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DCS 3301

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Gentrification & its Implications on the African American Community in Brooklyn

Gentrification is a controversial urban development process with far-reaching implications for communities. In New York City, particularly in boroughs like Brooklyn, gentrification has led to significant changes in demographic composition, housing affordability, and socio-economic dynamics (Freeman 2006). This project aims to investigate the impact of gentrification in Brooklyn on the African American population by focusing on how the spatial distribution of the Black population in these neighborhoods has evolved over two time periods (1990 & 2018) and whether the population has become more or less segregated as a result. African Americans have occupied spaces in Brooklyn for almost a century, and gentrifying these areas essentially uproots the culture and community they have accumulated over this period, making it essential to acknowledge and understand the implications of gentrification.

History of African Americans in Brooklyn:

Between 1945 and 1950, New York City experienced a period of growth following World War II. The economy boomed as it transitioned from military to consumer production, fostering the lucrative job prospects (History 101 NYC). This promise of opportunities attracted many people and brought about the Great Migration, “the period between 1910 and 1940 of rapid population shift when hundreds of thousands of southern African Americans resettled in the North hoping to find better employment, housing, and education for their children, and less racial discrimination” (Lemak 2009).

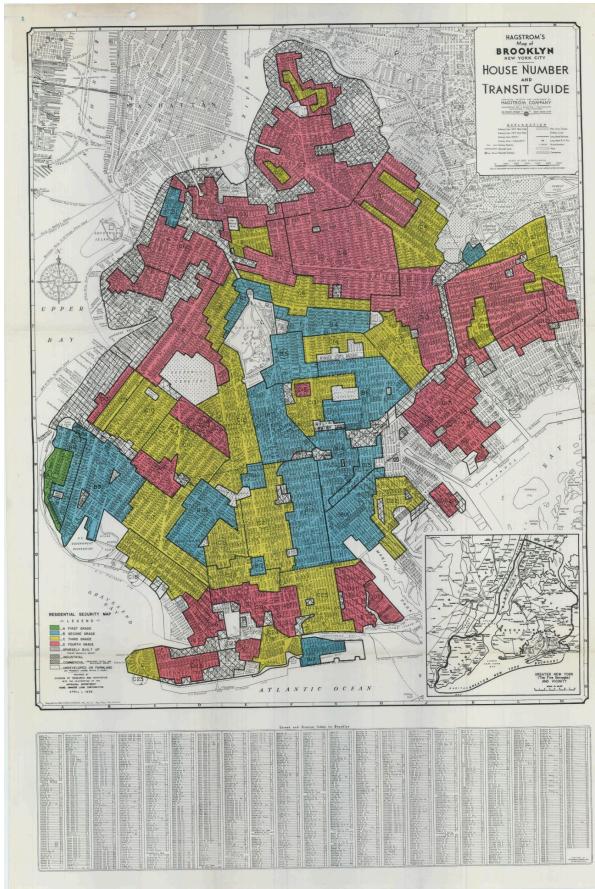


Figure 1: HOLC colorcoded map of Brooklyn from the 1950s Source: Hagstrom Company

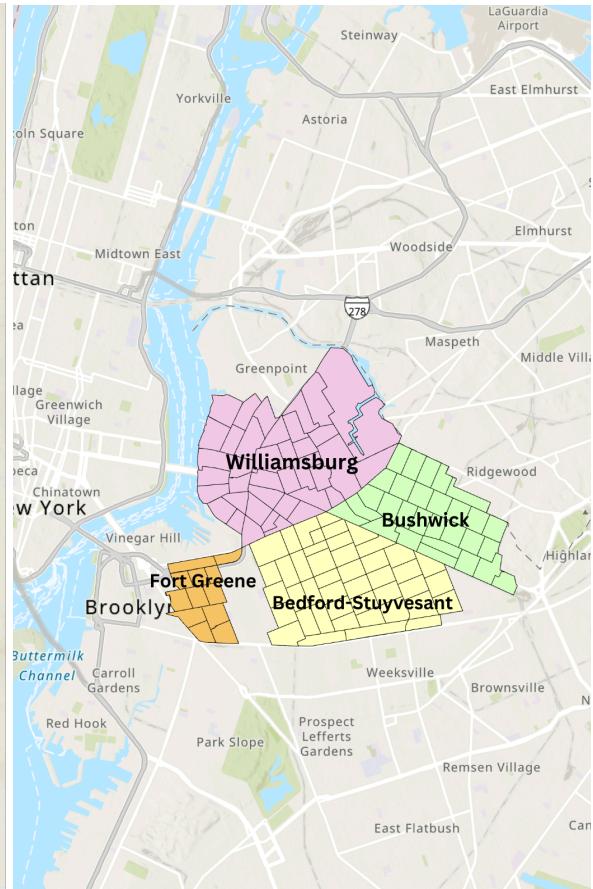


Figure 2: The Neighborhoods I am looking at for my project

As this was happening, the HOLC's (Home Owners' Loan Corporation) was color coding neighborhoods to inform lenders of what kind of loans to make to homeowners in order to stabilize the market (Hiller 2003). The color codes denoted the desirability of the neighborhoods with "redlined" neighborhoods being the least desirable and "excluded from the mortgage market and properties in these areas were devalued" (Chronopoulos 2020). Most of the influx of the African American population ended up living in these redlined neighborhoods surrounding Bedford Stuyvesant (Figure 1 & Figure 2) – "As early as 1940, more than 90,000 out of almost 110,000 Blacks in Brooklyn lived in a small redlined portion of what became known as Black Brooklyn" (Chronopoulos 2020).

Present: Gentrification of African Americans in Brooklyn

In the paper titled "African Americans, Gentrification, and Neoliberal Urbanization: the Case of Fort Greene, Brooklyn," by Themis Chronopoulos, gentrification is described through a nuanced and historically contextualized lens in the case of Brooklyn (Chronopoulos 2016). Gentrification can be defined as more affluent populations replacing and displacing low and moderate-income people from their neighborhoods. It "goes beyond displacement and includes the replacement and exclusion of certain populations from a neighborhood" (Chronopoulos 2016). "In Brooklyn, gentrification has recently acquired a racial dynamic as whites are moving to African American neighborhoods that they had previously abandoned and in the process are undermining the housing chances of Black people" (Chronopoulos 2020).

A New York Times article from 1953 talks about the slum clearance process of Fort Greene headed by city planner Robert Moss and how it aims to redevelop the area by replacing the slums with college buildings, schools, playgrounds & parks (NYT, 1953). Slum clearance methods for urban renewal were supported since "it would eliminate both the unwanted physical environment of a neighborhood and the people who lived in it" (Chronopoulos 2016). This tells us that displacement of low income residents in the area is not a new phenomenon.

His research revealed that while residents recognized that Fort Greene had better infrastructure as a result of gentrification, it was detrimental to black communities particularly due to loss of culture (Chronopoulos 2016). He also shines light on a crucial part of gentrification, particularly in Brooklyn, that it happens on a neighborhood level so larger areas that are examined do not have gentrification patterns. This provides a foundation and support for this research since I look at 4 gentrifying neighborhoods (Chronopoulos 2016). Why is Brooklyn gentrifying? The answer is simple— because of its proximity to the city, access to transit which attracted public and private actors to "redevelop" it (Chronopoulos 2016).

Project Overview:

My paper will be looking at a section of the area famously called "Black Brooklyn" which "is the home of more people of African descent than any other contiguous area in the USA" (Chronopoulos 2020). Black

brooklyn comprises of the following neighborhoods: Fort Greene, Clinton Hill, Bedford-Stuyvesant, Prospect Heights, Crown Heights, Brownsville, Ocean Hill, East New York, Canarsie, Flatlands, East Flatbush, Flatbush, parts of Bushwick, and parts of downtown Brooklyn (Chronopoulos 2020). I will be looking at Fort Greene, Bedford Stuyvesant, Bushwick and Williamsburg since they were listed as being one of the top gentrifying neighborhoods in Brooklyn by the NYU Furman Center (Coneybeare 2016).

The displacement of African Americans from these historical black neighborhoods have been facilitated by redlining and subprime lending, making them vulnerable to foreclosures. “At the height of the [housing] crisis [in 2007], more than one in four homeowners with subprime mortgages in Bedford-Stuyvesant/Crown Heights, [majority black neighborhoods], 11233 zip code lost their homes—a rate four times the national average and, at that time, the highest in the nation” (Boston 2020). Given these statistics, I aim to look at how the spatial distribution of black population in these neighborhoods have evolved over time (1990 & 2018) and if the population has become more or less segregated as a result.

Data and Methodology:

- Census Tract data from 1990 and 2018 were obtained from the National Historical Geographic Information System (NHGIS) and were integral for the whole study.
- The Brooklyn neighborhood shapefiles came from NYC Open Data.
- All the layers were projected to UTM zone 18N, isolated into Brooklyn neighborhood by intersecting with the Brooklyn Neighborhoods shapefile & variables were prorated to ensure the numbers were proportional to any area being covered.

Inflation and House Prices:

Comparing the 2018 Average Median Home Values to the 1990 Average Median Home Values, we see an unprecedented rise in home values. *Could inflation be why house value rose so much?*

According to the Federal Reserve Bank of Minneapolis Consumer Price Index (CPI) calculator with data from the U.S. Bureau of Labor Statistics, CPI in 1990 is 392.6 & CPI in 2018 is 754.6. With the formula below, we can project what we would expect the house prices in 2018 would be like solely due to inflation

$$\text{Year 2 Price} = \text{Year 1 Price} \times (\text{Year 2 CPI}/\text{Year 1 CPI}) \text{ or } = \text{Year 1 Price} \times (756.4/392)$$

Neighborhood	1990 Average Median Home Value	2018 Projected Value	2018 Average Median Home Value	% Difference in Projected vs Actual
Williamsburg	\$95,137	\$183,463	\$912,914	498.71%
Bedford-Stuyvesant	\$114,087	\$220,048	\$929,052	422.16%
Bushwick	\$114,772	\$221,610	\$634,568	286.47%
Fort Greene	\$184,920	\$357,092	\$1,069,763	299.54%

Figure 3: Calculating the difference in the actual and projected home values between years 1990 and 2018 with CPI

This table tells us otherwise. If inflation was the reason houses rose in prices, then the 2018 average median home values should have been closer to the projections. Instead we see a very large percent difference between projection & actual values.

Comparing the Racial Composition of Neighborhoods: 1990 vs 2018

Neighborhood	Year	% Black	% White	% Asian	Average Median Household Income
Bushwick	1990	29.04%	20.34%	4.44%	\$14,005
	2018	26.50%	38.76%	5.78%	\$49,099
Williamsburg	1990	13.78%	55.34%	3.20%	\$16,364
	2018	9.89%	68.48%	6.98%	\$57,137
Fort Greene	1990	69.05%	15.64%	3.67%	\$22,000
	2018	33.55%	42.01%	11.06%	\$95,500
Bedford Stuyvesant	1990	81.82%	6.12%	0.73%	\$17,288
	2018	56.35%	27.94%	4.00%	\$54,091
Whole of Brooklyn	1990	37.84%	46.97%	4.33%	\$26,594
	2018	32.79%	43.26%	11.92%	\$56,250

Figure 4: Percentage of races & median household income in the four neighborhoods and Brooklyn

We can see that in every neighborhood, there is a decline in black population and increase in white & asian population as time passes from 1990 (Figure 3).

How does this compare to Brooklyn as a whole?

Running a one-sample t-test, we compare the neighborhoods of Brooklyn as a unit to the overall demographics of Brooklyn as a whole.

Neighborhood	Number of Black People	Total Number of People	Median Household Income	T-Statistic	P-Value	95% Confidence Interval
Bushwick	178,598	673,981	\$49,099	-0.61555	0.5817	(-140599.8, 602956.8)
Williamsburg	93,336	943,934	\$57,137			
Fort Greene	77,521	231,017	\$95,500			
Bedford Stuyvesant	575,259	1,020,003	\$54,091			
Whole of Brooklyn	5,268,611	16,074,375	\$56,250			

Figure 5: T test results

A negative t-value indicates that the observed sample mean is less than the hypothesized population mean. However, the magnitude of this statistic (-0.61555) is relatively small, suggesting that the observed mean is not drastically different from the expected mean (Figure 5).

A p-value of 0.5817 is quite high, significantly above 0.05 which suggests that the average number of Black residents in these neighborhoods is not significantly different from what would be expected based on the proportion of Black residents in the whole of Brooklyn (Figure 5).

Racial Maps: 1990 vs 2018

Brooklyn

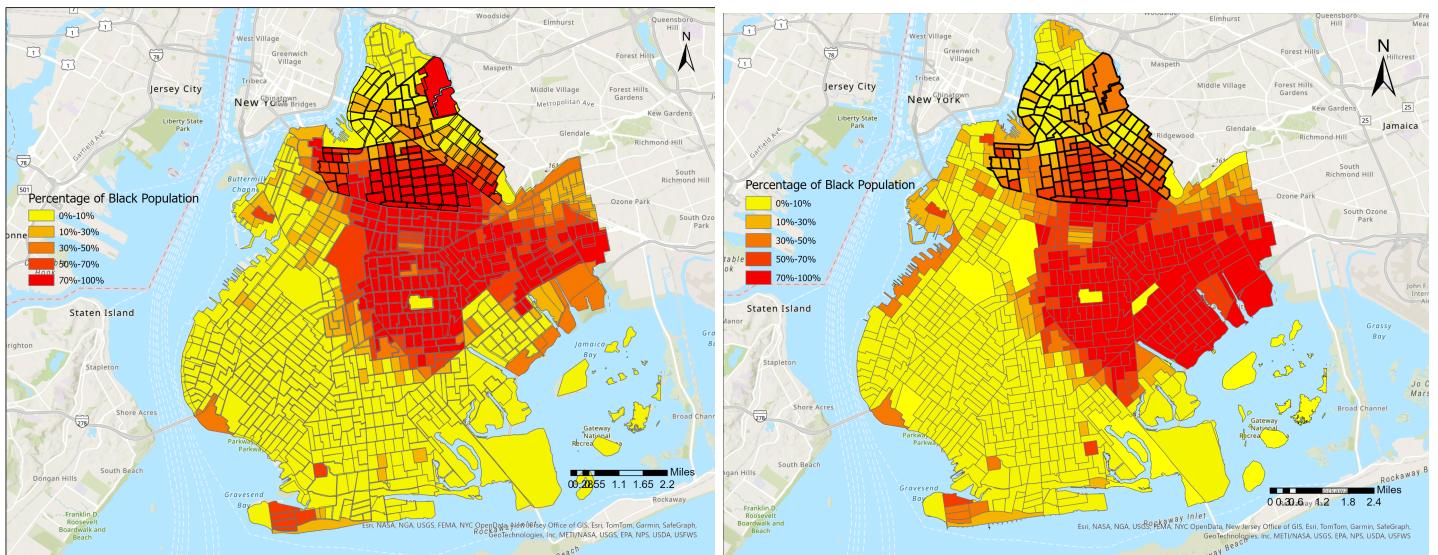


Figure 6: Symbolized distribution of black population in Brooklyn in 1990 vs 2018

Using a manual interval with 5 bins to symbolize the black population in Brooklyn over time, we see the racial composition changes in the area. The area within the black border in the map is my area of interest. Outside this area, the color pattern remains fairly similar over the years. Inside this area though, we can see brightening of the hues of red that signify decrease in the black population (Figure 6).

Bushwick

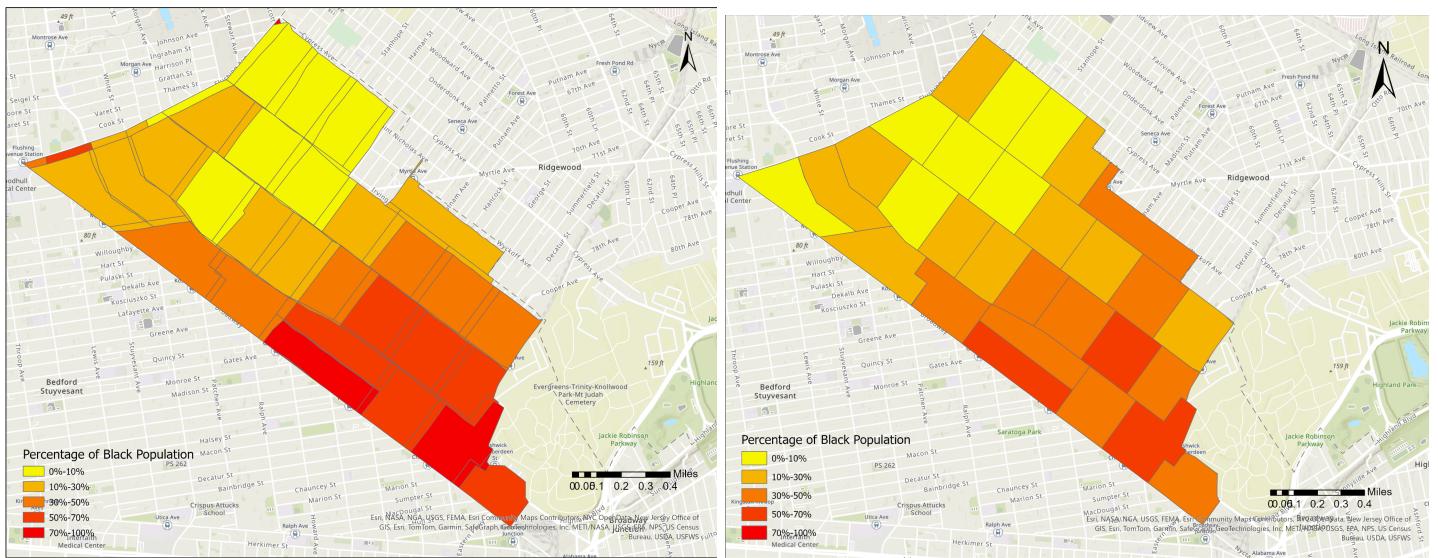


Figure 7: Symbolized distribution of black population in Bushwick in 1990 vs 2018

Doing the same symbology for Bushwick, we observe some notable changes. Between 1990 and 2018, Bushwick experienced a notable decrease in areas with high concentrations of Black residents, with the highest percentages dropping from 70-100% to 50-70%. Lower concentration zones (0-30%) expanded significantly across the neighborhood (Figure 7).

Bedford Stuyvesant

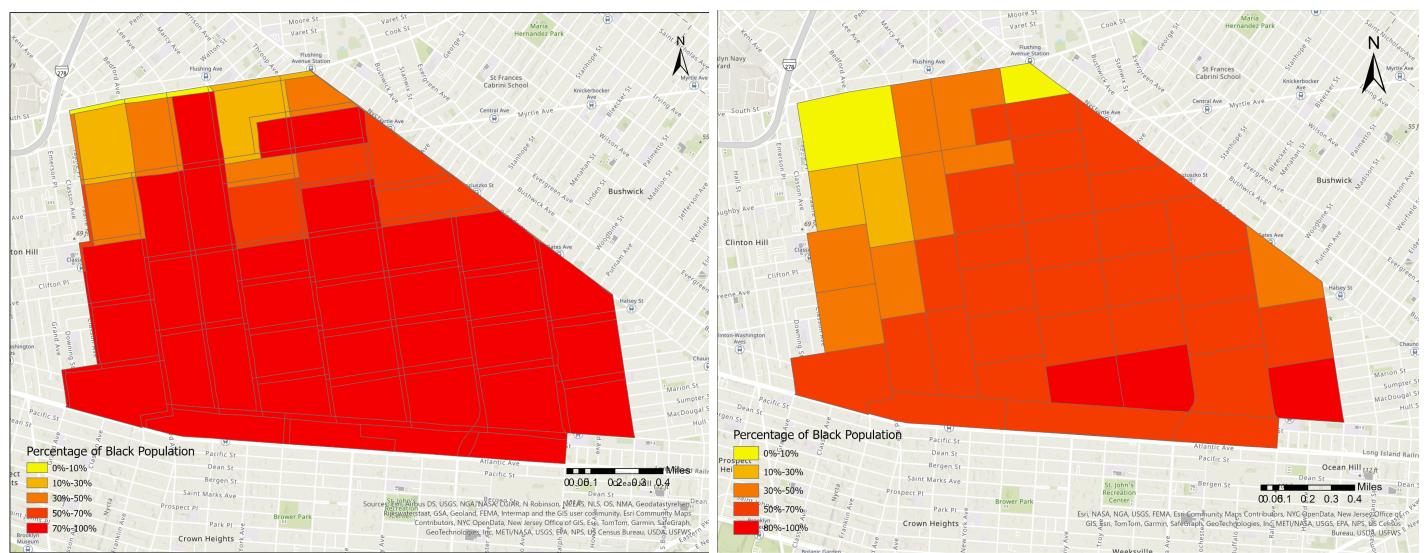


Figure 8: Symbolized distribution of black population in Bedford Stuyvesant in 1990 vs 2018

Using the same method, Bedford-Stuyvesant saw a reduction in areas with very high concentrations of Black residents (80-100%), with these zones shrinking and dispersing. Lower concentration zones (below 50%) expanded, reflecting a diversification in the neighborhood's racial composition (Figure 8).

Williamsburg

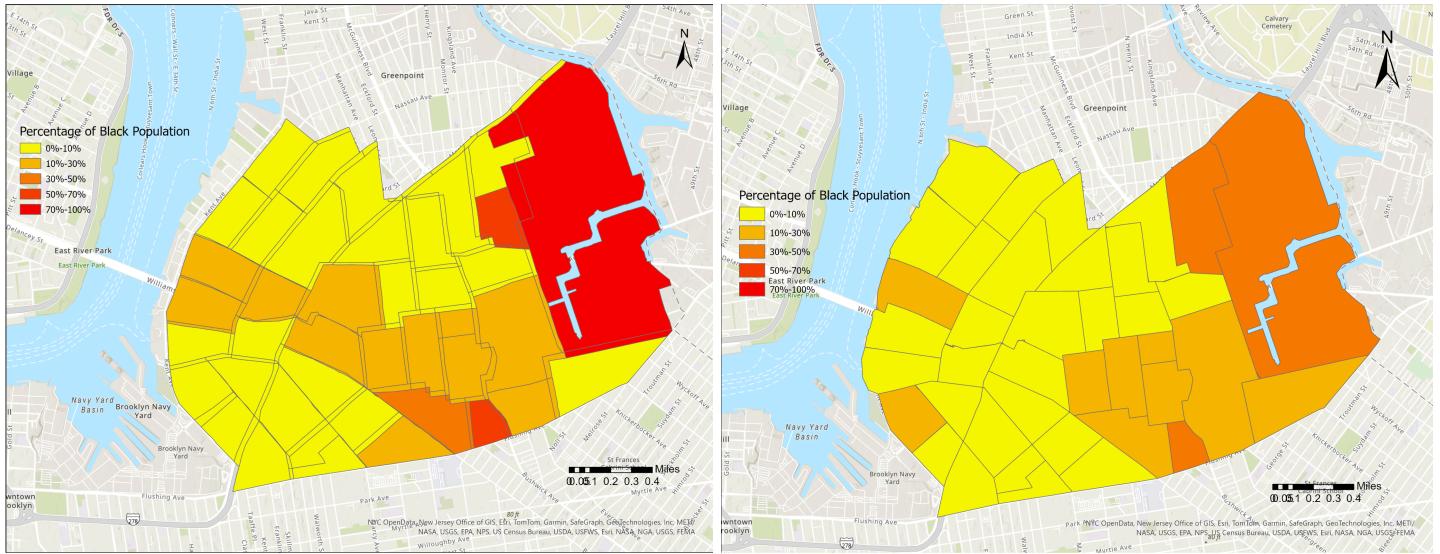


Figure 9: Symbolized distribution of black population in Williamsburg in 1990 vs 2018

From 1990 to 2018, Williamsburg experienced a significant decrease in the areas with the highest concentrations of Black residents, especially in the eastern parts near the river, indicating a sharp decline or displacement. The overall area covered by higher concentrations of Black population (above 50%) has diminished, with increases in zones showing lower Black demographic percentages (0-30%) (Figure 9).

Racial Map: Fort Greene 1990

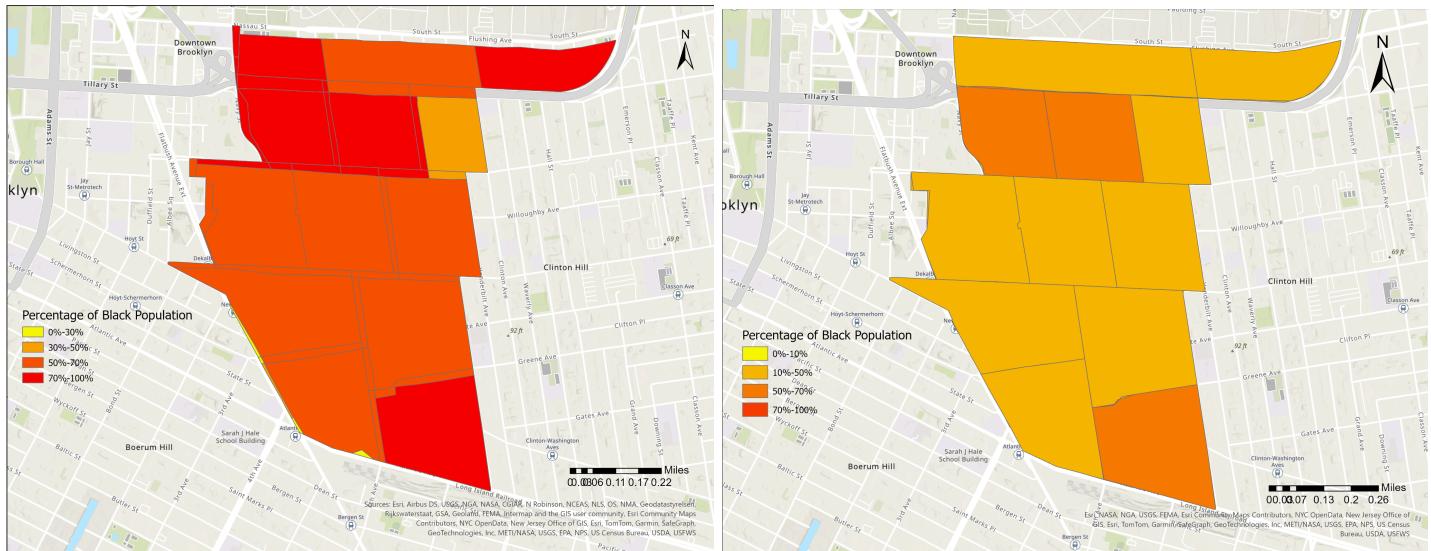


Figure 10: Symbolized distribution of black population in Fort Greene in 1990 vs 2018

From 1990 to 2018, Fort Greene witnessed a substantial decrease in the highest concentrations of Black residents (70-100%), with these zones shrinking notably. Lower concentration zones (below 50%) became more prevalent, covering larger areas of the neighborhood. This pattern highlights a significant decrease in the density of Black population (Figure 10).

Index of Dissimilarity

The Index of Dissimilarity serves as a statistical measure of the extent to which two groups are segregated from each other across a geographic area. It ranges from 0, indicating complete integration, to 1, reflecting complete segregation.

Neighborhood	Index of Dissimilarity Value	
	1990	2018
Bushwick	0.4732006	0.4181402
Williamsburg	0.6605778	0.4977112
Fort Greene	0.3653526	0.3449696
Bedford Stuyvesant	0.6444799	0.357557
Brooklyn	0.8164422	0.753164

Figure 11: Index of Dissimilarity values of the four neighborhoods and Brooklyn.

My study utilized this index to evaluate the distribution of Black and non-Black populations within specified Brooklyn neighborhoods from 1990 to 2018. The results showed a decrease in the index values over the years: This indicates a trend towards greater racial integration within these neighborhoods over the study period.

Distribution of Wealth in Brooklyn (2018) vs Distribution of African Americans (2018):

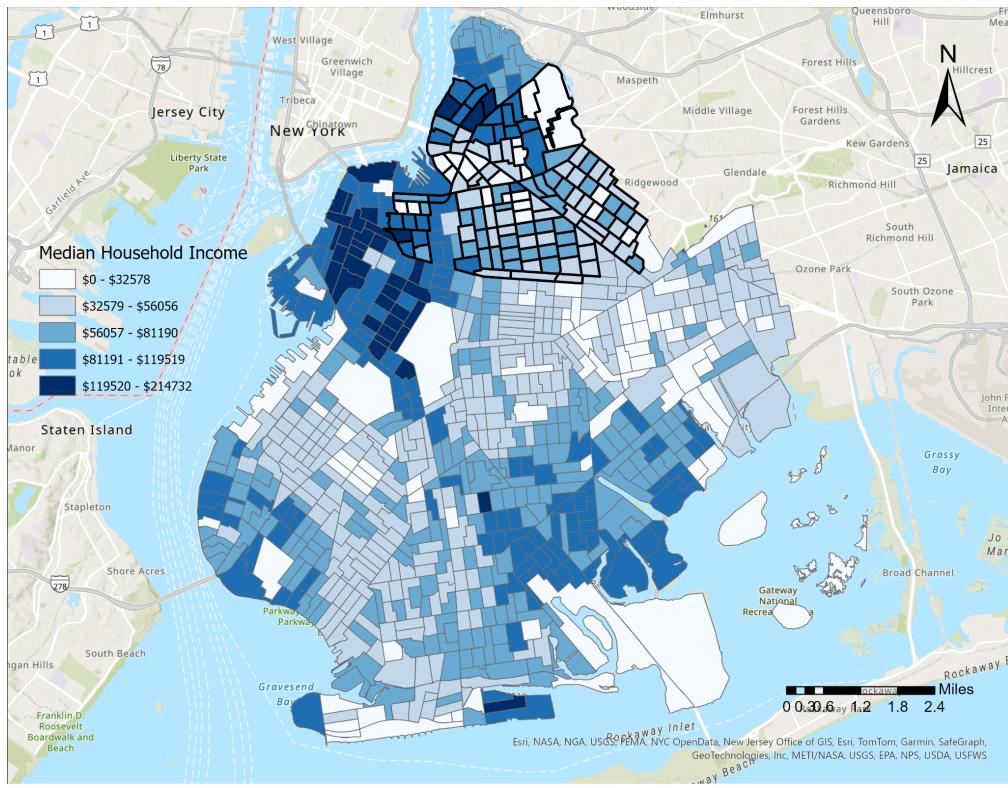


Figure 12: Map of Brooklyn symbolized by Median Household Income in 2018

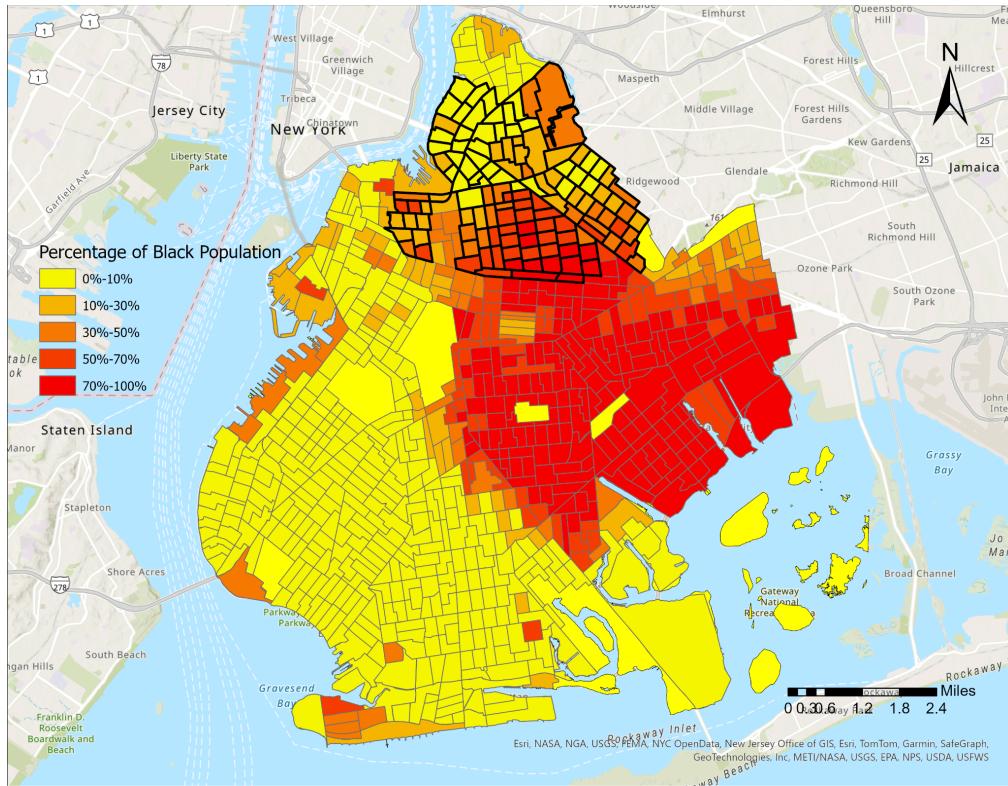


Figure 13: Map of Brooklyn symbolized by distribution of black population

To provide a comprehensive view of gentrification and its effects on the African American community in Brooklyn, it is crucial to compare the distribution of wealth in 2018 with the distribution of African Americans in the same year. This comparison reveals how economic disparities align with racial demographics, offering insights into the socio-economic dynamics of gentrification.

My analysis shows that areas with higher concentrations of low-income households often coincide with higher concentrations of African American residents (Figure 12, 13). For instance, neighborhoods like Bedford-Stuyvesant and Bushwick, which historically have had significant African American populations, continue to display lower median household incomes compared to other areas in Brooklyn. Figures 12 and 13 illustrate these correlations visually, highlighting how wealth distribution and racial demographics intersect across Brooklyn neighborhoods.

Results:

The analysis of demographic and housing data from 1990 and 2018 reveals significant shifts within the studied neighborhoods, which are indicative of gentrification processes.

Demographic Shifts

In every neighborhood studied, there is a notable decline in the Black population and an increase in the White and Asian populations. For example in Fort Greene, the Black population decreased from 69.05% in 1990 to 33.55% in 2018, while the White population increased from 15.64% to 42.01% over the same period (Figure 4). Similar trends were observed in Williamsburg, Bushwick , and Bedford-Stuyvesant.

Housing Value Increases

This study also analyzed changes in median home values, comparing the actual 2018 values to projections based on 1990 values adjusted for inflation using the Consumer Price Index (CPI). The results showed that home values far exceeded inflation-adjusted projections:

- Williamsburg: Actual median home value in 2018 was \$912,914, compared to an inflation-adjusted projection of \$183,463, marking an increase of 498.71%.
- Bedford-Stuyvesant: Actual median home value in 2018 was \$929,052, compared to an inflation-adjusted projection of \$220,048, marking an increase of 422.16% (Figure 3).

These disparities suggest factors beyond general economic inflation.

Statistical Analysis

A one-sample t-test was performed to compare the proportion of Black residents in the selected neighborhoods to the overall demographics of Brooklyn. The test showed that the differences were not statistically significant (p -value = 0.5817), indicating that the observed demographic shifts are reflective of broader borough-wide trends (Figure 5).

Racial Maps Analysis

The racial maps for 1990 and 2018 visually depict the demographic changes. They show a significant decrease in areas with high concentrations of Black residents. For instance, in Bushwick, areas with a 70-100% Black population in 1990 dropped to 50-70% in 2018 (Figure 7). Similar patterns were observed in Bedford-Stuyvesant, Williamsburg, and Fort Greene, highlighting the reduction in high-density Black populations and the expansion of lower concentration zones.

Conclusion:

The findings underscore the complex nature of gentrification and its impacts on traditional Black neighborhoods in Brooklyn. While there is evidence of increasing racial integration as indicated by the decreasing Index of Dissimilarity, the substantial decline in the Black population and the disproportionate rise in property values raise concerns about the displacement of original community members (Figure 3, 4). The comparison of wealth distribution and racial demographics further reveals that areas with higher concentrations of African Americans remain economically disadvantaged.

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