

NZ Police: Victimization and Places

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2024-02-22

Objective/purpose/question

To understand if Covid 19 has impacted on people lives and if the thefts increased from 2020 till 2022

The global pandemic has resulted in widespread ramifications including significant job losses, increased instances of illness within families, economic turmoil, and heightened mental health challenges. These factors have collectively contributed to a rise in both desperation-driven crimes and those exploiting newfound opportunities.

Who are the primary targets for these criminal activities? Amidst the implementation of stay-at-home orders, what specific types of thefts have witnessed a notable increase? Has crime increased in NZ since before the pandemic? What kind of crimes are being committed? How have different types of crime changed since before pandemic?

Furthermore, which particular categories of theft have experienced a decline in frequency?

Methodology

About the data:

The table here contains data from NZ Police crime statistical reporting datasets. The data was sourced from Victimisations snapshot page which provides a quick overview of crime victimisations in your area.

Inclusions and Exclusions: A new column has been added to include all districts under one city grouped to come under one District such as below: Auckland - Auckland City, Central, Counties/Manukau, Eastern, Waitemata Bay Of Plenty - Bay Of Plenty Canterbury - Canterbury, Southern, Tasman Northland - Northland Not Specified remains the same Waikato - Waikato Wellington - Wellington

A new column has been added to include Victimisations happened prior to the Pandemic year 2020.

Quality of Data: Data in the tables has been simplified and categorised for high-level analysis. Like all operational data, it could contain anomalies that would not affect its day-to-day use but could cause errors for statistical analysis.

For example, under the 'District' column there are two observations containing values 'Not Specified'. Similarly, for the column 'Location Type Division', there are several observations containing values as 'Not Applicable'. Any such gaps in the dataset could impact the insights drawn when reporting statistical summaries.

The original NZ police dataset does not contain the baseline data to inform the crime rate before Covid. Therefore, to compare the crime rates pre and post-Covid, I have obtained another dataset that contains crime data before pandemic. This new data set is also sourced from from NZ police website. I have cleaned up the data to appear in long format by using the tidyr package.

Variables in the dataset

- Police District: The geographical area or region where the crime occurred.
- ANZSOC Division: The division of the crime classification based on the Australian and New Zealand Standard Offence Classification (ANZSOC) system.
- ANZSOC Group: The specific group within the ANZSOC Division that the crime belongs to.
- Location Type Division: The division of the location type where the crime occurred.
- OOI Exclusion: Exclusion information related to the Official Offender Index (OOI).
- Person/Organisation: Whether the offender was a person or an organization.
- District: Another designation of the district where the crime occurred.

Quantitative Variables:

- Victimisations: The number of victimizations associated with the crime.
- Year of Year Month: The year and month when the crime occurred.
- Year Month: The month and year of the crime occurrence.

Loading R Libraries

Loading dataset

The dataset is for the period Jan 2020 till Nov 2023 Here we shall look into data set. There are total 14 variables and 613,752 observations.

We shall have a look at the summary of the file.

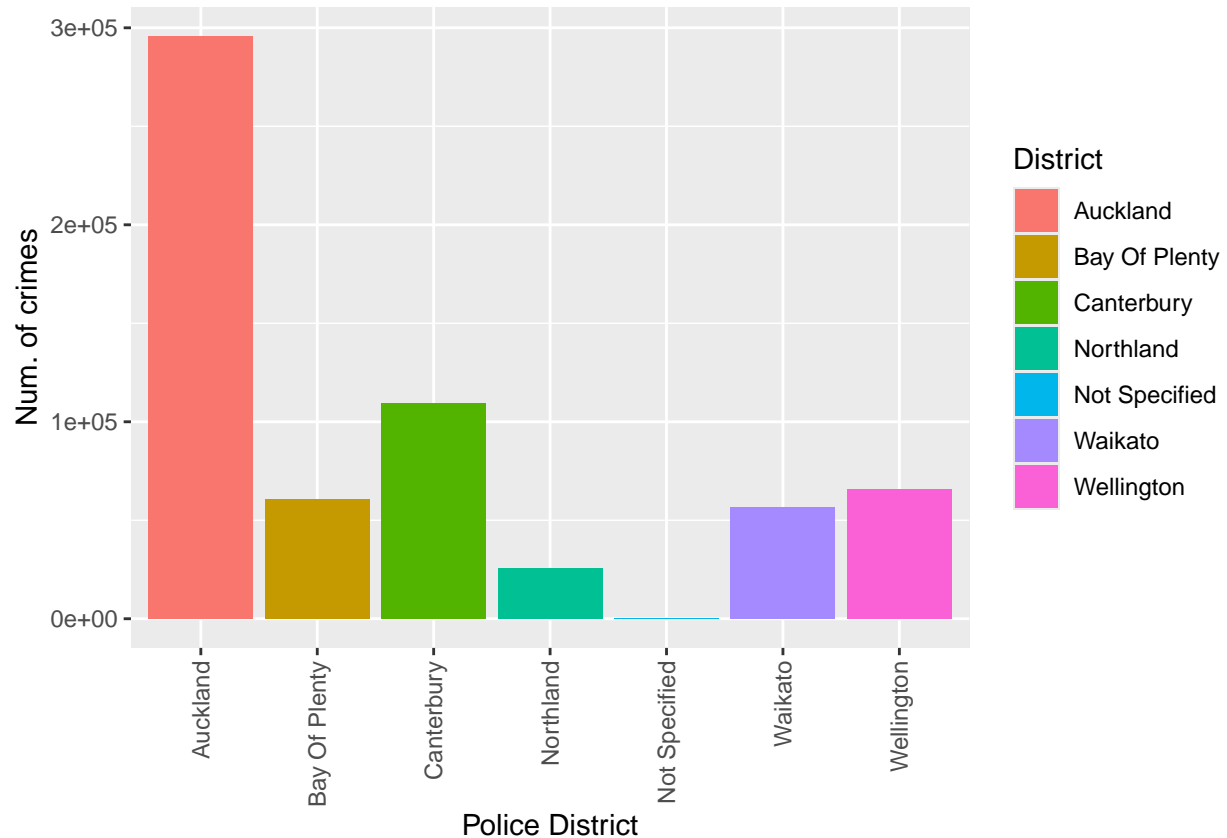
```
## 'data.frame': 1 obs. of 15 variables:
## $ Police.District : chr "Central"
## $ Year : int 2021
## $ ANZSOC.Division : chr "Robbery, Extortion and Related Offences"
## $ ANZSOC.Group : chr "Non-Aggravated Robbery"
## $ Location.Type.Division: chr "Not Applicable"
## $ OOI.Exclusion : chr "No offender proceeded against"
## $ Person.Organisation : chr "Organisation"
## $ Year.Month : chr "Jul2021"
## $ Month.Ago : int -30
## $ OoI.180d.Gp : chr "No offender proceeded against"
## $ OoI.30d.Gp : chr "No offender proceeded against"
## $ OoI.7d.Gp : chr "No offender proceeded against"
## $ OoI.90d.Gp : chr "No offender proceeded against"
## $ Victimisations : int 1
## $ District : chr "Auckland"
```

```
## 'data.frame': 1 obs. of 5 variables:
## $ Offence : chr "Acts.Intended.to.Cause.Injury"
## $ Victimisations: int 1637
## $ date : int 1
## $ month : int 6
## $ year : int 2017
```

Including Plots// Data Visualization

How is the crime being distributed across different districts?

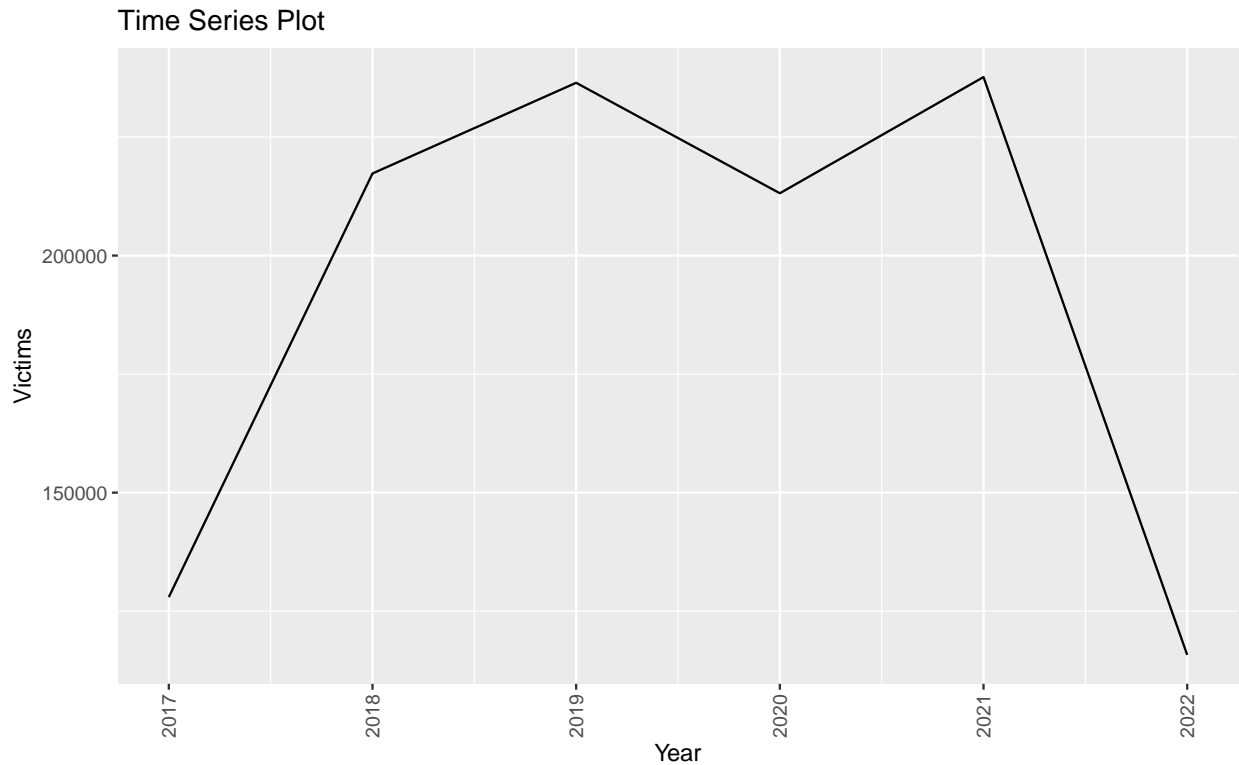
Auckland experiences a higher incidence of crimes compared to the South Island, likely due to its larger population size.



Has crime increased in NZ since before the pandemic?

The incidence of crime escalated notably in 2022 compared to the preceding two years, likely attributed to the conclusion of lockdown periods and the subsequent return of the public to regular activities. Contributing factors may include widespread job losses prompting individuals to seek employment opportunities, which remain limited. Consequently, as people strive to sustain their livelihoods amidst the scarcity of job opportunities, some resort to theft and robbery as accessible means to alleviate financial strains.

```
## Category      x
## 1      2017 127962
## 2      2018 217317
## 3      2019 236445
## 4      2020 213144
## 5      2021 237655
## 6      2022 115772
```

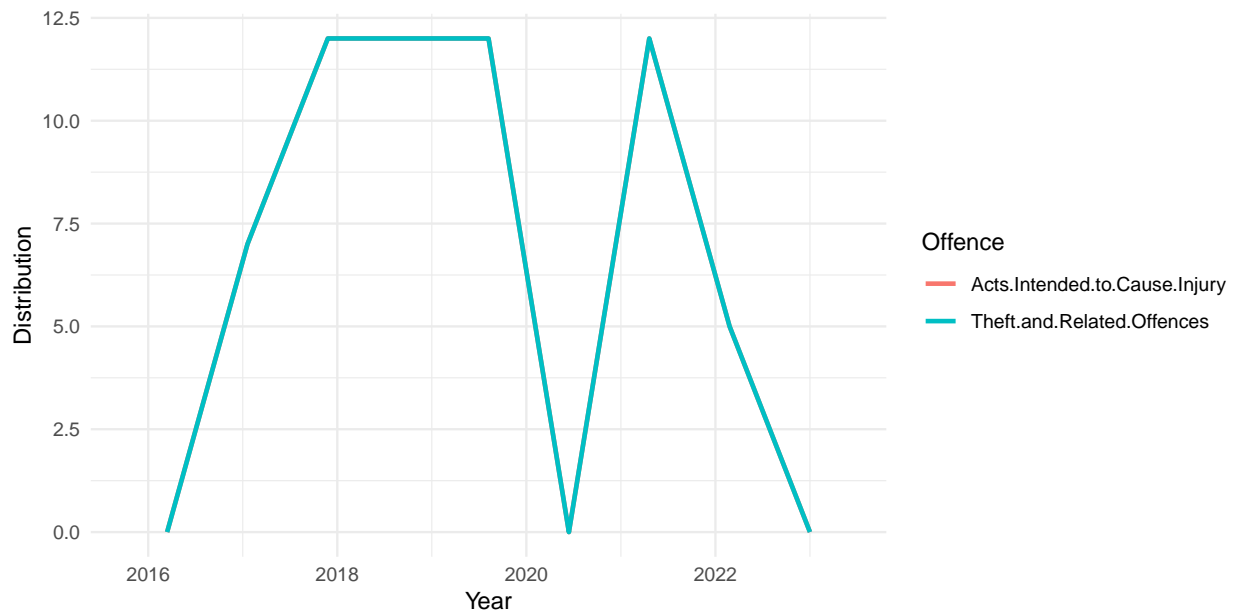


What kind of crimes are being committed?

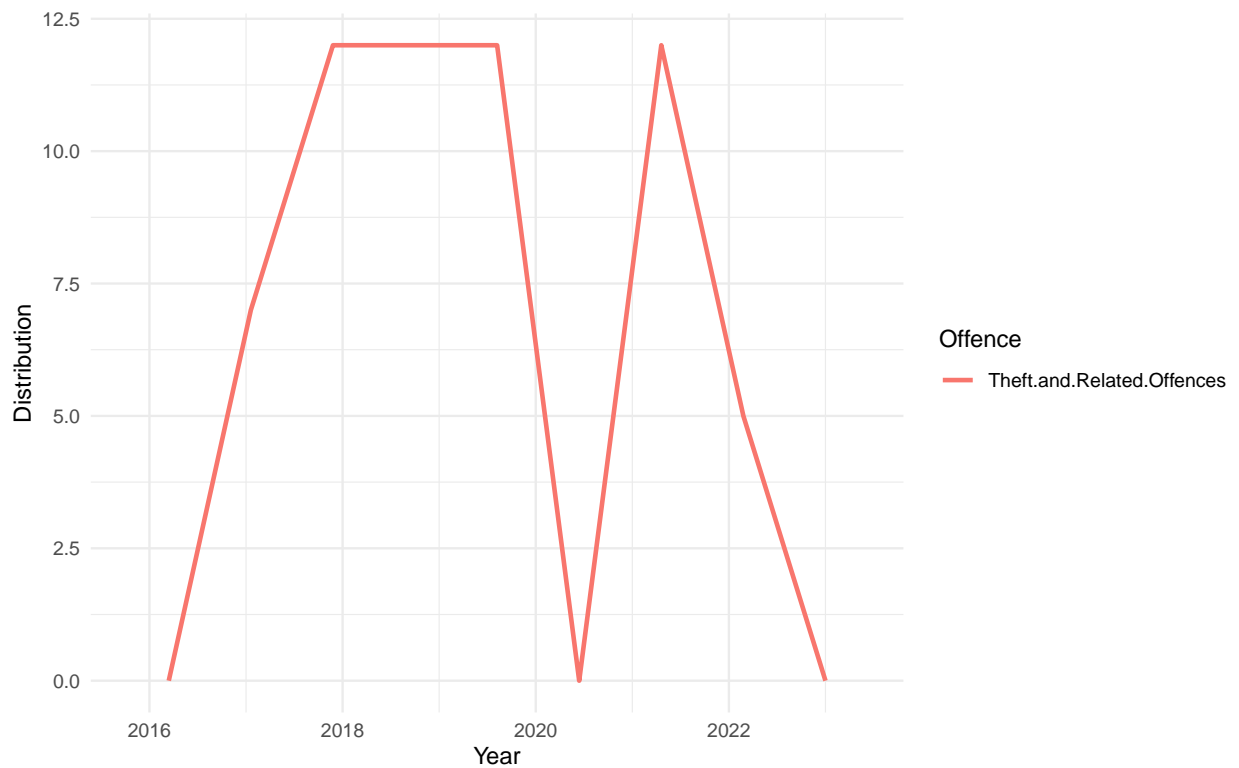
Acts intended to cause injury and theft related crimes are huge in number compared to rest of the crimes being occurred in NZ. Illegal use of Motor vehicle, Theft of Motor Vehicle and Serious assault not resulting in Injury are being the top 3 crimes during the year 2020 and 2023. The ease of covid restrictions has seen a high increase in number of vehicle thefts. Vehicle crime tends to be opportunistic and offenders look for easy targets or quick gains if they see valuables left in vehicles.

The good news is that this surge in increase in car thefts has seen decrease in other offences like unlawful entry, burglary, sexual assaults and Robbery related offences.

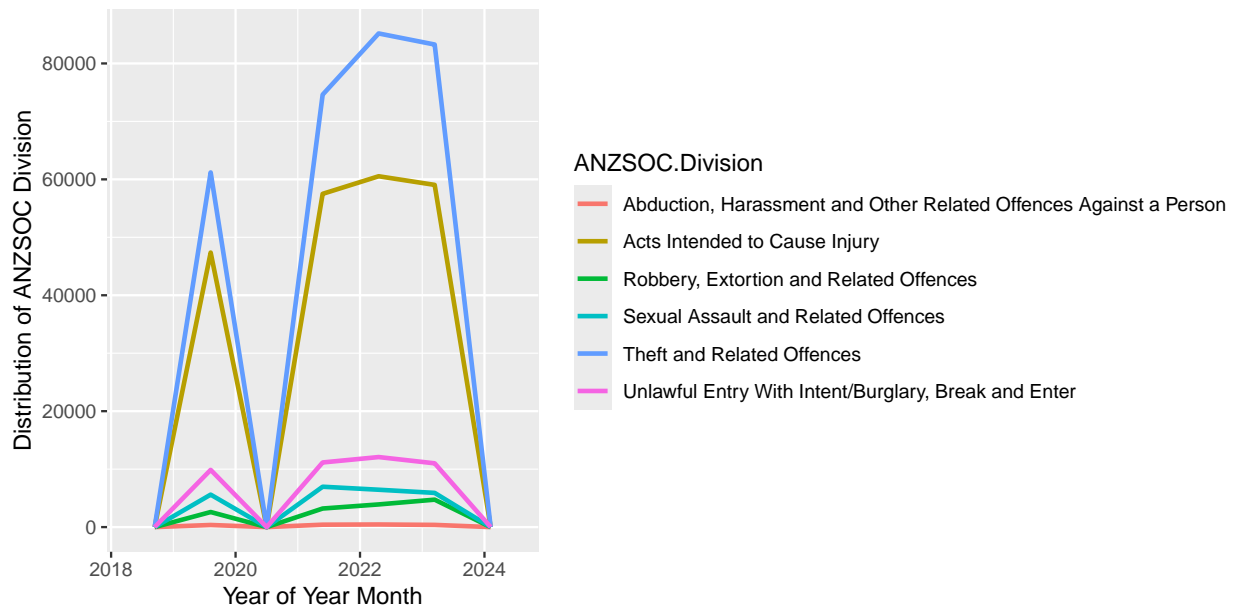
Acts intended to cause Injury before Covid



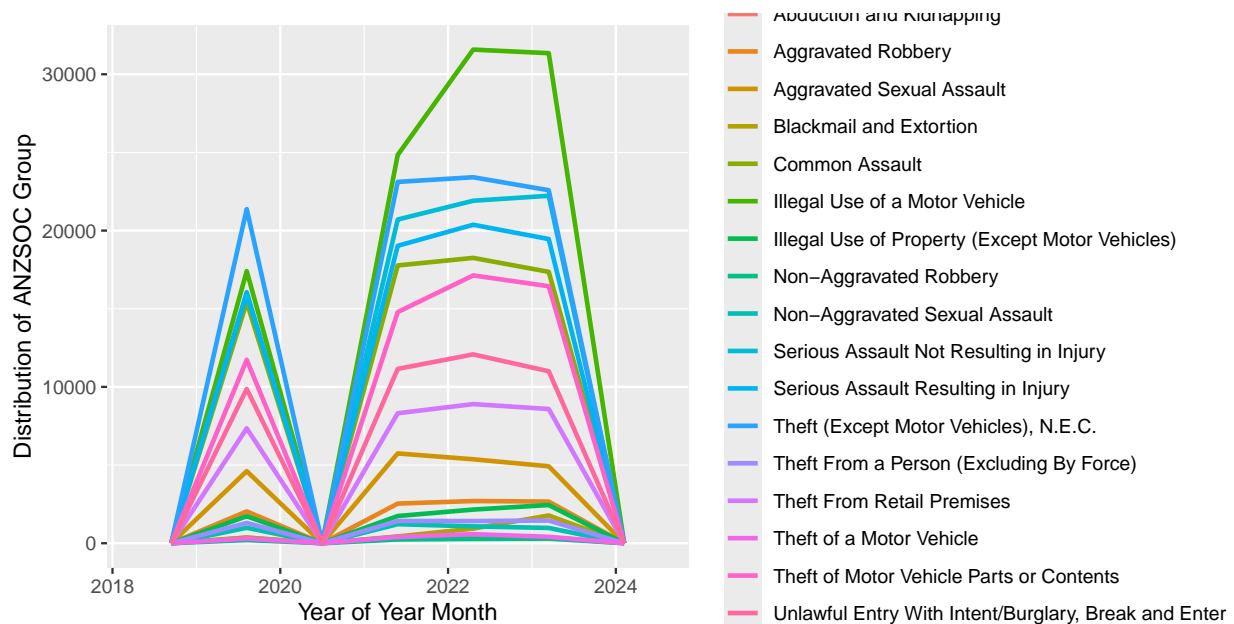
Theft and related offences before covid



ANZSOC Division during and after pandemic

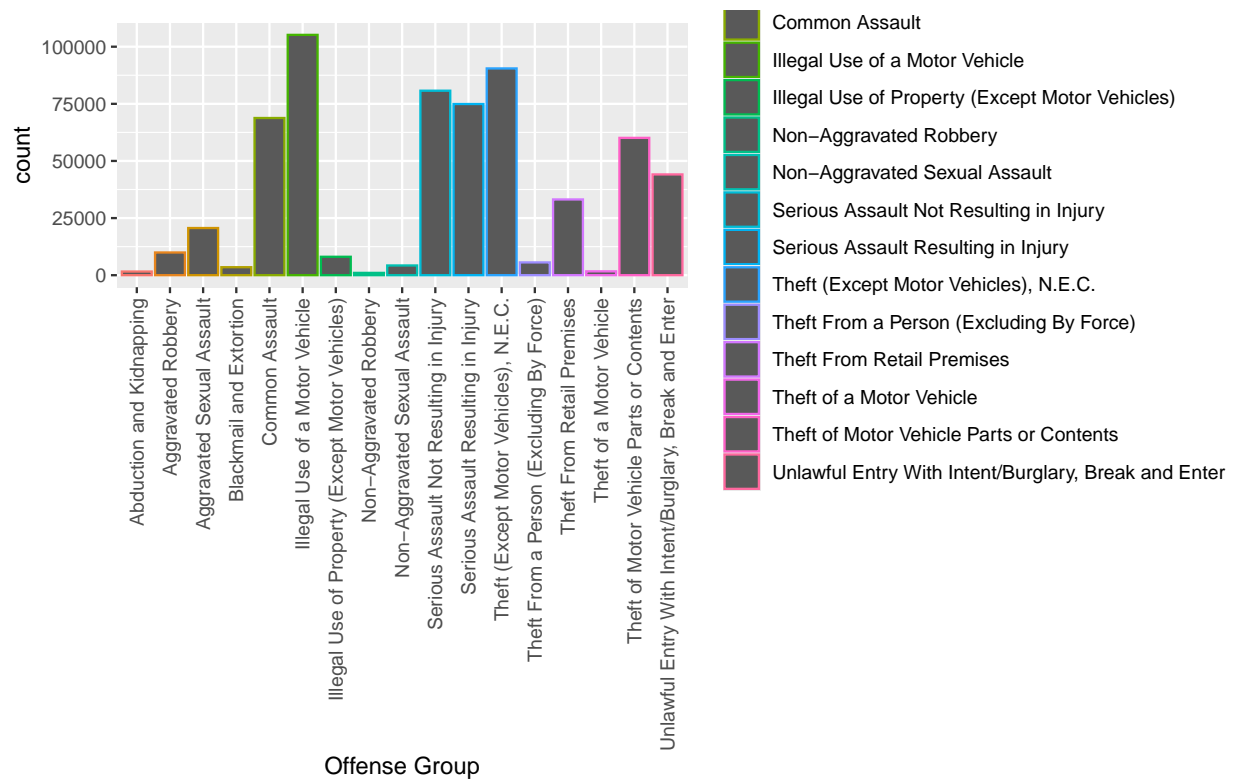


ANZSOC Group during and after pandemic



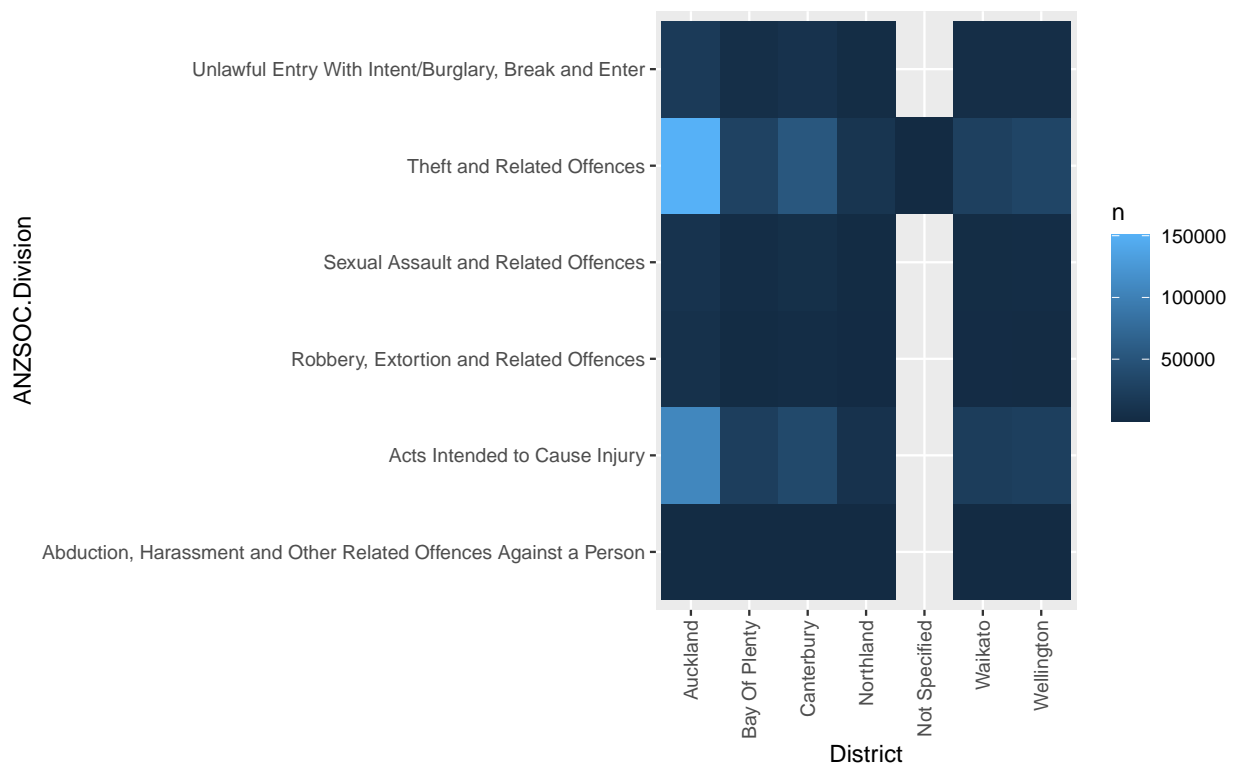
Distribution of Offense group by count

The below distribution shows that “Theft except motor vehicles” is showing the second highest offense followed by “Illegal use of Motor vehicles”



Connection between Districts and offense group for Covid period(2020-2022)

This correlation map shows Acts intended to cause injury and thefts & related offences are higher in Auckland due to its larger population area. This number is followed by Canterbury region.



Discussions With people remaining indoors, households are better guarded so domestic burglars and car

thieves are more conspicuous and neighbours are more available to spot them. Cars were safer at home, particularly in garages or driveways. So the domestic burglary and car crime offences were low during the covid lockdown period. The bad news is staying at home as has higher chance of domestic and family violence to occur although this hasn't shown a high increase as per our findings.

Recommendations

The analysis has shown an increase in motor theft since post-Covid, therefore it is recommended that car owners consider installing immobilizers and dash cams in their vehicles. These devices can help capture theft incidents, making it easier to identify thieves and ultimately reduce crime in the area.

References

<https://r-graph-gallery.com/279-plotting-time-series-with-ggplot2.html> <https://rmarkdown.rstudio.com/lesson-3.html#:~:text=echo%20%3D%20FALSE%20prevents%20code%2C%20but,useful%20way%20to%20embed%20figures>
The book of R by Tilman M Davies.