

Investigation into the relationship between local businesses and venues and crime in London

IBM Data Science Capstone Project

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The Problem Statement

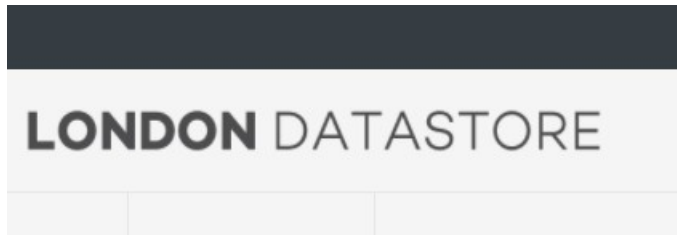
Within the context of London, is there evidence of a relationship between the types of facilities/industries in a locality and crime?

Motivation

Thefts from businesses make up almost 90% of business crime but account for approximately half of the total estimated costs of crime against businesses (£4.2bn), as each crime has a low impact on society. In contrast, robberies and burglaries against businesses – estimated to cost £2bn and £1.6bn respectively – make up over 40% of the costs of crime, but account for only 5% of all crimes against businesses.

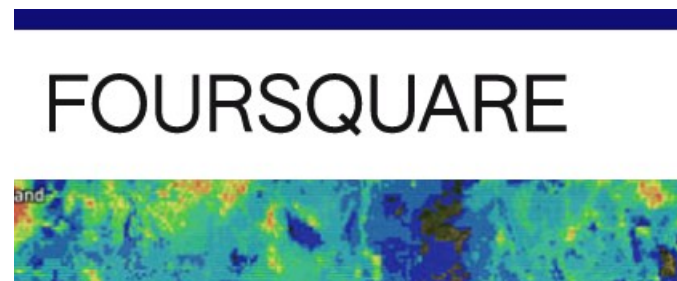
The economic and social impact of crime 2nd Edition Home Office 2018

The Data Sources



The London Data Store

- Crime data from MPS
- London borough profiles
- Venues with 24 hr alcohol licence
- Local units by industry



Foursquare places API

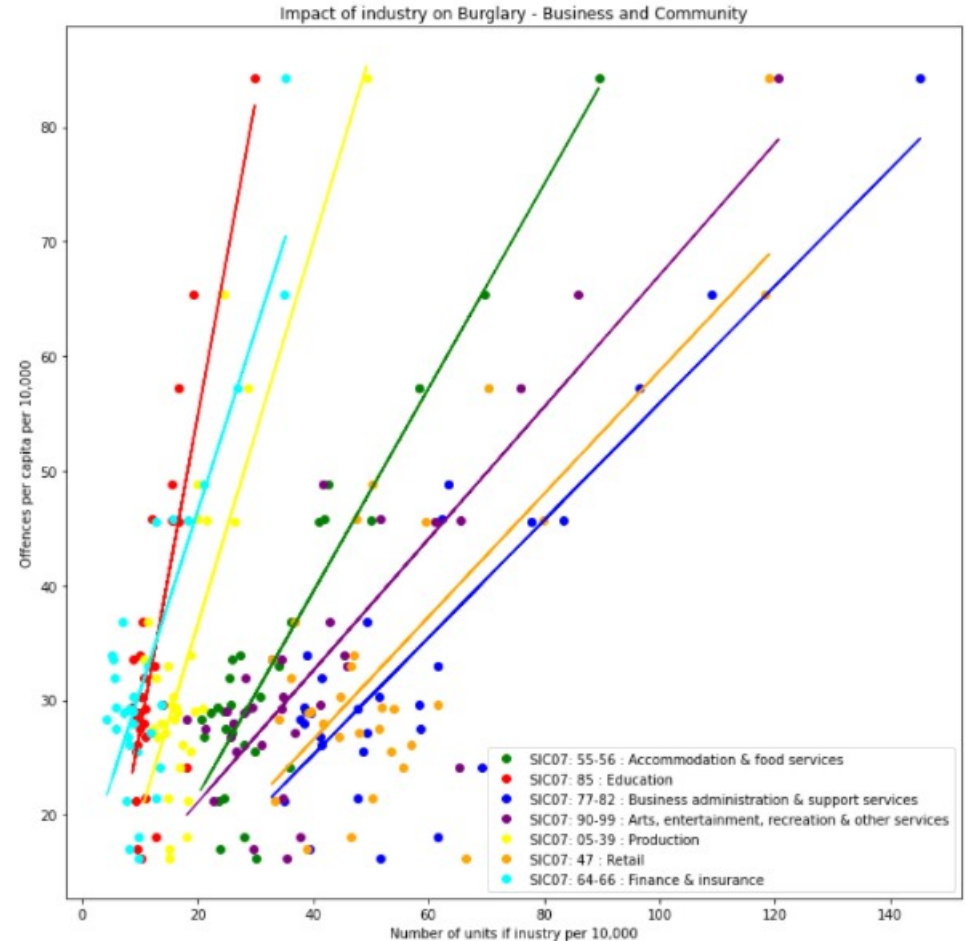
- Top 100 recommended venues in a location

	MajorText	MinorText	LookUp_BoroughName	201905	201906	201907	201908
0	Arson and Criminal Damage	Arson	Barking and Dagenham	11	3	5	3

Findings (local units by industry)

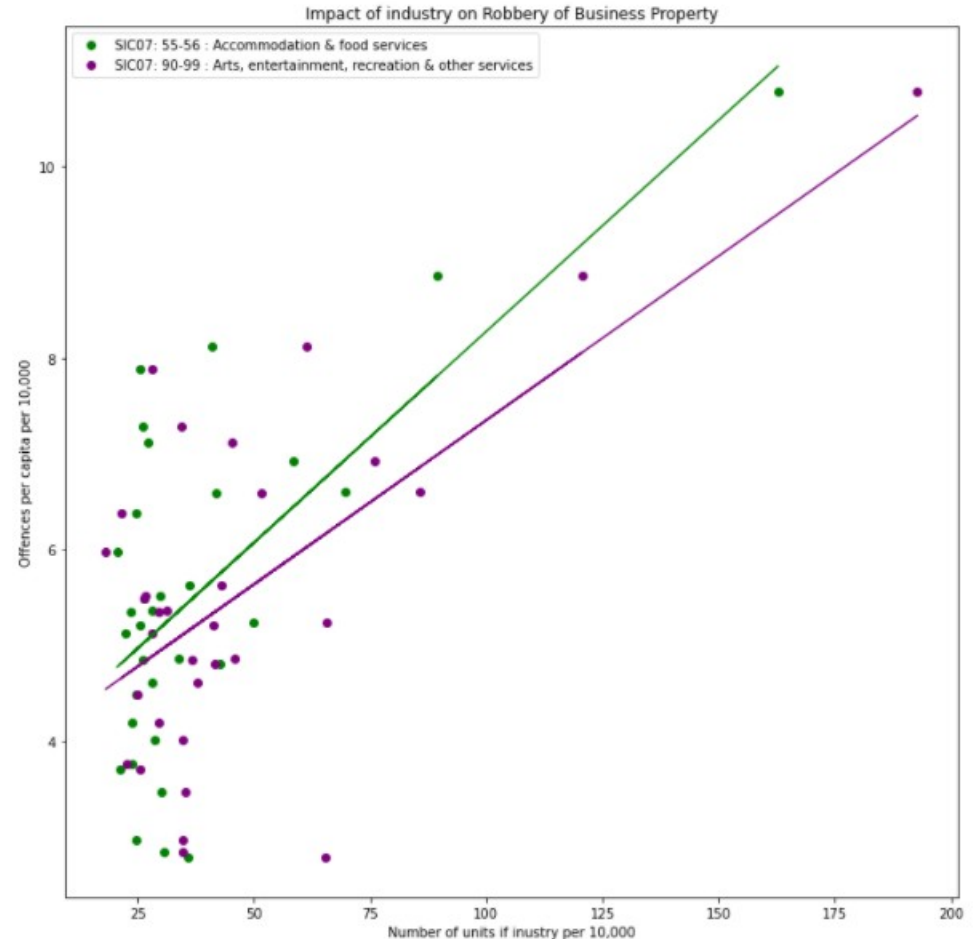
Increasing business units in a locality does, in general, increase crime.

- “Burglary – Business and Community” is increased by Educational and production businesses



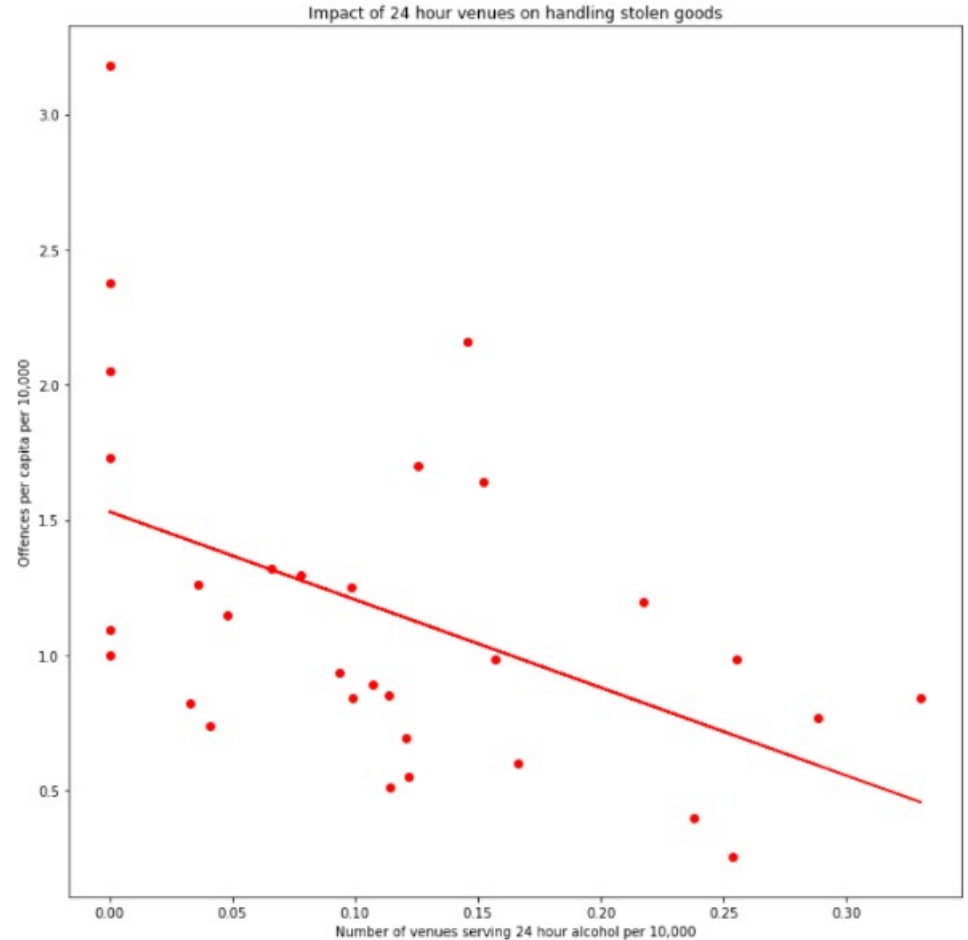
Findings (local units by industry)

- “Robbery of Business Property ” is increased by Accommodation & Food services and Arts, entertainment and recreation



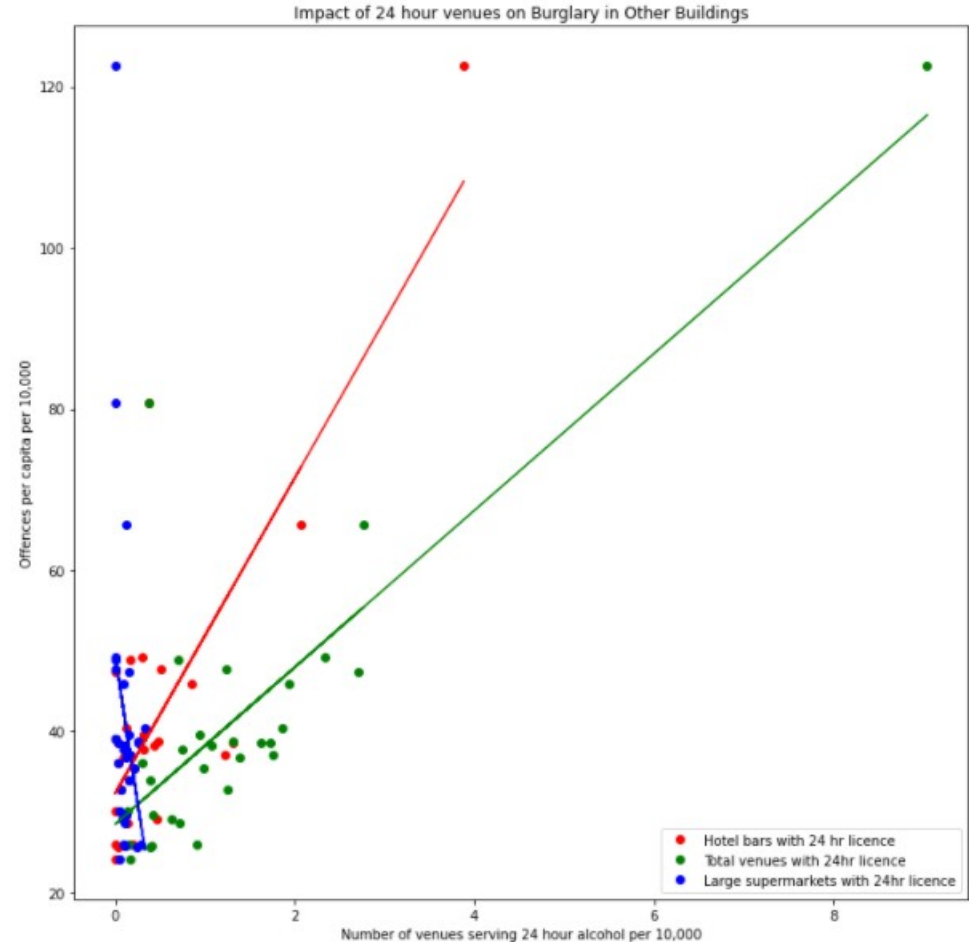
Findings (24 hour alcohol licence)

- Large supermarkets with a 24 hour alcohol licence may decrease rate of handling stolen goods



Findings (24 hour alcohol licence)

- Burglary in non residential buildings increases with venues with 24 hour alcohol licence.
- Exception is licenced large supermarkets



Findings (Foursquare)

Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
Penge	Gas Station	Outdoor Sculpture	Fast Food Restaurant	Hardware Store	Sculpture Garden	Gym / Fitness Center	Tapas Restaurant	Grocery Store	Train Station	Tram Station
Thornton Heath	Gas Station	Bus Stop	Home Service	Sandwich Place	Auto Garage	Coffee Shop	Tram Station	Mediterranean Restaurant	Chinese Restaurant	Pizza Place

Thornton Heath is a really boring place if these are really the best categories of venues there!

(no meaningful conclusions were drawn from Foursquare data)

In Conclusion

- Analysis indicated there is a link between crime and businesses in a locality
- The nature of this link and confounding factors were not considered
- The study was limited by a small sample size of large geographic areas
- See the full report for more detail