



# GIS Visualization of New York Chinese Immigrant Demographic Shifts between 1970s and 1990s

Ken wu, Faculty Sponsor: Prof. Lisa Dombrowski

Department of Film Studies, Quantitative Analysis Center, Wesleyan University



## Abstract

My project this summer focuses on visualizing the demographic shifts of Chinese immigrants in New York City between the 1970s and the 1990s. The subject area includes four boroughs of New York city, namely Manhattan, Queens, Brooklyn, and Bronx. Through the visualization of historical US census data collected from the Census Bureau, the final product takes on the form of an interactive arcGIS map. The main goal of the interactive map aims to shed light on the possible correlation between the decline Chinese Language Theaters in New York City and the outward shifts of Chinese immigrant enclaves. Compared to previous attempts of this same project, this version of the GIS map includes more granular census tract data as well as including more diverse demographic indicators, such as average income, racial composition, and household information, all of which are displayed in graphic popups. Thus, this interactive map also can serve as a possible secondary source for other future researches that might require understanding of Chinese immigrants demographic shifts during this period.

## Background

This project is a part of a bigger study focusing on Chinese immigrant experience in the US and the development of Chinese Language Theaters in the 20th century. Chinese Language Theaters in the United States are cinemas often found in Chinese immigrant enclaves, such as Chinatowns, that showcased Cantonese or Mandarin language films. The proliferation of Chinese Language Theaters peaked in the 1970s with various Chinese Language Theaters operating in different Chinatowns. These cinemas not only served as popular entertainment for Chinese immigrants, but also became important cultural institutions for many Chinatown residents.

In the following decade of 1980s and 1990s, Chinese Language Theaters began their decline. The cause of its decline is multifold. Current literatures on the subject suggest the proliferation of TVs, Chinese American's growing affinity toward mainstream American culture, and demographic shifts may all have played a part in its decline. In an attempt to explore one of the causes, this project aims at studying the possible correlation between the decline of Chinese Language Theaters with Chinese American demographics shifts brought about by the immigration reform of 1965.

The Hart-Cellar Act, or known as the Immigration and Nationality Act of 1965, was a federal law overhauled the pre-existing U.S. immigration policy codified back in the 1920s. This new act abolished the previous nation-specific quota system which heavily undercut immigration from Asia and Africa while leaving immigration from the Western European countries unrestricted. Instead, the new set of policies centered around the principle of reuniting immigrant families and attracting new skilled laborers to the United States.

Prior to the Hart-Cellar Act, the majority of the Chinese population in NYC resides in the Manhattan Chinatown, consisting mainly of native-born Chinese Americans and poor laborers who immigrated from Southern China. After the 1965 immigration reform, large numbers of more affluent and more educated Chinese diaspora immigrated from Hong Kong, Taiwan, or mainland China. Unlike the previous generation of Chinese immigrants, these new immigrants brought with them their resources and capital, initiating transformations in the Chinese immigrant community, reshaping the established notions about urban Chinese communities and everything within, including Chinese Language Theaters.



• Cinema Treasures. "Sun Sing Theatre." Accessed July 24, 2021. <http://cinematreasures.org/theaters/10396>.

## Methods

**Data Sample:**  
U.S. Decennial Census Data of 1970, 1980, and 1990 are obtained from the *Social Explorer* platform. For this project, I refined the subject counties to all census tracts and block numbering areas in four of the five boroughs of New York (Bronx County, Kings County, New York County, and Queens County). The reason for excluding Richmond County, or Staten Island, is due to its minimum Chinese population presence during the study period.

- Procedure:**
- Obtain raw Census data from *Social Explorer*, containing demographic indicators
  - Data management and conversion into time series panel data in STATA and SPSS
  - Import into ArcGIS Web Map for visualization and spatial analysis
  - Data Visualization: Create main interactive map with configurable pop-up window displaying basic summary statistics of selected census tract using arcGIS and basic HTML
  - Spatial Analysis: Run Hot Spot Analysis on each decennial year dataset base on each census tracts' Chinese population to find out statistically significant clustering of Chinese immigrant as indication of the formation or deformation of Chinese enclaves
  - Export finished arcGIS Web Map as Dashboard App

## Discussion

Figure 1 showcases the overall Chinese population growth trend in the study area over 1970 to 1990. The graph reflects the overall increase of Chinese population in Kings County, New York County, and Queens County. In particular, Kings and Queens County saw much more substantial change over the two decades after 1970.

Figure 2 showcases the result of hotspot cluster analysis based on tract level chinese population done by arcGIS. There are a total of 193 statistically significant output census tracts based on a FDR correction for multiple testing and spatial dependence. Note that the hotspots are statistically significant areas of the Chinese population cluster. They do not necessarily reflect the exact Chinese enclaves boundaries in real life.

From looking at Figure 1 and 2, it is clear that since the 1970s, Chinese population in New York City not only has increased dramatically, but also expanded outward away from the Manhattan Chinatown which used to be the only one Chinese enclave in the entire city in the 1970s. Instead, new Chinese population clusters are formed in Elmswood, Flushing, and Sunset Park. These clusters do not reflect the actual Chinese enclave boundaries in real life but they all accurately reflect the general communities in which they can be observed today.

The shift from one centralized Chinese enclave, in which all of the Chinese Language Theaters are located, to a more dispersed Chinese immigrant presence in several other boroughs may be understood as a contributing factor of the these theater's decline. Most likely due to long commute time to travel from Queens or Brooklyn to Manhattan as well as the rise of the more accessible television, cinema going culture among residents of the Chinese enclaves diminishes.

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## Results

[Link to final interactive map: Click here](#)

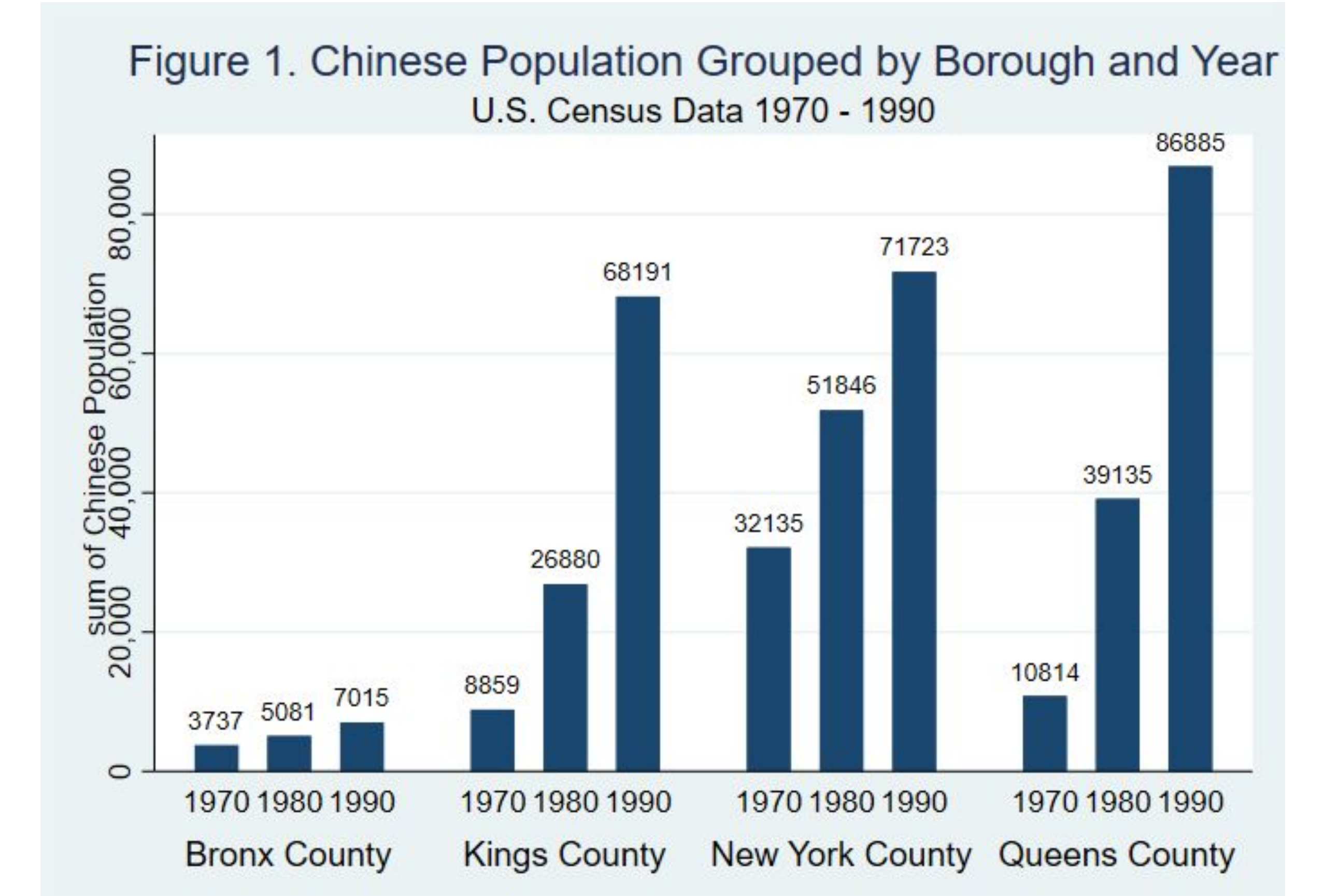
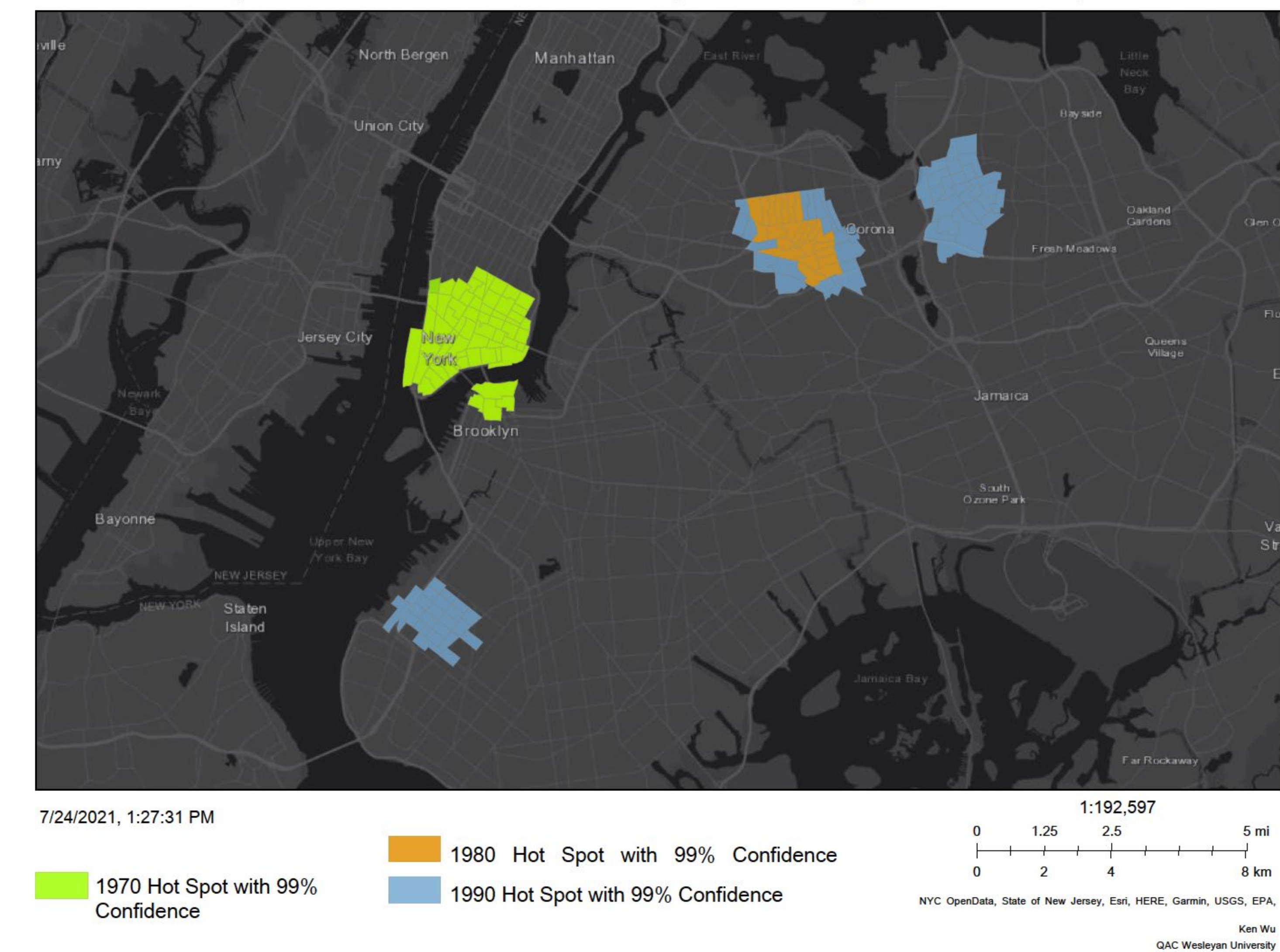


Figure 2. 1970 - 1990 Chinese Population Hotspot Cluster Analysis



## Citation

Social Explorer & U.S. Census Bureau. New York, 1970. Prepared by Social Explorer. <https://www.socialexplorer.com/data/C1970/metadata?ds=SE&table=T1> (accessed 24 July 2021, 14:44:21 GMT-4).

Social Explorer & U.S. Census Bureau. New York, 1980. Prepared by Social Explorer. <https://www.socialexplorer.com/data/C1970/metadata?ds=SE&table=T1> (accessed 24 July 2021, 14:44:21 GMT-4).

Social Explorer & U.S. Census Bureau. New York, 1990. Prepared by Social Explorer. <https://www.socialexplorer.com/data/C1970/metadata?ds=SE&table=T1> (accessed 24 July 2021, 14:44:21 GMT-4).