



Analysis of Australian victims from 2010 to 2019

Yiru Wang
section1

Kexin Xu
section2

Ruiqi Tang
section3

Report for
Australian Government COVID19

28 May 2021

Our consultancy
Yiru Wang &
Kexin XU &
Ruiqi Tang

📞 (03) 9905 2478
✉️ questions@company.com

ABN: 12 377 614 630

Introduction

This report aims to analyze the changes in the victims of various crimes in Australia from 2010 to 2019. We hope to find some problems by analyzing the data: From the perspective of state, gender and age, how have the victims of various crimes changed in the past ten years?

The report is based on [victim data](#) from the [Australian Bureau of Statistics](#). It is a data set generated by regular judicial and criminal investigations and aims to provide the number and rate of victims across Australia in terms of state, gender and age. All ABS data displayed on this website are provided under the Creative Commons Attribution 4.0 international license. It is open data and can be shared freely and adapted for any purpose.

State

In this section, the number of victims of various crimes in eight Australian states and the number (and rate) of victims per 100,000 people will be analyzed from 2010 to 2019, and the types of crimes with the most victims will be analyzed.



Figure 1: Comparison of the number of victims of various crimes in each state in the same year

As can be clearly seen in Figure 1, the number of victims of sexual assault and armed robbery was the largest in the same year.

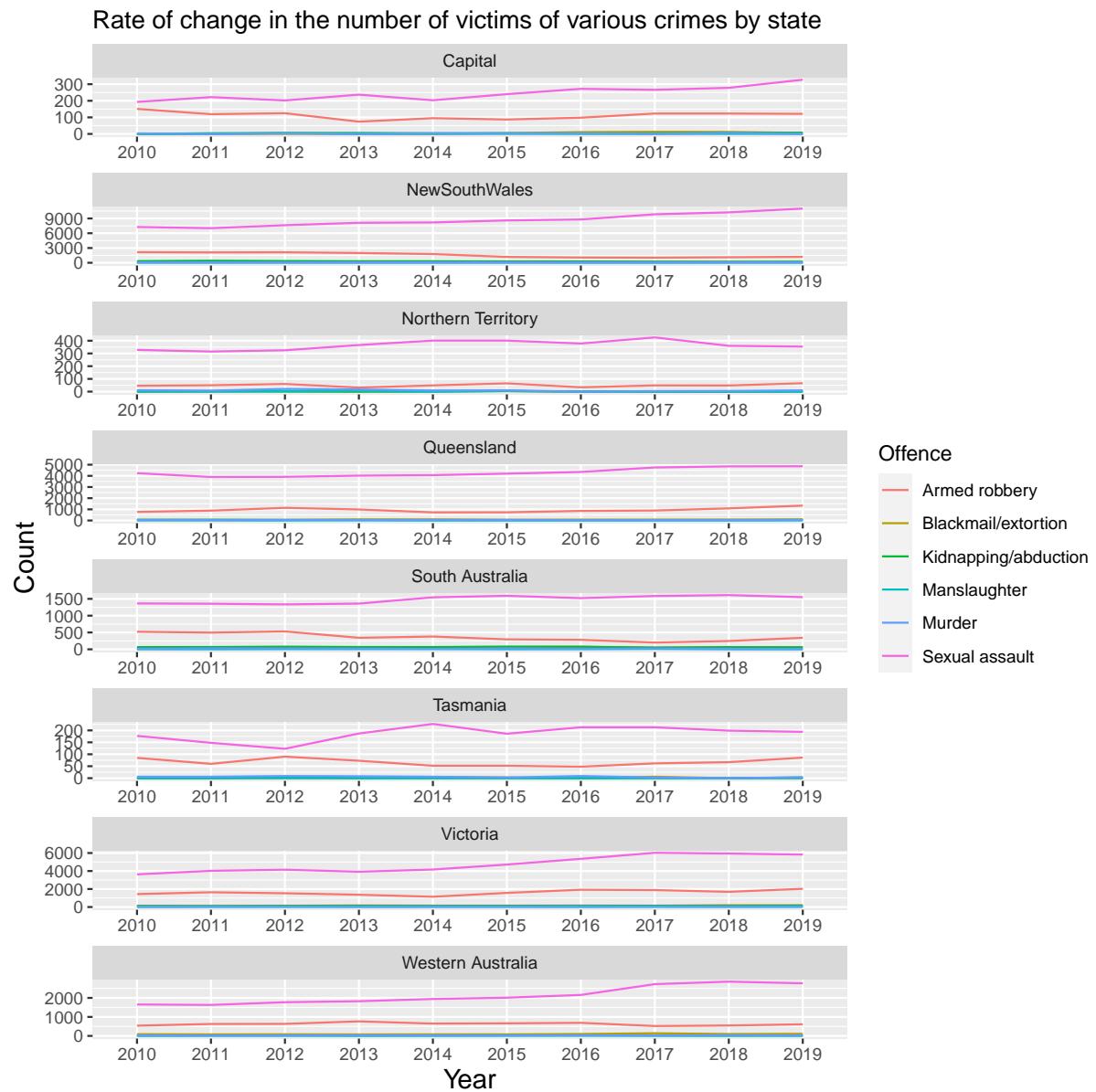


Figure 2: Rate of change in the number of victims of various crimes by state

Figure 2 shows the change in the number of crime victims by state over 10 years. Sexual assault and armed robbery are the most victimized crime categories in every state, while other crimes are victimized in relatively small numbers.

Table 1: Ten-year rate of change in the number of victims of various crimes by state

State	robbery_rate	robbery_change	Sexual assault_rate	Sexual assault_change	Murder_rate	Murder_change
Capital	-19.867550	-30	69.430052	134	-	-3
NewSouthWales	43.953488	-945	51.451369	3740	100.000000 4.109589	3
Northern Territory	43.478261	20	7.926829	26	-9.090909	-1
Queensland	73.246753	564	14.626091	620	-2.083333	-1
South Australia	-34.482759	-180	13.719736	187	-33.333333	-5
Tasmania	1.176471	1	9.604520	17	-33.333333	-2
Victoria	40.751043	586	60.622761	2200	19.148936	9
Western Australia	13.358071	72	67.412334	1115	-10.000000	-3

Table 2: Ten-year rate of change in the number of victims of various crimes by state

State	extortion_rate	extortion_change	Manslaughter_rate	Manslaughter_change	Kidnapping_rate	Kidnapping_change
Capital	Inf	6	NaN	0	Inf	7
NewSouthWales	46.24277	-80	18.18182	2	-31.610942	-104
Northern Territory	Inf	3	-100.00000	-3	NaN	0
Queensland	108.69565	50	-57.14286	-4	-13.235294	-9
South Australia	96.77419	30	NaN	0	-9.230769	-6
Tasmania	NaN	0	NaN	0	Inf	3
Victoria	43.06569	59	366.66667	11	36.206897	42
Western Australia	20.00000	18	0.00000	0	21.052632	4

Table 1 and Table 2 show the ten-year change and rate of change in the number of victims of the above six types of crime. Sexual assault was the only crime category in which victims increased in all states, with increases of 51.45 per cent in New South Wales, 67.4 per cent in Western Australia, 60.6

per cent in Victoria and 69.4 per cent in the Australian Capital Territory. Victoria was also the only state to see an increase in the number of victims of all six types of crime.

Rate of change in the number of victims of various crimes by state

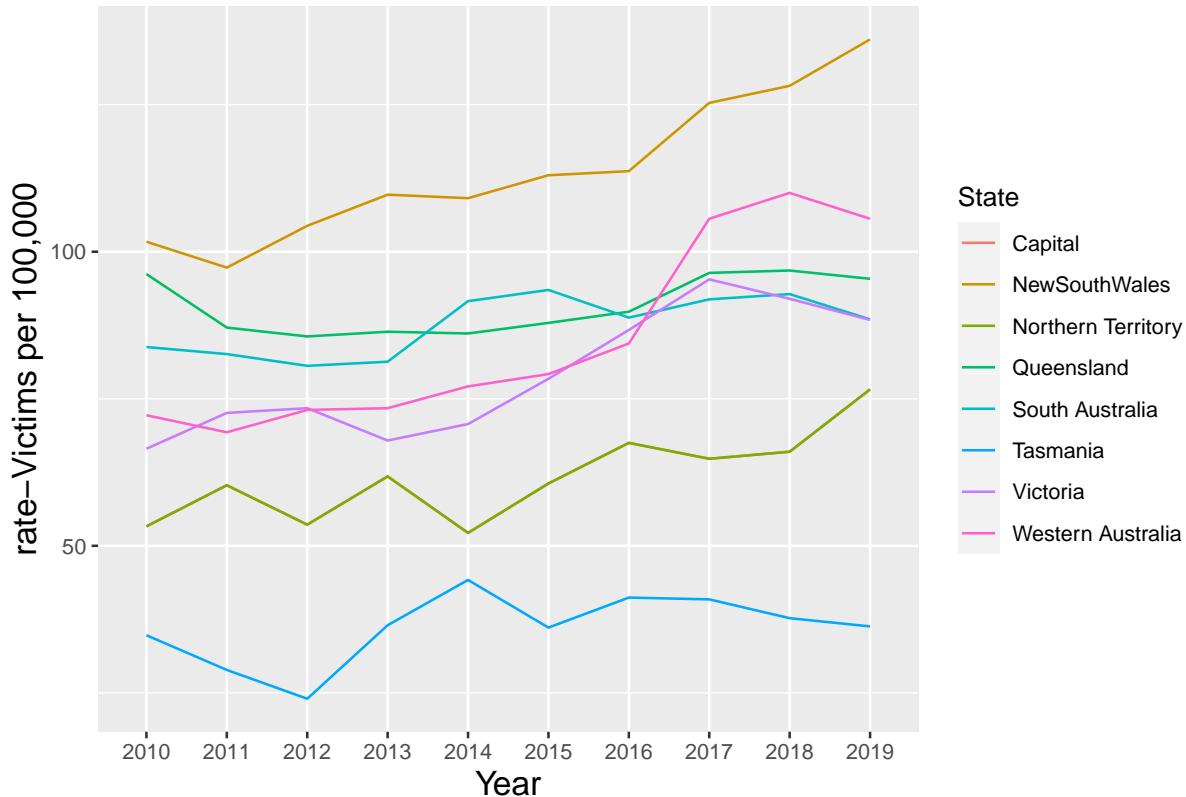


Figure 3: The rate of change in the rate of various crime victims by state

Since sexual assault is the most victimized crime category and the only one with a 10-year increase in the number of victims in all eight states, we will look at it separately.

Figure 3 shows how the rate of victims of sexual assault (the number of victims per 100,000 people) changed in eight states from 2010 to 2019. New South Wales had the highest rate of victims, while Tasmania had the lowest. Rates of sexual assault victims fluctuated in most states.

Table 3: A 10-year change in the proportion of victims of sexual assault

State	2010-2011	rate_change
NewSouthWales	34.4	33.8249754
Victoria	21.9	32.9323308
Queensland	-0.8	-0.8316008
South Australia	4.7	5.6085919
Western Australia	33.4	46.2603878
Tasmania	1.5	4.3103448
Northern Territory	23.3	43.7148218
Capital	23.3	43.7148218

Table 3 shows the change of the proportion of victims of sexual assault in all states. Except Queensland, the proportion of victims in all states is increasing. The increase of the proportion of victims in Western Australia, Northern Territory, Australian Capital Territory is more than 40%. Western Australia saw the highest increase of 46.3%.

Based on the above analysis, we can conclude that the state with the most victims among the eight states is New South Wales, and the type of crime with the most victims is sexual assault. The number of victims of sexual assault in each state has increased over the past 10 years, and Western Australia has even increased by 46.3%. Only Queensland has a decrease in the number of victims of sexual assault, which shows that Queensland attaches importance to such crimes.

Gender

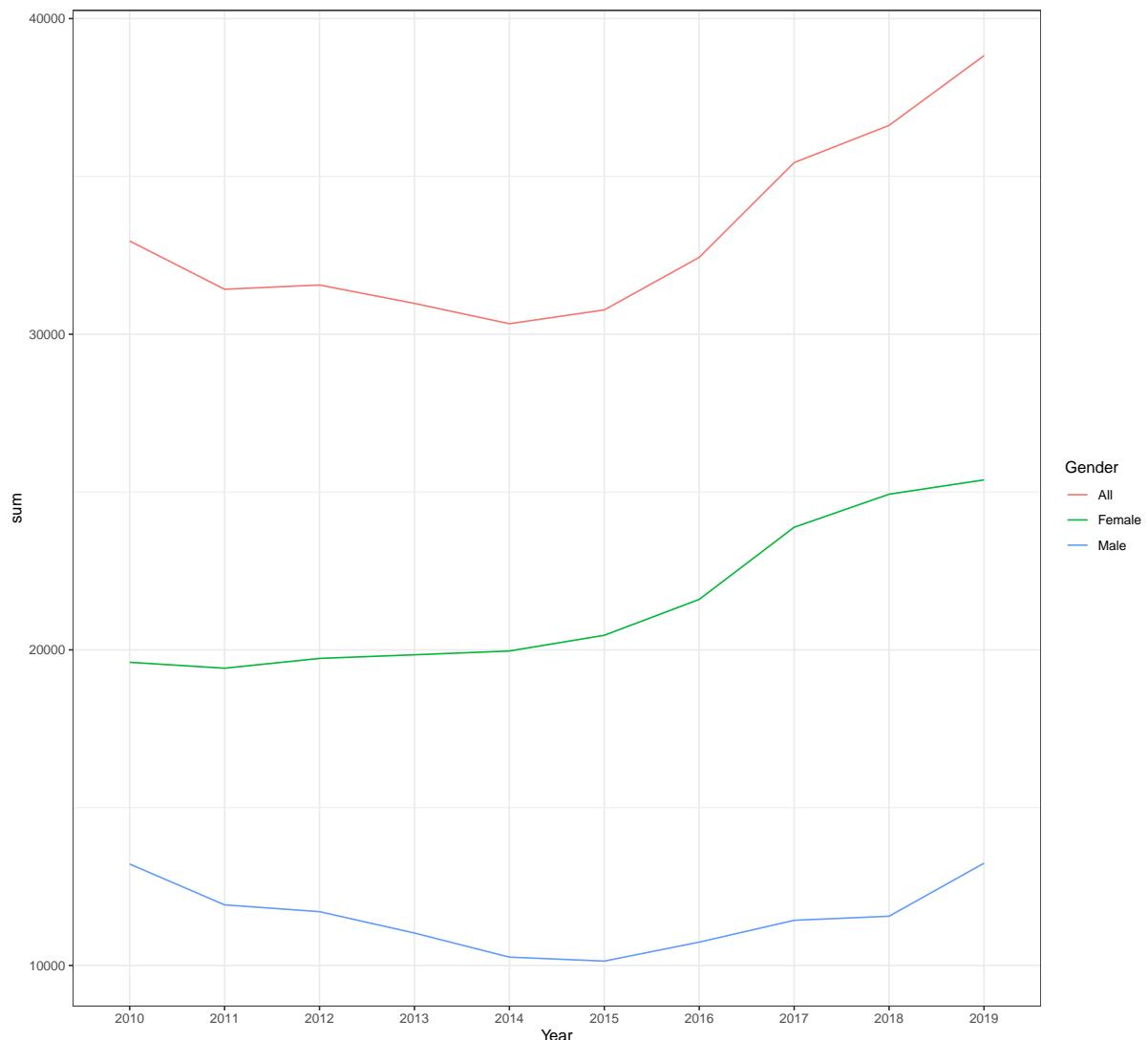


Figure 4: Total number by gender

Figure 4 shows:

- * On the whole, it shows an upward trend year by year recently.
- * The number of female victims is much higher than that of male victims, almost twice.

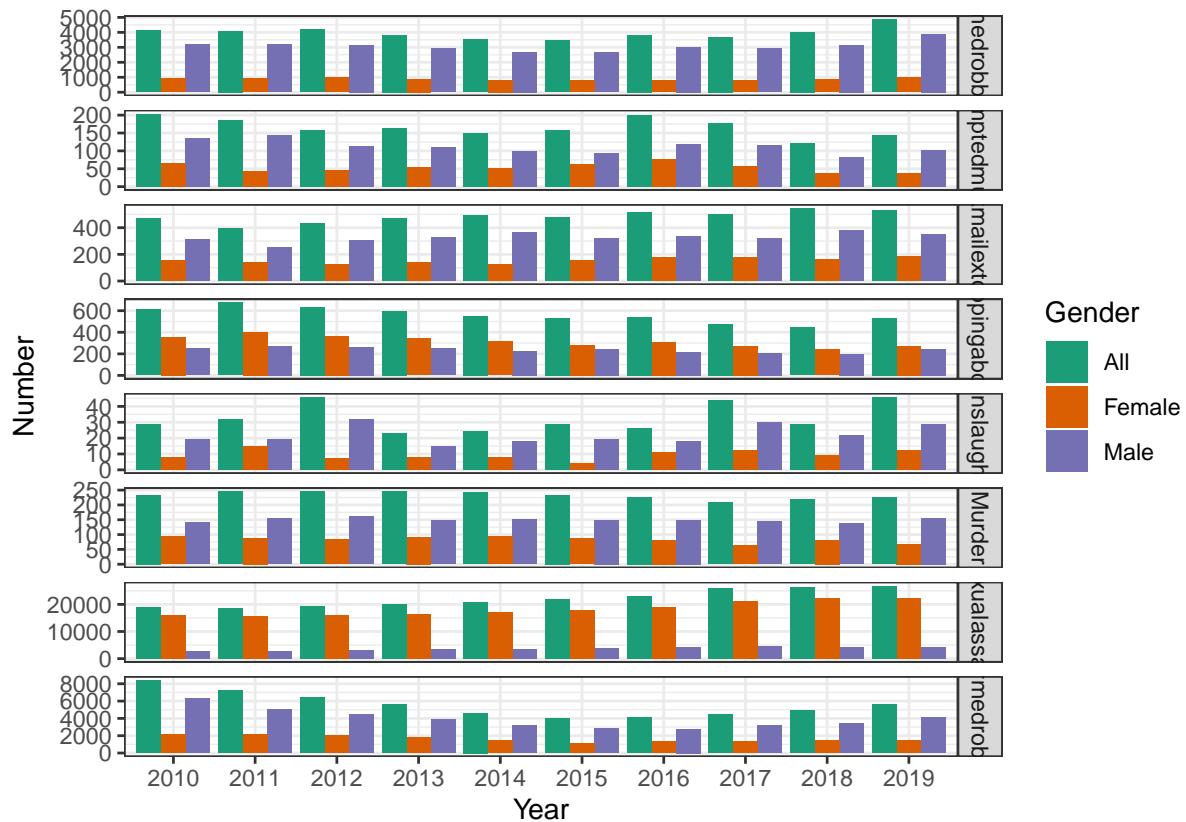


Figure 5: Number by gender by crime type

Figure 5 shows:

- * With the exception of sexual assault and kidnapping, the majority of victims are men. * The vast majority of cases are sexual assaults.
- * The number of robberies among the remaining crime categories is also considerable. (Including both armed and unarmed)
- * Possible reasons: + Women generally have stronger safety awareness + Women are less likely to be seen alone at night in areas where they are likely to be robbed

According to statistics of gender-specific crimes in various countries, male victims are the majority in almost all crimes except for sex-related crimes in which more women are victims.

Table 4: Sexual Assault Rate

Gender	Year	sa_rate
Female	2010	81.14353
Female	2011	80.92590
Female	2012	81.71220
Female	2013	83.46100
Female	2014	85.77439
Female	2015	87.63073
Female	2016	87.29571
Female	2017	88.86702
Female	2018	88.74093
Female	2019	87.99638
Male	2010	21.67991
Male	2011	23.79634
Male	2012	27.87459
Male	2013	30.70995
Male	2014	34.46328
Male	2015	38.35306
Male	2016	38.22735
Male	2017	39.55563
Male	2018	35.52154
Male	2019	33.06397

Table 4 Take sexual assault, female victims of sexual assault make up a very high proportion of total female victims.



Figure 6: Rate by gender in Sexual Assault

Figure 6 shows:

- Rate is calculated by victim number divided by 100,000 persons.
- Show an upward pattern over years.
- Higher than 0.15% in recent years which means 3 out of every 2,000 people have been sexually assaulted.
- Possible reasons:
 - Women are physically vulnerable
 - Men are more sexually impulsive
 - Many women may choose not to report the crime
 - relationship to the offender
 - confidence in the justice system
 - fear of revenge
 - public opinion

ABS personal safety survey also measures the number of women who contacted the police about the most recent incident within the last 10 years. Only 13.4% of women did so.

Age

For my part, my main job is to investigate the victims for the different age groups. I divide the age into four group, teenage, adult, elder adult, and elder. I will compare different class of victims for different groups

from graph, we can see that Sexual assault is the largest part, compared with other class From the graph, we can see that the people who are 35-54 have bigger probability to has criminal record

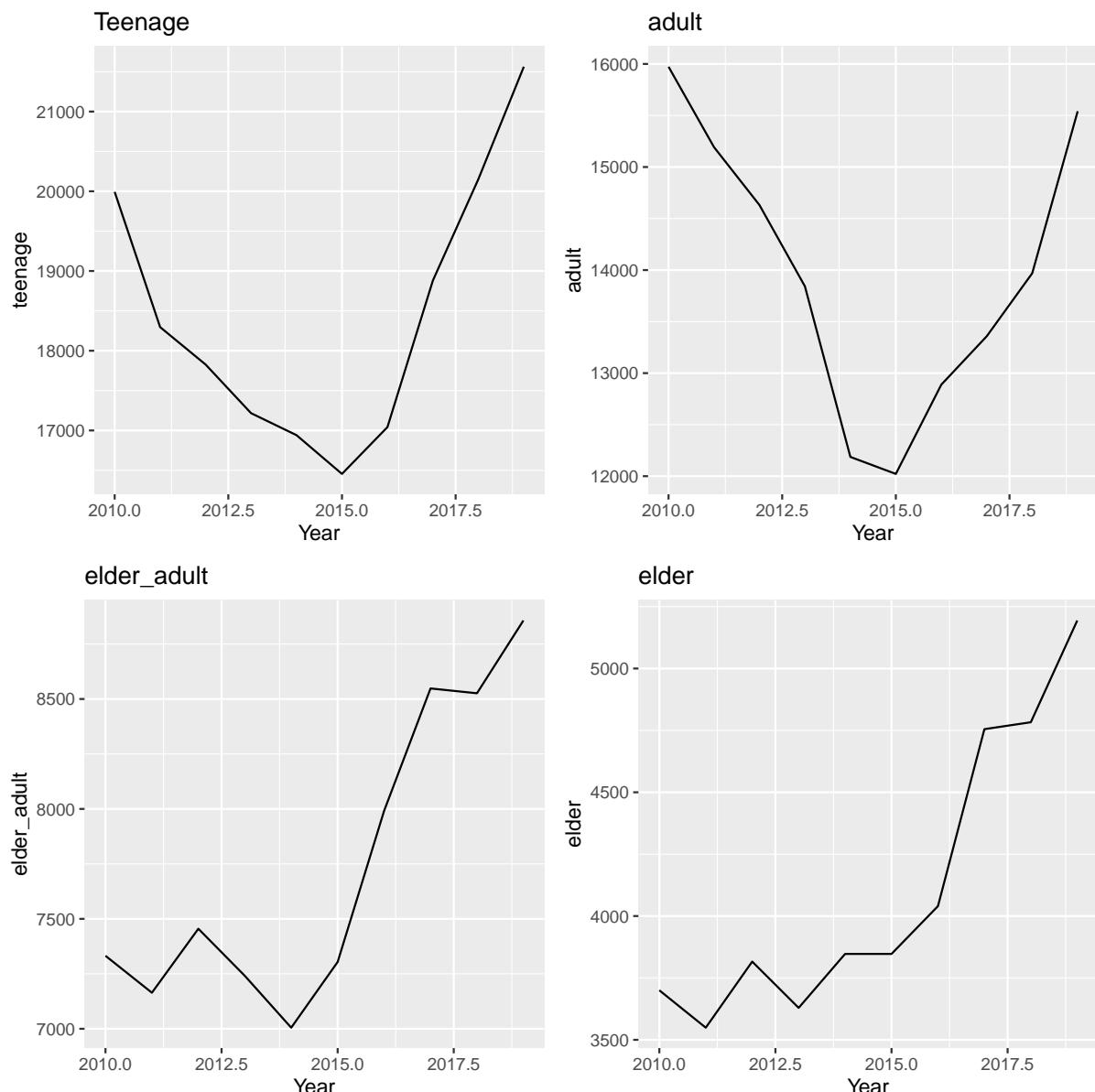


Figure 7: Age group between 2010 to 2019

From 7, we can see that the trend for both teenage and adult is very similar. it has a decrease trend from 2010 to 2015. Then, it has a increase trend from 2015 to 2019. For the elder adult and elder, they have increase trend for all year.

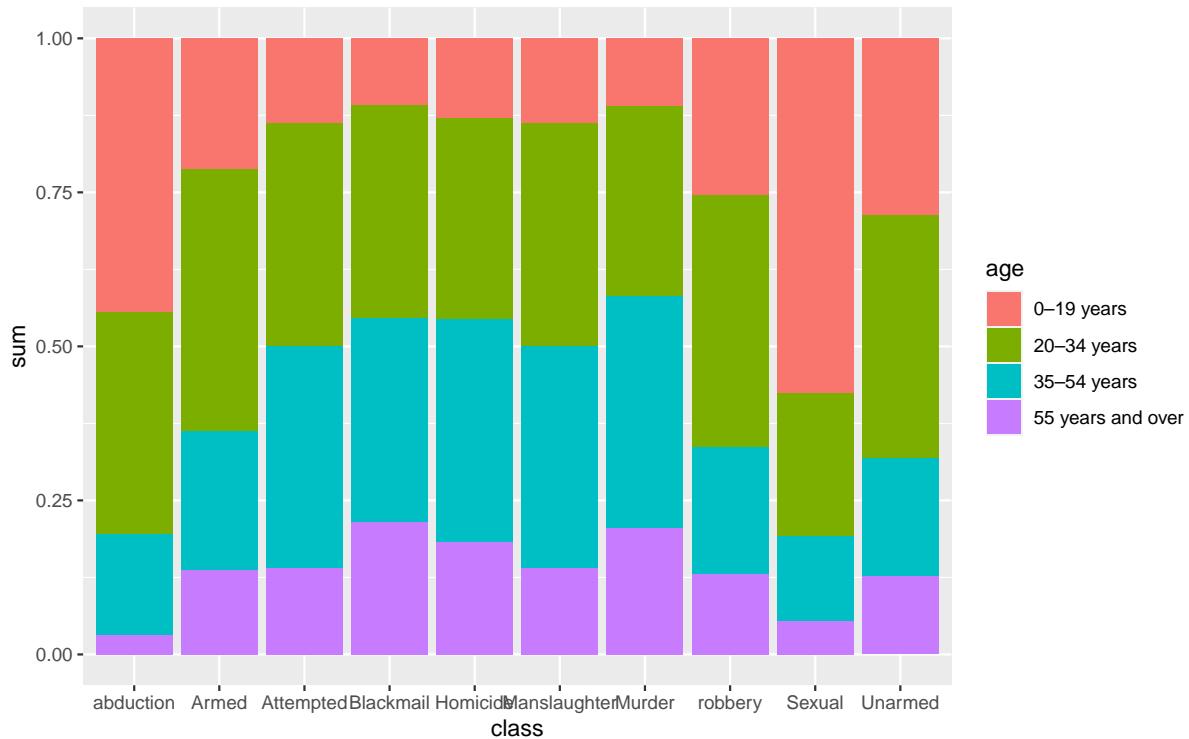
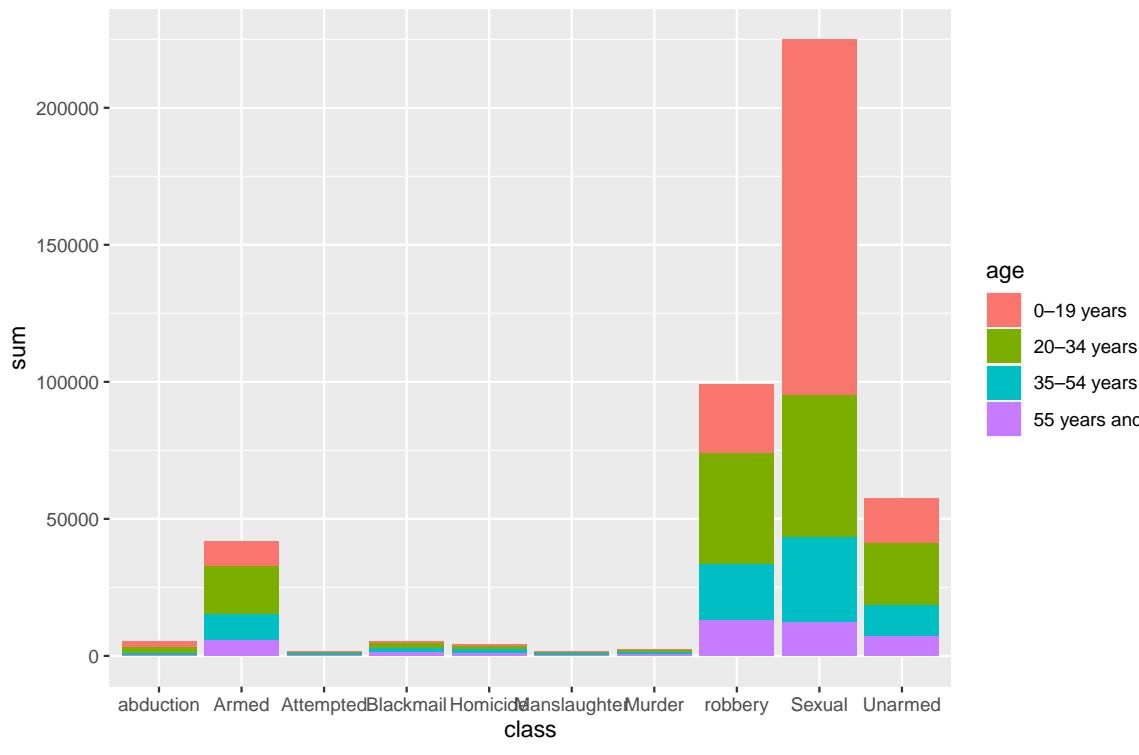


Figure 8: Age in class

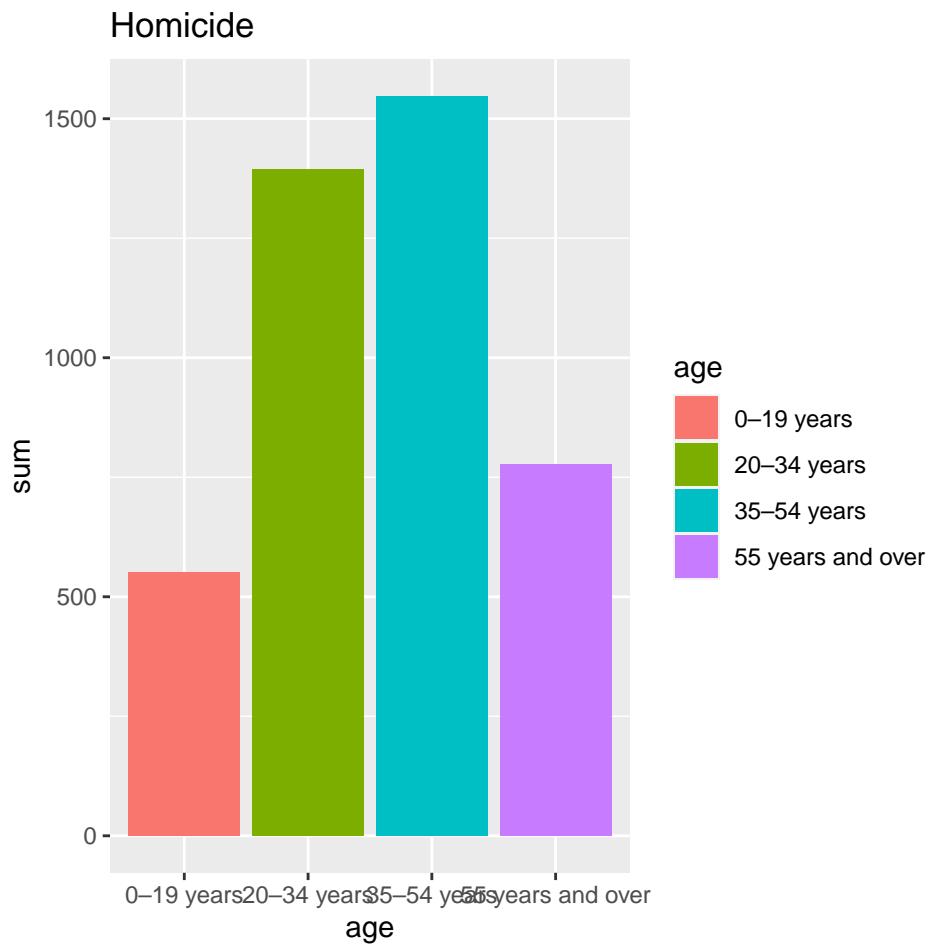
From 8. we can see that 20-54 years age are the largest people for victims record. The 55 year and over are the smallest group.



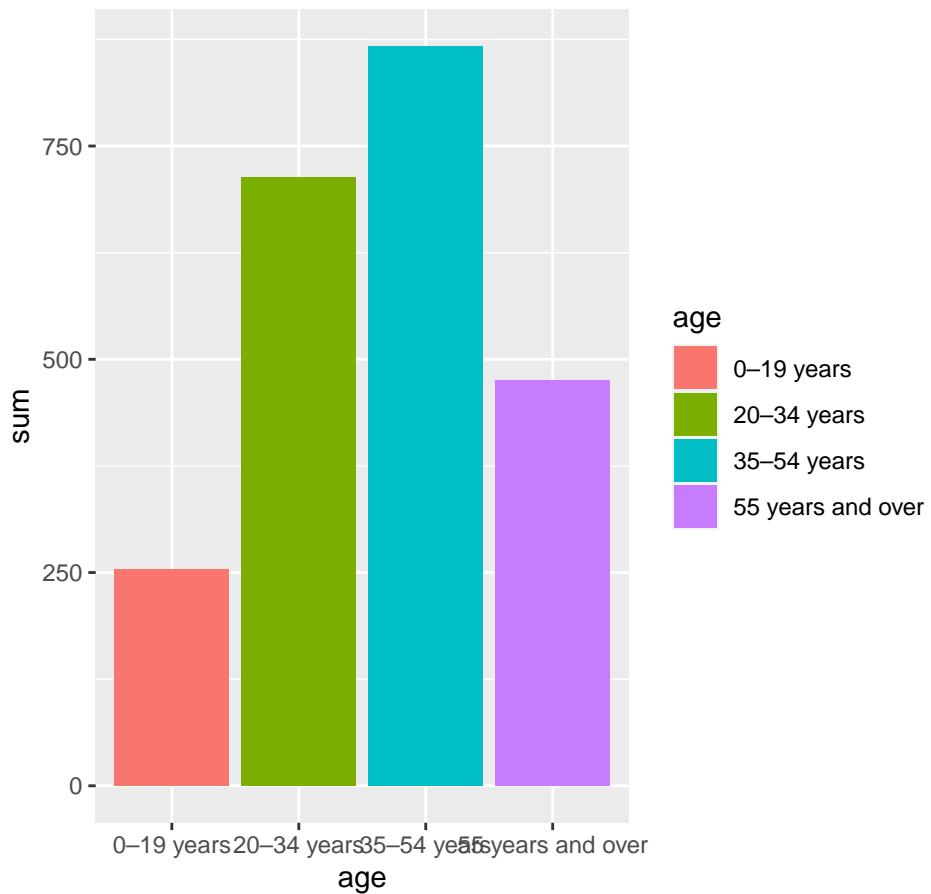
For all class of victims

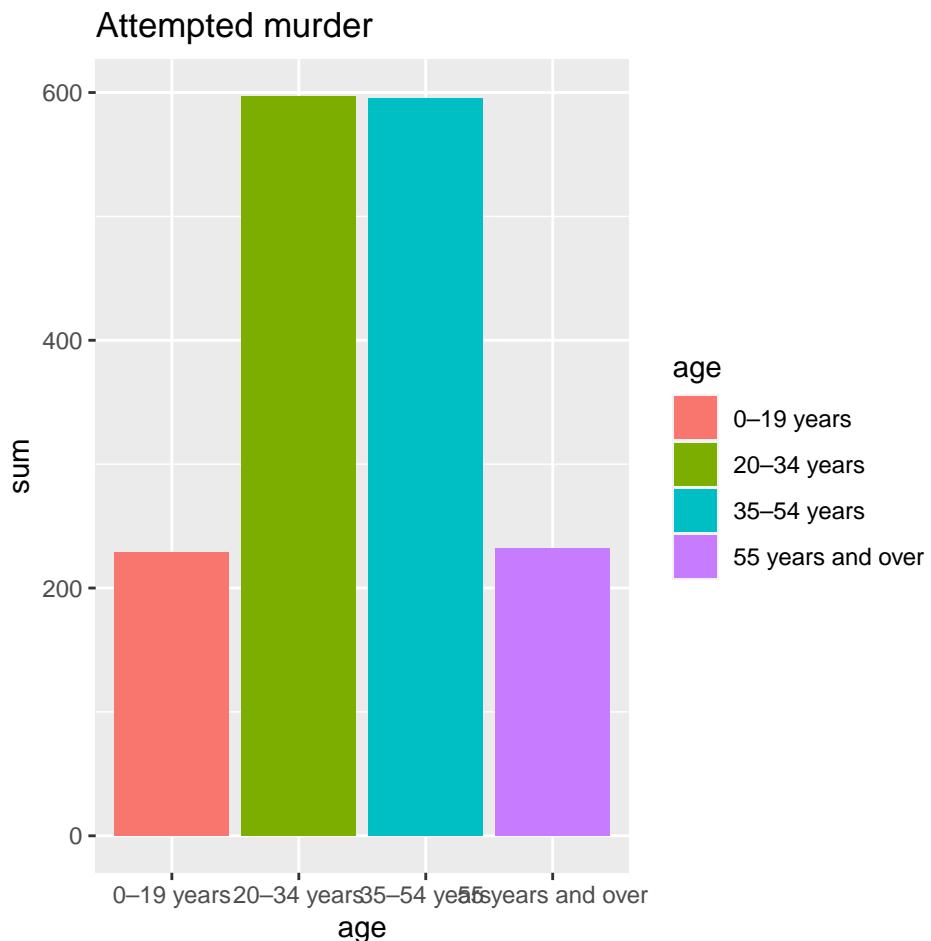
The ?? shows that the the number of people committed Sexual is the largest

Then, There are the each class victims

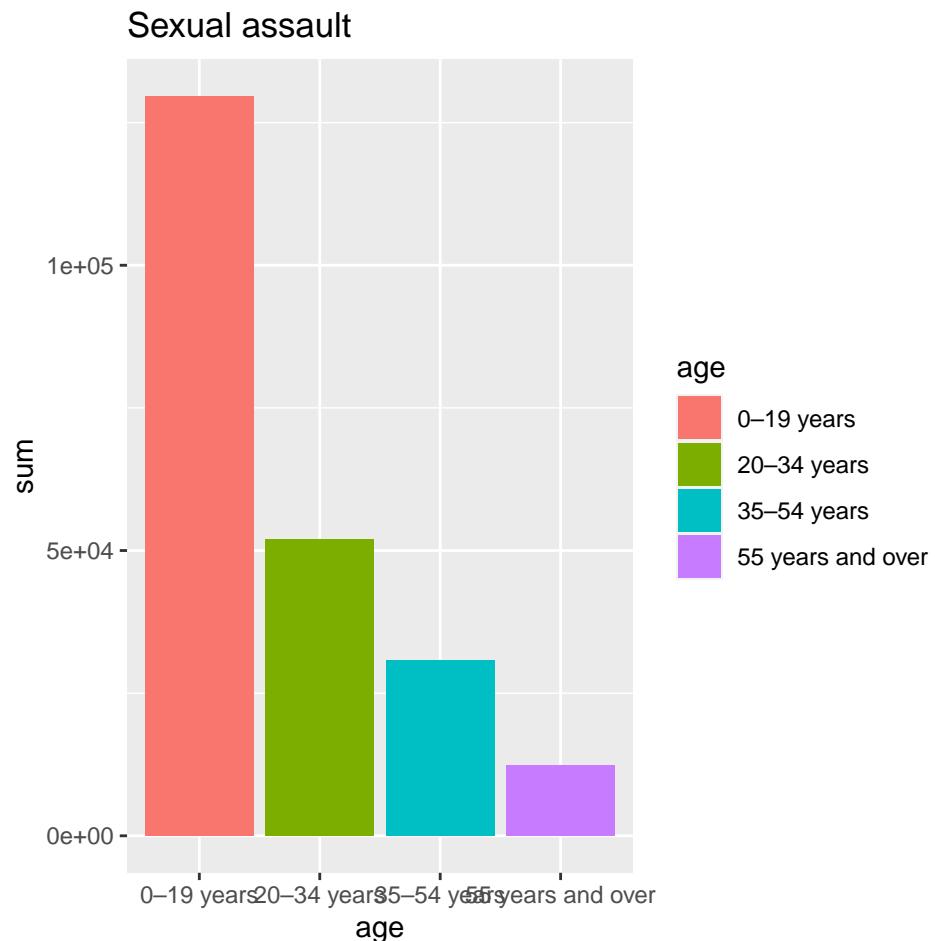


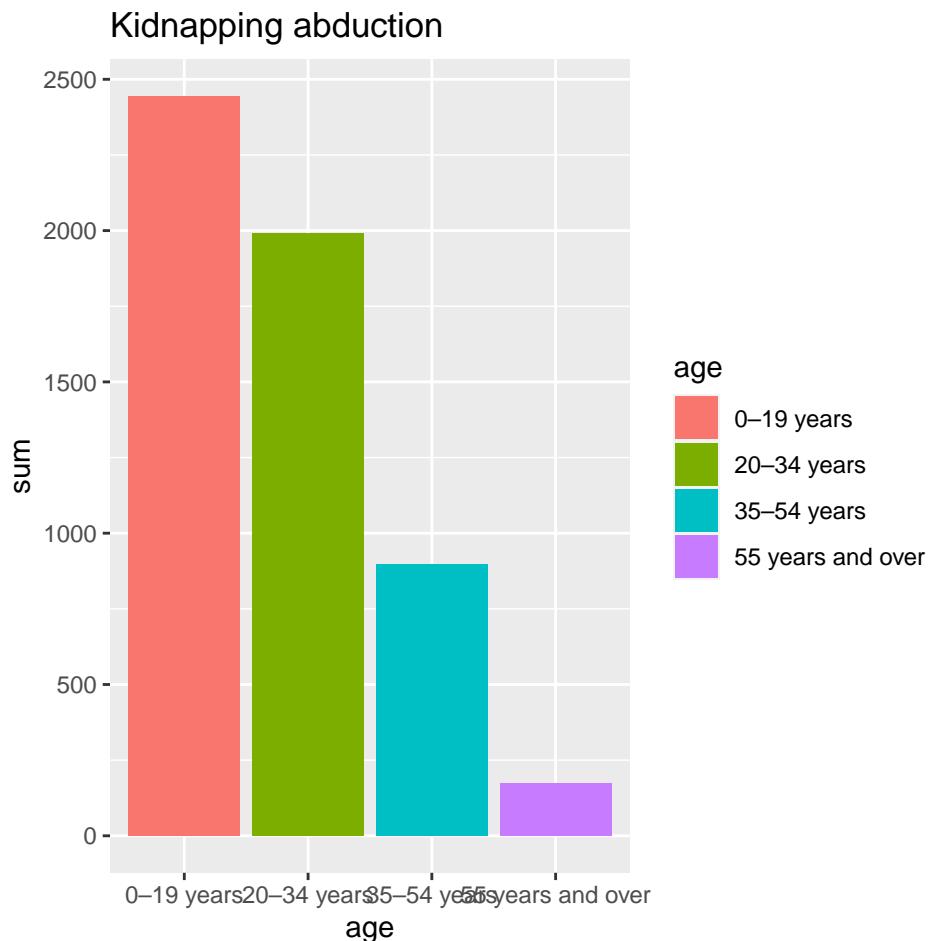
Murder

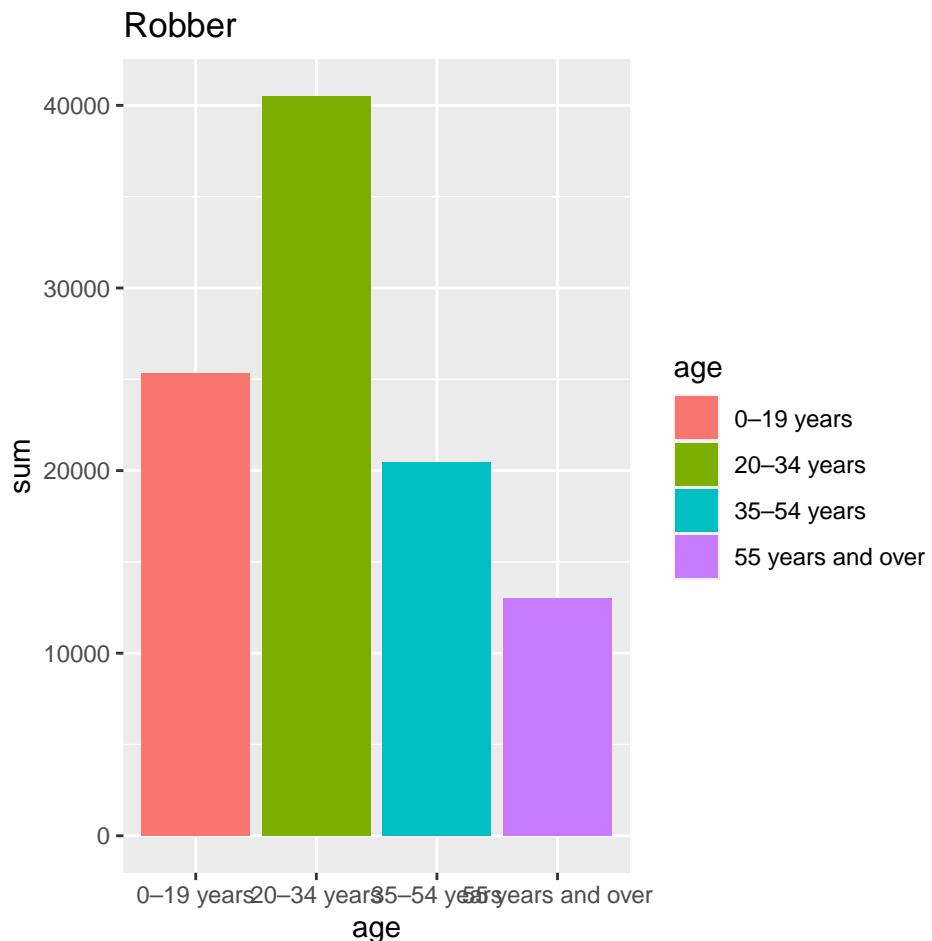


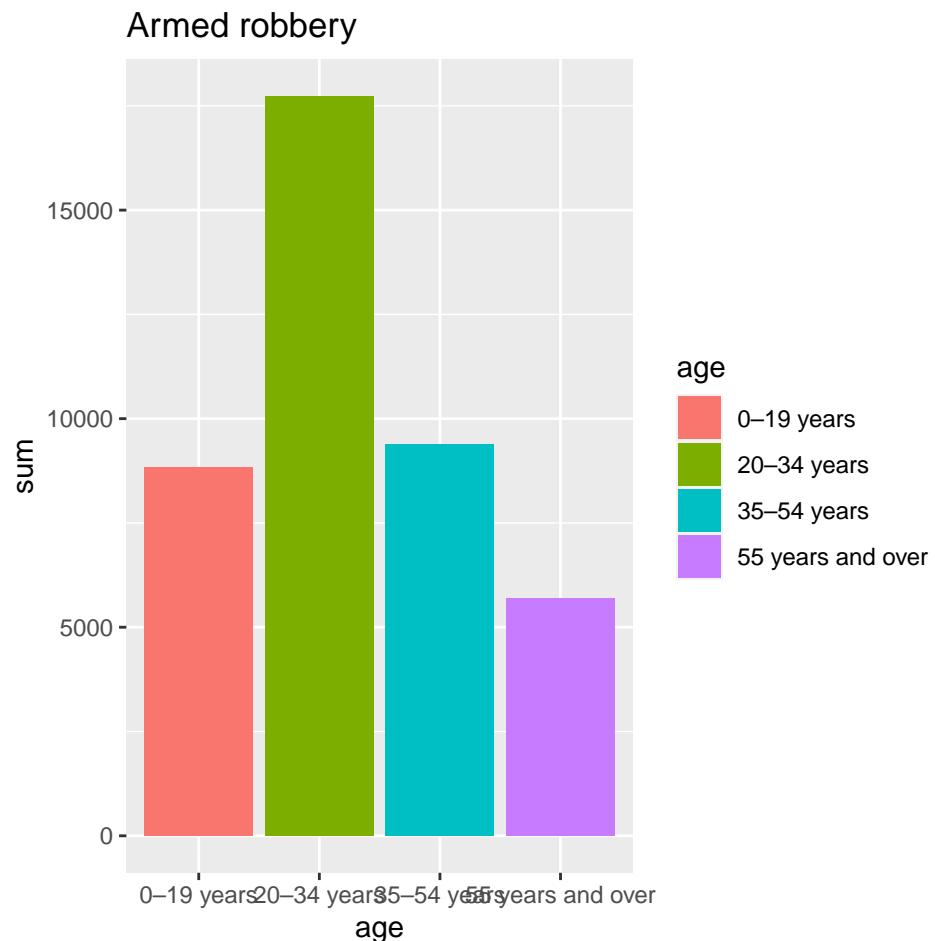




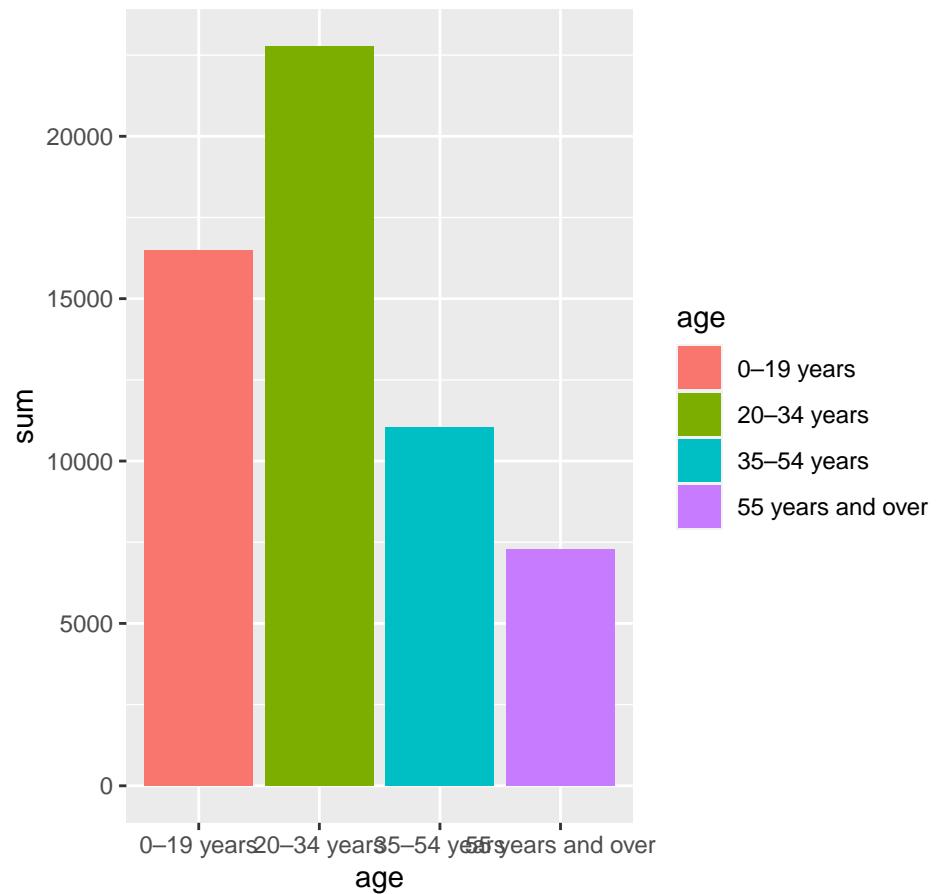


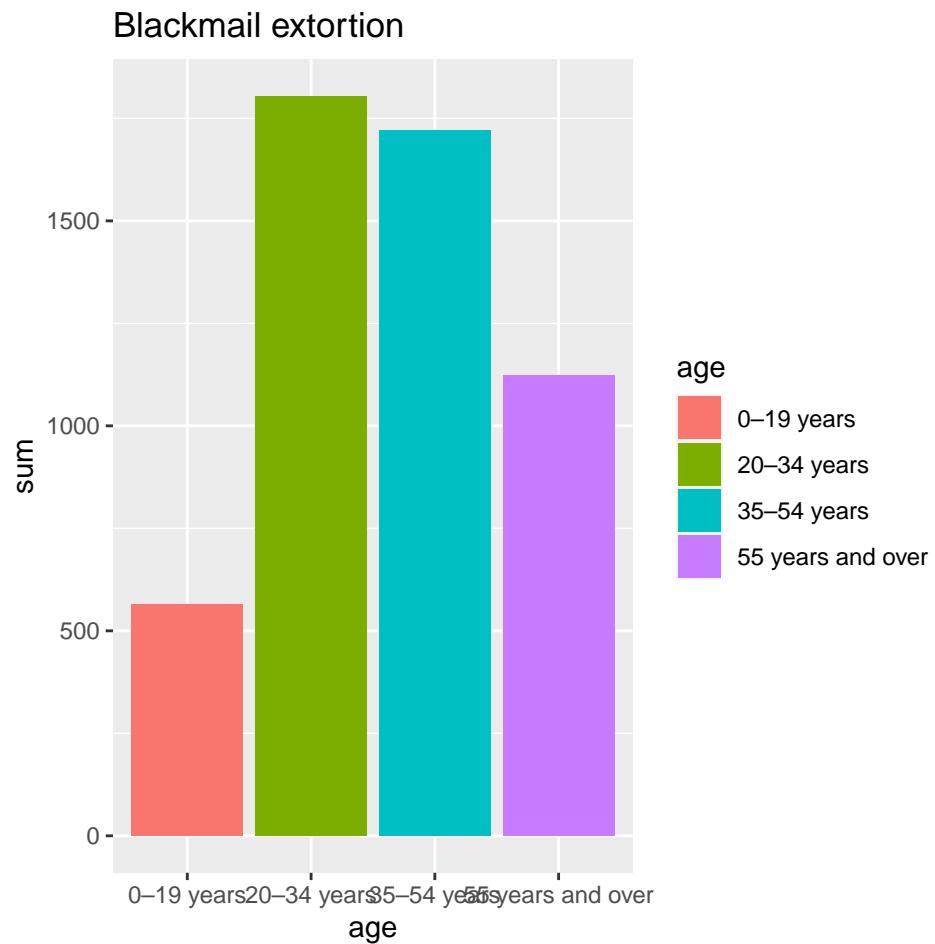






Unarmed robbery





Conclusion

Our group just investigate victims of various crimes in Australia from 2010 to 2019. We analysis in this topic in **State, Gender and Age**. Overall, We find that the number of crimes has increase in recent five years

References

R packages

- Hao Zhu (2021). kableExtra: Construct Complex Table with ‘kable’ and Pipe Syntax. R package version 1.3.4. <https://CRAN.R-project.org/package=kableExtra>
- Yihui Xie (2021). tinytex: Helper Functions to Install and Maintain TeX Live, and Compile LaTeX Documents. R package version 0.31.
- Baptiste Auguie (2017). gridExtra: Miscellaneous Functions for “Grid” Graphics. R package version 2.3. <https://CRAN.R-project.org/package=gridExtra>
- Hadley Wickham and Jim Hester (2020). readr: Read Rectangular Text Data. R package version 1.4.0. <https://CRAN.R-project.org/package=readr>
- Yihui Xie (2021). bookdown: Authoring Books and Technical Documents with R Markdown. R package version 0.22.
- Hadley Wickham and Jennifer Bryan (2019). readxl: Read Excel Files. R package version 1.3.1. <https://CRAN.R-project.org/package=readxl>
- Yihui Xie (2021). knitr: A General-Purpose Package for Dynamic Report Generation in R. R package version 1.33.
- C. Sievert. Interactive Web-Based Data Visualization with R, plotly, and shiny. Chapman and Hall/CRC Florida, 2020.

Data Resources

- [Recorded Crime - Victims, Australia](#)

Software

- RStudio

- R

Literature

- * Sexual assault in Australia
- * An exploratory analysis of armed robbery in Australia