ECONOMIC AND SOCIAL IMPACT OF ARLINGTON RESTAURANT INITIATIVE

The Arlington Restaurant Initiative trains and certifies restaurants and bars to prevent and proactively address nightlife alcohol-related incidents.

- Is the intervention reducing alcohol-related crime?
- How do we quantify the economic impact of the program?

Data Sources

- Arlington County Police Department (ACPD) - Police Incident Logs - Nightlife Detail Calls for Service - Restaurant Accreditation information
- Virginia Alcoholic Beverage Control (ABC) - Licenses and Violations
- Yelp Restaurant Features

GEOSPATIAL CRIMES APPLICATION

- Spatially explore crimes in Arlington County from 2016 – present
- Visualize data by year, by crime type, and area of interest
- View establishments and ABC violations for restaurants included in the analysis
- Explore incident occurrence by the hour
- Export raw data including descriptions and time stamps of incidents

SIMILARITY MATRIX

- Develop similarity scores among 89 restaurants based on Yelp 51 attribute features (e.g., “Kid Friendly”, “Noise Level”)
- Jaccard Similarity Indexing is computed as the intersection of shared features over the union of features between all restaurant combinations
- The similarity matrix is used to identify similar restaurants for various statistical models

Introduction

CRIME DISTRIBUTION

Composition of Crime Incidents by Type

SEASONAL TRENDS

Weekly total of alcohol-related incidents for accredited and non-accredited restaurants. Peak holidays include Christmas and St. Patrick’s Day.

COSTS OF CRIMES

Preliminary crime costs calculated using tangible prices (see example). We used cost estimates from various studies and the number of incidents in Arlington to calculate the minimum and maximum yearly costs for crime types.

Example of a cost estimation (minimum)

Driving under influence:
- Fine: $250
- Jail time: 0
- Attorney: $1,900
- Court: $1,100
- Car insurance: $800
- Towing vehicle: $170
- Mandatory Classes: $250
- Total: $4,774

RESTAURANT SPECIFIC CRIME COUNTS AND FLUCTUATION

While most restaurants exhibit a decreasing trend in crimes, one establishment’s crime incidents continues to rise.

CRIME DISTRIBUTION

Two restaurants in the accreditation program comprise the majority of crime incidents in our database.

CRIME DISTRIBUTION

While most restaurants exhibit a decreasing trend in crimes, one establishment’s crime incidents continues to rise.

Conclusion & Next Steps

- Perform a cost and benefit analysis of the program
- Develop tangible and intangible estimates & incorporate disorderly conduct crimes
- Cost estimates as individual versus government costs to increase accuracy of public savings attributed to the program