasting from 2000 to 2017. This section includes a longitudinal analysis of lifestyle segments over time. The earliest PRIZM data available come from 2010, however, making it impossible to determine trends going back to 2000. Moreover, 2010 PRIZM data are only available for Census tracts that did not change boundaries between 2010 and 2017. Despite limitations of the lifestyle segment data, I am able to redefine gentrified neighborhoods as Census tracts that gentrified between 2010 and 2017 according to the DHD and TJW methods. Gentrification can take many years, but a variety of studies examine gentrification over short time periods (Gibbons, Barton, and Reling forthcoming; Glaeser, Kim, and Luca 2018; Somashekhar forthcoming). Appendices 2 and 3 provide characteristics of Chicago neighborhoods that gentrified between 2010 and 2017 and did not change tract boundaries, reproducing Table 2 and Figure 1 for this new set of neighborhoods. When the information in these appendices is compared to gentrification trends from 2000 to 2017, there are many similarities. Census tracts that gentrified between 2010 and 2017 continued to have larger gains than non-gentrified tracts in values such as median income and rent. Moreover, gentrification continued to occur in parts of the city that fit received wisdom, such as the Logan Square area (Harris et al. forthcoming). The primary difference when using data between 2010 and 2017 rather than 2000 and 2017 is that the number of gentrified neighborhoods were fewer and the changes across time in key values were smaller in magnitude.

Figure 2 shows the number of households in each lifestyle segment in 2010, the baseline

year from which I measure change in PRIZM data over time. The first two panels are limited to

neighborhoods that gentrified between 2010 and 2017, while the third panel is for all Chicago

neighborhoods in 2010. Several segments that have been discussed, such as Bohemian Mix

(Segment 16), American Dreams (Segment 29), and Urban Achievers (Segment 31), were

prominent in neighborhoods that were about to gentrify. Although one could infer much from the

presence of these lifestyle segments prior to gentrification, gentrification may have already been

underway in these neighborhoods by 2010. Regardless, there were other, lower-SES lifestyle

segments that were also prominent in these neighborhoods, such as Big City Blues (Segment 65)

and Low-Rise Living (Segment 66). Big City Blues and Low-Rise Living households jointly

"face enormous challenges: low incomes, uncertain jobs, and modest educations." In other

words, neighborhoods that were about to gentrify in 2010 contained both high- and low-SES

lifestyle segments. The final panel of Figure 2 compares the household composition of gentrified

neighborhoods to the full city of Chicago in order to demonstrate that the lifestyles in gentrified

neighborhoods were uniquely different from the rest of Chicago. While certain segments, such as

Bohemian Mix and American Dreams households, were common citywide, they were

represented in very different proportions in neighborhoods that gentrified from 2010 to 2017.

[Figure 2]

Figure 3 shows the change in lifestyle segments in neighborhoods that gentrified between

2010 and 2017. For the sake of clarity, the figure only includes segments that gained or lost at

least 100 households during this time period.[6] Trends were variable across lifestyle segments.

For example, American Dreams and Urban Achievers households grew, but lower-SES segments

like Big City Blues and Low-Rise Living suffered substantial losses. While there is debate over

the extent to which lower-SES households are physically displaced from gentrified neighborhoods (Brown-Saracino 2017), lifestyles appear to be displaced as neighborhoods gentrify. In addition, scholarship sometimes ignores the diversity of household types that move into gentrified neighborhoods (Butler 1997, Rose 1984). Unlike the presumptions of the stage model, which implies that culturally homogeneous members of a particular social class move into gentrifying neighborhoods, many household types grew simultaneously in Chicago's gentrifying neighborhoods despite practicing different lifestyles. Even Multi-Culti Mosaic households (Segment 54) grew substantially according to the DHD and TJW operationalizations of gentrification, a contrast to Bohemian Mix households, which grew little according to the TJW operationalization. Although the growth in Bohemian Mix households was negligible, it is important to remember how prominent this segment was in 2010, at the outset of the gentrification process studied here. By 2017, in other words, Bohemian Mix households were still very common in neighborhoods that the TJW method considered gentrified.

[Figure 3]

Unlike the findings for Bohemian Mix households, the growth of Multi-Culti Mosaic households in gentrified neighborhoods is curious and requires further investigation. Because the DHD and TJW methods are unable to distinguish between neighborhoods that barely gentrified and neighborhoods that experienced dramatic transformations, it is hard to tell if Multi-Culti Mosaic households are truly associated with gentrification. Therefore, to attain a strong signal from the data, especially given the short, seven-year time span of gentrification studied here, Figure 4 isolates those Chicago neighborhoods that experienced acute gentrification from 2010 to 2017. *Acute Gentrification* refers to those gentrified neighborhoods that were above the median for housing unit rent or housing unit value in 2017. This distinction is similar to one

employed by Ding, Hwang, and Divringi (2016), who broke out the gentrified neighborhoods of Philadelphia by intensity of gentrification. Ding, Hwang, and Divringi (2016) considered a neighborhood intensely gentrified if a neighborhood's median housing unit rent or housing unit value was in the top quartile at the end of the study period. I define acute gentrification using the top two quartiles because there were a small number of Chicago neighborhoods that gentrified from 2010 to 2017. The growth of Multi-Culti Mosaic households was relatively modest in acutely gentrified neighborhoods. Instead, as shown in Figure 4, Urban Achievers households grew more consistently, as did American Dreams households, at least according to the DHD method. The diminished growth rate of Multi-Culti Mosaic households in acutely gentrified neighborhoods indicates that these households were more associated with neighborhoods whose gentrification was less severe between 2010 and 2017.

[Figure 4]

Discussion and Conclusion

This paper aimed to determine whether cultural data could be integrated into large-scale, quantitative analyses of gentrification. Much quantitative gentrification scholarship tends to under-conceptualize who gentrifiers are despite rigorously measuring gentrification and understanding gentrification's causes and effects (Boustan et al. 2019; Brummet and Reed 2019; Dragan, Ellen, and Glied 2019; Freeman 2005; Glaeser, Kim, and Luca 2018; McKinnish, Walsh, and White 2010; Timberlake and Johns-Wolfe 2017, cf. Barton and Cohen 2019). The study of gentrifiers is typically done through qualitative case studies (Douglas 2012; Ocejo 2011; Schlichtman, Patch, and Hill 2017) or surveys targeted at specific neighborhoods (Butler 1997), which are expensive and difficult to implement on a large scale. Nevertheless, gentrifiers'

lifestyles and habits influence how gentrification unfolds (Brown-Saracino 2009; Butler and Robson 2001; Zukin 2014), so it is important to study gentrification and gentrifiers simultaneously. One way of doing this, cheaply and at a variety of geographic scales, is to incorporate geodemographic marketing data into gentrification studies.

Using a combination of data from the U.S. Census and Claritas PRIZM on Chicago neighborhoods between 2000 and 2017, this paper's findings highlight problems in existing scholarship and suggest new directions for research. Gentrified neighborhoods include households that adhere to a wide variety of lifestyles, calling into question attempts to attribute simple labels such as "gentrifier" to any particular social group or demographic category. Three lifestyles were prominent in Chicago's gentrified neighborhoods, often growing simultaneously in the same neighborhoods. The first lifestyle included what Claritas calls Urban Achiever households, or younger, lower-income gentrifiers who share characteristics with early gentrifiers (Ocejo 2011). Urban Achiever households tended to be low on income but high on cultural capital. The second lifestyle was Bohemian Mix households, which include older, upper-middle income renters who like to chase after the latest consumer trends. The third lifestyle was American Dreams households, who had an income and education profile similar to Bohemian Mix households. Nevertheless, American Dreams households owned rather than rented their homes and engaged in consumer habits that revolved around children and family. Together, these three lifestyle segments show how characteristics unrelated to social class can affect who lives in gentrified neighborhoods. Bohemian Mix and American Dreams households, in particular, had the same social class position but different lifestyles. Although this study cannot prove that different kinds of gentrifiers influence gentrification in different ways, it suggests the possibility and must be investigated further. Family-oriented gentrifiers, for example, sometimes demand

changes to local schools that non-family-oriented gentrifiers do not (Barton and Cohen 2019; Butler and Robson 2001). In the least, monotonic, class-based models of gentrification such as the threshold model (Barton 2016) or the stage model (Blasius, Friedrichs, and Rühl 2016; Clay 1979) may be overly reductive and insensitive to the varieties of gentrification that occur across neighborhoods.

If the threshold and stage models are called into question, what should take their place? This paper does not intend to throw away such useful models. Both models surely describe how gentrification unfolds in many neighborhoods. Nevertheless, these models should be updated to account for the fact that people in similar social class positions may make different life choices and likely engage in gentrification in different ways. It is common for quantitative scholars to explain trends found in large-scale data using mechanisms drawn from qualitative literature. Quantitative studies, however, could use sources such as geodemographic marketing data to directly test the mechanisms that link gentrifiers to gentrification. For instance, if a neighborhood gentrifies but does not experience growth in fashionable stores like boutiques and coffee shops, it may be because family-oriented, American Dreams households moved in rather than trendier Bohemian Mix or Urban Achiever households.

Even for scholars who continue to rely on traditional demographic data sources rather than geodemographic marketing data, this paper provides valuable lessons. In this study, for instance, certain qualities such as age, homeownership, and family status differentiated gentrifiers in a meaningful way. Studies that rely on the U.S. Census, which includes variables on age, homeownership, and family status, should pay close attention to these demographic characteristics when analyzing the consequences of gentrification. In an ideal world, Census microdata on these variables could be combined with household-level geodemographic

marketing data in order to better understand the demography and culture of gentrification. Nevertheless, unlike the U.S. Census Bureau, which has a formal application process to access restricted-use microdata, private corporations like Claritas rarely offer detailed microdata to researchers.

There are some potential downsides to integrating geodemographic marketing data into gentrification studies. The algorithms used to produce PRIZM data are largely proprietary, built on privatized data sources such as retailers' customer loyalty program data (Claritas 2018). Subjectivity sometimes affects geodemographic marketing data, as when outlier households and segments are grouped together in order to produce a parsimonious marketing model (Burrows and Gane 2006). Academics must test geodemographic lifestyle segments in the field using qualitative methods or survey research before adopting them regularly. A similar process occurred before ReferenceUSA, a commercially available listing of retailers in the United States, was adopted in public health and urban studies research. Scholars triangulated ReferenceUSA data with other data sources using on-site observations, canvasses of commercial corridors, and interviews of business owners found in the listing (Bader et al. 2010; Fleischhacker et al. 2012; Tam 2019). Beyond this general caution about the use of geodemographic marketing data, there are limits to the specific conclusions drawn from this paper's empirical results. The lifestyle segments emphasized in this study may be unique to Chicago's gentrified neighborhoods. Results may also be limited by the time period studied. Fortunately, since PRIZM data include households across the United States spanning many years, the conclusions of this study can be tested outside of Chicago.

Some scholars may be skeptical of using geodemographic marketing data because they believe that gentrification is driven by the decisions of developers and political elites rather than

gentrifiers and their lifestyles (Smith 1996). Other scholars may be hesitant to take data from a marketing firm, which could pull gentrification studies away from the field's critical foundations (Slater 2006). Nevertheless, to fully understand how gentrification works, the study of gentrification's causes and effects must be done alongside the study of gentrifiers' lifestyles (Hamnett 1991). Gentrification has both an economic and a cultural side, each of which influences the other (Lees 1994). Many quantitative scholars of gentrification have taken seriously the economic side of gentrification but have left the cultural side to qualitative scholars. Even more problematically, quantitative scholars sometimes rely on culturally incoherent categories such as "White" or "Black" racial identity as a proxy for the cultural orientations of gentrifiers. Quantitative research can and should do better. If scholars measure gentrification in terms of lifestyles in addition to traditional demographic categories, they can more accurately assess how gentrification preserves or changes the identities of local communities. Critical gentrification studies could use such information to create meaningful social and political connections between gentrifiers and longstanding residents as well. Indeed, affordable housing advocates have used geodemographic marketing data to determine which communities may be most receptive to living near public housing (van Altena, Mieijboom, and Tiessens 2007).

Finally, this paper is an invitation for spatial demographers, economists, and other quantitative researchers to have a more vigorous conversation with qualitative scholars and others who study the culture of gentrification. As shown in this study and supported by other research, social class alone is insufficient to describe who moves into or out of gentrified neighborhoods (Beauregard 1990; Brown-Saracino 2009). The cultural orientation of some gentrifiers can even alter the trajectory of gentrifying neighborhoods, as when early gentrifiers take collective action against newcomers (Deener 2007; Ocejo 2011). While quantitative

scholars have much to do to improve gentrification studies, qualitative scholars have a job to do as well. The adoption of geodemographic marketing data risks replacing one essentializing category, such as race, with another, such as lifestyle segment. Qualitative studies that test and apply geodemographic lifestyle segments in the field can ensure that all scholars of gentrification make the most of geodemographic marketing data. Such efforts can also ensure that the gaps between those who study gentrification and those who study gentrifiers are finally closed.

Endnotes

1. Although this paper deals with the United States context, the geodemographic marketing industry is well-established across the world (Singleton and Spielman 2014; Weiss 2000).

2. Since 2015, Claritas updated their data and created a new set of classifications called PRIZM Premier segments. I do not use these updated segments because doing so would prevent me from using data from before 2015 in my analysis.

3. In personal communication with Claritas, I was told that historical PRIZM data before 2010 were not for sale.

4. TJW includes an additional requirement that tracts losing more than 50% of their population during the study period are considered Not Gentrified. However, in my study, this requirement did not affect any tracts.

5. All dollar amounts in this study are in 2017 dollars.

6. I show changes in raw counts of households rather than percent change because several lifestyle segments that grew in number in gentrified neighborhoods started out with zero households in 2010.

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Figure 1. Chicago Neighborhoods That Gentrified between 2000 and 2017
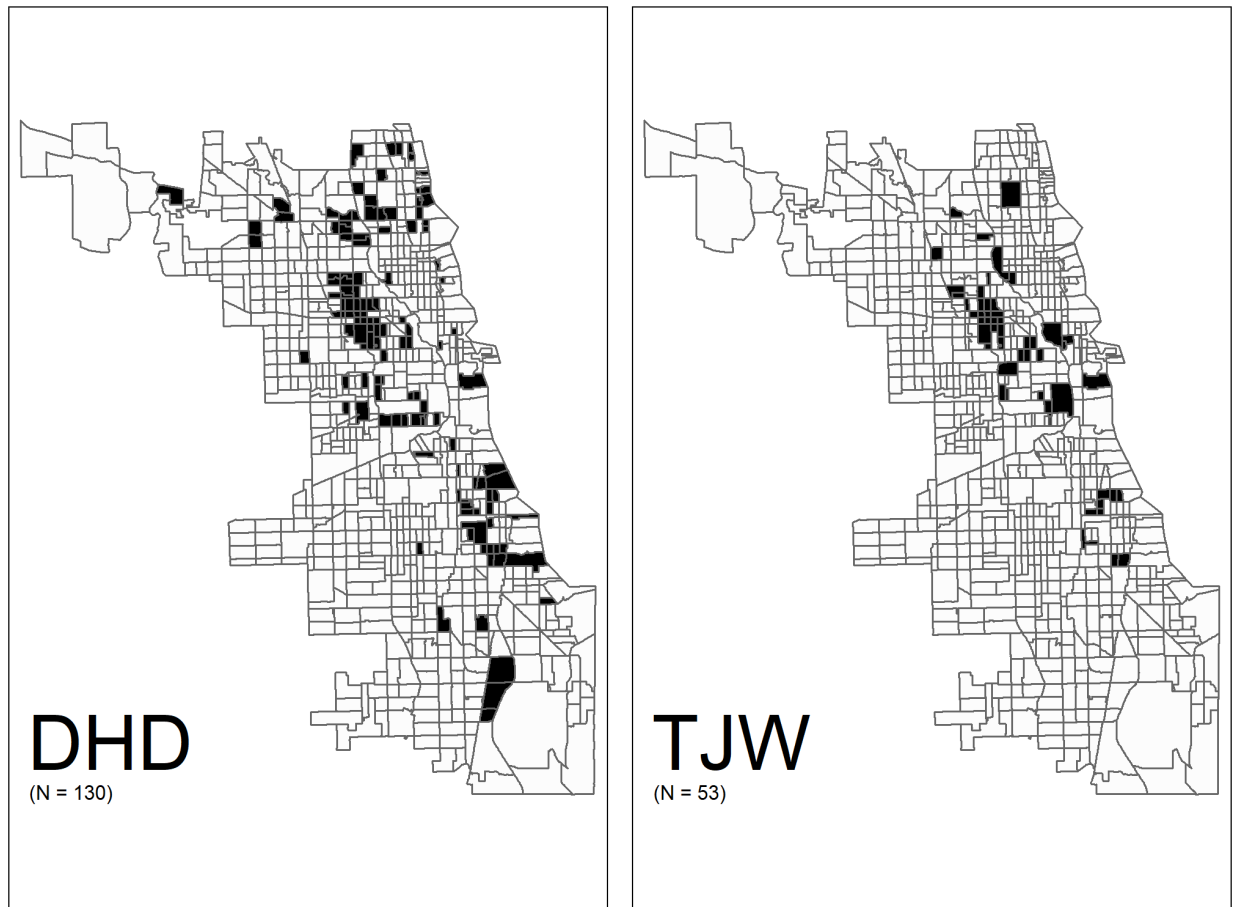

Neighborhoods colored black are considered gentrified. The first panel, 'DHD,' refers to neighborhoods considered gentrified using the Ding, Hwang, and Divringi (2016) operationalization of gentrification. The second panel, 'TJW,' refers to neighborhoods considered gentrified using the Timberlake and Johns-Wolfe (2017) operationalization of gentrification. 'N' refers to the number of gentrified neighborhoods according to each method.

Figure 2. Prominent Lifestyle Segments at the Outset of Gentrification in 2010
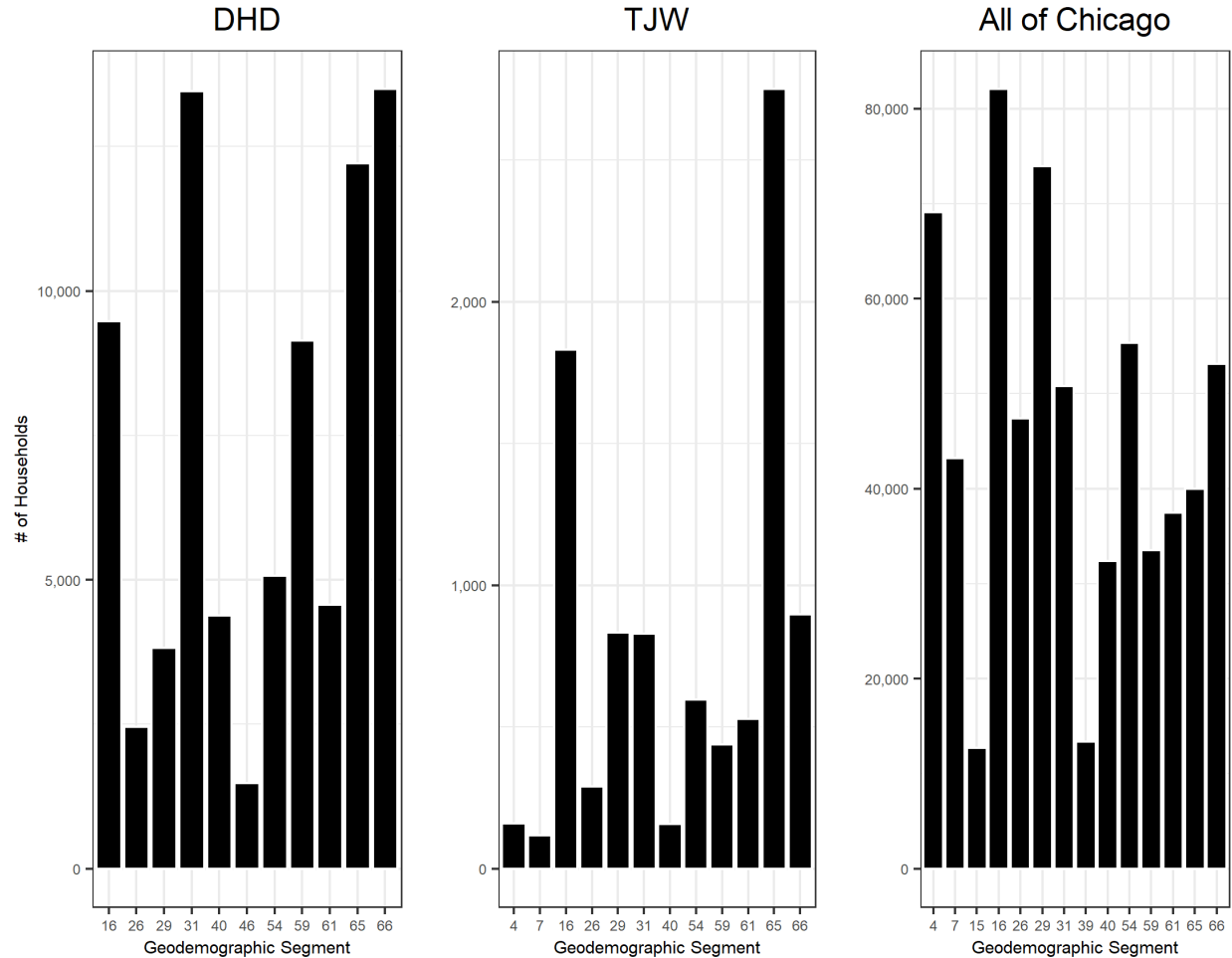

The first two panels of this figure show the number of households in 2010 by lifestyle segment for neighborhoods that gentrified between 2010 and 2017. The third panel shows the number of households in 2010 by lifestyle segment in all of Chicago. 'DHD' and 'TJW' respectively refer to the Ding, Hwang, and Divringi (2016) and Timberlake and Johns-Wolfe (2017) operationalizations of gentrification. For ease of viewing, only segments that contained at least 1,000 households are shown in the first panel, only segments that contained at least 100 households are shown in the second panel, and only segments that contained at least 10,000 households are shown in the third panel.

Figure 3. Change in Prominent Lifestyle Segments in Gentrified Neighborhoods, 2010-2017
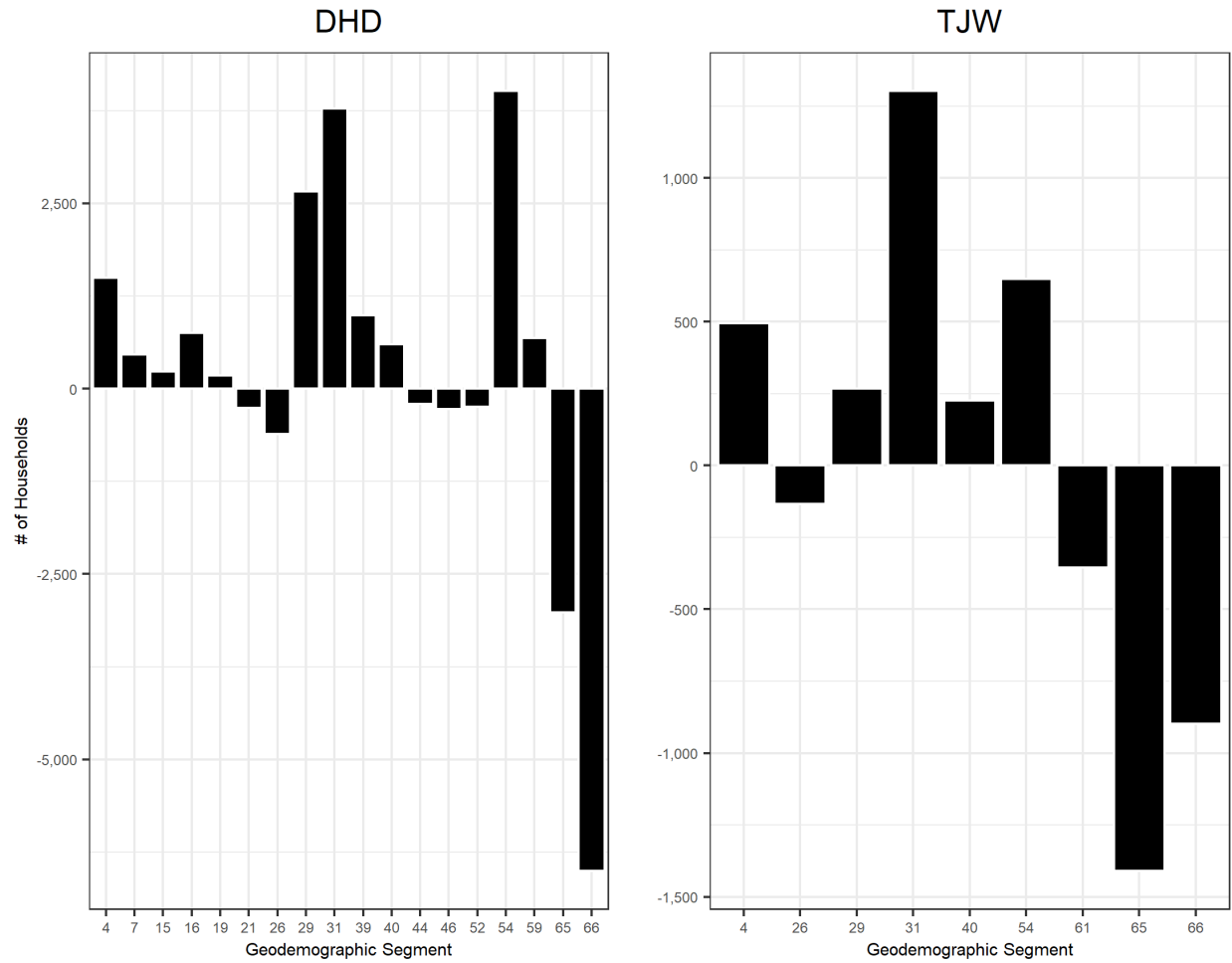
'DHD' and 'TJW' respectively refer to the Ding, Hwang, and Divringi (2016) and Timberlake and Johns-Wolfe (2017) operationalizations of gentrification. For ease of viewing, only segments that grew or declined by at least 100 households are shown.

Figure 4. Change in Prominent Lifestyle Segments in Acutely Gentrified Neighborhoods, 2010-2017
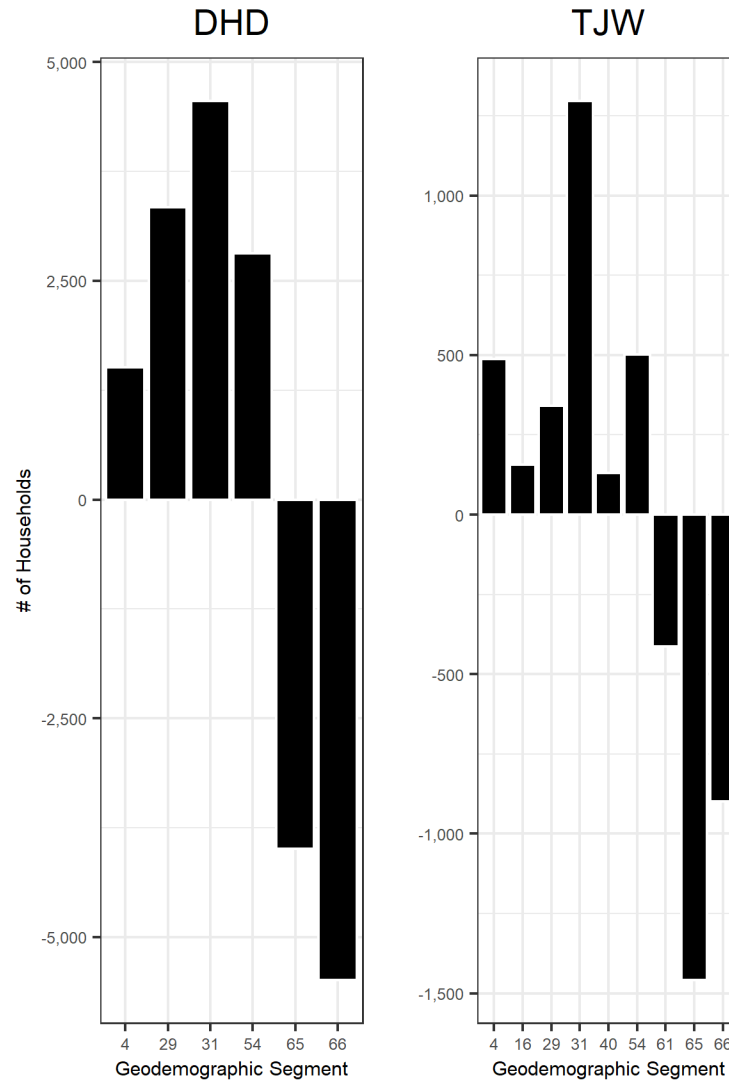
'DHD' and 'TJW' respectively refer to the Ding, Hwang, and Divringi (2016) and Timberlake and Johns-Wolfe (2017) operationalizations of gentrification. For ease of viewing, only segments that grew or declined by at least 1,000 households are shown in the first panel, and only segments that grew or declined by at least 100 households are shown in the second panel.

Table 1. Claritas PRIZM Geodemographic Lifestyle Segments in the United States, 2017

Segment	Name	# of Households	% of Households
1	Upper Crust	1,735,731	1.44
2	Blue Blood Estates	1,106,452	0.92
3	Movers and Shakers	1,859,646	1.55
4	Young Digerati	1,542,616	1.28
5	Country Squires	2,196,329	1.83
6	Winner's Circle	1,265,292	1.05
7	Money & Brains	2,541,005	2.11
8	Executive Suites	1,026,530	0.85
9	Big Fish, Small Pond	2,596,572	2.16
10	Second City Elite	1,615,999	1.34
11	God's Country	1,790,861	1.49
12	Brite Lites, Li'l City	2,058,351	1.71
13	Upward Bound	2,176,605	1.81
14	New Empty Nests	1,213,238	1.01
15	Pools & Patios	1,508,678	1.26
16	Bohemian Mix	2,247,236	1.87
17	Beltway Boomers	1,099,862	0.92
18	Kids & Cul-de-Sacs	1,871,689	1.56
19	Home Sweet Home	2,138,081	1.78
20	Fast-Track Families	1,988,524	1.65
21	Gray Power	1,048,898	0.87
22	Young Influentials	1,660,557	1.38
23	Greenbelt Sports	1,658,444	1.38
24	Up-and-Comers	1,657,238	1.38
25	Country Casuals	1,849,802	1.54
26	Cosmopolitans	1,474,382	1.23
27	Middleburg Managers	2,533,873	2.11
28	Traditional Times	3,250,259	2.70
29	American Dreams	2,738,582	2.28
30	Suburban Sprawl	1,498,386	1.25
31	Urban Achievers	1,889,236	1.57
32	New Homesteaders	2,153,865	1.79
33	Big Sky Families	2,198,802	1.83
34	White Picket Fences	1,706,839	1.42
35	Boomtown Singles	1,762,911	1.47
36	Blue-Chip Blues	1,422,780	1.18
37	Mayberry-ville	2,844,390	2.37
38	Simple Pleasures	2,596,719	2.16
39	Domestic Duos	1,365,136	1.14
40	Close-In Couples	1,470,027	1.22
41	Sunset City Blues	2,298,039	1.91
42	Red, White & Blues	1,328,313	1.11
43	Heartlanders	2,305,111	1.92
44	New Beginnings	1,686,059	1.40
45	Blue Highways	1,837,140	1.53
46	Old Glories	1,096,869	0.91
47	City Startups	1,538,813	1.28
48	Young & Rustic	2,234,101	1.86
49	American Classics	1,152,246	0.96
50	Kid Country, USA	1,500,723	1.25
51	Shotgun & Pickups	1,838,425	1.53
52	Suburban Pioneers	1,168,660	0.97
53	Mobility Blues	1,609,648	1.34
54	Multi-Culti Mosaic	2,133,652	1.78
55	Golden Ponds	1,794,620	1.49
56	Crossroads Villagers	2,409,894	2.01
57	Old Milltowns	1,596,502	1.33
58	Back Country Folks	2,704,410	2.25
59	Urban Elders	1,666,173	1.39
60	Park Bench Seniors	1,442,867	1.20
61	City Roots	1,438,497	1.20
62	Hometown Retired	1,522,688	1.27
63	Family Thrifts	2,281,925	1.90
64	Bedrock America	2,052,117	1.71
65	Big City Blues	1,393,221	1.16
66	Low-Rise Living	1,772,169	1.47
Totals	n/a	120,163,305	100.00

Source: SimplyAnalytics (2020)

Table 2. Demographic Summary Statistics of Chicago Neighborhoods by Gentrification

Status, 2000 to 2017

	DHD			TJW		
	Not Gentrifiable	Not Gentrified	Gentrified	Not Gentrifiable	Not Gentrified	Gentrified
Baseline in 2000						
Median Household Income	$88,464	$36,948	$33,661	$83,059	$50,655	$57,404
Median Housing Unit Value	$359,980	$150,874	$203,211	$385,511	$194,562	$317,314
Median Housing Unit Rent	$1,036	$829	$810	$1,166	$823	$825
% >= College	33	15	20	53	12	18
% in Poverty	12	23	25	10	21	27
% > High School	56	38	42	74	36	39
% Professionals	22	14	17	32	13	16
Avg. Family Income	$114,453	$72,059	$65,974	$151,817	$67,616	$61,832
% White	47	16	23	63	20	19
% Black	26	56	36	17	49	34
% Latinx	20	24	33	11	27	42
% Asian	5	3	5	6	3	3
% Foreign-Born	18	18	25	16	21	21
Change, 2000 to 2017						
Median Household Income	-$18,554	-$1,243	$18,151	$1,214	-$11,308	$12,916
Median Housing Unit Value	-$52,853	$21,536	$64,699	$4,853	-$13,518	$11,944
Median Housing Unit Rent	$149	$82	$230	$185	$92	$388
% >= College	12	4	23	13	8	32
% in Poverty	2	4	-4	2	3	-11
% > High School	11	8	25	9	11	32
% Professionals	3	0	10	1	2	14
Avg. Family Income	$8,646	-$11,006	$21,430	$16,726	-$7,178	$51,879
% White	-3	-2	10	0	-3	18
% Black	-2	-3	-4	-2	-3	-8
% Latinx	3	5	-7	-1	5	-14
% Asian	2	1	2	2	1	3
% Foreign-Born	0	0	-4	-1	-1	-5
# of Neighborhoods	373	303	130	226	527	53

Source: 2000 U.S. Decennial Census and the 2017 5-Year American Community Survey

Estimates. All values except for '# of Neighborhoods' are means. Dollar amounts are inflated to

2017 values. 'DHD' and 'TJW' respectively refer to the Ding, Hwang, and Divringi (2016) and

Timberlake and Johns-Wolfe (2017) operationalizations of gentrification.

Table 3. Top 5 Lifestyle Segments in Chicago Neighborhoods According to Gentrification Status, 2017

	DHD					
	Not Gentrifiable		Not Gentrified		Gentrified	
	Segment	% of Households	Segment	% of Households	Segment	% of Households
1.	Young Digerati (4)	16	Low-Rise Living (66)	14	Urban Achievers (31)	20
2.	American Dreams (29)	15	Multi-Culti Mosaic (54)	14	Bohemian Mix (16)	14
3.	Bohemian Mix (16)	13	City Roots (61)	11	American Dreams (29)	11
4.	Cosmopolitans (26)	7	Urban Elders (59)	9	Big City Blues (65)	10
5.	Money & Brains (7)	7	American Dreams (29)	8	Multi-Culti Mosaic (54)	10
# of Households	n/a	556,361	n/a	368,939	n/a	167,677
# of Neighborhoods	373		303		130	

	TJW					
	Not Gentrifiable		Not Gentrified		Gentrified	
	Segment	% of Households	Segment	% of Households	Segment	% of Households
1.	Young Digerati (4)	23	Multi-Culti Mosaic (54)	14	Urban Achievers (31)	19
2.	Bohemian Mix (16)	19	American Dreams (29)	11	Bohemian Mix (16)	19
3.	American Dreams (29)	13	Low-Rise Living (66)	11	American Dreams (29)	14
4.	Urban Achievers (31)	11	City Roots (61)	10	Young Digerati (4)	12
5.	Money & Brains (7)	10	Close-In Couples (40)	10	Multi-Culti Mosaic (54)	11
# of Households	n/a	401,364	n/a	635,659	n/a	55,954
# of Neighborhoods	226		527		53	

Source: SimplyAnalytics (2020), 2000 U.S. Decennial Census, and the 2017 5-Year American Community Survey Estimates. The numbers in parentheses alongside segment names are segment numbers. Percentages are totals of all households in neighborhoods of a given gentrification status that were in a particular lifestyle segment. 'DHD' and 'TJW' respectively refer to the Ding, Hwang, and Divringi (2016) and Timberlake and Johns-Wolfe (2017) operationalizations of gentrification.

*Appendix 1. How the Claritas PRIZM Geodemographic Marketing Model is Created*

Claritas marshals an incredibly large number of data sources to create each Claritas PRIZM segment. Data include the U.S. Census; customer loyalty reward programs, which track purchasing habits; banking information; insurance information; telecommunications usage habits; and media habits, among other sources. More specifically, Claritas derives data from sources such as the Claritas Financial Track Survey, Nielsen Scarborough, Epsilon Data Management, LLC, Total Source Plus, Valassis Direct Mail, Inc., Infogroup, and TomTom North America, Inc. (Claritas 2018).

Once the data are compiled, Claritas uses Classification and Regression Trees (CARTs) to find cut points that separate different groups of households from one another. For example, among households that invest in at least one mutual fund, there are notable differences in asset levels between households whose total income is above $50,000 and whose head of household is above the age of 45 (Claritas 2018). In CARTs, cut points are determined by breaks in the data that optimally reduce deviance in the overall model. Despite the unsupervised nature of this optimization technique, subjectivity plays a role in classification. If segments are too small to be practically meaningful, or if certain households are outliers in the model, then Claritas may lump them into existing segments (Burrows and Gane 2006). Similar forms of subjectivity affect geodemographic marketing data created by other companies as well (Singleton and Spielman 2014).

Importantly, many segments are founded upon whether a household is in an urban, suburban, or rural location. Urbanicity, however, is not determined using Census Bureau classifications. Rather, each Census block is placed into a grid-like structure in which population density is smoothed across blocks. Households in highly dense blocks are considered urban,

while moderately dense and less dense blocks are respectively suburban or rural. In between

suburban and rural blocks is a distinction that Claritas calls "Second City," or blocks that tend to

be found in satellite cities of large metropolitan areas. Second City blocks are often more affluent

than blocks in small towns and farming communities (Claritas 2018, p. 11). Because Claritas

does not follow U.S. Census Bureau urban-rural classifications, even households that the Census

Bureau would deem urban might be assigned to a more rural geodemographic lifestyle segment.

Appendix 2. Chicago Neighborhoods That Gentrified between 2010 and 2017
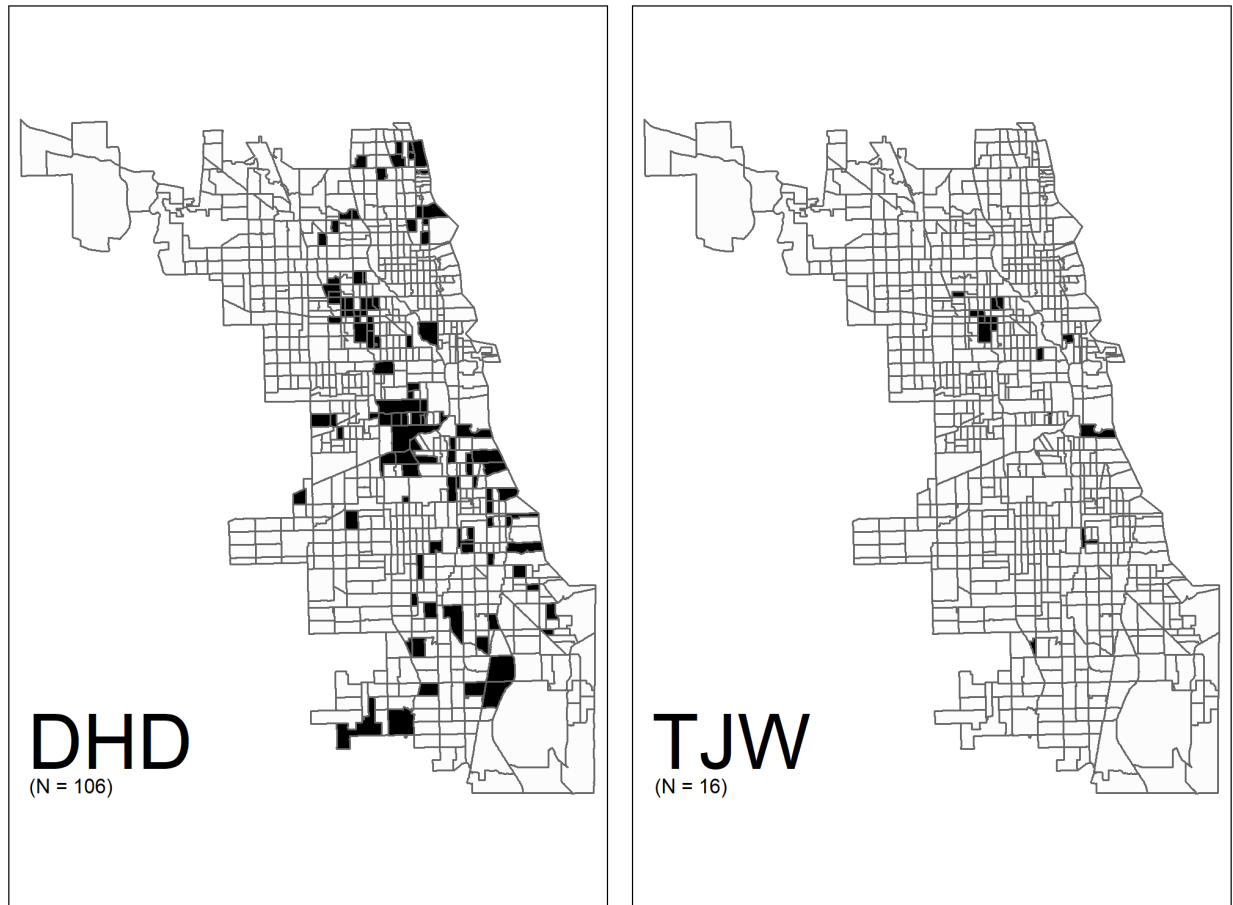
Neighborhoods colored black are considered gentrified. The first panel, 'DHD,' refers to

neighborhoods considered gentrified using the Ding, Hwang, and Divringi (2016)

operationalization of gentrification. The second panel, 'TJW,' refers to neighborhoods

considered gentrified using the Timberlake and Johns-Wolfe (2017) operationalization of

gentrification. 'N' refers to the number of gentrified neighborhoods according to each method.

Appendix 3. Demographic Summary Statistics of Chicago Neighborhoods by Gentrification Status, 2010 to 2017

	DHD			TJW		
	Not Gentrifiable	Not Gentrified	Gentrified	Not Gentrifiable	Not Gentrified	Gentrified
Baseline in 2010						
Median Household Income	$76,650	$35,421	$37,404	$78,634	$41,814	$39,831
Median Housing Unit Value	$409,336	$246,317	$291,455	$453,669	$259,206	$348,171
Median Housing Unit Rent	$1,181	$931	$887	$1,202	$954	$946
% >= College	47	16	23	61	16	24
% in Poverty	11	27	25	12	23	25
% > High School	69	41	48	80	42	44
% Professionals	26	15	18	33	14	15
Avg. Family Income	$134,215	$54,614	$60,568	$155,849	$59,003	$54,194
% White	55	11	19	62	16	22
% Black	16	57	44	16	48	28
% Latinx	21	27	30	12	31	46
% Asian	6	3	6	8	4	3
% Foreign-Born	19	18	21	16	20	20
Change, 2010 to 2017						
Median Household Income	$1,390	$1,475	$5,722	$5,057	-$1,867	$16,361
Median Housing Unit Value	-$68,787	-$82,806	-$48,988	-$64,147	-$76,998	-$42,884
Median Housing Unit Rent	$80	-$48	$89	$138	-$33	$173
% >= College	5	1	11	4	4	19
% in Poverty	1	1	-2	1	1	-7
% > High School	4	4	11	3	5	21
% Professionals	1	0	5	1	1	16
Avg. Family Income	$6,245	$644	$9,791	$7,839	$1,678	$33,291
% White	-2	0	4	-1	0	9
% Black	-1	-3	-4	-1	-3	-4
% Latinx	1	2	-2	0	2	-8
% Asian	1	0	1	1	0	3
% Foreign-Born	0	0	-1	0	-1	-5
# of Neighborhoods	352	348	106	261	529	16

Source: The 2010 5-Year American Community Survey (ACS) and the 2017 5-Year ACS. All values except for '# of Neighborhoods' are means. Dollar amounts are inflated to 2017 values. 'DHD' and 'TJW' respectively refer to the Ding, Hwang, and Divringi (2016) and Timberlake and Johns-Wolfe (2017) operationalizations of gentrification.

Author Biography

Mahesh Somashekhar is an assistant professor of sociology at the University of Illinois at Chicago. His research focuses on how economic development and social inequality affect one another in urban and suburban neighborhoods. He is currently working on several research projects that explain why gentrifying neighborhoods can experience diverging social and economic outcomes. In addition to these projects, he studies the economic foundations of immigrant neighborhoods and gay villages.