

Overcrowding and crime: a case study of Major League Baseball games during 2018.

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1 Background.

- Issues around overcrowding and crime in urban environments has been acknowledged for some time (Freedman, 1975).
- Evidence suggests that the more ‘strangers’ in an area, the more crime trends to occur, although this can vary by crime type (Jarrell & Howsen, 1990).
- Overcrowded areas, such as around public transport stops, are thought to mask deviant behaviour and thus provide opportunities for crime (Loukaitou-Sideris, 1999).
- Existing studies have found that sports events, such as baseball games, can incite criminal behaviour, especially around the immediate vicinity of the stadium (Mares & Blackburn, 2019).
- Here, we demonstrate how to examine the relationship between crowd density and crime at Major League Baseball games during 2018 using open data sources.

2 Data.

- Open Street Map API.
- Open police-recorded crime data (Ashby, 2018).
- Game logs from Retrosheet.

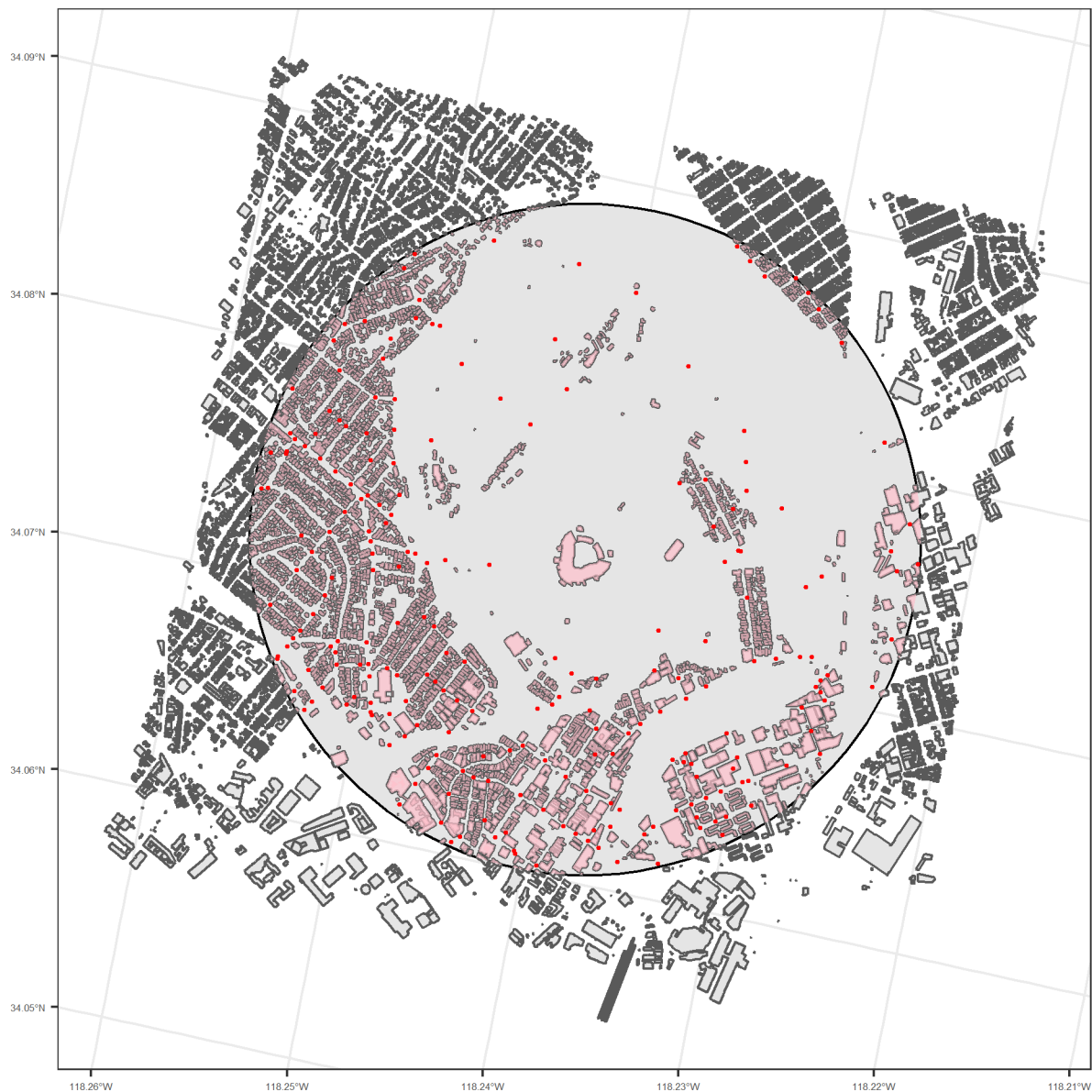


Figure 1: Building footprints around the LA Dogder stadium including 1-mile buffer and geocoded crime locations during 2018.

3 Preliminary findings.

- There is a clear relationship between game attendance and crime.
- To provide a meaningful interpretation, we adjust attendance figures for the built environment, providing a measure of crowd density.
- This demonstrates that there is a positive association between crowd density and the volume of crime occurring in and around stadiums on match days.
- There is a negative association between crowd density and crime *rates* (adjusted for attendees), noting potential issues around rate measure.

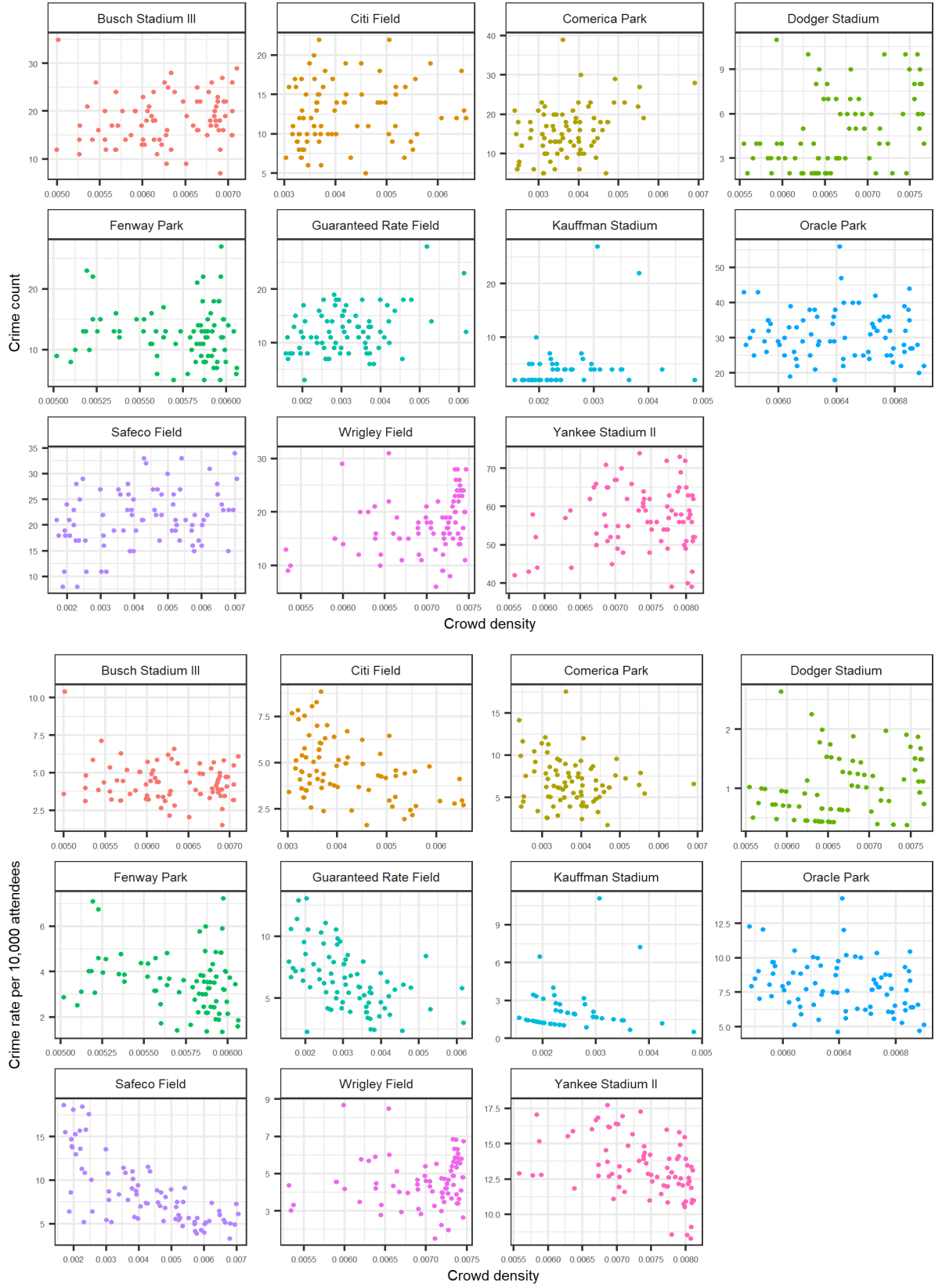


Figure 2: Relationship between crowd density and crime (counts and rates) by stadium for Major League Baseball games during 2018.

4 Discussion.

- We provide a demonstration of how to use open data to examine the relationship between overcrowding and crime.
- There is preliminary evidence to suggest that there is a relationship between crowd density and crime around Major League Baseball games on match day.
- All code to replicate this study can be found online (https://github.com/langtonhugh/crowds_crime).

References

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