Analysis Report On Crime Incidents In Victoria

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2021-05-27

1 INTRODUCTION

The data (https://www.crimestatistics.vic.gov.au/crime-statistics/latest-victorian-crime-data/download-data-0) used for the analysis records the criminal incidents in Victoria from **December,2011** to **December,2020**. It is collected from the Crime Statistics Agency (https://www.crimestatistics.vic.gov.au/about-us/contact-us) of Victoria Government. The copyright is under the CC-BY 4.0 license (https://creativecommons.org/licenses/by/4.0/), which allows the team to apply the data analysis with minimum restrictions on the use of the data.

The *purpose of this analysis report* is to assist the policy maker to adjust or re-assign the police resources, possibly providing some insights on the future development on the social security.

In the data analysis, it contains three main parts:

- To obtain an overview of the criminal incidents among Victoria's **police regions**. Also, observing the changes of incidents recorded over time to seek some trend or pattern in different local government areas.

  - Which police region has the greatest number of incidents recorded? (2.1.1)
  - How did the trend of incidents recorded in those police regions varied across the years? (2.1.2)
  - What is the trend of incidents recorded in North West Metro's local government areas changes over time? (2.1.3)
- To understand the criminal activity better, it will not only show the record changes over time but also the changes of offense sub-groups and sub-divisions. This will provide a precise landscape of criminal activities in Victoria.

  - For each LGA, which offense_subdivision, recorded maximum incidents? (2.2.1)
  - Which offense_subgroup was most recorded in the previous found offense_subdivision's? (2.2.2)
  - What was the trend of each offense_subgroup found over the years? (2.2.3)
- Building on the previous analysis, this part will explore the dissect of criminal activities among different **suburbs** or **towns** in Victoria.

  - What are the top 10 Suburbs with maximum no of incidents so far? (2.3.1)
  - What are the top 10 Suburb's recorded with most number of incidents in each Year? (2.3.2)
  - What were the top 10 Offense's in each year? (2.3.3)
  - What are the top 2 Offenses for the most affected Suburb's found in figure 2.7? (2.3.4)
  - What is the trend of top 2 offenses in each year w.r.t most affected Suburb? (2.3.5)

2 STATISTICAL AND GRAPHICAL ANALYSIS

2.1 PART-1

Note: The data for 2.1 analysis has excluded the criminal incidents where the geographic location is unknown. For further information on these geographic locations please refer to the Explanatory Notes and Glossary on this website (https://www.crimestatistics.vic.gov.au/about-the-data/explanatory-notes#Data%20source%20%E2%80%93%20Victoria%20Police).

2.1.1 Which police region has the greatest number of incidents recorded? [1]

From the table 2.1, it shows an overview of the total number of incidents recorded for each police region from **2011** to **2020**. It indicates that the **North West Metro** police region has recorded maximum incidents during the period.

Table 2.1: Number of Incidents Recorded in different Police Region

Police.Region	Total_Incidents
1 North West Metro	1442412
3 Southern Metro	856043
2 Eastern	798741

4 Western	584529
Justice Institutions and Immigration Facilities	10764
Unincorporated Vic	973

2.1.2 How did the trend of incidents recorded in those police regions varied across the years? [1]

Figure 2.1 presents the movement of the incidents recorded for each police region over time.

- In the **4** main police regions of Victoria, it illustrates an evident fact that the number of incidents recorded has reached the peak around early **2016**, then has a sudden plunge afterward.
- The possible reason behind may be that the large decrease on the number of **burglary** and **theft** from **2016** to **2017**, according to the report from Victoria crime statistics (https://www.crimestatistics.vic.gov.au/crime-statistics/latest-victorian-crime-data/victim-reports-2).

Figure 2.1: Total number of incidents recorded in each police region

Additionally, this report states that the number of **deception** cases are in a continuous increase, which may be due to the convenience of technology of e-mail, mobile phones and the internet. Thus, it may highlight some areas for re-enforcement in the future, such as cyber security and private data privacy.

2.1.3 What is the trend of incidents recorded in North West Metro's local government areas changes over time? [1]

The observation from table 2.1 triggers an interest for further investigation on the **North West Metro** police region.

Since it has the most incidents recorded, constructing a figure 2.2 to observe the change of the number of incidents recorded in different local government areas may provide some insights.

The figures suggest that

- There is a tendency that the number of incidents recorded is increasing since **2019**.
- This can provide some suggestions to the government in terms of adjusting the public safety policy and assigning the police resources.

Yet, few exceptions such as **Hobsons Bay**, **Moonee Valley** and **Banyule**, the reason maybe they are not the major resident area hence fewer criminal activities occurrence.
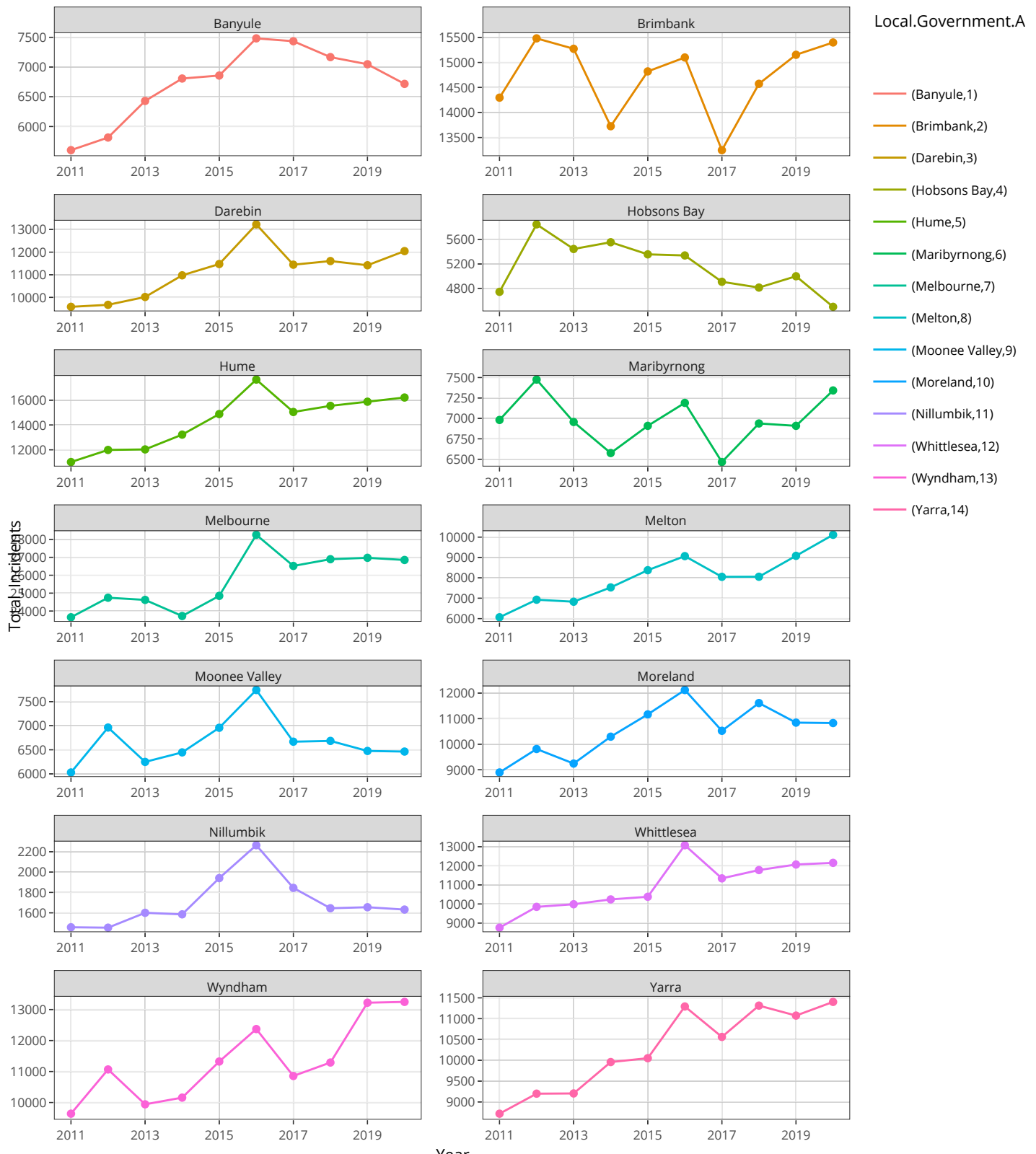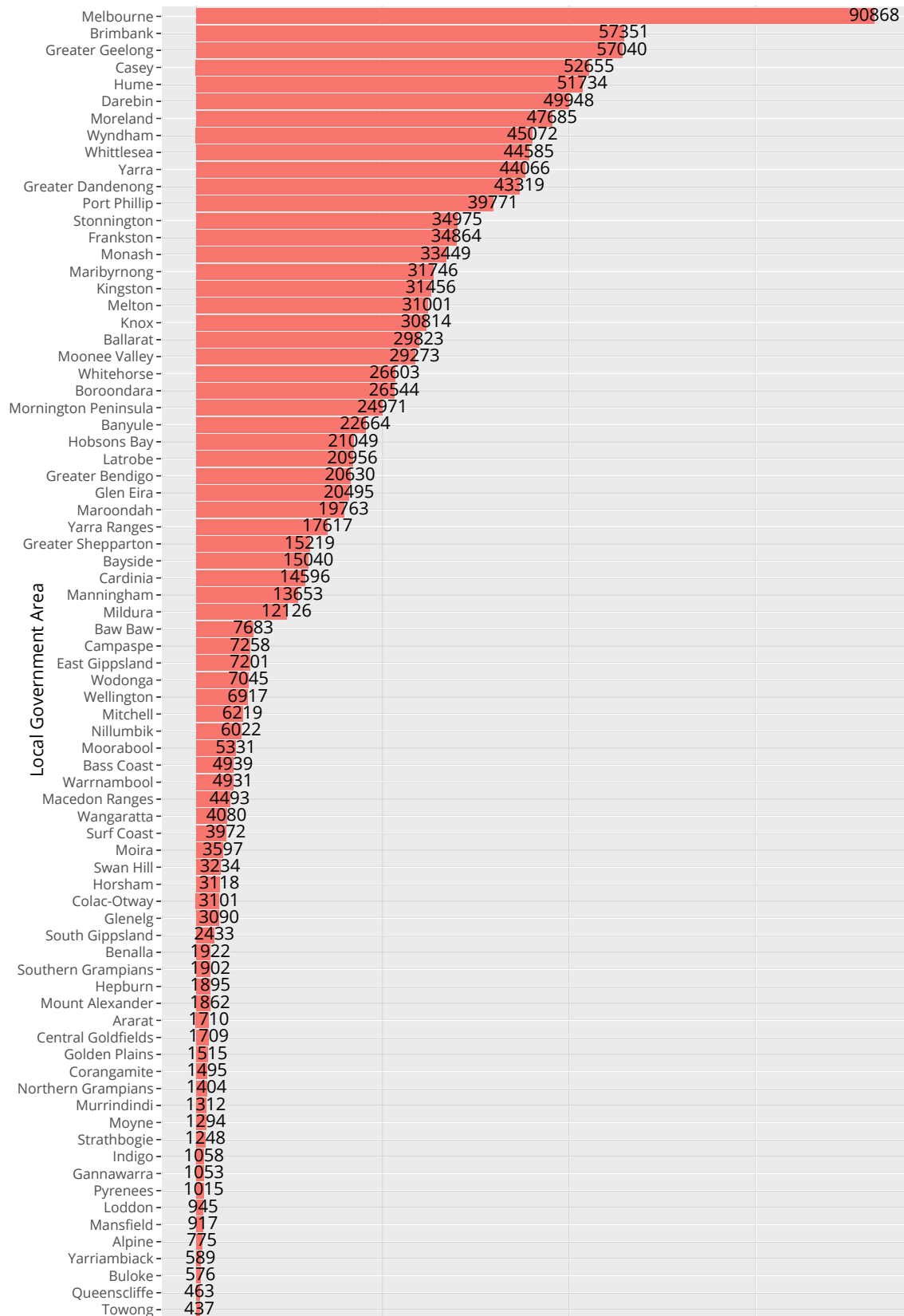
Year

Figure 2.2: Crimial activity trend in different suburbs from North West Metro

2.2 **PART-2**

2.2.1 **For each LGA , which offence_subdivision, recorded maximum incidents? [1]**

Hindmarsh – 416
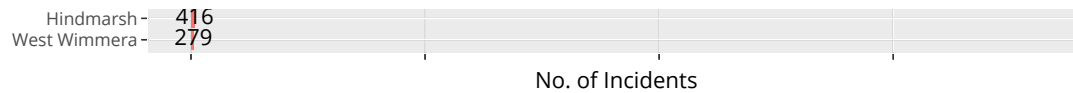West Wimmera – 279

No. of Incidents

Figure 2.3: No .of Imcidents of top offennce in each LGA

The figure 2.3 shows:

- **Theft** was the most common crime in each region.
- Melbourne in particular recorded around **90,900** burglaries in the past **5** years, far more than any other region.
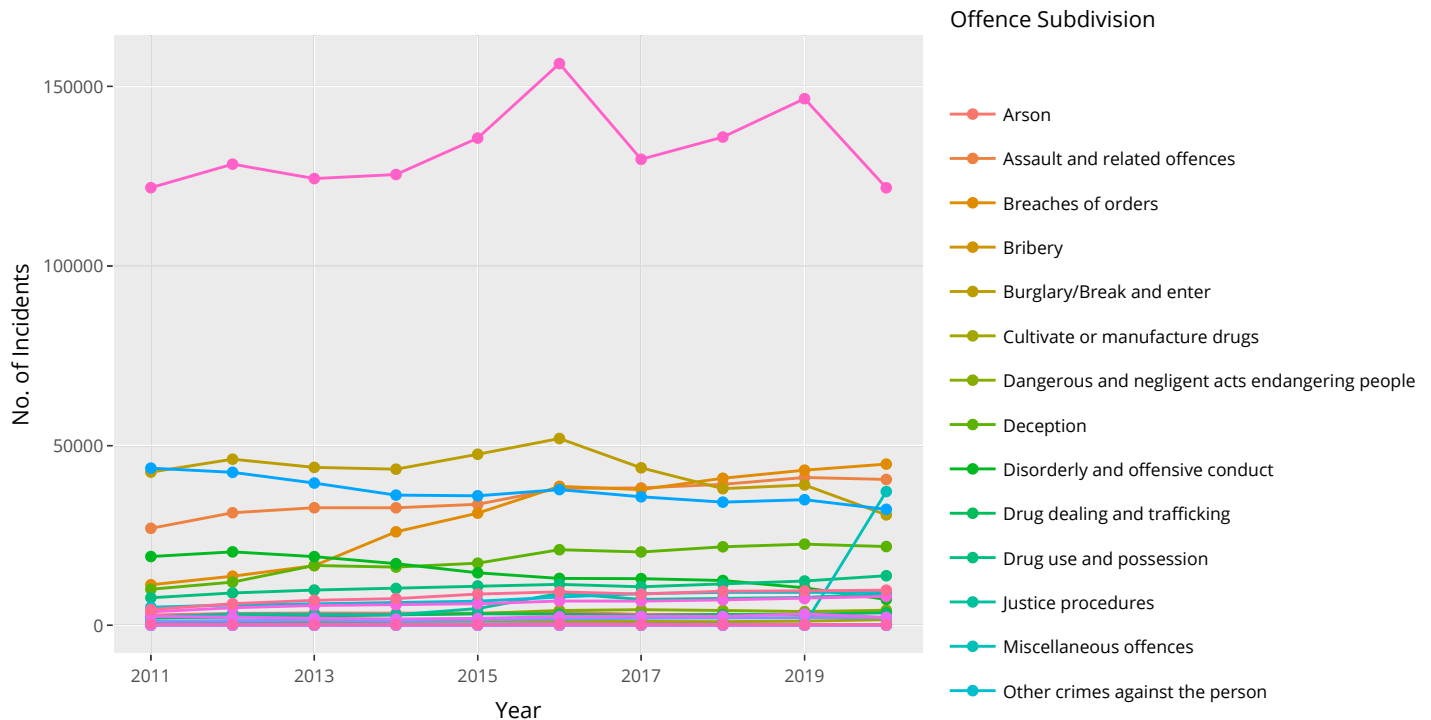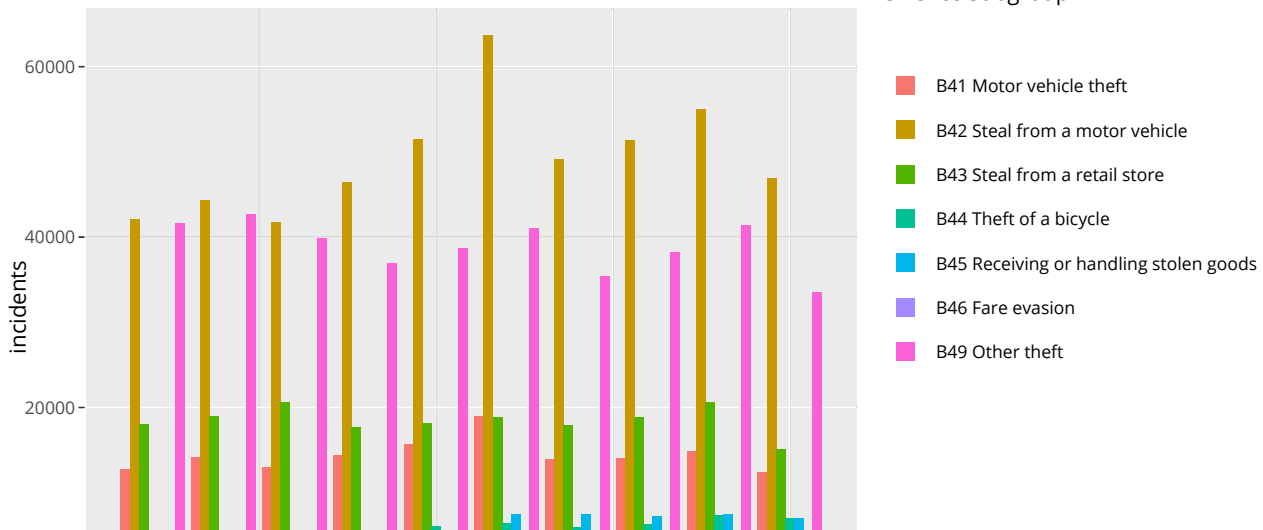

Figure 2.4: Trend of each Offence_subdivision from year 2011-2020

The figure 2.4 shows

- **Theft** cases have far exceeded other types of crime in the past **5** years, especially reaching a peak (about **156,000**) in **2016**, but the number has declined in the past **2** years.
- **Burglary**/**Break and Enter** (about **38,000**) and **Assault and Related Offense** (about **37,000**) rank **2nd** and **3rd**, respectively.

2.2.2 **Which offence_subgroup was most recorded in the previous found offence_subdivision's? [1]**

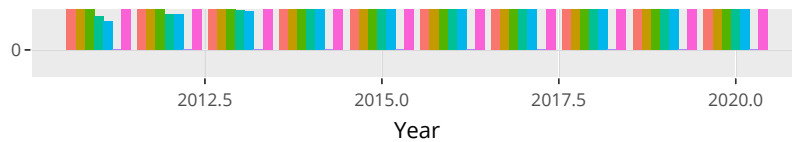Percentage of each offence_subgroup in the previous found offence_subdivision's

Figure 2.5: Incidents in each Offence_subgroup of most recorded Offence_subdivision

The figure 2.5 shows

- Among thefts, *steal from a motor vehicle* has the largest number during the last **5** years. In **2016**, about **63,000** steal from a motor vehicle occurred, but the number of thefts has decreased in the past **2** years.
- Other Theft is second (around **40000**), and other offense-subgroup make up only a small fraction.

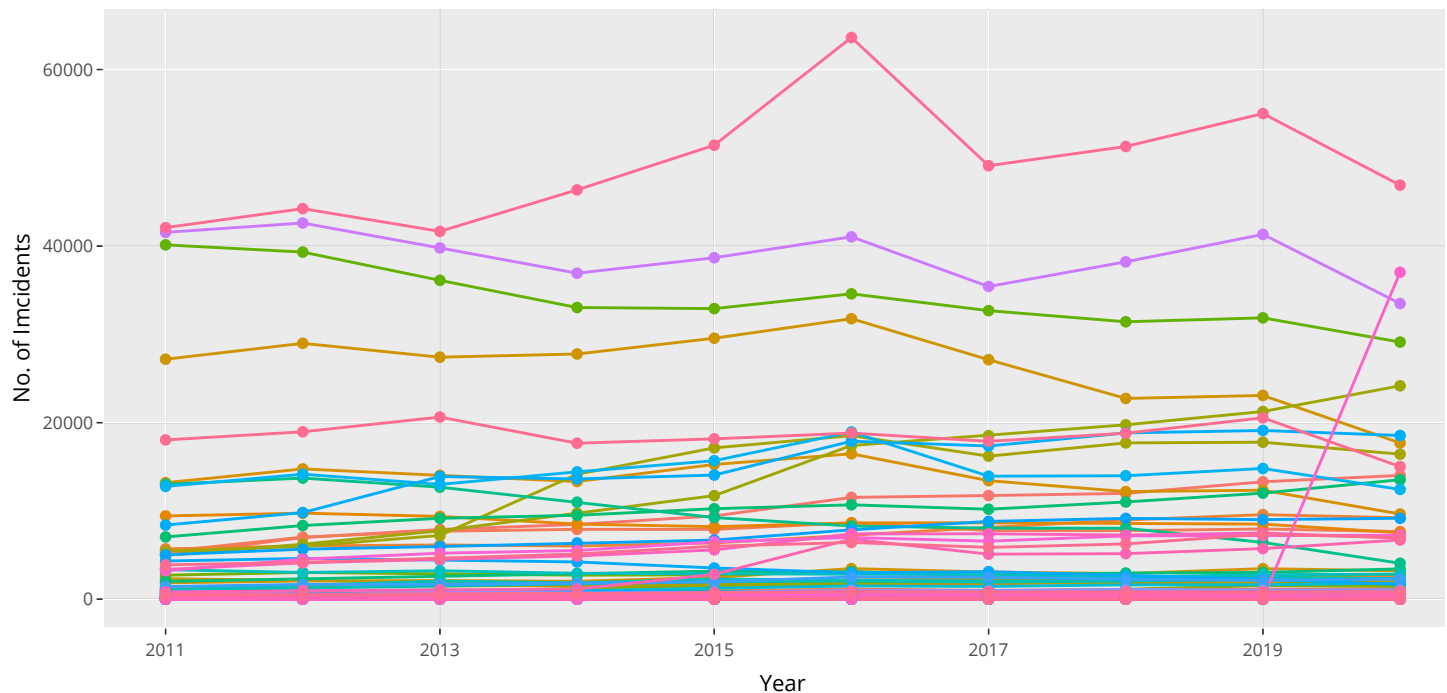## 2.2.3 What was the trend of each offence_subgroup over the years? [1]

Figure 2.6: Trend ofIncidents of each offence_subgroup

The figure 2.6 shows

- Most have seen a decline in crime over the past **5** year, and almost all have seen a small spike in 2016.
- *Steal from a motor vehicle* in the category of theft has been in the first place in the past **5** years, with about **50,000** cases occurring every year, far exceeding other offense-subgroups.
- Other Theft is in second place (about **39,000** per year) and **Criminal Damage** is **3rd** (about **35,000** per year). However, the gap between these two types of crimes and steal from a motor vehicle has gradually widened since **2013**.
- Since **2019**, *public health and safety* cases have risen sharply, with almost no cases in 2019 but rising to about **37,000** in **2020**.

2.3 PART-3

2.3.1 What are the top 10 Suburbs wth maximum no of incidents so far? [1]

Table 2.2: Suburbs with maximum incidents over the years

Suburb	Total_Incidents
Melbourne	153694
Dandenong	58610
Frankston	57645

Preston	40185
Shepparton	39651
Mildura	39120
St Kilda	34484
Reservoir	32532
Werribee	32009
Richmond	31638

The table 2.2 clearly states that:

- **Melbourne** had maximum no of incidents with more than 1.5 lac over the years
- Other suburbs had 60K incidents in total for each.

2.3.2 **What are the top 10 Suburb's recorded with most number of incidents in each Year? [1]**

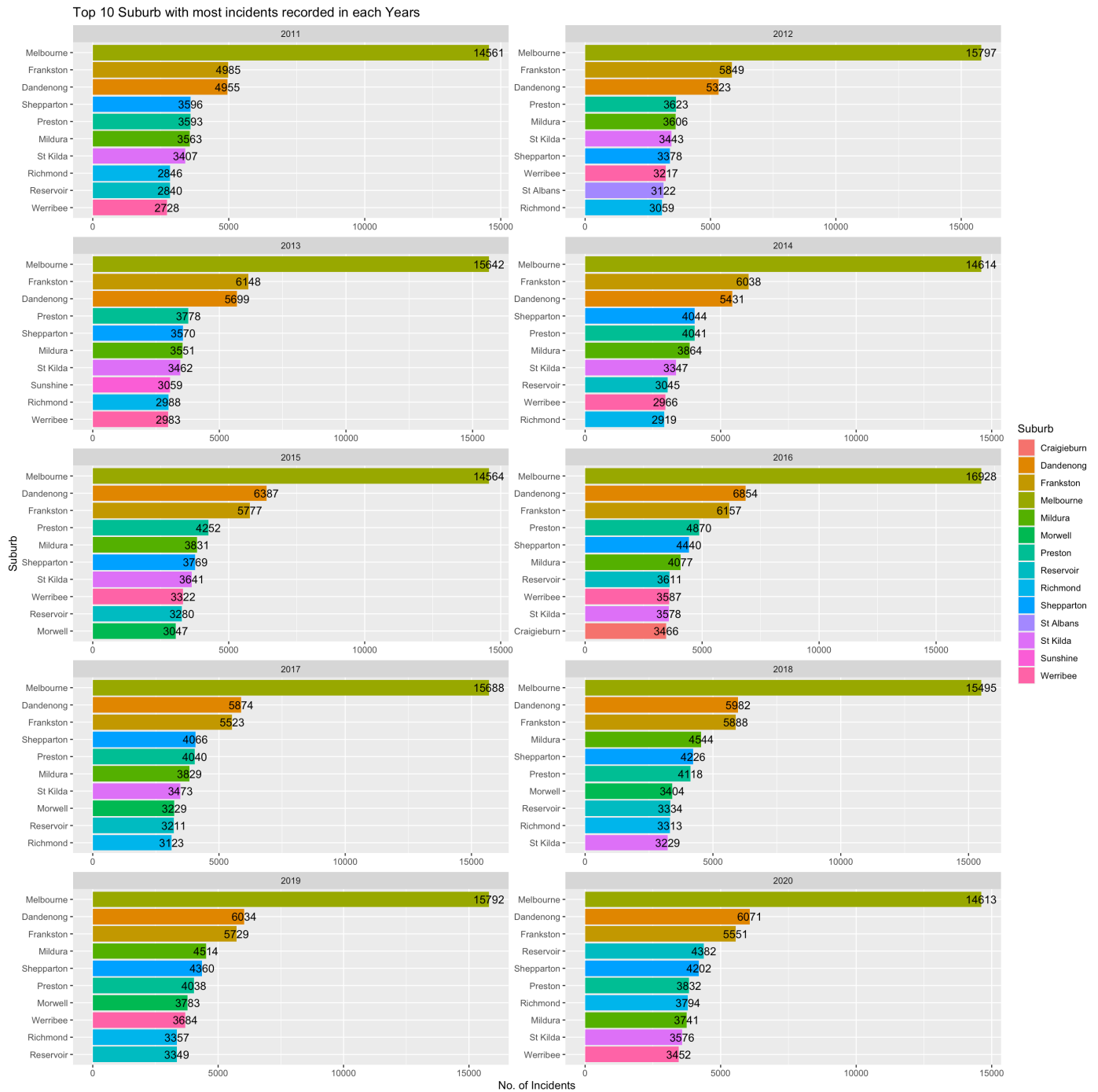Top 10 Suburb with most incidents recorded in each Years

Figure 2.7: Top 10 Suburb with most incidents recorded

The Figure 2.7 depicts that:

- **Melbourne** not only had overall maximum incidents, but also had maximum incidents in each year.
- It had least no of crimes in year **2015**.
- Surprisingly, **Melbourne** saw a massive fall of 10K in crime no. from 2019-2020, maybe due to lockdown restrictions imposed during COVID-19.

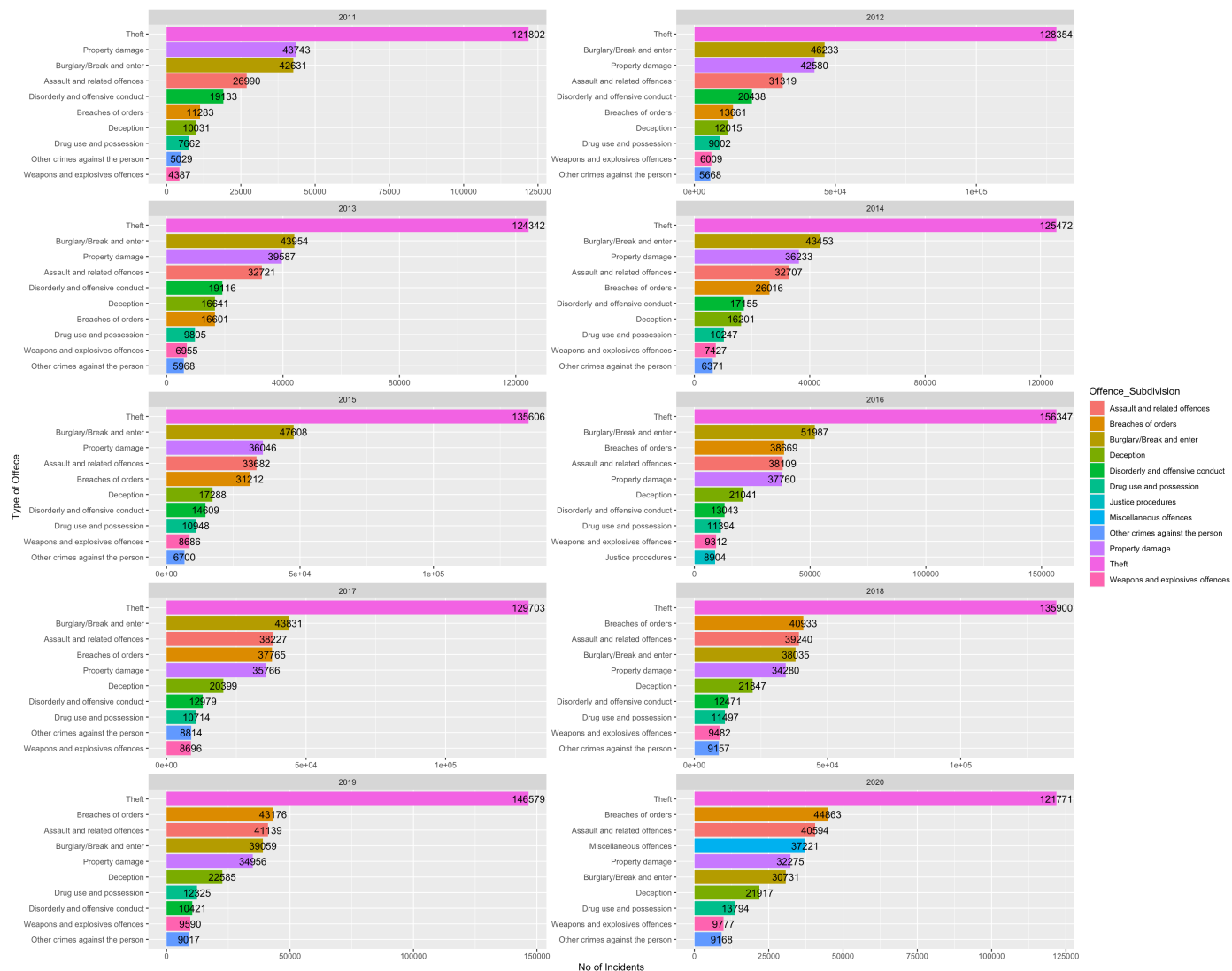## 2.3.3 **What were the top 10 Offence's in each year? [**1**]**

Figure 2.8: Top 10 Offences recorded

The Figure 2.8 showcases that:

- **Theft** was the most occurred crime across all the years.
- **Burglary/Break and enter** type of offense decreased over the years.

2.3.4 **What are the top 2 Offences for the most affected Suburb's found in figure** 2.7**? [1]**
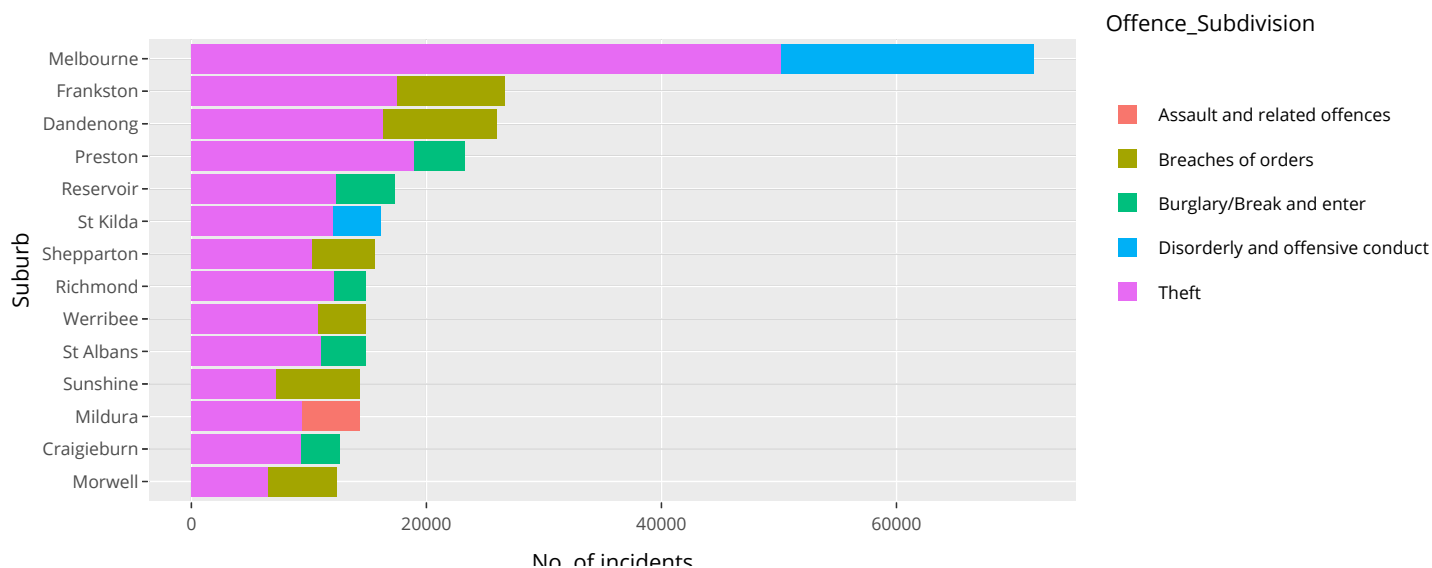
No. of Incidents

Figure 2.9: Top 10 Offfences Suburrb wise

The Figure 2.9 is clearly in coordination with figure 2.8 as we can see that **Theft** is most occurred crime across the affected Suburbs too

2.3.5 What is the trend of top 2 offences in each year w.r.t most affected Suburb? [1]
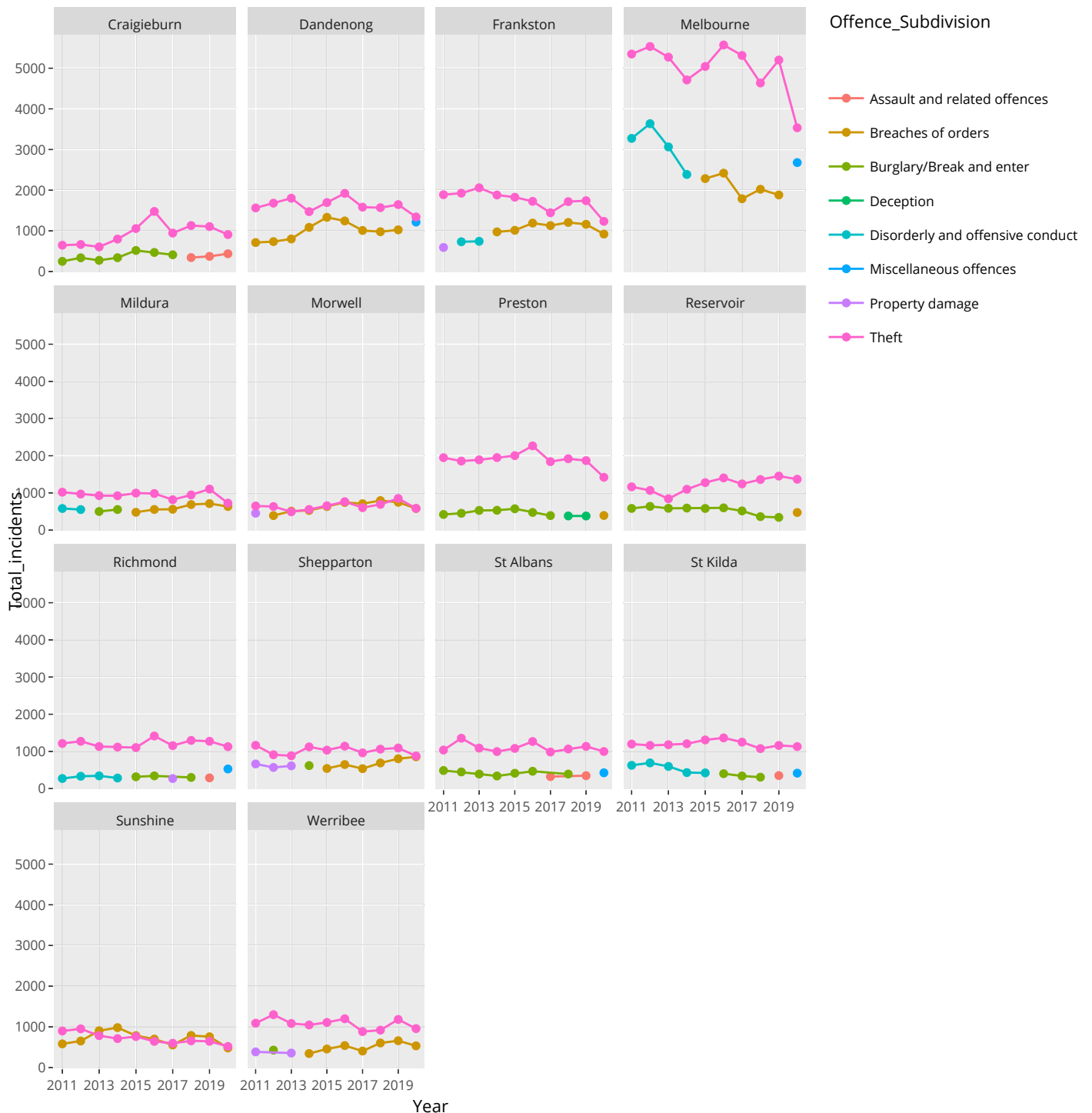

Figure 2.10: Trend of Top 2 Offences in each year w.r.t Suburb

The Figure 2.10 depicts that:

- Crime rate of the 2 most occurred offenses in the affected Suburbs were pretty much steady along the years.
- In **Melbourne**.
  - **Disorderly and offensive conduct** crime went off radar after 2014.
  - **Breakers of order** were only seen from years 2015-2019.

        ○ **Miscellaneous offense** came into action in year 2020.

3 CONCLUSION

Following points could be inferred from the above report:

- **North West Metro** police region has recorded maximum incidents.
- Number of **deception** cases are in a continuous increase.
- There is a tendency that the number of incidents recorded is increasing since **2019**.
- In each LGA, theft occurs most frequently in offense-subdivision and it's occurrence is far greater than other types of offense-subdivision.
- In the theft offense-subdivision, the vast majority are **steal from a motor vehicle** and **other Theft**.
- Of all offense-subgroups, **Steal from a motor vehicle**, **Other Theft** and **Criminal Damage** were the top three, but the vast majority of offense-subgroups were up in **2016**, but have declined in the last **2** years.
- **Melbourne** not only had overall maximum incidents, but also had maximum incidents in each year.
- **Burglary/Break and enter** type of offense decreased over the years.

3.1 **Bibliography**

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