

STUDY FOR AN INDEX MEASURING
BRONX GENTRIFICATION

Experimenting with available data
drawing on existing methodological studies
to build an index to observe and assess
gentrification

Memo Contents:

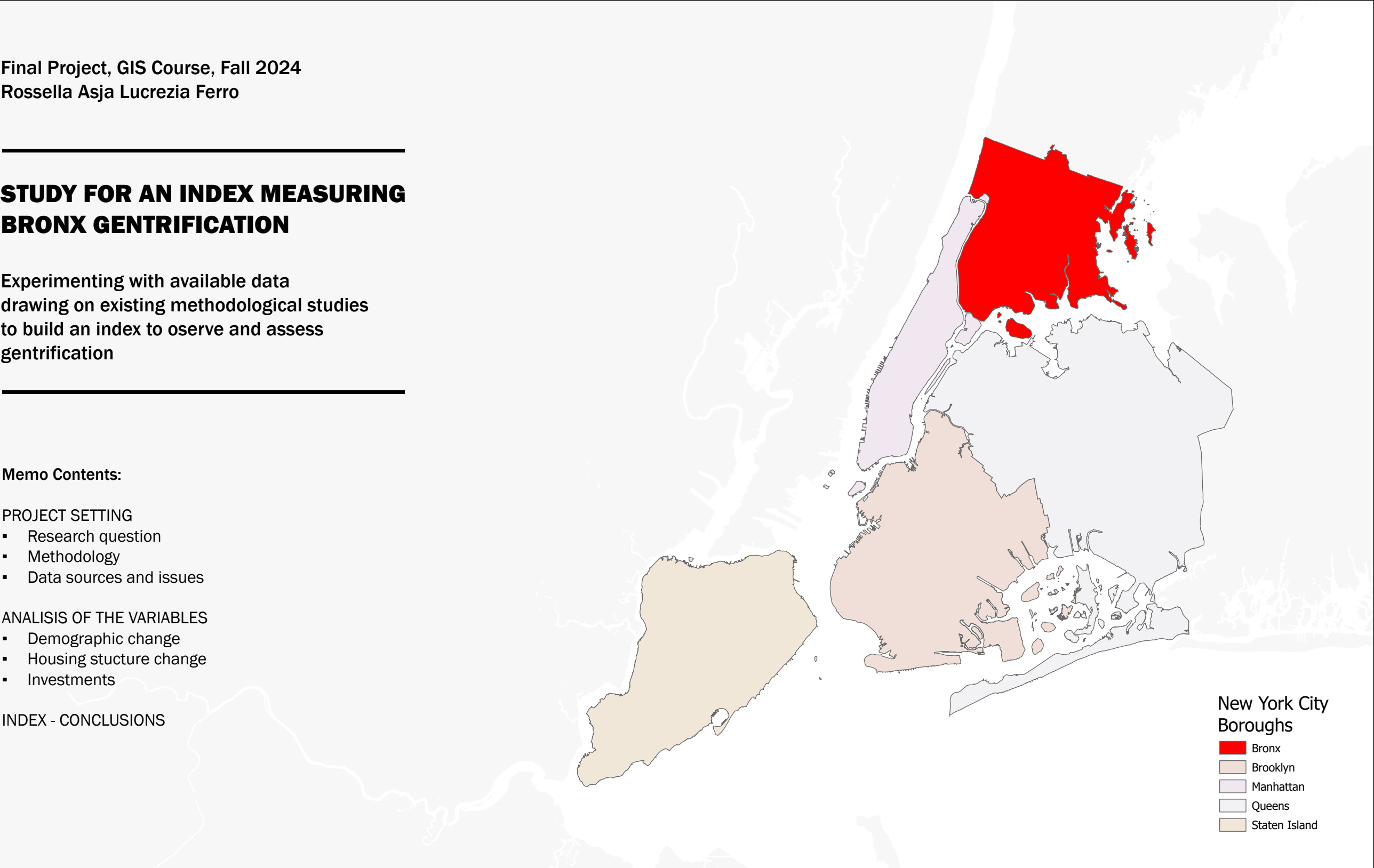
PROJECT SETTING

- Research question
- Methodology
- Data sources and issues

ANALYSIS OF THE VARIABLES

- Demographic change
- Housing structure change
- Investments

INDEX - CONCLUSIONS



New York City
Boroughs

- Bronx
- Brooklyn
- Manhattan
- Queens
- Staten Island

RESEARCH QUESTION

Gentrification is a complex and contentious issue characterized by socio-economic and demographic neighborhood changes that imply the displacement of long-term residents. Socio-cultural institutions and economic activities adapt to the needs of the incoming more affluent new population. According to the Rent Gap Theory (Smith, 1987), these changes are driven mainly by real estate investments that find a profitable market in historically low-income or working-class neighborhoods. Here, the costs of land and housing are cheaper and the investors can realize more margin of profits. While some see gentrification as a process of economic revitalization and services improvement, there is a vast community of scholars, local advocates, and grassroots organizations that underlines the significant challenges for long-term residents, especially vulnerable and low-income households, and community cohesion.

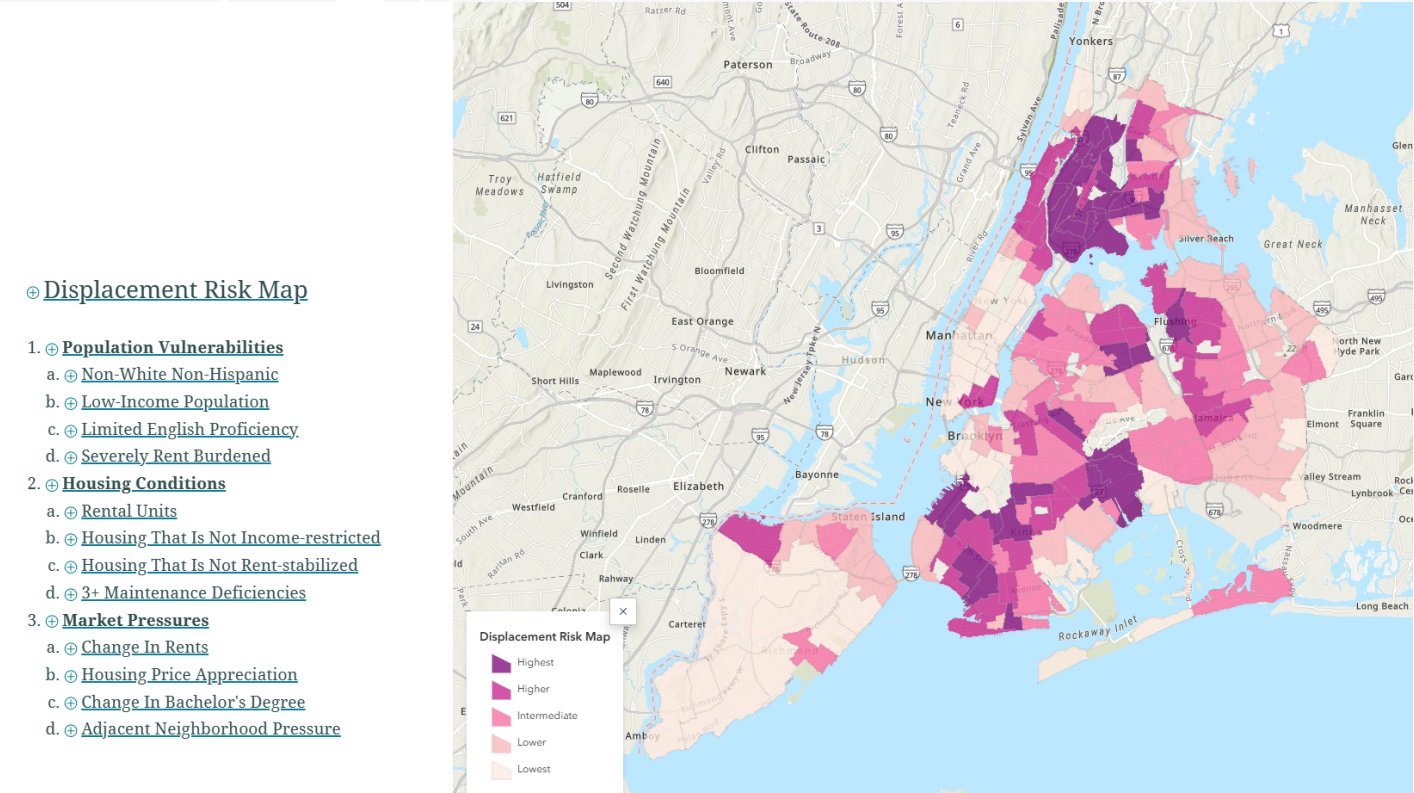
Recently, the state of New York reinforced some tenant protection measures.

Local Law 78 of 2021 established the preparation of Racial Equity Reports for public and private land use applications to the Department of City Planning, with the aim to promote equitable development.

In these context, the department created a Displacement Risk Map, where the Bronx results the borough presenting the highest risk of displacement.

>>> are there signs of the beginning of gentrification processes in the Bronx?

The research project aims to explore the incipient phenomena of gentrification in the Bronx, and try to comprehensively capture the nuances of neighborhood transformations with a fine spatial precision. The new enormous availability of big data could help to look at gentrification from multiple perspectives.



METHODOLOGY

For the analysis I took into account 10 variables, organized in the three macroareas that scholars generally indicate as sensitive to detect gentrification:

- 1) Changes in the demographic structure of the neighborhood, unveiling a possible displacement of a long-term low-income populations
- 2) Changes in the housing system structure, characterized by a different distribution between owner and renter tenure and generally higher prices
- 3) The concentration of real estate investments to upgrade housing units ad building and adapt them to different users and lifestyles

The analysis focuses on the variation (or concentration) between these variables in a short period of time.

I concentrated my analysis in the period 2017 - 2022, because gentrification processes can be very sudden.

Variables and weights of the MCDA

The wheight of the Multi Criteria Decision Analysis were initially uniformly assigned, and then adjusted enhancing three particularly significant variables (education achievement, median income, percentage of owner-occupied housing).

Demographic Data	Education achievement	15
	Median income	15
	Race	10
	Employment	10
	Age structure	5
Housing Data	Rent prices	10
	Vacant Units	5
	Owners	15
	Renters	5
Investments	Building permits	10
		100

Bibliography

Alejandro, Y., & Palafox, L. (2019). Gentrification prediction using machine learning. In Advances in Soft Computing: 18th Mexican International Conference on Artificial Intelligence, MICAI 2019, Xalapa, Mexico, October 27–November 2, 2019, Proceedings 18 (pp. 187-199). Springer International Publishing.

Rodriguez, J., Hawkins, R. L., & Wilkes, A. (1965). Social Capital, Gentrification, and Inequality in New York City. Racial Inequality in New York City since 1965.

Smith, N. (1987). Gentrification and the Rent Gap. Annals of the Association of American Geographers, 77(3), 462-465.

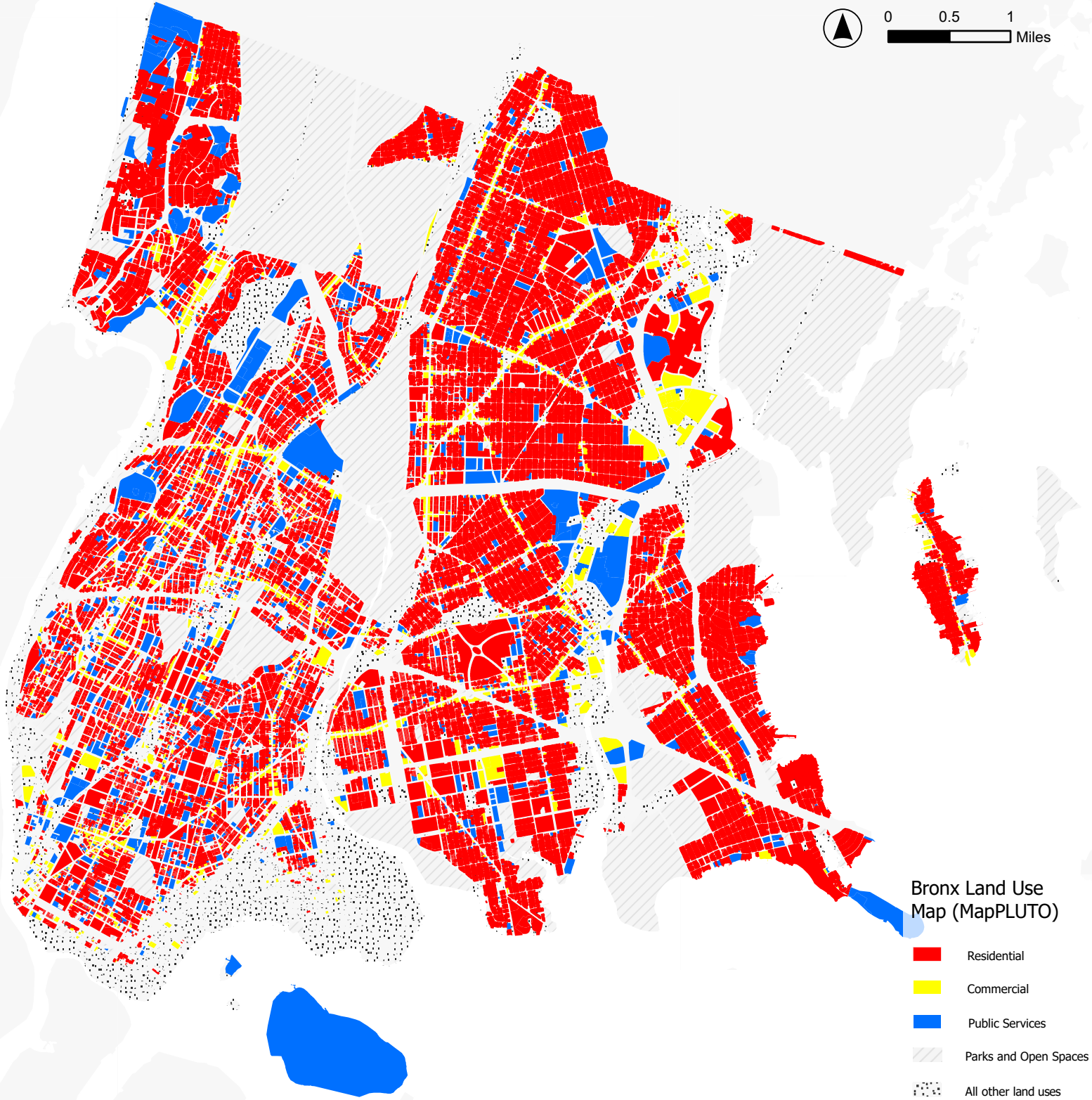
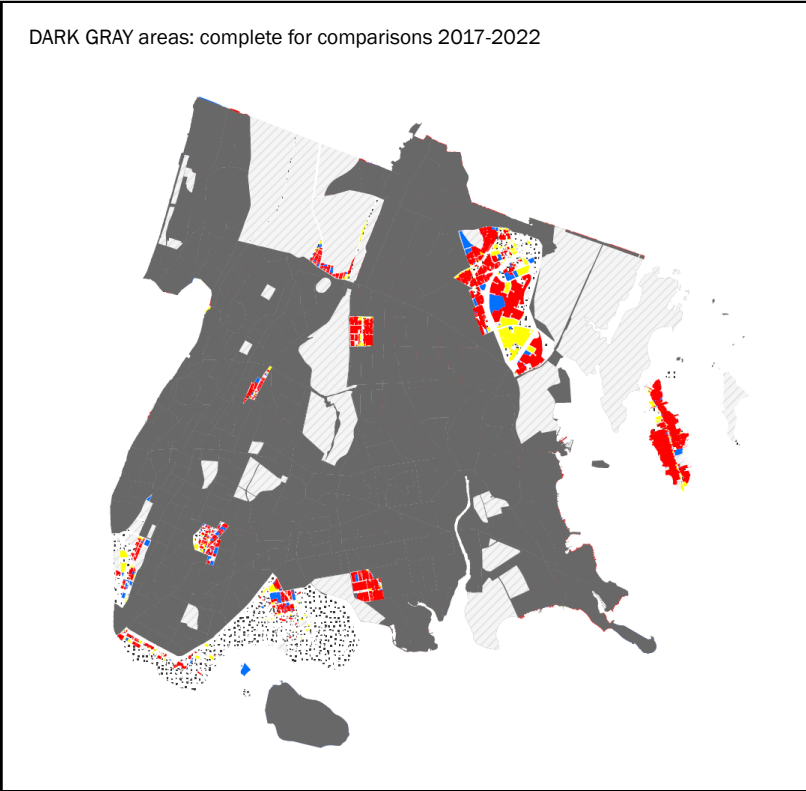
Smith, S., Gilani, O., Massaro, V., McGann, C., Moore, G., & Kane, M. (2024). Mapping Gentrification. Cityscape, 26(1), 377-394.

DATA SOURCES AND ISSUES

The data sets for the analysis are from two sources. The American Community Survey and the New York Open Data. In particular, for demographic and housing structure I compared ACS Data from 2017 and 2022. For databases on investments and land use, I relied on New York Open Data. Other background sets (tiger lines, borough boundaries) come from the same sources (Census.gov and NYOD)

Issue with comparison among Census Tracts

It is relevant mentioning that the comparisons between 2017 and 2022 sometimes lacks of some information, due to unmatchings among the data. This image highlights the areas where data are complete for comparisons (in gray). Areas where the land use is visible are often incomplete. Note that the residential uncomplete data include mainly the neighborhood of Co-op City and City Island.

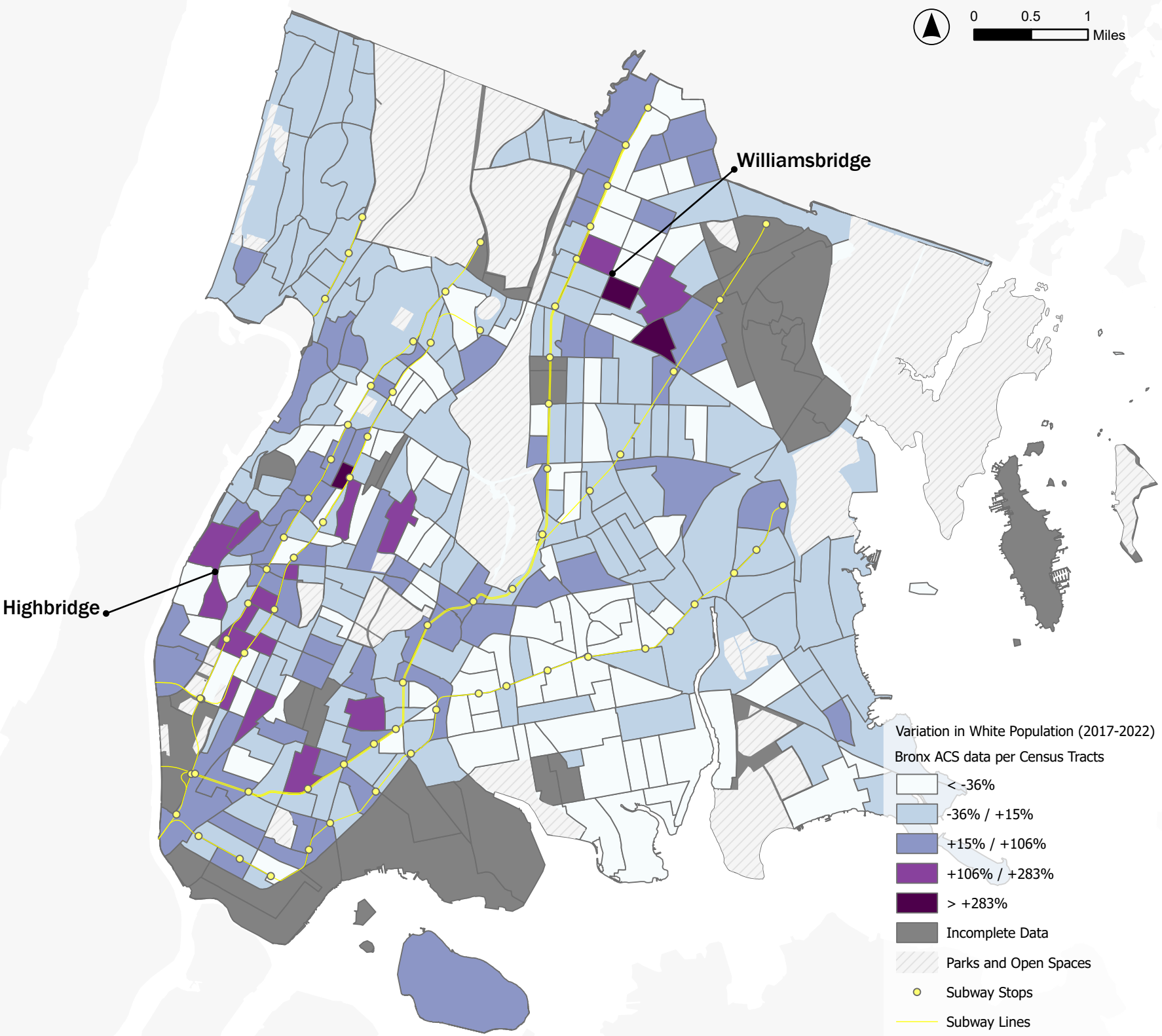


Variable 1
VARIATION IN WHITE POPULATION

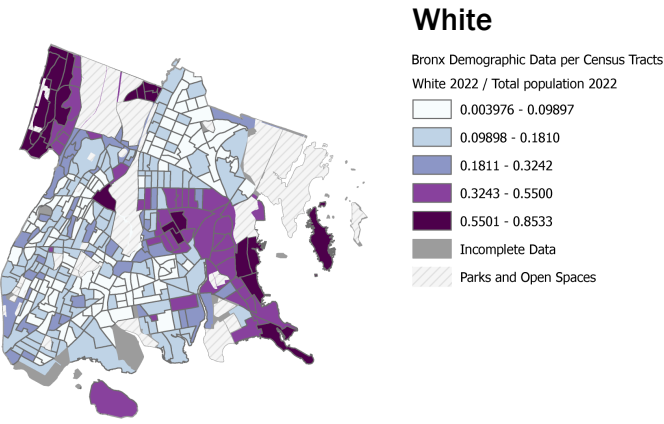
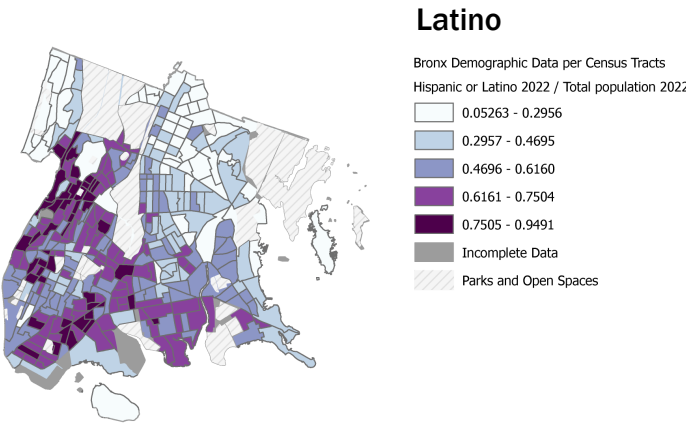
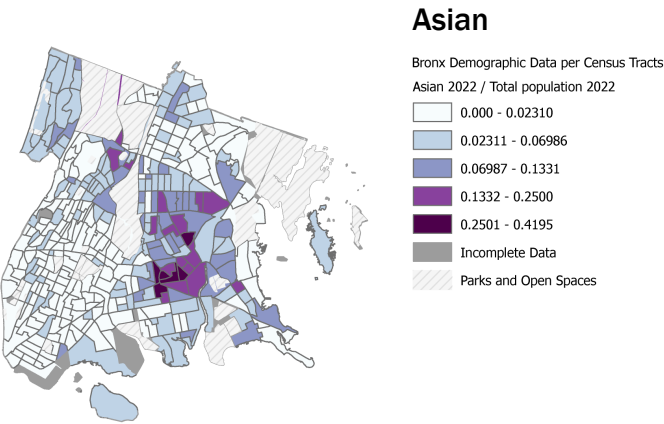
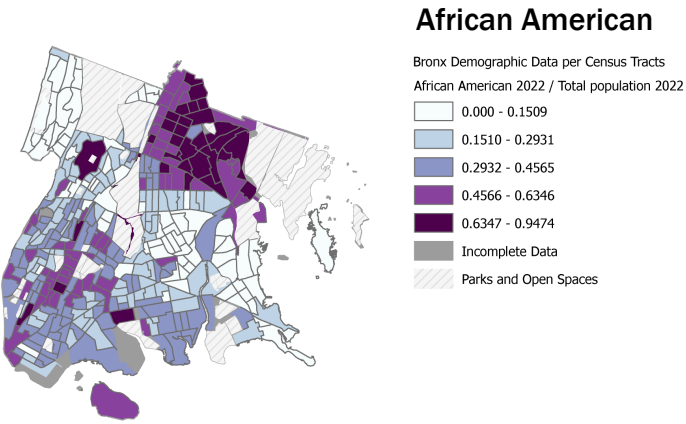
In some historically black neighborhood (Williamsbridge, North Bronx) and latin neighborhood (Highbridge, South-West Bronx) the percentage of white population varied pronoucedly.

The data assumes a greater significance in front of the highly segregation of the Bronx (see next page for more data).

The % variation in white population could suggest the incoming of a wealthier population.



A SEGREGATED BOROUGH



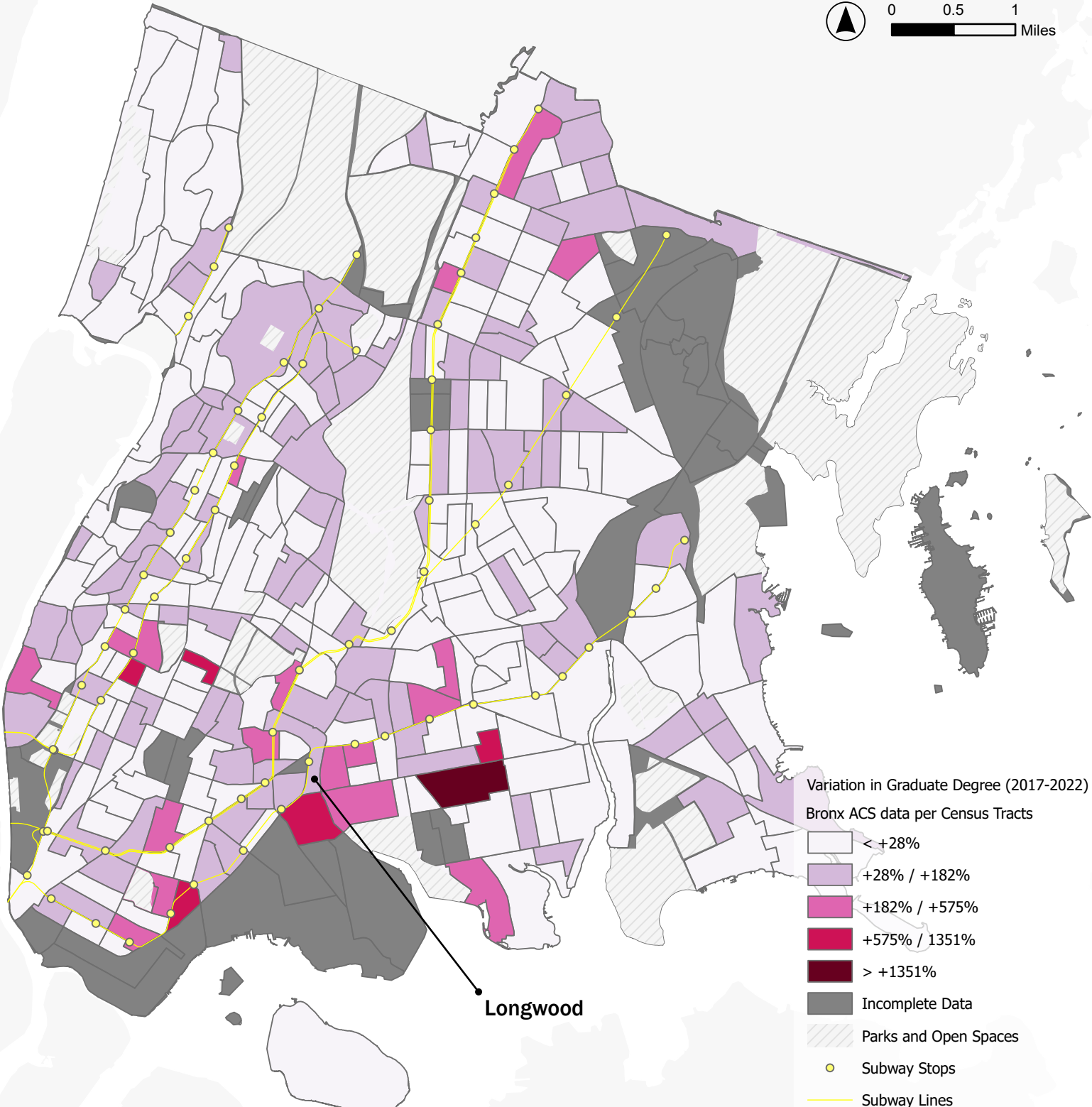
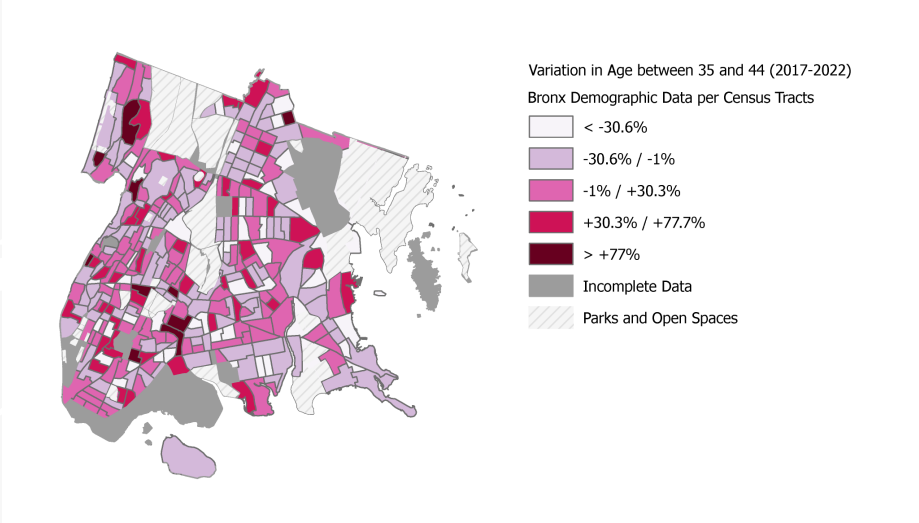
Variable 2
VARIATION IN EDUCATION ACHIEVEMENTS

The data on education achievement and age variation could suggest the arrival of a new population.

The increased percentage in higher education degree usually corresponds to a population with higher life opportunity to study, typical of a whealtier class. The % age variation between 35 and 44 years old can corrspond to newly established households seeking for a first housing investment.

We start seeing a recurrent concentration of variation in the area of Longwood.

Variable 3
VARIATION IN AGE STRUCTURE



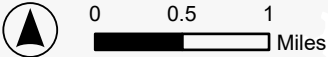
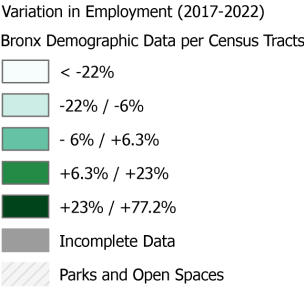
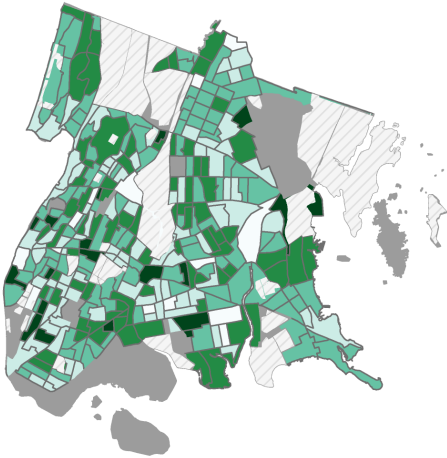
Variable 4
VARIATION IN MEDIAN INCOME

Augmented percentage concentration of income and employment level, in a so short period of time, could mean the arrival of new population with wealthier economic conditions.

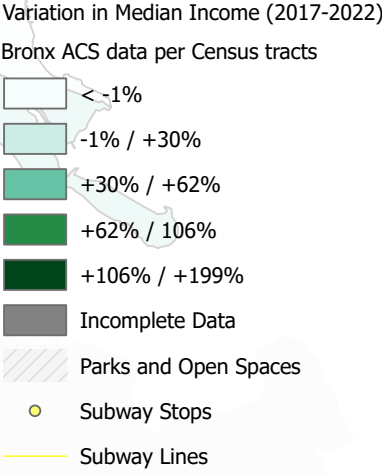
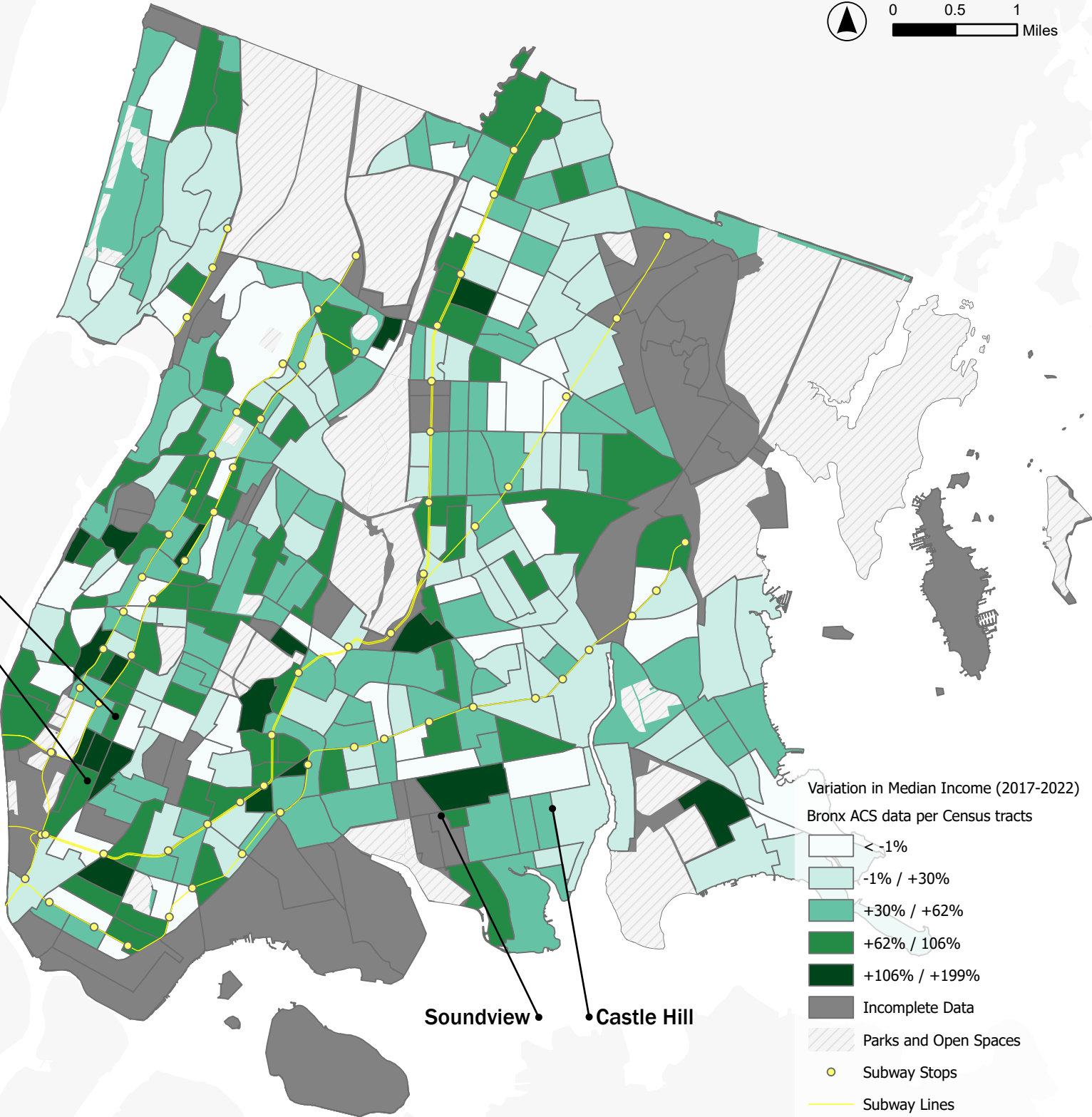
Interestingly, both the variables see an % increase in the Neighborhoods of East Concourse and Concourse Village.

An other area emerging is a specific census tract in Soundview, encompassed between Brukner Boulevard, Soundview Avenue, Lafayette Avenue, and Pugsley Avenue. By contrast, the census tract on its eastern side, in Castle Hill, emerge to record negative percentages.

Variable 5
VARIATION IN EMPLOYMENT LEVELS



East Concourse
Concourse Village

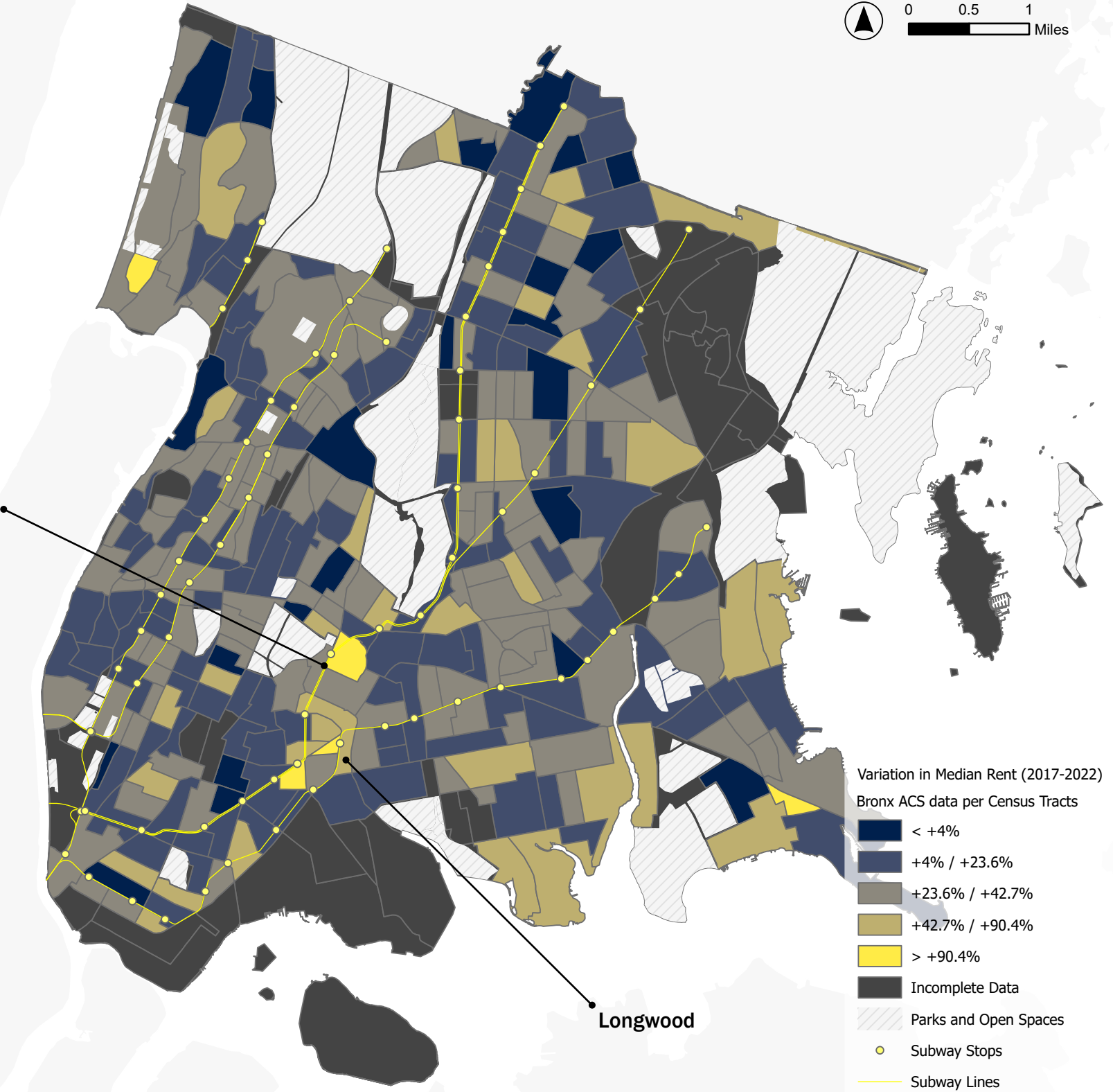
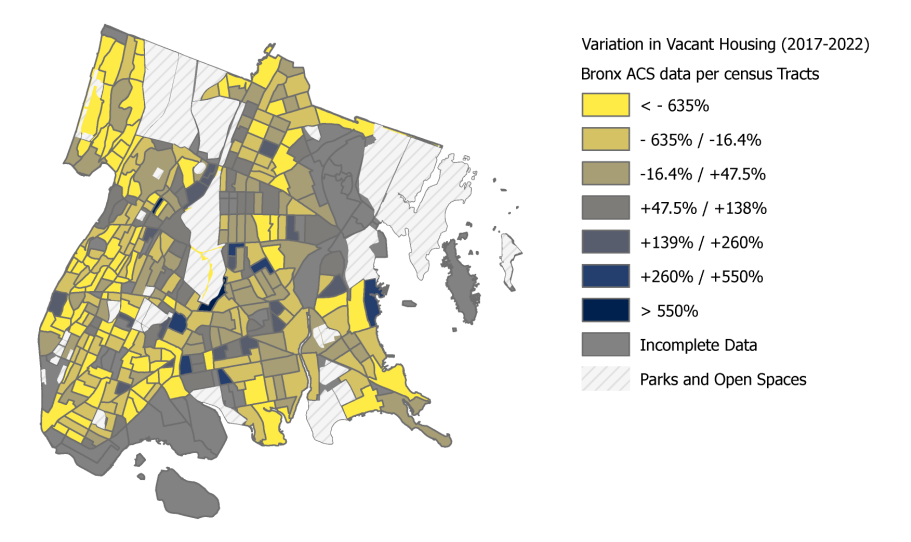


Variable 6
VARIATION IN MEDIAN RENT

Generally, in the span of time between 2017 and 2022, all the census tracts of the Bronx saw an increase of the median rent and a decrease of vacant units. The great diminished percentage of vacant units seems matching with a general increase in Bronx total number of population.

Peak of percentage increase of the median rent are localized in the neighborhood of Crotona Park East and Longwood.

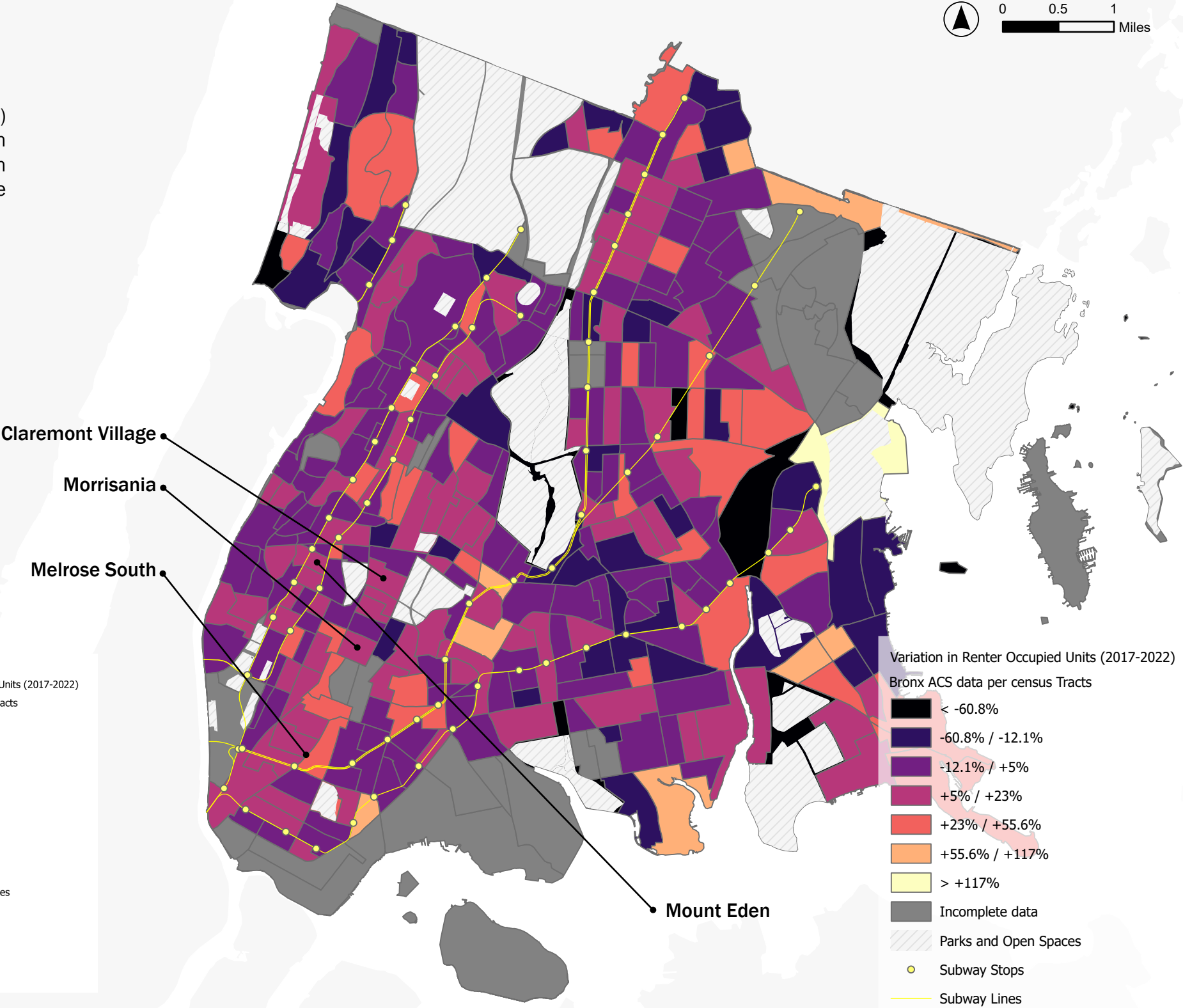
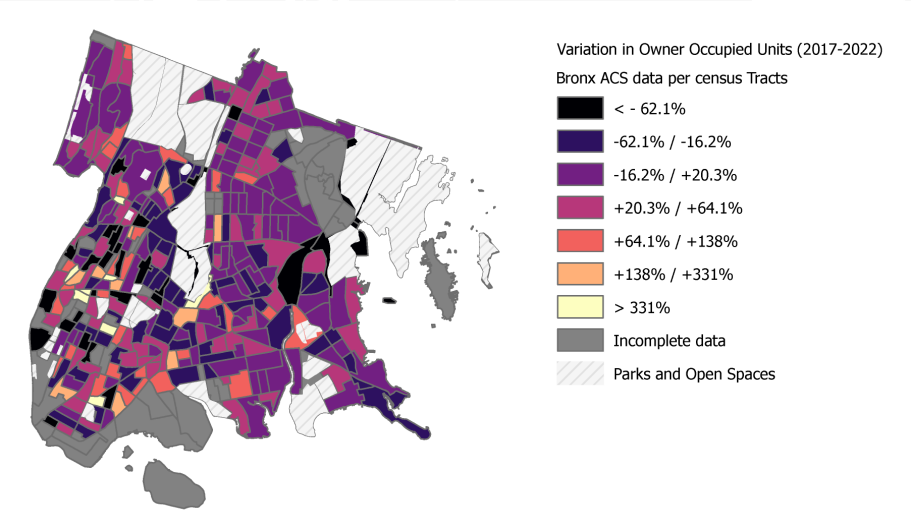
Variable 7
VARIATION IN VACANT UNITS



Variable 8
VARIATION IN RENTER OCCUPIED UNITS

The data on owner occupied housing units (small map) highlight a strong increase of the variable percentage in the following neighborhood: Mount Eden, the area in between Claremont Village and Morrisania, Melrose South.

Variable 9
VARIATION IN OWNER OCCUPIED UNITS



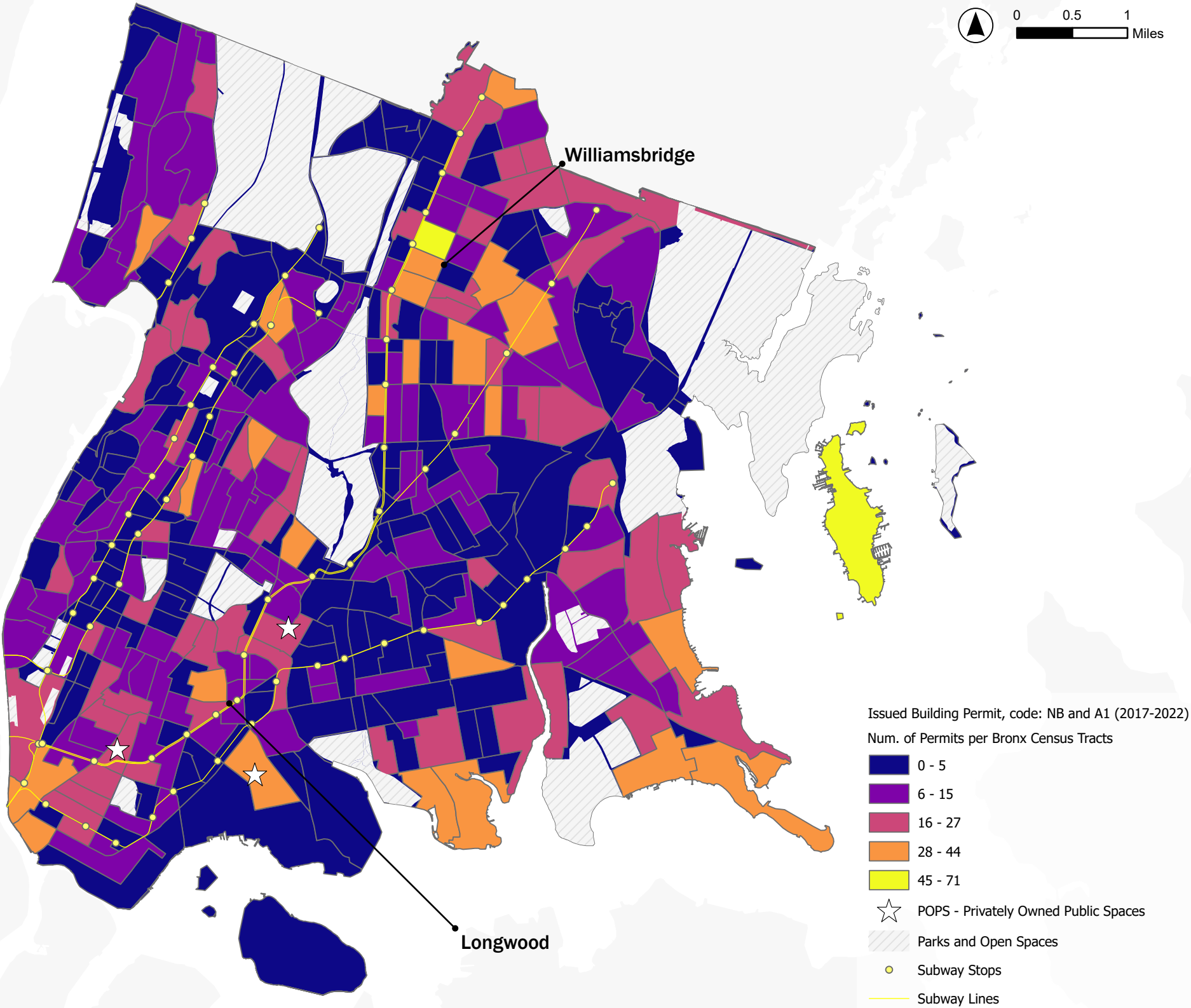
Variable 10
NUMBER OF REAL ESTATE INVESTMENTS
BETWEEN 2017 AND 2022

This set of data is the only one that do not consist in a percentage variation, but in a count of points of total real estate investments in the years 2017 - 2022. The data is deducted through informations related to building permits.

The building permits considered are only the one concerning new building (NB) or major renovations (A1). I considered only the permits issued to for-profit company, excluding non-profit organizations. To avoid double data, I considered only first issuances, excluding the request of estension or renovation of the permit.

I tried to put in evidence the presence of POPS - privately Owned Public Spaces, that usually correspond to certain type of urban development, compatible with urban trasnformation suitable to whealtier users.

Beside City Island, that unfortunately is not encoded in the other datasets and thus not comparable in the MCDA, emerge again the neighborhoods of Longwood and Williamsbridge.



BRONX GENTRIFICATION INDEX

The final map, results of an MCDA, shows the areas where is more likely to identify some initial signs of gentrification processes in the Bronx. On the south, emerge especially the neighborhoods of **Melrose South** and **Longwood**. In the west, some specific tracts of **Concourse** and a more spread phenomenon in **Morris Heights**. Interestingly, also some census tracts in **Williamsbridge** emerge. The accessibility through one (or between two) line of **MTA** public transport is a constant in all these areas.

Further study can deepen the cases of some polarized adjacent situations, as in the case of Soundview and Castle Hill, or Pelham Bay. Areas like Clason Point, even if not well connected, are probably located in interesting landscapes.

