Gentrification of Core Area in Atlanta from 2008 to 2014

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Introduction of Gentrification

Definition

"… many of the working class quarters have been invaded by the middle class… Once this 'gentrification' starts in a district it goes on rapidly until all or most of the working class occupiers are displaced…"

—Ruth Glass, 1964

The process of repairing and rebuilding homes and businesses in a deteriorating area accompanied by an influx of middle-class or affluent people and that often results in the displacement of earlier, usually poorer residents.

—Merriam-Webster Dictionary

Effects of Gentrification

Positive
Revives the economy of urban center
Terminates the social disorder of inner urban areas
Reverses of the deteriorating process of urban center
Negative
Increases the property of apartment or house value
Reduces affordable housing
Causes displacement of low-income households
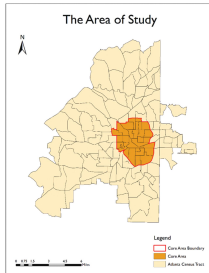
Area of Study

Core area of Atlanta (Downtown and part of Midtown)
Why choose this area?
1. The living conditions and surrounding environment of the area are not good now.
2. This area is mainly occupied by working class households and renters.
3. Lots of office space attracts young people who want to live nearby the area.
Data and research are collected and conducted by census tract.
– Study area (30 census tracts)
– Atlanta (129 census tracts)

The Area of Study

Legend
Core Area Boundary
Core Area
Atlanta Census Tract

Our Method

Socioeconomic GIS

Demographic data from 2008-2014 are used to evaluate vulnerability and indicate gentrification of census tracts.
Step 1: A census tract is labeled as vulnerable if it satisfies four of the five criteria:
1. Percent of Non-Hispanic white is below the median of all Atlanta census tracts;
2. Percent of people holding bachelor degree is below 40% percentile of all Atlanta census tracts;
3. Median household income is below 40% percentile of all Atlanta census tracts;
4. Median home value is below 40% percentile of all Atlanta census tracts;
5. Percent of renters is over the median of all Atlanta census tracts.

Step 2: For vulnerable census tracts, it is regarded to be gentrified if four of the five following statements are true:
1. Percent change of Non-Hispanic white is over the average of all Atlanta census tracts;
2. Percent change of people holding bachelor degree is over the average of all Atlanta census tracts;
3. Percent change of median household income is over the average of all Atlanta census tracts;
4. Percent change of median home value is over the average of all Atlanta census tracts;
5. Number of crimes is below the average of all Atlanta census tracts.

Remote Sensing

1. Satellite images are combined with socioeconomic data to better illustrate and understand the gentrification process.
2. Change detection analysis from 2008 to 2014 is performed on satellite images of study area.
3. Changes of landscape and construction of new buildings, parks and other facilities are detected and extracted.
4. Certain level of manual editing is required to smooth the boundary, add missing changes and remove false changes.

Data Source

American Community Survey
1. Accessed and downloaded from American FactFinder website (https://factfinder.census.gov).
2. Data includes ethnicity, education attainment, median household income, median home value and housing tenure.
Satellite Image
1. Images are obtained from Tony Giarrusso of the Georgia Tech Center of Spatial Planning Analytics and Visualization.
2. Images are captured on October 25, 2008 and October 06, 2014 with spatial resolution of 2m and 6m respectively.
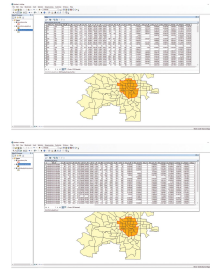Atlanta Police Department
1. Crime data is downloaded in spreadsheet format with latitude and longitude columns.

Procedure

Socioeconomic GIS

1. Calculate percent of Non-Hispanic White and bachelor degree holders.
2. Working with attribute table to calculate percent change of socioeconomic parameters.
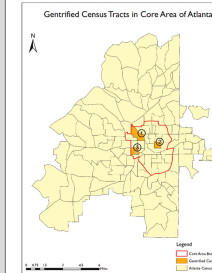3. Sum the number of crime incidents within a certain census tract by Spatial Join tool.

Remote Sensing

Landscape changes and constructions of new facilities are identified from change detection.

Bare land to buildings and public green spaces

Parking lot to construction site.

Apartments to public green spaces.

Spatial Analysis Result

Gentrified Census Tracts in Core Area of Atlanta

Legend
Core Area Boundary
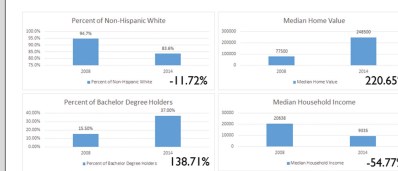Gentrified Census Tract
Atlanta Census Tract

A total of three census tracts are identified as being gentrified from 2008 to 2014 by our socioeconomic criteria. The following slides will present more detailed analysis with charts and satellite images.

Gentrified census tract #1

ID: 118
Area: 0.73 mi^2

Socioeconomic GIS
Median home value and percent of bachelor degree holders increased, showing a trend of gentrification. The decrease of Non-Hispanic White was not significant among other Atlanta census tracts. Although median household income decreased by more than a half, it did not compensate the other two large increases.

Percent of Non-Hispanic White
2008 94.7% 2014 83.8% -11.72%
Median Home Value
2008 77500 2014 220.65%
Percent of Bachelor Degree Holders
2008 16.50% 2014 37.00% 138.71%
Median Household Income
2008 20694 2014 9393 -54.77%

Remote Sensing
A certain number of new buildings and roads were constructed. There were also many bare lands and apartments converted to public green spaces in the central and southwestern part.
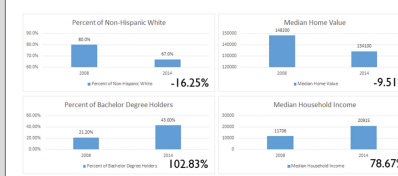
Gentrified census tract #2

ID: 28
Area: 0.29 mi^2

Socioeconomic GIS
Median household income and percent of bachelor degree holders increased for this census tract. The decreases of Non-Hispanic White and median home value were not too large when compared with other census tracts in Atlanta.

Percent of Non-Hispanic White
2008 80.0% 2014 67.0% -16.25%
Median Home Value
2008 148200 2014 134100 -9.51%
Percent of Bachelor Degree Holders
2008 21.20% 2014 43.00% 102.83%
Median Household Income
2008 11708 2014 20915 78.67%

Remote Sensing

Construction of new buildings mainly concentrated in the west side of the highway. Many green spaces emerged on the east side of locations which were originally occupied by buildings.

ID: 38
Area: 0.32 mi^2

Gentrified census tract #3

Socioeconomic GIS
Median home value and percent of bachelor degree holders increased, like those of the census tract 118. There were also slight decreases of percent of Non-Hispanic White and median household income.

Percent of Non-Hispanic White
2008 99.2% 2014 88.4% -12.90%
Median Home Value
2008 84300 2014 70.58%
Percent of Bachelor Degree Holders
2008 22.80% 2014 42.50% 86.40%
Median Household Income
2008 23750 2014 21071 -11.28%

Remote Sensing
Not many landscape changes can be found from these two images, except one in the northeast and one in the south. Both changed from grasslands to houses.

Discussion

1. The Belt Line project may also lead to gentrification in Atlanta. The census tract 28 is within a few blocks' distance from the eastside trail, which opened to the public in 2012. So we suppose that the gentrification of core area may also be affected by the Belt Line, besides other socioeconomic factors.
2. Changes in socioeconomic data may not cause changes in the landscape. Construction of new facilities has a chance to cause gentrification. That's why we don't use socioeconomic data lonely. Satellite image also can support us to analysis gentrification.

Conclusion

1. A set of socioeconomic parameters can be used collectively to identify gentrification.
Satellite images can combine with socioeconomic
2. data to illustrate the relationship between gentrification and landscape change.
3. According to this research and other academic sources, trend of gentrification in the core area of Atlanta is likely to continue to the coming years.