

City of Chicago Department of Technology and Innovation, Autumn 2025

Analysis of Short-Term Rental Restrictions and Chicago Housing Data

The City of Chicago enforces short-term rental (STR) prohibitions under the Shared Housing Ordinance, but it remains unclear how these prohibitions relate to housing affordability, demographic trends, and socioeconomic conditions. The team worked with the City of Chicago's Department of Technology and Innovation (DTI) to better understand the distribution of STR prohibitions and relationships with other demographic and market variables. Gaining insight into these connections is a critical step towards alleviating the City of Chicago's rising housing pressures.

The team built a pipeline to conduct a comprehensive analysis of Chicago's housing landscape using data from the Chicago Data Portal, U.S. Census Bureau, Airbnb, Zillow, and city administrative records. The pipeline allows the users to merge datasets and perform geospatial analysis, enabling a comprehensive view of how key housing factors vary across the city and relate to one another.

By merging datasets and performing k-means clustering, the analysis revealed significant spatial variation across census tracts. STR distribution proved to be a non-random spatial process and the strongest distinguishing factor among 12 variables, confirming its central role in understanding housing pressures and neighborhood dynamics.

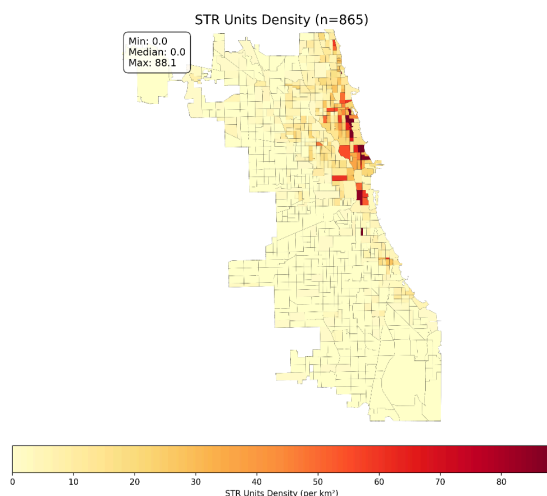


Figure 1: Short Term Rental Prohibition Unit Density by Census Tracts

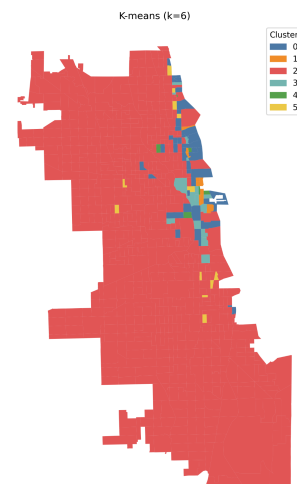


Figure 2: K-means Clustering Map