City Exploration #2: Tour of a Neighborhood (Allston/Brighton)

Jessica Tanumihardja

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Background

We are continuing our exploration of the [Craigslist Housing Postings in Massachusetts](#) (MA) dataset by Boston Area Research Initiative (BARI) [1]. According to the description, this dataset contains Craigslist housing listings (2020 - 2021) in the regions of Massachusetts as designated by Craigslist. We are continually exploring how this dataset explains or provides insights into the housing market in the Boston neighborhood. It should be noted that this dataset mainly covers the pandemic time so further data scrapping is needed to get the "normal" (prior to 2020) and "new normal" (after 2022) trend.

This week, we are creating maps based on the chosen new variables and latent construct created in the previous weeks: property desirability based on the availability of places of interest (POI). The details of the latent construct and new subsets of the dataset can be found here: [Building Latent Construct](#) [2]. We are going to focus on Allston/Brighton Neighborhood to discuss these findings further and how it is represented through the lens of media. We are also discovering whether the new findings strengthen or negate the initial hypothesis from the first city exploration.

Method: Making Maps

R Studio is used to preprocess the dataset, which includes data cleaning, transformation, merging, and aggregating, and produce maps using `ggplot` library. The codes originated from this week's module and Urban Informatics textbook reading in [Chapter 8](#) [3]. The resulting "Craigslist Housing - Places of Interest" dataset from the Building Latent Construct assignment is aggregated based on the unique census tract ID (CT) in the City of Boston. The features include the total number of postings, median/mean/minimum/maximum listing price, and the respective number of places of interest within each CT in 6 categories. The categories are:

- Food-related services (restaurant, bakery, bar, cafe, meal takeaway, and food)
- Grocery services (grocery and convenience stores)
- Transit stations (bus, train, subway, and light rail stations)
- School-related (schools and universities)
- Entertainment-related (zoo, stadium, bowling alley, movie theater, art gallery, nightclub, aquarium, museum, and shopping mall)
- Parks

The Boston tract shapefile is utilized to be able to map these variables on each CT. To further gain insights, this shapefile is merged with [Boston's census indicator](#) [4]. There are two dataset options applicable for this analysis: the official 2010 census indicator file or the more recent 2014-2018 ACS Tracts indicator (estimated values). To get more variables, the latter dataset is utilized. The resulting merged file consists of 74 features (including geometry for

mapping) per the City of Boston CT. The maps obtained from the Craigslist Housing dataset are compared to the ones produced by the census indicators.

Two interesting figures from the map comparison are shown in Figure 1 below. The "Median Gross Rent" (left) is obtained from the census indicator dataset. The "Median List Price" (right) is mapped from the aggregated Craigslist housing dataset. Although the color scale is set to be the same, the Craigslist dataset has a higher median price (more red than green) than what is reported by the census indicator. One explanation is the Craigslist dataset is only a subset of Boston's housing dataset, hence, it might only show certain characteristics. Some CTs has no or few Craigslist listings. It is also uncommon to find low-income housing posts in Craigslist. Also, there are a lot of outlets to post a rental property, Craigslist is only one of the outlets.
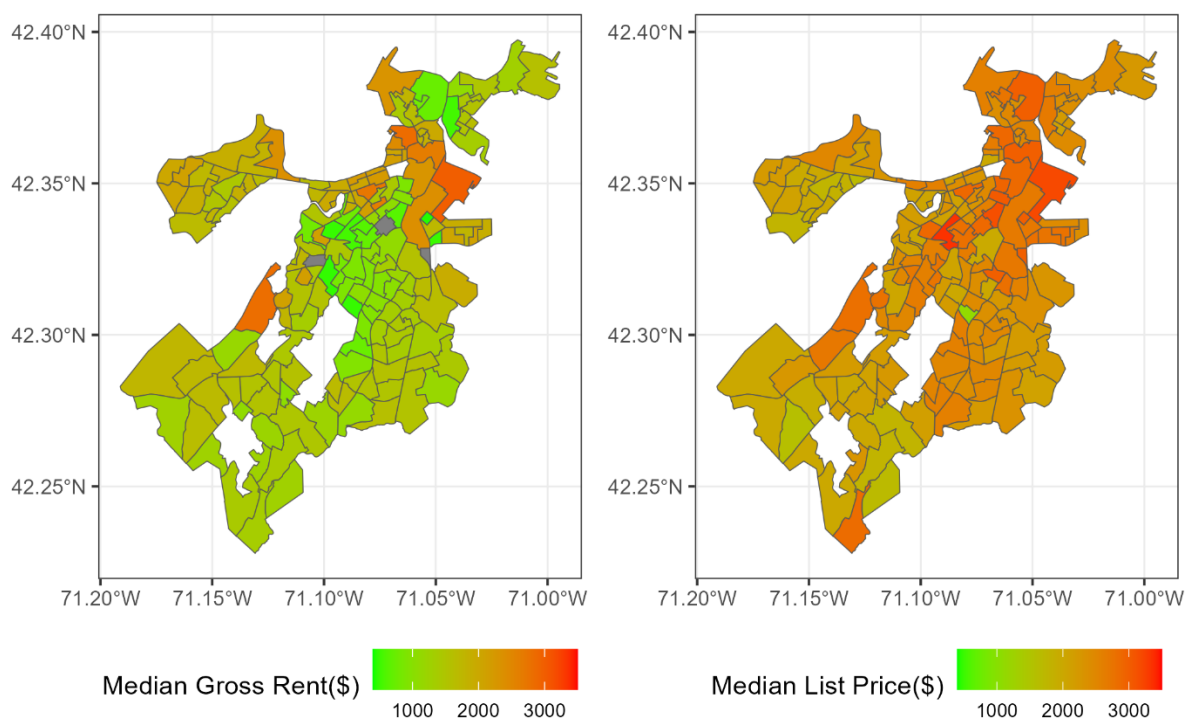

Figure 1 Maps of City of Boston's median rental price from Census Indicator data (left) and Craigslist Housing data (right) per census tract ID.

Other interesting maps are shown in Figure 2 below. These maps are all sourced from the aggregated craigslist data. The left map is showing median listing price ($) per square-feet of property (green is the lowest). The center map is showing the number of food-related services located in each CT (dark blue is the lowest). The right map is showing the number of entertainment-related places of interest in each CT (blue is the lowest). The grey color for each map means that the number for that respective CT is higher than the limit of the range (high value). These three maps have a positive correlation with each other as the CT with high value tends to be the same in these three maps. Hence, it is supporting the insight found in the bivariate visualization in the previous assignment.
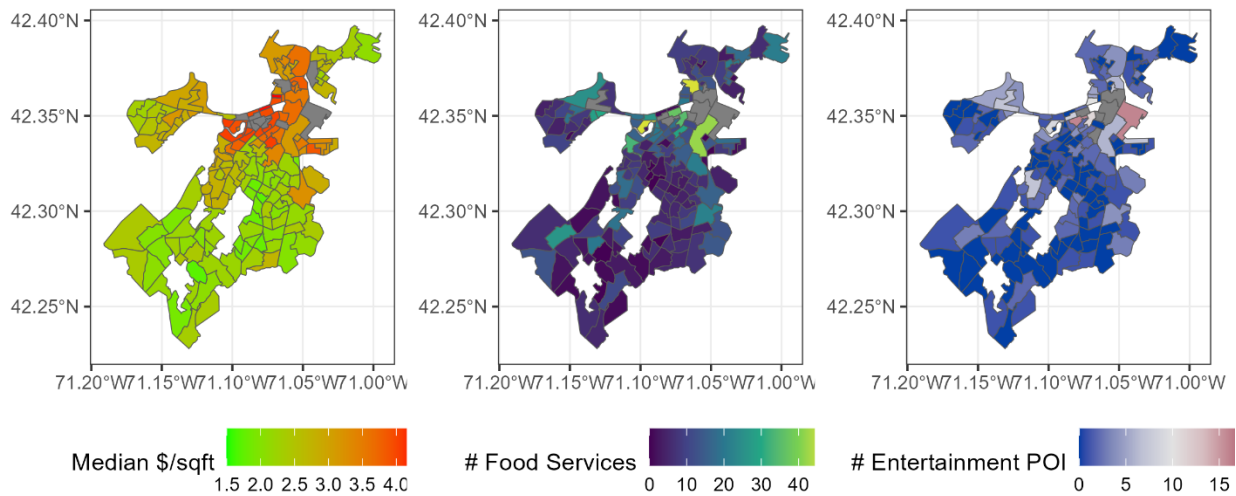
Figure 2 Maps of Craigslist Housing features for City of Boston per each census tract ID.

Chosen Neighborhood: Allston/Brighton

From the maps shown above, higher priced listings are in Downtown, Back Bay, and South End neighborhood, which corresponds to urban area. The further is the distance from downtown, the lower the median listing price or median price per square-feet is lower. However, it is important that the neighborhood to be chosen to have enough sample for the analysis. Figure 3 below shows the number of postings for each CT as well as the median household income and median price per square-feet that will be discussed further in the interpretation section. Similar to the figures above, the grey color means the value in each CT is higher than the upper range of the map.
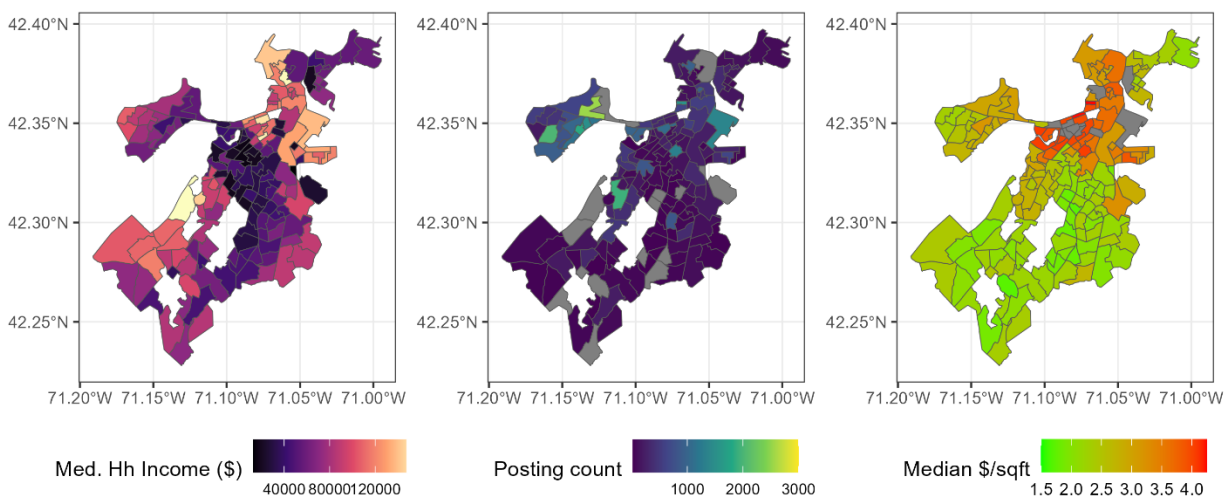

Figure 3 Map of City of Boston according to median household income (left), posting count (middle), and median price per sq.ft. (right) per census tract ID.

The three urban neighborhoods, Allston/Brighton and South Boston neighborhoods have more posting counts compare to all other neighborhood. Allston/Brighton and South Boston values are more in the middle range for most variables, hence, they are a good candidate for further analysis. To further distinguish these neighborhoods, we will compare the general land use in the two neighborhood as shown in Parcel Land Use map by Bostonplans.org [5]. Allston/Brighton has mix parcel land use with more residential area in Brighton and more commercial on the Allston side. The South Boston neighborhood has a lot of tax-exempt areas and less residential land use. Hence, the Allston/Brighton neighborhood is chosen since it has a higher amount of craigslist housing postings, middle range values of most POI variables, and more residential land use area.

Allston/Brighton Exploration

Allston/Brighton neighborhood is located in the northwest corner of Boston's city limit. Brighton neighborhood (which includes part of Allston) was part of Cambridge between the 16th to 18th centuries [6]. The neighborhood grows more during the industrial revolution era as it is one of the commercial centers and blooming horticulture industry. Residential development started after 1850 after the landowners saw the prospective growth of the town, especially for downtown people looking for suburban homes. The neighborhood was annexed to the City of Boston in 1873. After 2014, the neighborhood is separated into two neighborhoods of Allston, named after Washington Allston (an American artist), and Brighton, named after a city in England [7, 8].

Nowadays, Allston/Brighton neighborhood is mainly influenced by colleges and universities. Boston University and Harvard University have buildings in this neighborhood. In fact, 350 acres of the north Allston neighborhood belong to Harvard university [7]. Hence, it is home to a lot of students and young adults. This pattern can also be seen in the land use map where most of the commercial and industrial parcels are in Allston as shown in Figure 4.
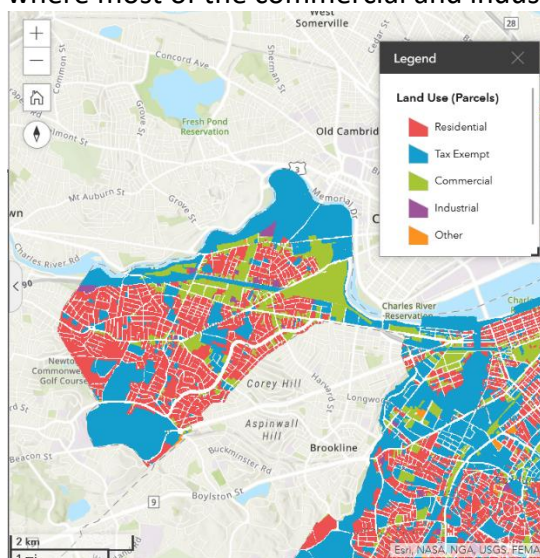

Figure 4 Allston/Brighton Parcel Land Use Map [9]

The general demographic of this neighborhood is obtained from BARI's Boston Area Research Map [9]. Most of the population in Allston/Brighton is white (>50%). There is slightly more male population than female (sex ratio >1). The majority of the population is within the 18 -34 years old age group. More than 30% of the resident has a Bachelor's degree as the highest education (more than 20% has a master's degree!). Higher median household income is present in the Brighton area (see Figure 3) than Allston area. Also, a higher unemployment rate is found in the Allston area (the highest is 0.14) than in Brighton. These two facts align as more student population can be found in Allston and more young professionals and families reside in Brighton.

There are multiple transit stations run through the neighborhood (A – E lines, bus stations, and more) [10]. The area also has no lack of amenities such as restaurants, clubs, bars, parks, and waterfront access. Most of the articles about the neighborhood mentioned food recommendations or hip places to go. This aligns with the mapping findings in Figure 2 that higher food-related and entertainment places are found in Allston/Brighton. In fact, the band Aerosmith was formed in this neighborhood! [7] The media pictures this neighborhood as a vibrant, young, and developing area. Here are a few pictures from Google Map Street View of the two neighborhoods. The area generally still has wide streets with access to pedestrians, transits, and personal vehicles.
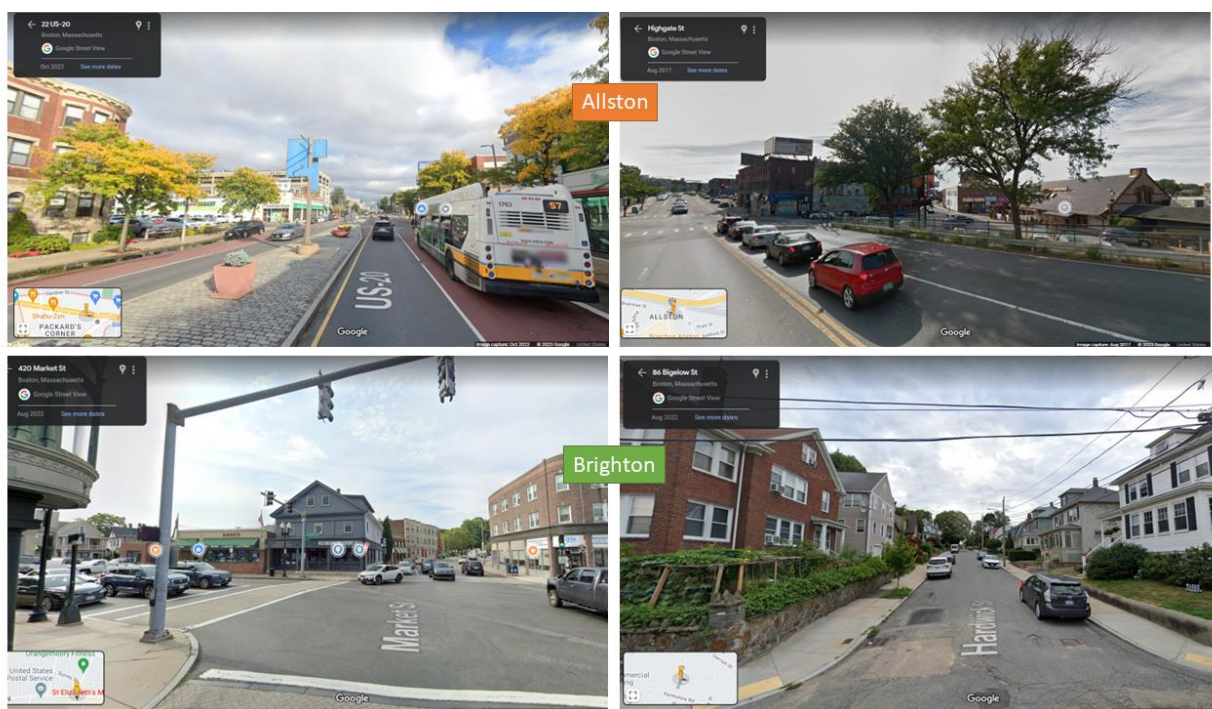

Figure 5 Google Street View of Allston (top) and Brighton (bottom) neighborhood [11]. Commercial areas are shown on the left pictures while residential areas are shown on the right pictures.

The neighborhood crime rate is generally lower than downtown Boston but still high in robbery. There was a recent restaurant shooting in Allston neighborhood back in December 2022 [12]. Generally, the articles found online mentioned that it is a safe neighborhood but still better to travel in groups at night.

Re-evaluation and Summary

Allston/Brighton is a developing neighborhood near downtown Boston that is mainly influence by the student population. The median rental price in the area falls in the middle of Boston's median range so this area can be considered affordable compare to downtown. However, with the higher unemployment rate in Allston (due to student population), it might be harder to find affordable rental property. The convenience of groceries and abundant options of food and entertainment explains the medium-high listing price in Allston/Brighton neighborhood. These observations are similar to the Sommerville's exploration in the City Exploration #1.

Merging the Craigslist dataset with the Places of Interest and Census Indicators enables us to gain more insights into the listings. Since Craigslist is only a subset of the rental properties available in the neighborhood, it can only explain part of the pulse of the neighborhood. The Census Indicators, articles, and BARI maps completes the picture for our neighborhood analysis. This proofs that we need to be cautions when analyzing specific datasets obtained from one source. Another example of this is the Google Places of Interest dataset has no record of transit stations in the neighborhood while there are a lot of bus and street car stations.

References

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