

Gentrifying the Magic City: A Spatial Analysis of Birmingham, AL 1980 -2010

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Abstract

Birmingham, Alabama, once among the most segregated cities in the nation, is now experiencing an economic revival driven by capital reinvestment into the physical fabric of neighborhoods and an influx of educated, higher-income residents. While positive in some respects, research suggests that urban revival is often accompanied by less positive change, including the displacement of low-income groups, many of them minority. This physical and social restructuring suggests the process of gentrification is at work within Alabama's largest city. The goal of this study is to explore the complex demographic dimensions of this change. Using geographic information system (GIS) technology and a case study approach, it analyzes Birmingham's census tracts over the thirty-year period from 1980 to 2010 in order to: ascertain the nature of the change in demographic and socioeconomic characteristics; determine which neighborhoods showed signs of gentrification during the study period; and provide recommendations on ways to mitigate gentrification's negative impacts on vulnerable populations.

Keywords: gentrification, Geographic Information Systems (GIS), poverty, minorities, Birmingham

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Section 1 Introduction

Project Scope

A professional planning report explores a topic that a planning professional might encounter in the course of his or her job. Gentrification, a tremendously complex planning topic is better understood through a professional planning report. The literature on gentrification is vast and diverse and explores many cities across the globe. However, the research tends to focus on large European and North American cities like London and New York. Mid-sized cities have seen considerably less attention. This professional report recognizes this gap in the research and focuses on Birmingham, Alabama, during the period from 1980 to 2010. It introduces gentrification broadly, in the context of American cities, and discusses its negative impacts on neighborhoods: namely, the displacement of low-income residents. This report uses commonly accepted proxy indicators of gentrification to identify where in Birmingham this process seems to be taking place. Three change indicators are used: race, educational attainment, and gross rent.

This report is driven by a central research question: did neighborhoods closer to Birmingham's city center experience change suggestive of the process of gentrification? Did the populations of these neighborhoods experience change over the period from 1980 through 2010 in their racial and educational attainment composition? And did they experience a change in average gross rents? This research hypothesizes that neighborhoods closer to Birmingham's city center will experience an increase in white population and college graduates, and gross rents will show increases, due to an influx of gentrifiers.

This report uses geographic information system (GIS) technology to analyze and visualize gentrification's impacts in Birmingham. It concludes with a series of pragmatic policy recommendations intended for planning professionals and public officials in the city

Section 2 Literature Review

Gentrification: An Introduction

The hand of gentrification is one that is often invisible to the naked eye, yet the process has been in cities worldwide since the 1960s. According to Peter Marcuse (1985), gentrification can be seen in neighborhoods

“when new residents that are disproportionately young, white, professional, technical, managerial workers with higher education and income levels-replace older residents-who disproportionately are low-income, working-class, poor, minority, elderly and ethnic group members, from older deteriorated inner-city housing in a spatially concentrated manner, that is, differing substantially from the general level of change in the community or region as a whole” (p. 198).

More than six decades after British sociologist Ruth Glass coined the term ‘gentrification’ in the 1960s, people are continuing to take note of the astronomical changes it brings to cities and their residents.

Gentrification is a process that typically begins with certain areas experiencing a decline in economic and capital investment. The reinvestment of capital and economic investment into these once declining areas cause an increase in the cost of living. The term gentrification itself is not negative. Rather, it is the associated consequences linked to gentrification displacement in particular. The primary consequence that follows gentrification is displacement of longstanding residents who can no longer afford to live in newly reinvested areas.

Throughout the years, numerous American cities have found themselves recovering from the effects of gentrification regarding demographic, economic and cultural changes in urban neighborhoods. Cities across America are confronted by “urban pioneers who are risking themselves and their savings to turn deteriorated and undesirable neighborhoods into a place of good living” (Beauregard 1986, p. 11). Specifically, in the city of Birmingham, the demographic and economic changes that create opportunities for renewal and interest in the city’s urban center are evident in multiple urban core neighborhoods such as Woodlawn, Avondale, and Southside. Because of the revival of the urban core, affluent residents make their way to primarily minority communities where “the rents are cheap, areas hold historical and emotional significance, spatial advantages regarding private and public services for reproduction and consumption, or employment opportunities may be nearby” (Beauregard 1986, p.18). However, it has long been acknowledged that the arrival of these ‘pioneers’ creates problems for those within these ‘untamed’ communities. As Larry Bennett wrote in the context of gentrifying Uptown in Chicago, gentrification began with a defensible beachhead with the neighborhood, from which speculative developers assembled “enough parcel to form an autonomous island of affluence and where new homeowners could comfortably renovate a “six-flat into a posh stockade of opulence amid the devastation.” (Bennett 1997, p. 94)

According to Robert Beauregard, the ideology of gentrification focuses on the image of the city and its neighborhoods, an image that is manipulated to encourage subsequent investment. This

idea erroneously presents gentrification as beneficial for the city as a whole (Ley 1980) Thus it can be argued that “gentrification results in the uneven development of metropolitan land markets” (Beauregard 1986, p.13). Though gentrification is now an old concept-it has its own sixty-year history- the surprisingly sharp increase in more affluent residents moving into underinvested minority communities and the costs of living and potential for displacement are growing issues in second- and third-tier cities like Birmingham. The investment and development that many communities currently see are accompanied by significant neighborhood increases in housing prices and rents.

Gentrification in America

Intense changes are playing out across parts of urban America, making many neighborhoods hardly recognizable from a relatively short time ago. The arrival of affluent new residents and investment in poorer communities can increase the cost of living in these neighborhoods, thereby causing displacement to occur. This process of gentrification presents a growing dilemma for many mid-sized American communities such as Atlanta, GA, and Durham, NC. Though the process of American gentrification is one that is not new rather it is one that takes on a different form in every city. For instance, older residents of communities that have been forgotten by their cities often contest the process of transforming underinvested communities into communities with more mobility options, green space, and new tech amenities. Although these community investments serve an economic purpose, the longstanding residents are often absent from communities once capital improvements are implemented because of rising housing affordability or structural social change (Lees, 2008, p. 4). As trends such as this persist, more residents that are affluent find themselves living in once minority low-income communities without a sincere appreciation of the community and its role in the larger picture of society, however, one must ponder what drives gentrification’s acceleration in American cities. Gentrification acceleration begins as ‘gentrifiers’ or new more affluent residents’ reproduction and consumption take on new directions such as choosing to pursue an urban lifestyle rather than a suburban lifestyle or delaying having children. As research shows living in inner-city housing is not a new trend, nor is the existence of politically and economically vulnerable social groups in America. However, the existence of the “single family household” (Beauregard 1986, p.14) in American cities is becoming more prevalent. Historically transformations in the industrial and occupational structure of the United States brought about the reshaping of capital and economic changes in declining cities (Bluestone and Harrison 1982, p. 140-90).

Before World War II, manufacturing jobs were in high demand in cities and residents often lived close to their places of employment (Beauregard 1986). Over time, manufacturing jobs declined and the employment base shifted to personal service, administrative, governmental, retail and professional. However, the poorest residents of cities often remain in the urban center to engage in its low-skill, low wage employment service sector, and opportunities. Furthermore, the question of why gentrifiers choose to leave suburban life for city life is still to be explained and unpacked. According to Robert Beauregard gentrifiers chose to leave the life of suburbia behind primarily because of their “consumption and reproduction needs” (Beauregard, 1986). Often the increasing cost in metropolitan areas, rising energy cost, and “increased operating cost of automobiles and transit systems.” Also, to increasing cost, the commute to work from the suburbs to work interferes financially with the need for consumption. Since many gentrifiers are

relatively new to their careers, they are unlikely to have extensive savings that can sustain the lifestyle they desire. Given the limited capital that gentrifiers have results in them living in the city in specific types of housing and residential areas that are recognized by developers, real estate agents, and commercial investors.

The process of gentrification typically consists of four phases (Clay, 1979). Phase one of the process involves a small group of people moving into an area and renovating their properties.

The purchase of property in the community generates public attention or displacement. Phase two creates an opportunity for similar individuals to purchase property within the neighborhood and begin fixing up their property. The subtle increase in movement to the community creates indirect promotion of the area, which garners the attention of real estate agents. Often minimal displacement occurs in this phase as vacant housing becomes scarce. Phase three is a crucial phase because it attracts the attention of the media and public. In phase three physical improvements, become visible, and general improvement increases housing prices in the area, thus pricing out long term residents out of the neighborhood. Displacement occurs as regulations are enforced, and reassessments of the area are completed to reassess its current value. At this point in the process, old and new members of the community are at odds because the organized community “begins to look outward to market the neighborhood to middle and upper middle class people and to make public demands for public resources” (Clay, 1979, p. 38). Protective and defensive actions against crime are taken along with banks greenlining areas as they reassess spatial patterns of reinvestment. Phase 4 of the process consists of more middle and upper middle-class residents moving into the area. During this phase, displacement affects everyone, not only renters but also homeowners as they are faced with increased mortgage payments. Meanwhile, as the process begins and ends in one neighborhood, another neighborhood is discovered to recreate the process.

While, the process of gentrification is widely known in American cities, few policies are in place to prevent negative outcomes-displacement in particular. A recent exception to the rule is, Atlanta where residents have gathered to revise zoning around the Atlanta Beltline path. The Atlanta Beltline was once an undeveloped strip that ran along a former rail line. Similar to other cities, Atlanta officials decided to transform tracks into a bike path. This 4.8 billion transportation project is slated for a 2030 completion. The project will consist of 22-miles of mixed-used pedestrian transit trails around the outskirts of the city. The goal is that the trail will help make Atlanta greener, reduce its traffic problem and encourage healthful lifestyles.

However, the project has not been met with universal support. Daniel Immergluck and Tharunya Balan, urban planning professors at Georgia State University, have shown how the Beltline is creating an increase in housing values in predominantly low-income African American neighborhoods (Green, 2017, p. 2). Neighborhoods such as Adair Park, Pittsburgh, Mechanicsville, and Westview have seen median sale prices jump 68 percent from 2011 to 2015, as plans for the Beltline were made public. The rapid gentrification of the communities impacted by the installation of the Beltline creates displacement of homeowners and renters. Immergluck notes that “benefits from the Beltline will primarily flow to the more affluent homeowners moving in and counterbalance some stark negatives for Atlanta as a whole... “ In the long run, without intervention, it will lead to the economic and possibly racial re-segregation of the city

(Green, 2017, p. 2). In addition to creating racial divides in the city of Atlanta, the lack of affordable housing associated with the Beltline is growing. A report by the city “*Resilient Atlanta: Actions to Build More Equitable Future*,” shows that “26 percent of Atlanta’s households spend more than 50 percent of their income on housing costs, with much of this located in low-income, low-access neighborhoods across the region” (Powers, 2017, 5). This is more than one in four people paying half their income on housing.

Atlanta is not the only mid-sized city feeling the heat from gentrification. So, too, is Durham, NC. The revitalization of downtown Durham, a predominantly African American city that saw disinvestment over the latter half of the 20th century, is applauded for its ability to

attract economic development to the area. Durham, once a working-class city, is increasingly becoming whiter, more affluent, and upper-middle-class. Specifically, Durham's historic African American Walltown neighborhood near Duke University's campus has seen pronounced demographic and socioeconomic changes. The community was once residents who worked service jobs at Duke University. However, over time the community demographics have changed from low income African Americans to middle class white families. Currently, Walltown is prime real estate because of its proximity to downtown and the university. As the neighborhood experiences demographic change, social tensions in the community have risen. For example, as crime patrols increase, young Hispanic and African American men are being harassed as new residents-many of them white- file police reports on account of not feeling safe in the neighborhood. Walltown serves as an illustrative case of how gentrification not only revalues neighborhoods economically, but socially and culturally as well.

As seen in other cities, Durham has created opportunities to maximize prime real estate opportunities with little thought to disrupting the social structure and community culture. Finding housing in Walltown is becoming a challenge because the city only assesses taxes every eight years, which means that property taxes have not been adjusted in many now-popular areas with much higher home values. Waiting to reassess property taxes every six years impacts longstanding homeowners because rather than receiving incremental tax increases over time they receive a substantial increase in property taxes at once which leads to displacement (White, 2016, p. 7). In addition to housing issues, business owners are noticing spikes in rent as the newly renovated downtown continues to develop. The growth and redevelopment of downtown not only creates a problem for business owners, rather it creates an issues for those who desire to participate in the growing economy and those who simply do not have the financial means to participate due to rising rental cost of commercial spaces (White, 2016, p. 8). To prevent such changes policies that protect vulnerable retailers and other non-residential uses from rapid rent and property tax increases, should be implemented. This would help maintain the community's uniqueness and sense of place.

Impacts on Minority and Low-Income Groups

Gentrification is an excellent way for cities to market their city as competitive, desirable and diverse to new business and millennials. The image that cities create of well-kept and modern places paints the ideal picture of "good living" for individuals who can afford to benefit from the changes that have occurred. However, the effects of gentrification are two-sided. Gentrification is desirable for economic development, yet it is undesirable because of its social impacts. It leaves neighborhoods, communities, and cities reeling with a new set of issues after development occurs. The issues seen after areas have been gentrified rest primarily on the lowincome minority groups. These groups are categorically and historically the groups of people that suffer from displacement from gentrification.

A report by the Federal Reserve Bank reports that gentrification scholarship has used quantitative and qualitative research methods to uncover the causes and negative impacts of gentrification on the low-income neighborhoods (Ding, Hwang and Divringi 2016, p.4). The primary consequence of gentrification is displacement. Displacement occurs when a household is forced to move from its residence by conditions that affect the dwelling or its immediate surroundings, and that: "1) are beyond the household's reasonable ability to control or prevent; 2)

occur despite the household's having met all previously imposed conditions of occupancy; and 3) make continued occupancy by that household impossible, hazardous, or unaffordable (Grier and Grier, quoted in Marcuse 1985, p. 205).” Not only does displacement by gentrification occur but also does displacement by abandonment. Abandonment occurs “when all those having a private profit-oriented economic interest in a unit lose any incentive for continued ownership beyond the immediate future, and are willing to surrender title to it without compensation, because of the absence of effective demand for its continued use or reuse (Marcuse, 1986, p. 334).”

Displacement from abandonment and displacement from gentrification are echoes of an enduring process interconnected to the changing economy of urban areas (Marcuse, 1985, p. 200). Marcuse notes that displacement from gentrification

“Is more difficult to measure than displacement from abandonment. The change in absolute numbers of high- or low-income households in the city is an inadequate measure because gentrification primarily results from movement within the city rather than from moving into the city” (Marcuse, 1985, p. 212).

The price of displacing the poor and low-income people has certain consequences because it “disrupts neighborhoods, misuses and inefficiently uses existing infrastructure and public services (Marcuse, 1985, p. 230).” The categories of displacement that transpire in cities takes on two forms: physical and economic. An example of physical displacement is when property owners remove a tenant’s ability to heat or cool a building, thus creating an environment that is uninhabitable and results in occupants moving out. An example of economic displacement is when landlords increase rental fees beyond a resident’s ability to pay and causes them to move (Marcuse, 1985, p. 214). It is useful to distinguish between these two causes of displacement, for purposes both of analysis and of measurement.

The negative consequences of gentrification have long been recognized. Yet cities in the United States and around the world continue to support programs that may result in gentrification due to a lack of other viable solutions for revitalization. As Neil Smith astutely notes, “Hardly anyone, presumably, would prefer broken-down buildings, slumped from years of concerted disinvestment, to the bright, sandblasted facades and new windows of newly restored and reoccupied structures” of gentrified neighborhoods (Smith 1998, p. 479). Roberta Brandes Gratz furthers this by recognizing that “Unqualified opposition to gentrification puts critics in the curious position of advocating the preservation of the very-low income ghettos they profess to help. The gentrification dilemma is not simple” (Gratz, quoted in Rypkema 2005, p. 60). Gentrification presents clear challenges to cities and yet few planning practitioners are prepared to address these.

Use of Geographic Information Systems (GIS) in Gentrification Research

As American citizens relocate to formerly disinvested urban neighborhoods and unwittingly spur the gentrification of those neighborhoods, it becomes a significant planning and public policy-issue. Much of the existing research on this topic uses population and housing data from USA Census to measure gentrification. Cities can spatially tract these changes using

geographic information systems (GIS). GIS is an analytical tool used to organize and capture spatial data to address the changes and trends within a geographic-changes like those brought about during gentrification.

Neighborhood change measurements can include both the use of qualitative and quantitative assessments. Each has its strengths and weaknesses. However, the spatial analysis undertaken in this professional report will utilize only the quantitative approach. A field study of gentrification conducted by Hammel and Wyly (1996) in Minneapolis-St. Paul serves as a model. This research examined various types of housing in the Twin Cities and evaluated structures as being “improved, unimproved or new.” The state of housing was then coded at the census tract level as having undergone a transition, possibly fueled by gentrification, susceptible to gentrification, or currently not disinvested and ideal for gentrification. A stepwise and canonical discriminant analysis revealed that numerous census tracts were significant in predicting the gentrification statuses. The variables identified were as follows: percent of the population with 4+ years of college; technical occupations; population size; the number of employed workers; percent of workers in managerial positions; median rent; median household income and percent of professional workers. Also, the amount of change used from previous census years in census tract median income, rent, and house value were applied to assess gentrification through GIS.

Preparing for economic well-being and growth through neighborhood investment is an objective in most every community. Nevertheless, equitable planning should incorporate the fair management of economic growth to minimize the negative externalities that can result from gentrification. This professional project attempts to identify and understand the use of indicators acknowledged in the literature review and through a case study to detect the presence of gentrification in Birmingham. It leverages the use of GIS technology on what is a complex and often contradictory urban concept, gentrification.

Section 3 Understanding the Birmingham of yesterday and today

Founded on June 1, 1871, after the Civil War, Birmingham, the foreseen intersection of the North and South. It was Southern and yet had industry, primarily steel, the industry that built America. It was far different from other Southern cities because of its abundance of resources in iron ore, limestone, and coal. Birmingham is the only major American city to have all three mineral resources (limestone, iron ore and coal) within a ten-mile radius (Encyclopedia, 2008, January 8). It is known as the massive- manufacturing mecca of the South, a city built by post Emancipation slaves and named after Birmingham, England's own center for the iron industry. The city grew quickly and later became known as the "Magic City".

According to Diane McWhorter (2000), the city was built using a widespread system known as convict leasing (p. 20). Convict leasing allowed the state of Alabama to loan half its prison population to the coal mines of Birmingham (p. 20). The offenses of the mine slaves were "gambling, indebtedness, or idleness" (p.20). The convict leasing system had "all the ills of slavery" and as one critic noted, like the slaveholders' "vested interest in keeping their property alive so did the state industrialist" (p. 20). According to Civil Rights Activist Fred Lee Shuttlesworth, Birmingham had "a heart as hard as the steel it manufactures and as black as the coal it mines" (McWhorter 2001, p. 21). The work generated from the manufacturing labor raised money for the state at the same time that it provided the industrialists a cheap, strike proof work-force.

Present day Birmingham is the largest city in Alabama and home to several historic sites and points of interest. The land on which Birmingham stands was once part of the Creek Nation, a Native American confederacy (Lewis, 2008, January 8). Birmingham was birthed out of the small Elyton community on June 1, 1871. The massive quantities of iron ore in the surrounding lands led to the development of the iron industry in the time of the Civil War. Several years after its establishment a community that was once considered unpromising during the Civil War grew to become a vibrant city that contributed much to the growth of America. Aside from the abundance in mineral resources the installation of the railroads created a new era of prosperity for the city and further contributed to the city's growth. It was this unlikely and unbelievable growth that led to its nickname of the "Magic City".

Despite some hardships, the city thrived because of its mineral resources. Although given the name "The Magic City" much of the United States knows Birmingham for being anything other than magical. Many eyes were on Birmingham during the 1960s when it became the focal point of the Civil Rights Movement. The intentional fire-hosing and releasing of dogs on protesting African Americans in Kelly Ingram Park or the Sunday morning bombing by the Ku Klux Klan that killed four little girls created a dark shadow that was hard for the city to shake. Protesting and fighting for basic human rights such as the right to vote, desegregation, equal pay for workers, and affordable housing came to characterize the city in the eyes of Americans. The Civil Rights movement that took place in Birmingham impacted many communities- ,and specifically, the College Hill community that was later named

“Bombingham.” College Hill earned this moniker because of the constant bombing tactics that were used to prevent blacks from moving into white neighborhoods (Birmingham Church Bombing, 2001).

Since then, the city has transformed from a segregated city to a vibrant and bustling town. Over the last half of the century, Birmingham, like many towns that once thrived on heavy industry, has experienced an evolution from manufacturing to services. It has witnessed the undoing of the Jim Crow system of segregation, “white flight” and population decline and disinvestment (The Plan, 2013, p.3.4). The city lost 37% of its population between 1960 and 2010 (The Plan, 2013, p.3.8), something that was not uncommon among industrial cities. Several industrial cities hit their peak population in the 1950s and 1960s prior to the transition from urban areas to suburbia. Birmingham continues to hold the most jobs for the region (The Plan, 2013, p.3.4). The city continues to show that it is an increasingly important player in the “next economy” that will bring about change. The next economy is a term used in the era of innovation and opportunity that is emerging from the economic crisis of the Great Recession (The Plan, 2013, p.3.2). Due to the city’s historic role in the civil rights struggle of the 1960s, the region continues to develop and maintain partnerships and circles of commitment that invest their social capital of relationships to make the city an excellent place to live (The Plan, 2013, p.3.4). Because of the city’s historic past, economic disinvestment over time, and the city’s new commitment to capital reinvestment makes Birmingham the ideal place for an exploration of gentrification.

Section 4 Methodology

This study aims to assess neighborhood change in Birmingham that is indicative of gentrification. It uses United States Census Bureau data. Specifically, the report uses the following variables: gross rent, educational attainment, and demographics (African American, Asian American, and White Americans). Using geographic information system (GIS) technology it analyzes Birmingham's census tracts over thirty years from 1980 to 2010 in order to: (1) ascertain where gentrification is likely occurring in Birmingham using demographic and housing variables commonly used in such studies; (2) determine which neighborhoods gentrified during the study period; (3) and provide recommendations on ways to mitigate gentrification's negative impacts on vulnerable populations. Due to data availability and economic market changes in Birmingham the 1980 to 2010 timeframe was selected.

This analysis utilized ArcGIS 10.6.1 to identify census tracts that experienced changes in race, educational attainment, and median gross rent. An essential component of the GIS methods and data used consisted of normalizing and geoprocessing Census data, spatially depicting the data to identify what census tracts experienced changes in keeping with conventional thinking about gentrification's characteristics. The study also utilized demographic data collected from Social Explorer in the Decennial Census and American Community Survey (ACS) 2006-2010 5year estimates. The purpose of using data at the census tract level is to map the boundaries of neighborhoods better. Census tract boundaries follow visible geographic features (i.e., roads, railroads, tracks, and waterways) and include populations of 2,500 to 8,000 residents (U.S. Bureau of Census 2000). Furthermore, to maintain population size and homogeneity, census tracts are subject to being split or combined from one census year to the next. The resulting inconsistency across time can present some challenges for the analysis (Logan, Xu, and Stults 2014:413).

A recent study by Lisa Bates (2013) in Portland, OR combined census tract data from the Department of Housing and Urban Development (HUD) to create a neighborhood typology that shows the various stages of gentrification. This classification is based on three divisions of displacement and gentrification. First, vulnerable populations are determined by assessing those who make a higher than average portion of income; classified as racial minorities; have less than a college education; and renters. Second, demographic change focuses on increases between 2000 and 2010 regarding homeownership, college education, household income, and white population. Third, housing market trends were evaluated on the median home values per census tract as a percentage of the citywide median home value (Bates, 2013). Contingent upon a census

tract's combination of the three dimensions, it was either classified as one of six potential neighborhood types that coincide with a specific stage of gentrification. The categories include a "susceptible" stage signifying risk for future gentrification; "early" stages signify the likelihood of gentrification; a "dynamic" stage of "current and ongoing significant gentrification pressured;" a "late" stages indicates that gentrification is currently happening yet vulnerable groups remain in the area; and last a stage of "continued loss: shows that a census tract has gentrified, but remaining vulnerable households may be in a risky situation" (Bates, 2013,30). Several of the methods mentioned above hinge on the use of neighborhood typologies to define the various stages of gentrification. Although those typologies are significant for comprehending the development of gentrification as a process and identifying areas that are at risk for deliberate policy deployment, reliance on categorical indicators is not best for determining neighborhood level socioeconomic changes over time. This is primarily because transitioning from one to another does not mirror the same level of detail about the amount of change needed to make that categorical transition. Therefore, to understand the amount of neighborhood change that signifies gentrification, an interval-ratio level measure is preferable over neighborhood typologies.

David Ley (1986) created a simple assessment of neighborhood socioeconomic status based on a Canadian census tract for this exact reason. The index calculated the mean value of each census tract regarding the percentage of those employed in managerial, technical, professionals and administrative jobs along with the percentage of college educated individuals. Though Ley (1986, p. 531) recognized that income is an essential component of the index, it was omitted intentionally to pinpoint the earliest stages of gentrification before the influx of above average earning households. By calculating this index for two points in time, Ley (1986) was able to calculate a new variable as the difference between them and named it the gentrification index, which measures residential socioeconomic neighborhood change. Since then this study has been replicated in other studies (e.g., Danyluk and 27 Ley 2007; Eckerd 2011), however profoundly criticized as simplistic because of the omission of income change as a component of the gentrification process (Smith, 1987).

Further research was later done by Lance Freeman to build upon Hammel and Wyly's (1996) work. Freeman (2005) applied several of the variables used by Hammel and Wyly's research and included the average age of housing stock. A study done by Owens (2012), assessed neighborhood dynamics that include gentrification along with other socioeconomic upgrading variables pertaining to income, occupation, home value, education, and rent to create an aggregate score of census tract socioeconomic status relative to all census tracts in a metropolitan statistical area (MSA). Owens (2012) study revealed that in many American cities, neighborhood change was disproportionately in white suburban neighborhoods from 1970 to 1990, and in the minority urban neighborhoods from 2000 onward.

Gentrification Indicators:

Gentrification is notoriously difficult to identify and measure. Existing studies have picked and chosen population, socioeconomic, and housing variables as gentrification proxies since the process has a clear relationship to changes in both the social and physical

characteristics of a city. An example of the diversity of possible indicators is captured in the following table (adapted from Grevstad-Nordbrock, unpublished):

Variable Description
Population total (5), (6), (7), (9), (12), (13), (14), (15), (17)
White total (4), (5), (11), (12), (13), (16)
Black total (3), (4), (5), (12), (13), (16), (17)
Hispanic total (4), (13), (17)
>25 years age (1), (10), (12), (13)
Per capita income (2), (7), (9), (10), (12), (13), (14)
Median income (2), (3), (5), (7), (9), (10), (11), (12), (13), (14), (15)
Median gross rent (5), (6), (9), (10), (12), (13), (15)
Families below poverty level total (7), (13)
Families on PAI total (13)
Female-headed households total (13)
High school graduates total (1), (6), (7), (12), (13), (15)
College graduates total (1), (3), (6), (7), (11), (12), (13), (15), (16)
Employed residents total (1), (11), (2), (13), (15)
Professional jobs total (11), (12), (13), (15), (16)
Manufacturing jobs total
Families total (12), (13)
Household total (10), (12), (13)
Housing units total (10), (12), (13), (14), (15), (17)
Vacant housing units total (5), (12), (13), (17)
Owner-occupied housing units total (4), (5), (7), (8), (10), (12), (13), (14), (16)
Renter-occupied housing units total (4), (5), (8), (9), (10), (12), (13), (14)
Median value occupied units

Literature cited

1. Atkinson (2000)	10. Ley (1993)
2. Bourne (1993)	11. Ley, Tutchener and Cunningham (2002)
3. Galster and Peacock (1986)	12. Podagrosi and Vojnovic (2008)

4. Gladstone and Preau (2008)	13. Podagrosi and Vojnovic and Pigozzi (2011)
5. Gotham (2005)	14. Schuler, Kent and Monroe (1992)
6. Hammel and Wyly (1996)	15. Wyly and Hammel (1998)
7. Heidkamp and Lucas (2006)	16. Wyly (1999)
8. Kennedy and Leonard (2001)	17. Wyly and Hammel (2004)
9. Ley (1986)	

For this study, three variables were used to calculate the socioeconomic changes occurring within each census tract. The three variables used were race (specifically examining African Americans and White Americans); educational attainment (college education); and median gross rent. Gentrification is a process of change. Therefore, change in each variable between 1980 and 2010 was calculated to ascertain where gentrification in Birmingham might be occurring. A standard formula used to show percent change for each variable from each census tract:

$$\text{percent change} = ((y_2 - y_1) / y_1) * 100,$$

where y_1 = year 1 and y_2 = year 2.

Race (Black, White)

Demographics are of central importance to the study of gentrification. Although it is technically possible for gentrification to occur without a racial component, such processes of neighborhood change are much more commonly found with some degree of racial turnover (Lees, Slater, Wyly 2008). A key indicator of emerging gentrification in neighborhoods is racial change. Many, if not most studies of gentrification have included racial variables as specific components of gentrification measures (e.g., Bostic and Martin 2003). However, according to new studies by Hyra (2008) and Freeman (2006), neighborhoods changing from non-white to predominantly white is not always the case, as an influx of wealthier people of color sometimes occurs within a gentrifying area.

Specifically throughout this study the racial focus is on whites and African Americans. These two racial demographics are chosen because Birmingham is a predominantly African American city with a small Asian American and Hispanic population. The Hispanic population was not included in this study because the U.S. Census Bureau has a long history of

“conducting research to improve questions on race and ethnicity. Since the 1970s, the Census Bureau has conducted content test to improve the design and function of different questions concerning race and ethnicity. According to the U.S. Office of Management and Budget, people who identify with the terms Hispanic or Latino are those who classify themselves in one of the specific Hispanic or Latino categories” (U.S. Census Bureau, 2018).

Due to lack of consistency on who is classified as Hispanics during this study period, the Hispanic demographic was eliminated from the study.

Educational Attainment

Change in levels of educational attainment is often seen as a proxy for neighborhood change associated with gentrification. As neighborhoods undergo renovations to the building stock, they begin to attract diverse groups of people with higher educational attainment who may appreciate the batch-produced qualities of the building stock. However, the research on this issue is mixed. Research by Freeman (2009) for example indicates that educational attainment diversity is the same for gentrifying and non-gentrifying areas. Although some residents were displaced from 1970 to 2000, Freeman's research shows that neighborhoods that did gentrify were more diverse regarding income, race, and education as opposed to non-gentrifying neighborhoods.

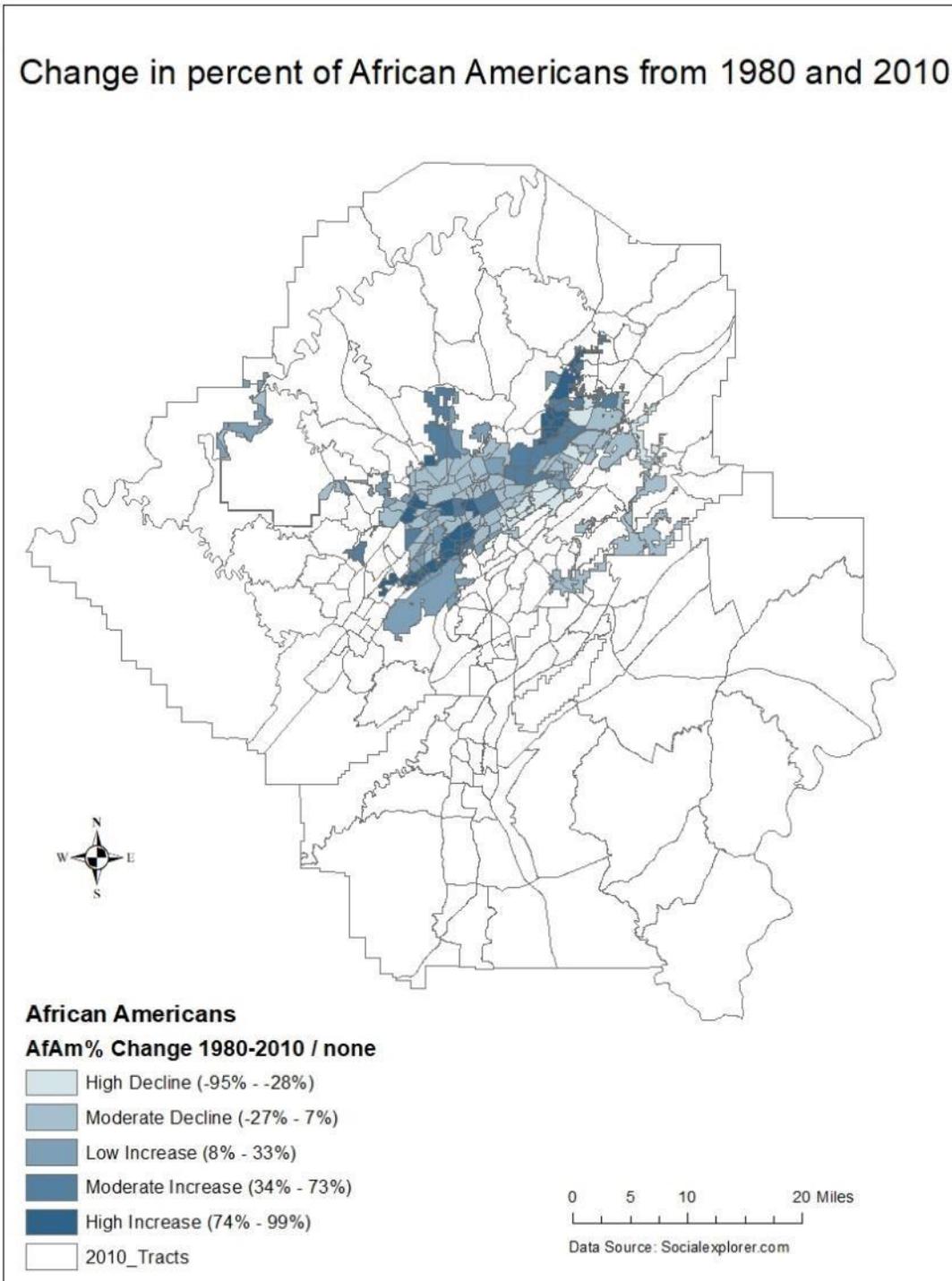
A 2010 study entitled "*Who Gentrifies Low-Income Neighborhoods*" (McKinnish, et.al, 2008) concluded that gentrification's impacts varied regarding African Americans. The study found that after analyzing 15,000 census tracts in 64 metro areas from 1990 to 2000 that African Americans that had more education attainment benefited from gentrification. Results show that a third of the change in household income came from the upward mobility change of one specific demographic (p.18-24). While it in turn caused gentrifying neighborhoods to become ideal residential locations to middle-class black households. Nonetheless, gentrification can also hurt less educated black households by pushing those who do not complete high school out of gentrified neighborhoods.

Gross Rent

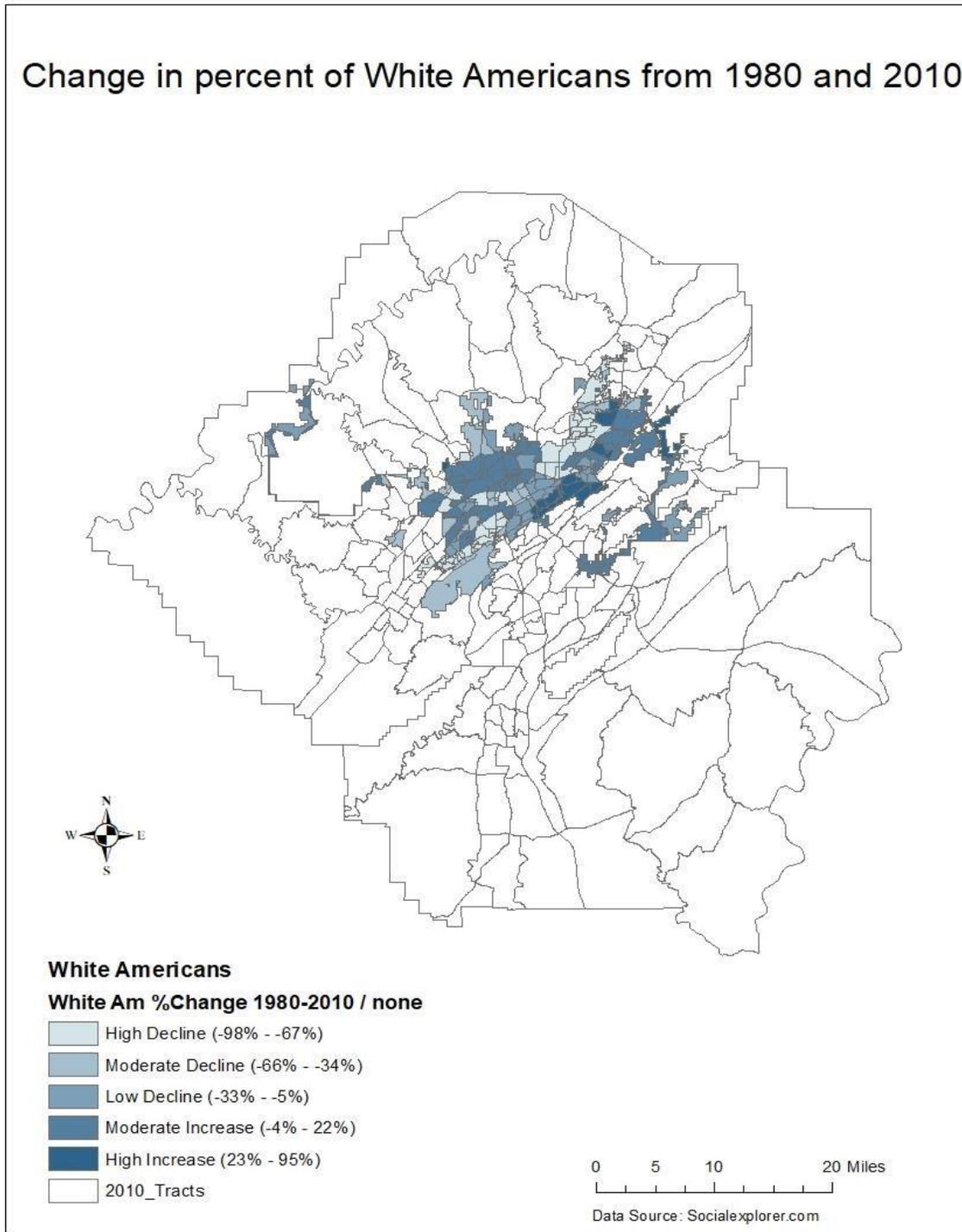
The percent of gross rent is a unique measure of neighborhood change because it is highly relevant to the categorization of neighborhood types and its desirability to potential renters. Using gross rent as an indicator helps to identify changes in the demand for various amenities or investments into a neighborhoods (Ding and Hwang 2016).

Section 5 Results

Race



Map 1: Change in percent of African Americans from 1980 and 2018

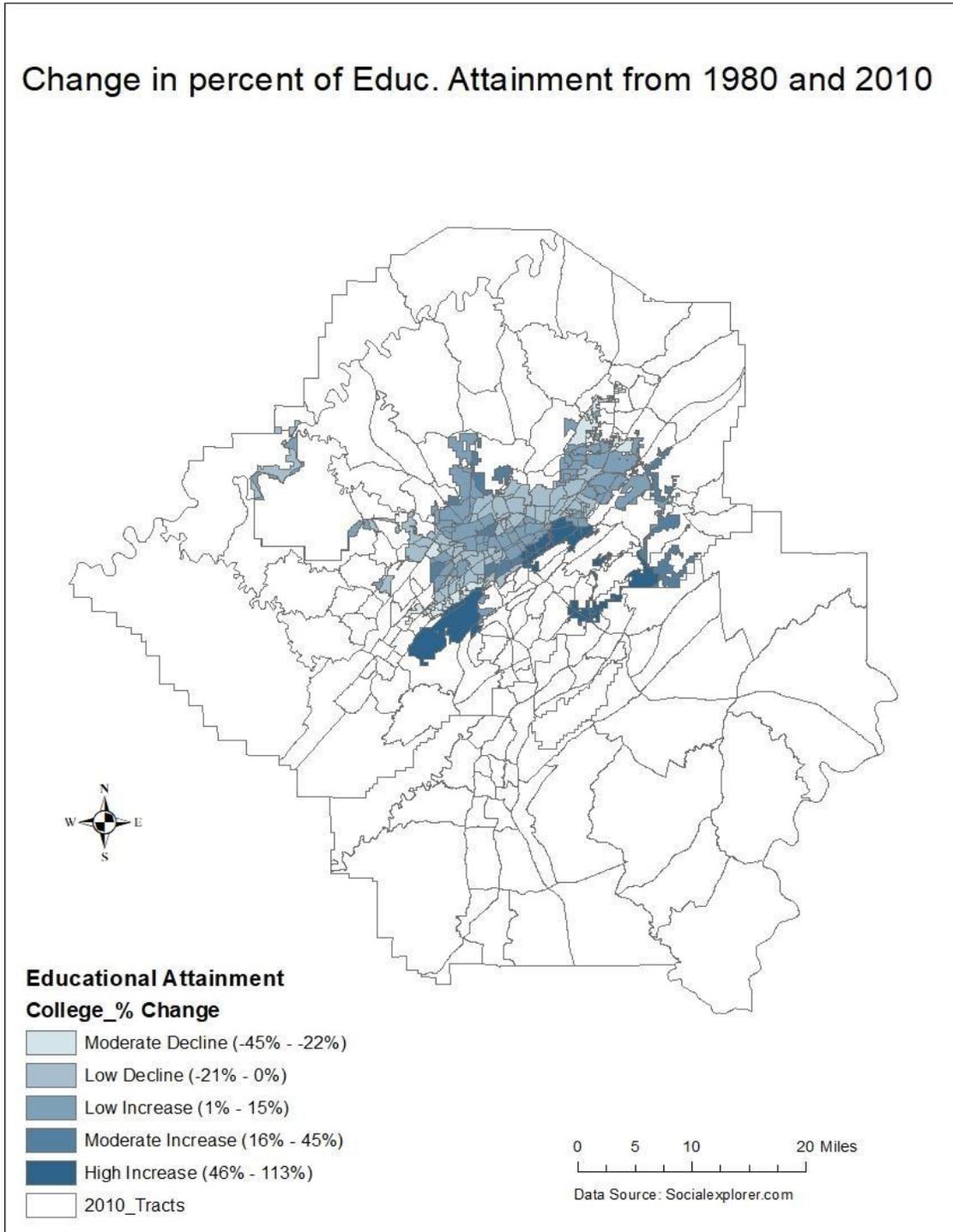


Map 2: Change in percent of White Americans from 1980 and 2018

During the thirty-year study period, neighborhoods closer to the city center did not experience an increase in African Americans. Rather neighborhoods closer to the city center along the eastern edge experienced a low and moderate increase of African Americans. Whereas areas south, and north east of the city center experienced a high increase of African Americans. Meanwhile, neighborhoods west and east only experienced a moderate decline and low increases in African Americans.

As for White Americans, neighborhoods near the city center did experience a high increase of whites into the area. While, neighborhoods to the west and northeast of the city center experienced moderate increases of white Americans. Neighborhoods north and south of the city center experienced moderate and low decline. The concluding results did meet initial research expectations for an increase in White Americans near the city center over a period of time.

Educational Attainment

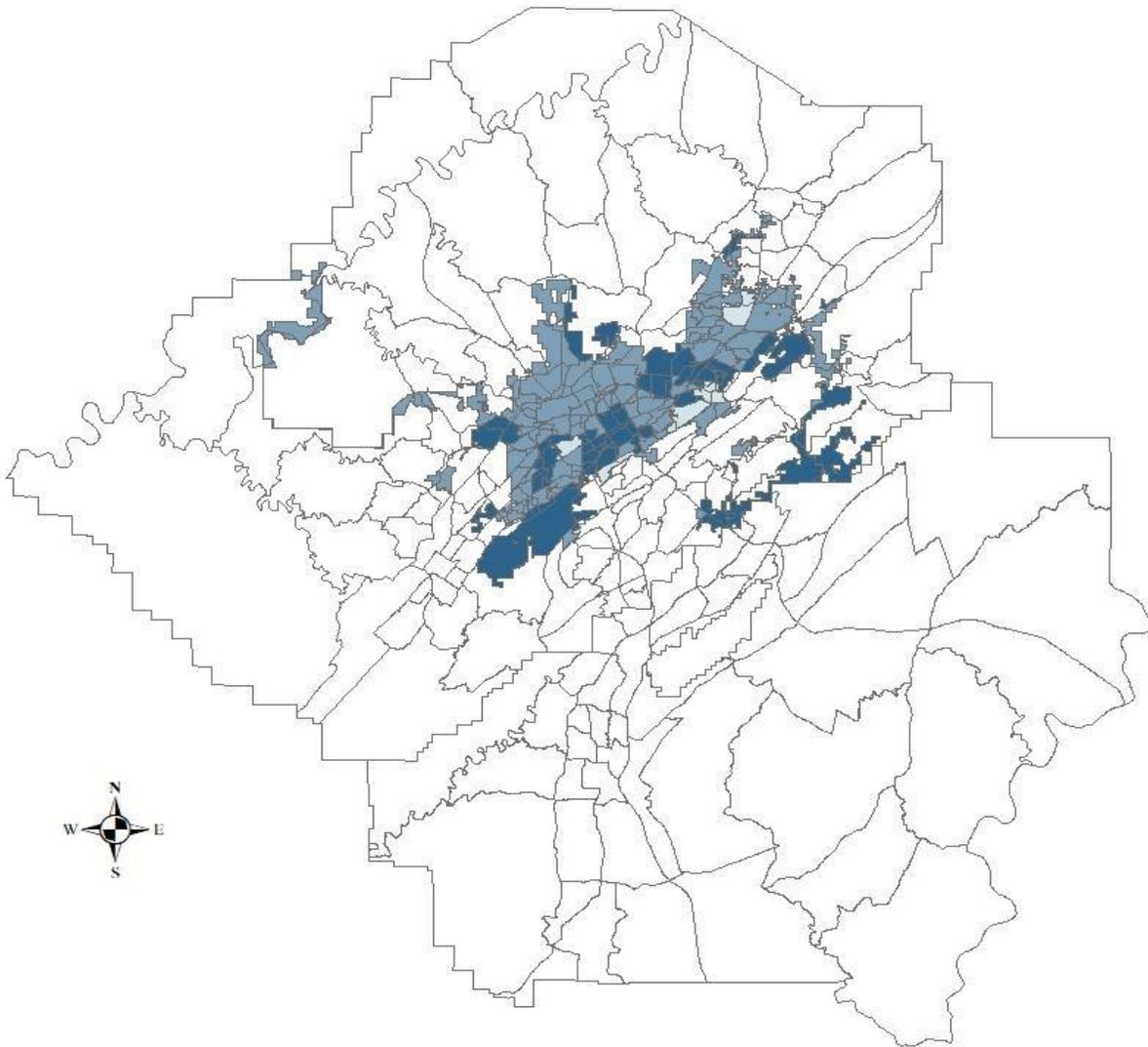


Map 3: Change in percent of Educational Attainment from 1980 and 2018

Educational attainment results reveal that neighborhoods along the eastern edge close to the city center experienced a high increase of individuals with a college degree or more to the area. Surrounding neighborhoods experienced moderate and low increases of college educated individuals. Areas with a low decline of college or more educated citizens occurred in neighborhoods north of the city center. The results from this analysis did meet research expectations of an increase of college educated residents to the areas closest to the city center.

Gross Rent

Change in percent of Gross Rent from 1980 and 2010



Gross Rent

Rent 950to1500 %Change 1980-2010 / none

-  Low Decline (-25% -- -14%)
-  No Change (-13% - 3%)
-  Low Increase (4% - 17%)
-  2010_Tracts

0 5 10 20 Miles

Data Source: Socialexplorer.com

Map 4: Change in percent of Gross Rent (\$950-\$1,500) from 1980 and 2018

It should be noted that in 1980, Census tract categories used to categorize the amount of rent paid by citizens in a given area were: Rent less than \$300, Rent \$300 to \$500 and, Rent \$500 or more. However, over a thirty-year period inflation rates must be applied to the most recent year of the study period. In this study, the 2010 inflation rate was applied to the year 1980. The inflation rates can be accessed using the Bureau of Labor Statistics (BLS) calculator to apply the 2010 inflation rates to normalize categories. After computing the 1980 specified rent amounts to 2010, inflation rates can be analyzed.

Results indicate that from 1980 and 2010 neighborhoods near the city center with renters paying \$950 to \$1,500 experienced a low decline and no change in median gross rent. While neighborhoods to the north, south and west of the city center experienced a low increase in renters paying \$950 to \$1,500 in rent. Neighborhoods to the west, south, east and northeast of the city center experienced no change in renters paying \$1,500 or more. Meanwhile, a majority of neighborhoods experienced no change in self-reporting renters paying \$1,500 or more. The following results reveal that research expectations were not met in the city of Birmingham. The city did not experience an increase of residents paying high median gross rent rates over the study period.

Section 6 Conclusion

Gentrification is indisputably a double-edged sword. The benefits of gentrification such as revitalized communities with new amenities make it a welcomed occurrence. However, the neighborhood improvements that are accomplished through public and private investments in cities that increase neighborhood livability, yet transform the way areas are experienced, make it a dreaded phenomenon. Like many other areas experiencing capital reinvestment and an increase in college-educated individuals, this creates an opportunity for change. Birmingham, like other mid-sized cities in the South, has begun to see minimal changes. This study focused on answering two questions. First, did neighborhoods closer to the city center experience an increase in white American demographics indicative of gentrification? Second, did neighborhoods closer to the city center experience an increase in gross rent and college or more educational attainment indicative of gentrification?

The results from this study indicate that two hypotheses were proven true while one was proven false. Hypothesis one and two which stated that the neighborhoods closer to the city center would experience an increase in white Americans and college or more educated residents were proven correct. Hypothesis two which stated that neighborhoods closer to the city center would experience an increase in gross rent was proven false. Results indicate that neighborhoods near the city center did not experience an increase in median gross rent rather, neighborhoods closer to the city center did experience a low decline median gross rent categories.

Limitations

The maps produced from this analysis should be interpreted with caution because they represent broad changes within the city of Birmingham over a thirty-year period. Moreover, they do not represent its current socioeconomic state. People familiar with the area are aware that the city has recently built a new baseball stadium, Regional Park, and plans to begin development of its new downtown football stadium. The research initiated in this report could be greatly enhanced through the introduction of additional data that might speak to the multidimensional aspects of gentrification. In addition, it would be logical to account for changes that have occurred from 2010 through the present in order to capture a more accurate snapshot of the growing city.

To that end, this analysis of this professional report has provided first step in understanding how the city of Birmingham could begin to consider and plan for gentrification issues through a dynamic and targeted data collection and analysis utilizing primary neighborhood indicators and incorporating more complex indicators as necessary. Incorporating indicators similar to those used in this analysis can help Birmingham planners and developers become aware of and address issues associated with capital reinvestment, urban revival, redevelopments and social inequities in a coordinated manner.

Section 7 Policy Recommendations and Strategies

The term gentrification describes the negative impacts that accrue from a city's investment into undervalued neighborhoods-or their promotion to private sector investment- and those neighborhoods, in turn becoming desirable. This has been shown to result in lower-income households being displaced due to loss of affordable housing, changes in culture, and so on. Changes to neighborhoods to enhance life for all citizens is often not planned with an equitable policy approach. If mid-sized cities like Birmingham begin to plan and address the needs of a growing population and community with an equitable lens, citizens across diverse socioeconomic backgrounds will begin to benefit from the new capital investments. To this end, this report concludes with a list of policy recommendations and strategies to ensure the city of Birmingham continues to make equitable citywide growth decisions.

1. Reduce the number of involuntary displacements in vulnerable neighborhoods, such as the elderly, low-income and persons with disabilities from growing communities near the city center.

Strategy: Develop neighborhood risk assessment criteria that examine each of the 99 neighborhoods in Birmingham. These criteria will allow planners and developers to assess which areas in the city are experiencing an increase in social, economic, or educational changes. By creating a database that assesses, tracks and monitors neighborhoods annual change creates opportunities for planners and developers to make more informed decisions on the development of projects and job creation in declining economic areas to prevent the occurrence of gentrification. A database that has such information will be essential to the transformation and growth of neighborhoods in cities.

2. Develop and maintain opportunities for diverse socioeconomic and cultural stability

Strategy: Coordinate public, non-profit and for-profit investments with social services and workforce development. Collaboration with public, non-profit and for profit organizations that strategically work to increase diverse socioeconomic and cultural stability creates opportunities for different social class groups to co-exist together in neighborhoods to enjoy amenities and services that are often catered to certain class groups. The development of such diverse socioeconomic and cultural environments creates stable communities and continues to support economic job creation and prevents communities from declining and becoming susceptible to gentrification.

3. Use incentives, public investment and policy tools to alleviate market trends from creating displacement

Strategy: Ensure that new developments which utilize incentives and public investment allow for a variety of housing and market configurations while complimenting neighborhood values and standards.

4. Promote meaningful engagement within neighborhoods to create a shared understanding of the threats of neighborhood reinvestments and gentrification to ensure the most vulnerable neighborhoods are prioritized

Strategy: Provide education and training to so that neighborhood constituents are equipped to make informed decisions to ensure the most vulnerable neighborhoods are prioritized. Prioritizing education in vulnerable communities creates a shared understanding of what could happen when and if communities begin to change. Taking the time to educate and involve community members in the planning process attracts commitment, energizes community members and creates a shared vision that bridges the present to the future. Without meaningful engagement, community members will resist community change and allow the social and cultural changes that are interconnected with community reinvestment to prevent them from enjoying the revitalization of areas similar to changes associated with gentrification.

Appendix A

Process for normalizing data in report

Data sources

Decennial data from the United States Bureau of the Census provided the foundation for this report. These tabular data that include a unique geographic identifier that allows them to be joined to boundary maps using a software like GIS. geocodes for joining boundary maps. Census data can be downloaded from the site of your choosing (US Census Bureau, American Community Survey (ACS), Social Explorer and others). Once the correct census data is identified data may then be processed in Microsoft Excel and finally joined to the tract map layer for display. The type of data that is downloaded is often referred to as the summary file 1 (SF1) data. The SF1 data provides general information that is available for all census levels: tract, block and so on.

Data Processing

After downloading census data, calculations for percentage change were calculated. The first step is to save the downloaded data as 1980_Original and 2010_Original. After saving each of the original datasets copy and paste the year 2010 data into the 1980 excel file. Save this file under the name Gentrification_TestData. By re-saving each dataset helps to ensure that the original dataset remains the same. If there is a need to refer to the original dataset you may do so. The second dataset that is named “Gentrification_testdata” is what you will use to perform calculations.

When preparing to calculate percentage change, be sure to first examine the dataset to identify what information is not needed that you can delete. Second, after identifying what information is needed to complete your analysis, rename the headings to something you can remember. Avoid numbers, special characters, and spaces. Keeping this in mind helps to reduce any errors when the datasets are input into ArcGIS. Third, delete any census tracts that contain a 0—a 0 that was the result of missing data rather than a true value will distort your results. After analyzing and making the datasets manageable and easy to read begin your percentage change calculations using the following equation:

$$\text{Percent change} = ((y_2 - y_1) / y_1) * 100, \text{ Where } y_1 = \text{year 1 and } y_2 = \text{year 2}$$

Data was normalized by creating relationships between the numbers and columns within the excel tables to make datasets flexible by eliminating any inconsistent dependency such as zeros, negative numbers etc. The benefits of data normalization is that it provides an overall database organization and reduction of redundant data.

Use of ArcMap to analyze and Interpret Data

ArcGIS and US Census data gathered for this report was managed, processed, analyzed, and transformed into maps that helped to capture three variables of change in Birmingham, AL from 1980 to 2010. ArcGIS was used to answer three research questions for this report by acting as an all in one tool. The utilization of a system such as ArcGIS helped to spatially process data by viewing, editing, analyzing and creating geospatial maps that tell a story of neighborhood change over a period of time. Having the ability to use GIS as a data management tool made the process of identifying what areas in Birmingham were experiencing neighborhood change indicative of gentrification from 1980 – 2010 based on the variables of race, educational attainment and gross rent. Using GIS helped to capture what raw census data showed through the use of choropleth maps. The Choropleth maps created from this report showed the amount of change experienced in each neighborhood. Aside from showing neighborhood change the GIS software helped to identify priority areas, strategies and policies that current planners in the city of Birmingham can use to create equitable planning strategies that move the City of Birmingham forward to a more inclusive and opportunity field community.

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