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LA 558 Web Mapping and Spatial Data Visualization

Final Project Abstract

Alcohol Outlet Density and Violence in Des Moines: A Geospatial Approach

Abstract

To better understand the causes of urban crime and how to manage it, scholars have begun looking into how the physical fabric of cities can create a conducive environment for crime and how these physical environments can be altered to reduce crime. To achieve this, using geospatial tools has become critical and helped bring new perspectives to scholarly ideas regarding the use of geographic data in explaining social phenomena. This project aims to document the relationship between alcohol outlet density and the incidence of crimes in Des Moines using a Geospatial approach. By visualizing the location of liquor stores and crime incidences, this project seeks to demonstrate that issues of alcohol availability and access are fundamental to the prevention of crime-related problems within communities.

Overview

Over the past few decades, violent crimes have been prevalent in many cities across the United States. In the face of such high crimes, many scholars have begun to question the effectiveness of the criminal justice system in battling urban crime within the country (Zhu et al., 2004). The foregoing has led to a plethora of studies that make use of multifaceted approaches to understanding crime in urban areas. Most of these studies have shown that urban crime is not just a factor of individual characteristics but is also susceptible to epidemiological understanding and public health interventions (Koop & Lundberg, 1992; Farrington & Loeber, 2000). Therefore, research into urban crime has shifted from emphasizing punishment as the primary means of reducing crime to the careful analysis of how physical and structural characteristics of local environments encourage and facilitate violent crime (Skogar, 1990; Brantingham & Brantingham, 1993).

An aspect of the built environment that has been found to contribute to crime incidences in urban areas, especially in the United States, is the location and density of alcohol outlets. The

concentration of alcohol outlets in neighborhoods has been linked to significant exposure to violent crime in neighborhoods with a high density of alcohol outlets (Zhan et al., 2015). Various cities have therefore begun reducing the concentration of alcohol outlets to help battle crime. This study seeks to investigate the relationship between alcohol outlet density and the incidence of crimes in Iowa using a Geospatial approach.

I made use of R Studio and Tableau to produce maps and charts for my analysis. With respect to data sources, I initially intended to get the crime data from the Federal Bureau of Investigation but the data available was for the state and city level but not the neighborhood level as I wanted. Fortunately, I was able to get local level crime data for all neighborhoods in Des Moines from a website called weichert.com. I also got data on liquor store distribution in the state of Iowa from [Iowa data](#) (a public data platform)

This project took a month before completion. The first two weeks were used to gather and clean the data and the final two weeks were devoted to making use of the cleaned data to generate my final outputs (maps and charts).

References

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