



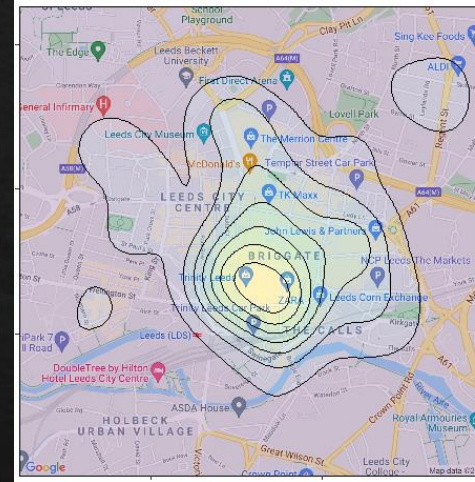
# Police crime reports

A year of Police data from Oct. 2020 to Sep. 2021 for Leeds city center (N 53.786-53.804 W1.52-1.56)\*

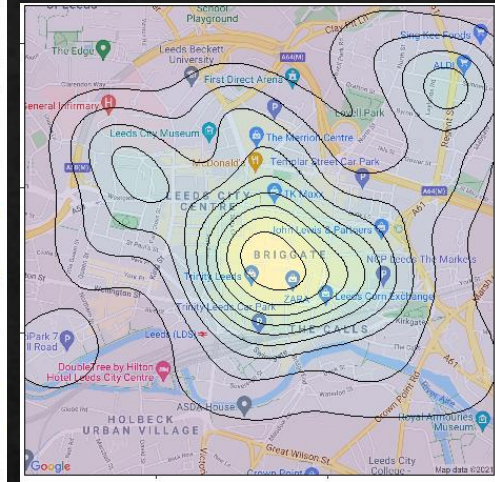
- There are crime focus areas with higher crime density than other parts of the city center. Briggate St. -Duncan, Albion St.-Trinity Center, Merrion St.-Woodhouse Ln. are the areas with the highest crime number. There is a consistency in the density centers and geographical domain over different months with a slight movement of the crime concentration locations. Fig(1)
- Why it is crucial: Preventive activities are far more critical than reactive. The police force can conduct patrolling, monitoring, and other supervision activities when knowing the regions with a higher crime risk. These activities can be more effective if more data consist of the exact time of the crimes exist.

\*All the data is made available under the [Open Government Licence v3.0](#)

October 2020

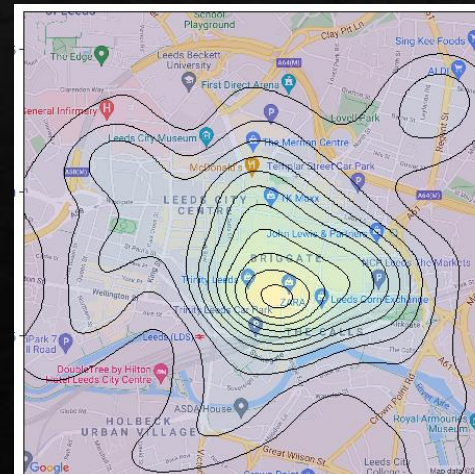


March 2021

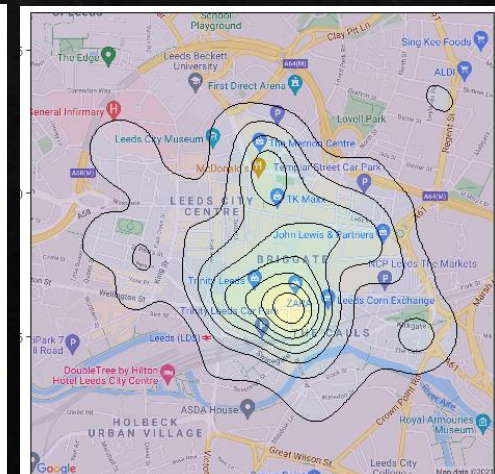


Fig(1) Crime focus areas

June 2021

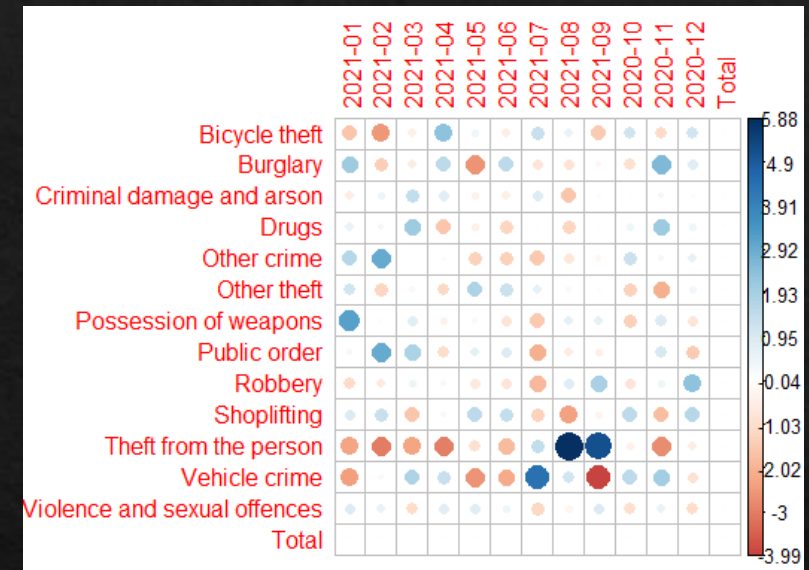


September 2021

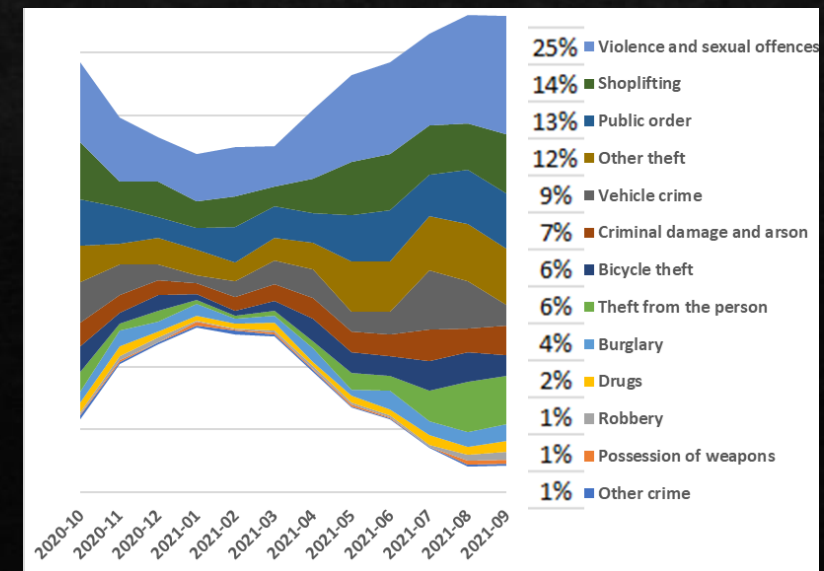




- There is a meaningful relationship between the month and the number of crimes. For some types of crime, this relation is stronger. “Theft from person” in 2021-08 and 2021-09,” Vehicle crime” in 2021-07 and 2021-09 have the greatest residuals. (The test is significant with X-squared = 376.76, df = 156, p-value < 2.2e-16).Fig(2) Also, the average monthly increase rates of “Possession of weapons” and “Robbery” are higher than other crime types, but the numbers of crimes for these two are not considerable. Fig(3) We define an “effective increase” index by multiplying the average increase rate and the average number of crimes in the month. “Theft from the person” and “Vehicle crime” have the most “effective increase” index among all crime types.
- Why it is crucial: Police and local authorities can conduct campaigns and social activities to raise awareness about the possible crimes before the peak time of each crime. For instance, they can use a public poster with a #BeSafe message to inform people about the “Theft from person” risk in August and September. A combination of this analysis and the crime concentration zones shape more targeted preventive actions. Also, crimes with a higher “effective increase” index should be considered seriously.

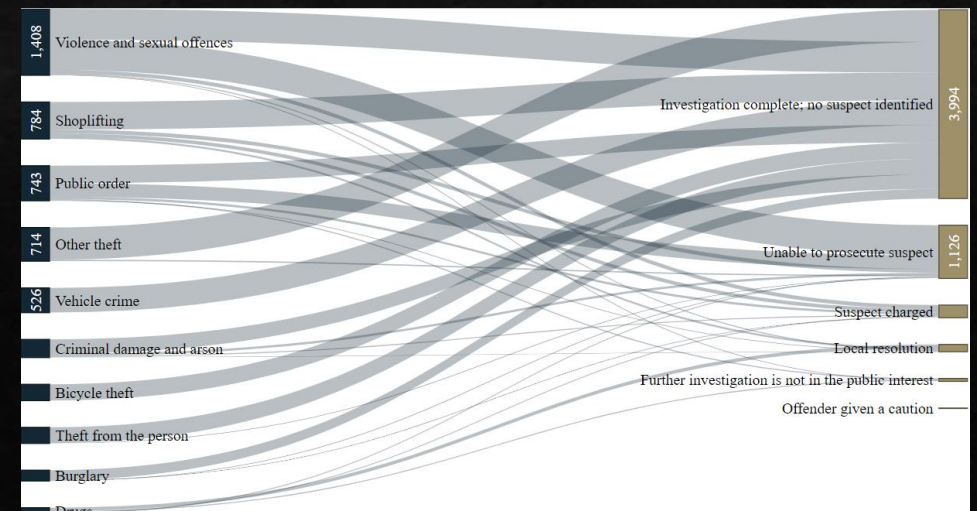
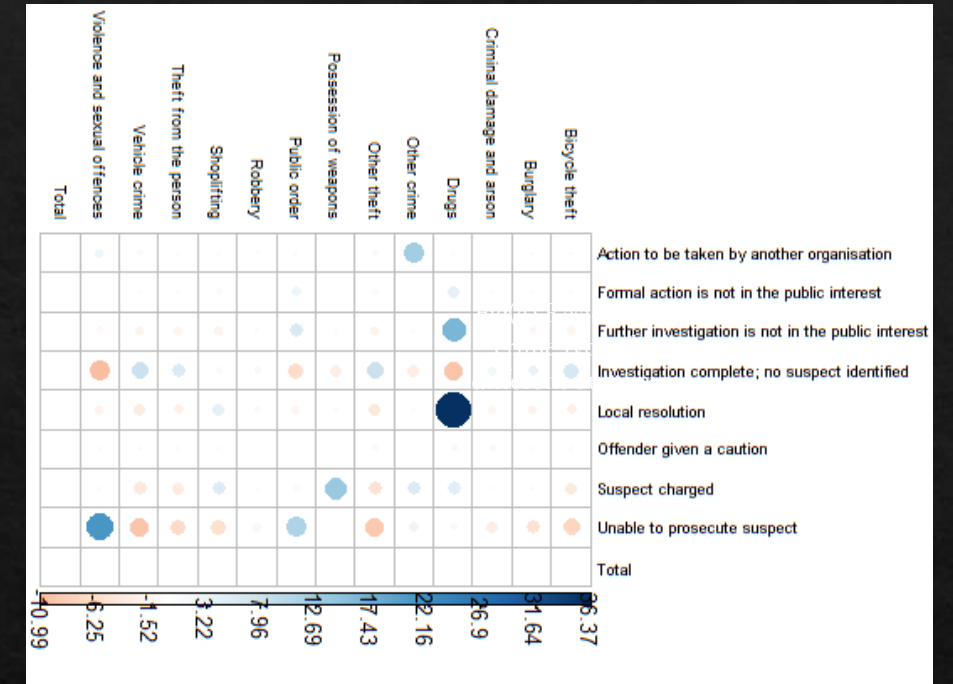


Fig(2) Residuals of crime types for different months



Fig(3) Ratio of crime type from total cases

- There is a strong relationship between the crime type and the outcome type. “Local Resolution” and “Further investigation is not in public interest” for “drug” crime type, “Unable to prosecute the suspect” for “Violence and sexual offence” have the highest residuals in the test. (The test is significant with X-squared = 3806.3, df = 104, p-value < 2.2e-16) Fig(4) Furthermore, about 70% of case outcomes result in “Investigation complete; no suspect identified” and 20% of cases classified as “Unable to prosecute the suspect.”
- Why it is crucial: Some crimes are hard to detect or document correctly. For example, in “drug” crime cases, we can see a large number of cases have the outcome of “local resolution”, and it raises the question about the action taken and how effective that action was. Many cases in crime type “violence and sexual offence” result in “Unable to prosecute the suspect.” Fig(5) Legislators and the Police force need to investigate further to ensure the sufficiency of laws and their authorities.



Fig(4) Sankey diagram of crime type vs. outcome