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22 March 2022

Abstract

First sentence. Second sentence. Third sentence. Fourth sentence.

1 Introduction

Discrimination had always been a worldwide issue, in the past, people used to judge people based on their race, sex, and age. However, after going into the 20th century, people started to advocate for equality and diversity, along with the help of some civil rights leaders such as Martin Luther King, the world is slowly becoming more diversified and discrimination-free. But despite the efforts people make to promote equality, discrimination and inequality are still prominent in today's world. For instance, according to Statistics Canada, in 2017, the number of hate crimes increased markedly by 47% and has remained at comparable levels in 2018 and 2019. Between 2018 and 2019, hate crimes motivated by hatred of a race or ethnicity increased by 10%, much of this increase was a result of more hate crimes targeting the Black and West Asian People. (Moreau 2021)

To find out more about discrimination, we obtained and analyzed data from Canadian General Social Survey, we are mostly interested in the type of discrimination that occurs most frequently and whether discrimination affects law enforcement. Additionally, we want to find out whether there is a correlation between discrimination and different type of crimes.

2 Data

We started our analysis by using R (R Core Team 2020), dplyr(Wickham et al. 2021), tidyverse(Wickham et al. 2019), here(Müller 2020). Graphs are generated using and ggplot2(Wickham 2016) and kableExtra(Zhu 2021).

2.1 Data Source

We retrieved our data from CHASS (Canada 2014). Among all the available data in the Canadian General Social Survey(Victimization), we decide to choose the following subset: *DIS: Discrimination*, *DTS: Discrimination - Types of Situations experienced by respondent*, *CIP: Confidence In Police*, *DEM: Demographic Derived Variables*, *PCC: Perceptions: Criminal Courts*, *PLP: Perceptions: Local Police*, *TIP: Trust In People*. The GSS program, established in 1985, conducts surveys annually across the 10 provinces. The GSS is recognized for its regular collection of cross-sectional data that allows for trend analysis, and its capacity to test and develop new concepts that address current and emerging issues. The two primary objectives of the General Social Survey are: a) to gather data on social trends in order to monitor changes in the living conditions and well-being of Canadians over time; and b) to provide immediate information on specific social policy issues of current or emerging interest.

*Code and data are available at: https://github.com/HuakunShen/Discrimination-Analysis-Canadian-2014-GSS

To meet these objectives, the data collected by the GSS are made up of two components: classification and core content. Classification content (such as age, sex, education, income) helps to delineate population groups for use in the analysis of core data. Core content is designed to measure changes in society related to living conditions and well-being and to supply data to inform specific policy issues(Canada 2014).

Data for 2014 General Social Survey (GSS) on Canadians' Safety and Security (Victimization) was collected from January to December, 2014. The survey collected a large amount of information for each selected respondent as well as some information about each member of the respondent's household. The overall response rate was 52.9%. The target population for the Cycle 28 GSS included all persons 15 years of age and older in Canada, excluding: 1. Residents of the Yukon, Northwest Territories, and Nunavut; 2. Full-time residents of institutions. The survey frame was created using two different components: • Lists of telephone numbers in use (both landline and cellular) available to Statistics Canada from various sources (Telephone companies, Census of population, etc.); • The Address Register (AR): List of all dwellings within the ten provinces.

2.2 Methodology and Data Collection

The survey started with an entry section. The purpose of this section is to introduce the survey and select a respondent. A Household Roster is created, which collects key demographic information on each member of the household, including age, sex and marital status. Selected respondents are asked for their birth date and confirmation of their age (ANC). They are also asked to confirm their marital status (CMR) if another household member provided the roster information. Age and marital status are used to determine if certain questions are asked later in the survey. Age and date of birth are also used for certain derived variables and to validate responses where ages are involved(Canada 2014).

When a probability sample is used, as is the case for the GSS, the principle behind estimation is that each person selected in the sample represents (in addition to himself or herself) several other persons not in the sample. Computer assisted telephone interviewing (CATI) was used to collect data for the 2014 GSS VIC. Respondents were interviewed in the official language of their choice. Proxy interviews were not permitted. In each frame, each record was assigned to a stratum within its province. A simple random sample without replacement of records was next selected in each stratum. Only specific geographies were targeted for the oversample of immigrants and youth(Canada 2014).

Coverage of the 2014 GSS on Canadians' Safety and Security (Victimization) targeted population by the survey frame is estimated to be more than 86% complete. All respondents in the ten provinces were interviewed by telephone. Households without telephones were therefore excluded. During collection, for the households not meeting the eligibility criteria, the interviews were terminated after an initial set of questions that established whether or not they met the criteria. For the oversample cases, an extra question was asked to determine if each person in the household was born in Canada or not. For the 2014 GSS on Canadians' Safety and Security (Victimization), 81.5% of the telephone numbers dialed reached eligible households. An attempt was then made to conduct an interview with one randomly selected person from each household. Interviewers were instructed to make all reasonable attempts to obtain a completed interview with the randomly selected member of the household. Those who at first refused to participate were re-contacted up to two more times to explain the importance of the survey and to encourage their participation(Canada 2014).

The target sample size (i.e. the number of respondents) for Cycle 28 on Canadians' Safety and Security (Victimization) was 39,674, while the actual number of respondents was 33,127. Some GSS respondents were removed from the PUMF for confidentiality reasons. GSS Cycle 28 PUMF contains questionnaire responses and associated information from 33,089 respondents. For each province, minimum sample sizes were determined that would ensure certain estimates would have acceptable sampling variability at the stratum level. Once these stratum sample size targets had been met, the remaining sample was allocated to the strata in a way that balanced the need for precision of both national-level and stratum-level estimates(Canada 2014).

One of the strengths of this survey is that it captures various potential factors that could have significant relationship with victimization. Also, it mainly focuses on gathering information within 5 years which is a more accurate approach for the respondent to retrieve a recent memory. However, this also comes with

a trade-off that we could not compare the information in earlier periods. Dealing with non-responses is a common problem for every survey. In the GSS, the answers for each question provided different situations for the respondent to choose including Yes, No, Valid skip, Don't know, Refusal, and Not stated. As a result, even though the existence of non-response could not be eliminated, the gathered data would provide a good sense of why the respondent could not offer a clear answer.

Another trade-off is that the general social survey is a relatively long to capture various information which may lead to impatience of answering and errors in responding. Typically, long questionnaires could involve a fake question to check if the respondent is reading the questions carefully and providing sincere answers. For some scenario questions, investigators like us would also like to obtain further elaborations. So we also include a supplementary survey to gather more detailed information about discriminations.

3 Results

3.1 Classification of Discrimination

The identification of discrimination could be vague and inconsistent in different regions. According to Human rights in Ontario(Commission 2008), there are four forms of discrimination: direct, indirect, subtle, and adverse effect discrimination; Harassment; Poisoned environment; Systemic discrimination. Discrimination often derives from different backgrounds and identities. Based on unique combination of identities, people may be exposed to specific forms of discrimination and may experience significant personal harm. The 2014 GSS on Canadians' Safety and Security (Victimization) mainly captured gender, disability, and ethnicity. It also provides information of the condition when discrimination happens. According to Figure 1, the most common reason of discrimination within 5 years is sex and ethnicity. In addition, physical appearance, age and language are also typical reasons of discrimination.

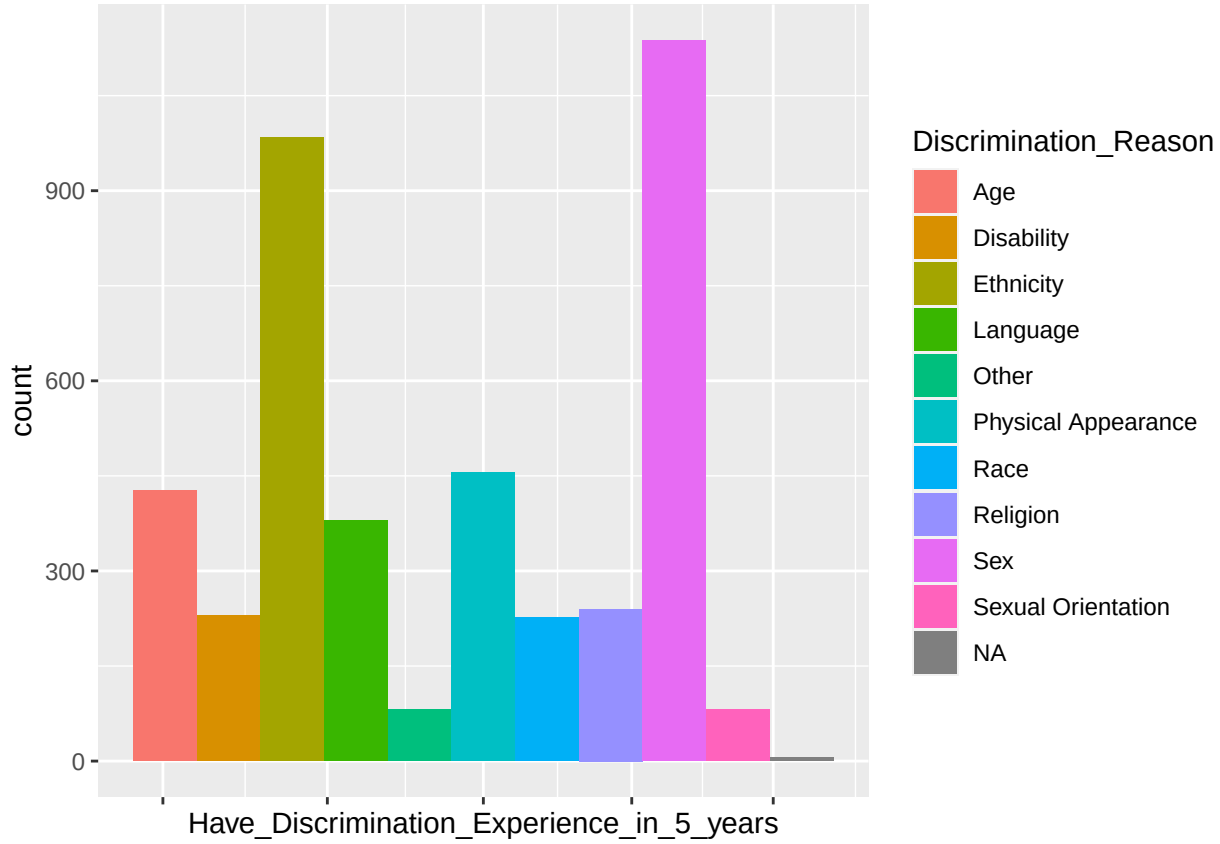


Figure 1: discrimination Reason

Under many circumstances, the government has established regulations to protect human rights. For example, the Canadian Human Rights Act is a broad-reaching piece of legislation that prohibits discrimination on the basis of gender, race, ethnicity and other grounds. Also, Canada's Employment Equity Act and the Federal Contractors Program require employers to take active measures to improve the employment opportunities for specific groups of people in our country. Both the labour rights and responsibilities of employers and employees within federally regulated sectors fall under the Canada Labour Code. The rights of foreign workers in Canada are also protected under federal or provincial/territorial labour laws. However, we could still see that discrimination experience is significantly common under working environment in 2. Bank, store, and restaurant are the most common location for discrimination to take place while the Canadian border and courts are the least common location for discrimination to happen.

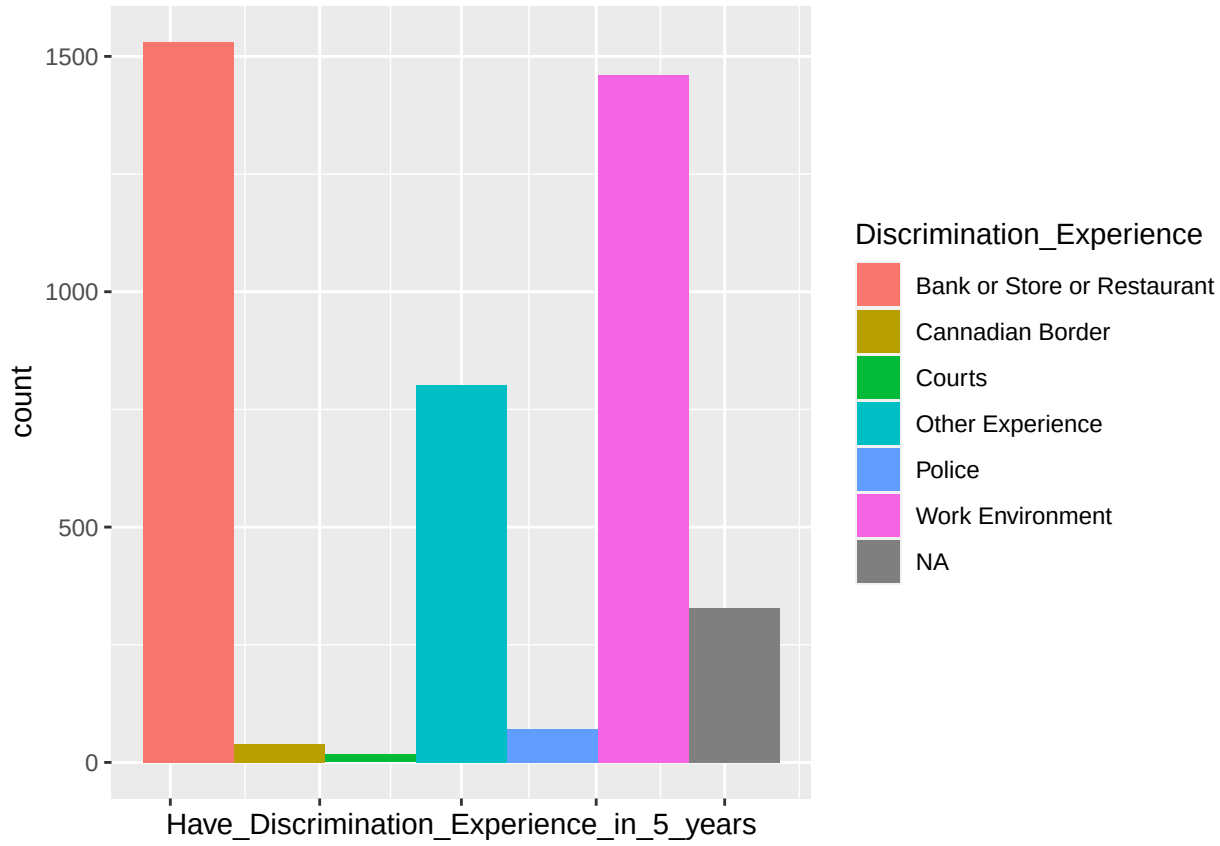


Figure 2: discrimination Experience

3.2 Impact of Gender on People's Confidence in Law Enforcement

After noting that the majority of discriminating cases are gender discrimination. We are wondering if this will also be reflected in people's confidence in Law Enforcement. To be a specific, if a certain gender group are more vulnerable to discrimination, will that group also be treated unfairly during law enforcement? To investigate this, we extracted some other survey results from Canadian General Social Survey. We will first find the number of each gender in the survey, if the number of respondents from each gender groups are uneven, then the result might be biased toward a gender group. After analyzing the survey data set, the following gender distribution is found, as shown in Figure 3. From the figure, we can see that the gender distribution are about the same, so we can proceed to further investigation.

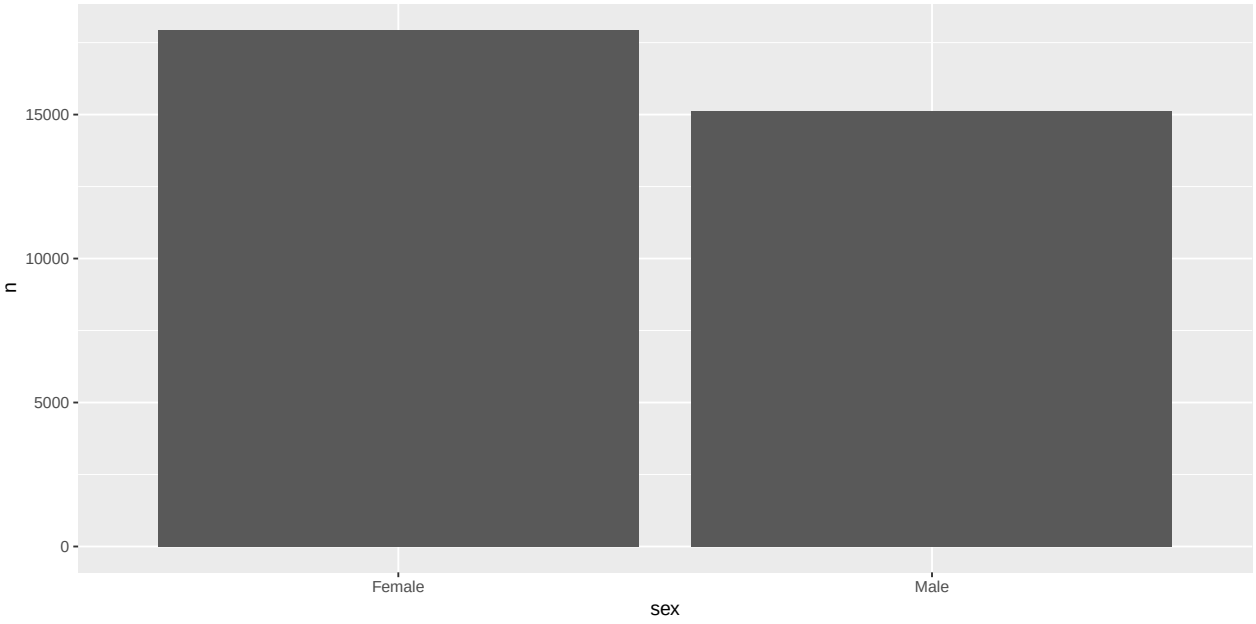


Figure 3: Gender Distribution

3.3 Confidence In Police

Now we will investigate people's confidence in police in different gender groups. People's response are categorized into 8 groups: *1 A great deal of confidence*, *2 Some confidence*, *3 Not very much confidence*, *4 No confidence at all*, *6 Valid skip*, *7 Don't know*, *8 Refusal*, *9 Not stated*. The following bar graph shows the distribution of the responses, categorized by gender groups, as shown in Figure 4. From the graph, we can see that the majority of respondents are confident in local police. To be specific, 92.8% of female show some or great confidence in local police, whereas 90% of male show some or great confidence in local police.

Next, we will take a closer look at the responses of two other questions, they are *Perception (local police) - Being approachable and easy to talk to* and *Perception (local police) - Treating people fairly*. Those questions, especially the second one, will allow us to have more certainty in determining whether people in different gender groups are treated unfairly in Law Enforcement. Both of the questions have 7 valid choices, they are *1 Good job*, *2 Average job*, *3 Poor job*, *6 Valid skip*, *7 Don't know*, *8 Refusal*, *9 Not stated*. For simplicity, we will only consider the first 3. The distribution of the responses is shown in Figure 5 and Figure 6. From the figures, around 81% of male respondents think that police are approachable and around 80% of female respondents hold the same opinion. On top of that, around 77% of female respondents think that police treat people fairly and around 79% of male respondents hold the same opinion. In Conclusion, based on the results of the survey, majority of the respondents from all participating gender groups have confidence in police and agree that police is approachable and treat people fairly.

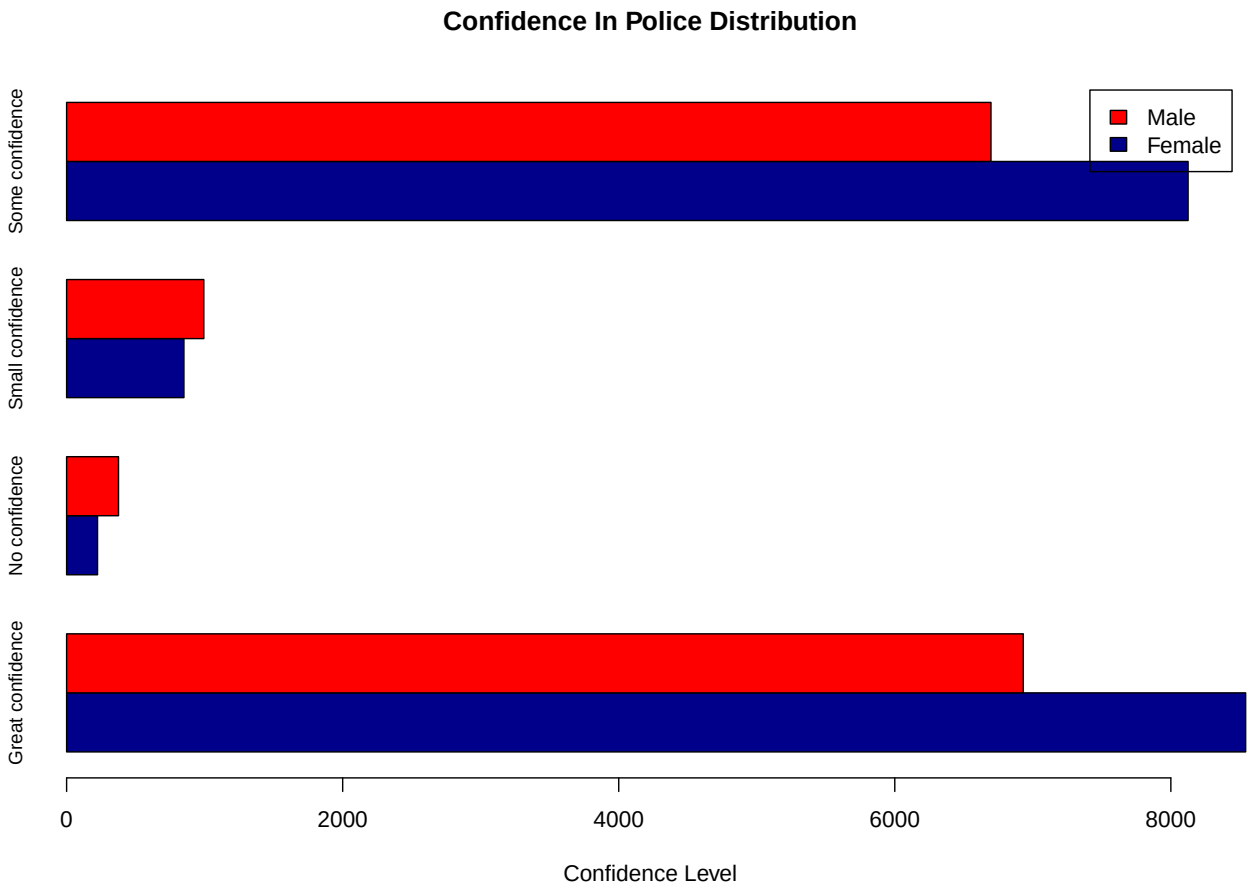


Figure 4: Confidence in Police Distribution

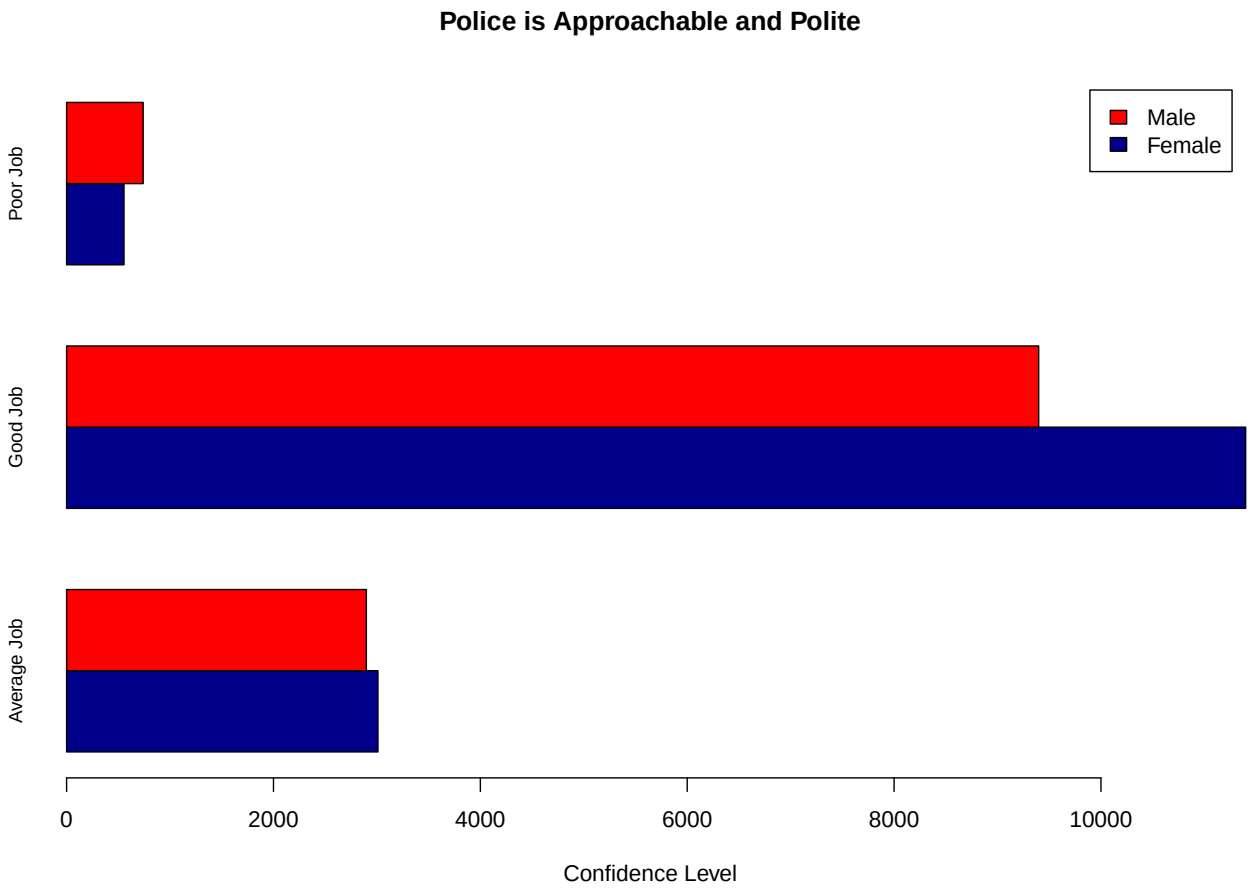


Figure 5: Police is approachable

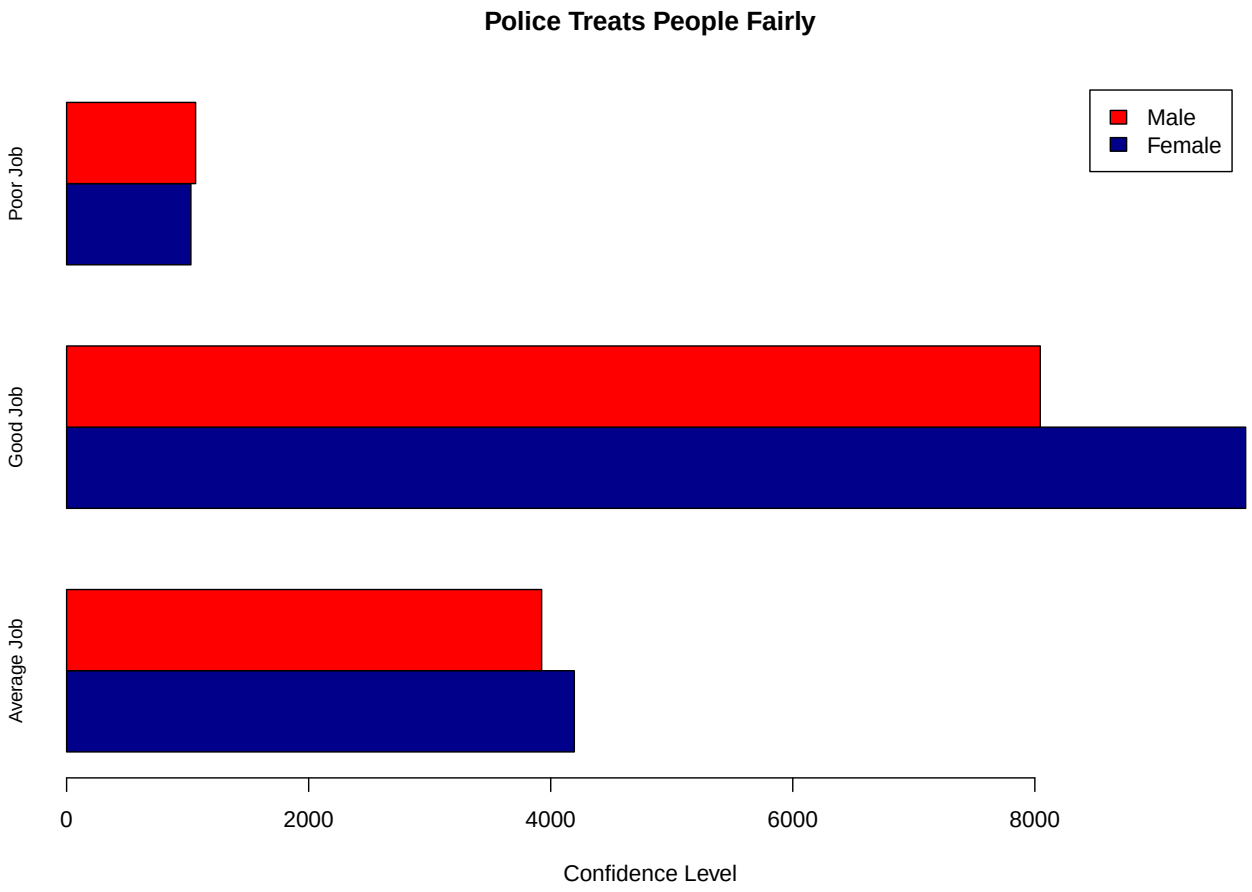


Figure 6: Police Treats People Fairly

3.4 Confidence In Criminal Courts

After investigating different gender group's confidence in police, we will now take a look at people's confidence in criminal courts. Similarly, we will only look at the following three responses: *1 A great deal of confidence*, *2 Some confidence*, *3 Not very much confidence*, Figure 7 shows the result.

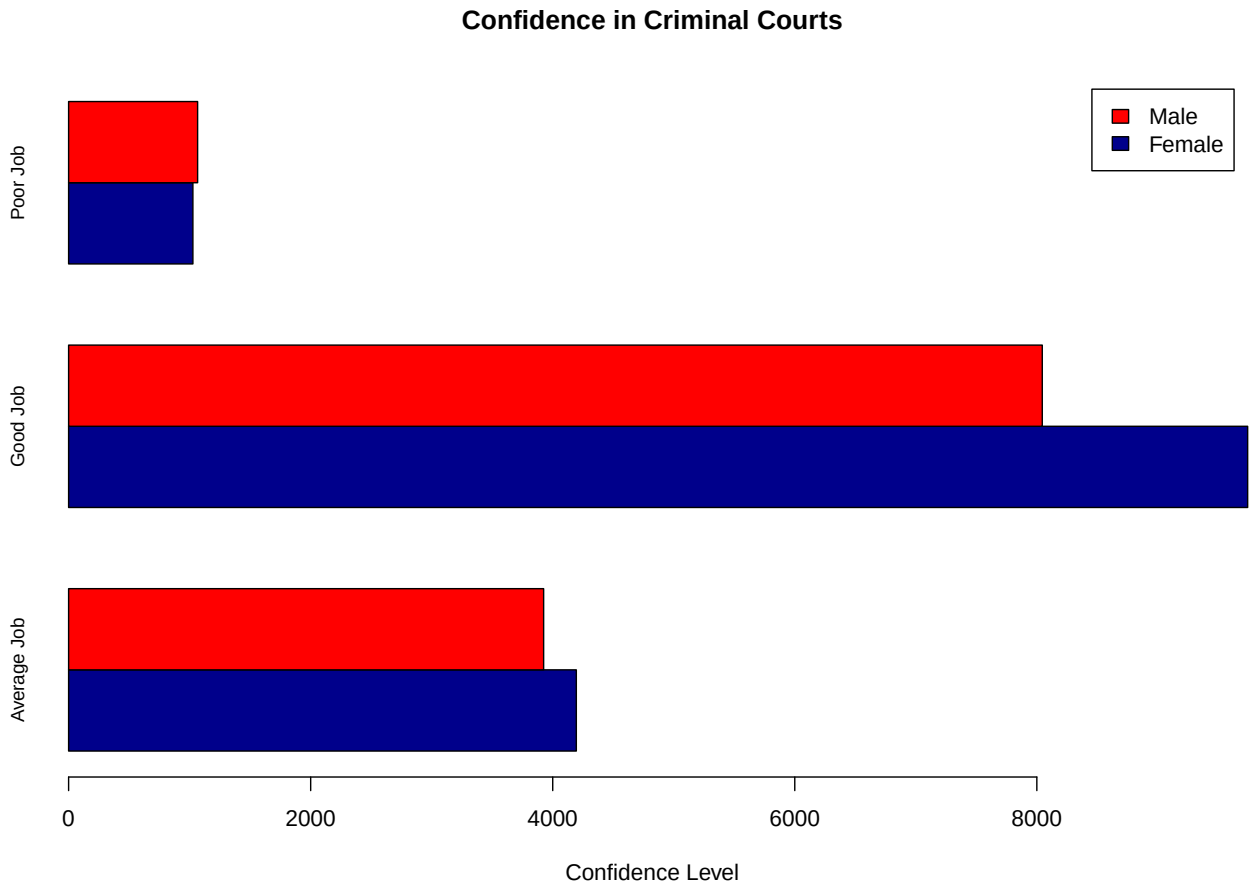


Figure 7: Confidence in Criminal Courts

3.5 Crime By Category

Figure 8 shows the crime count of different categories. We can identify the crimes that happen the most frequently.

Theft, assault, and break and enter happen most frequently.

3.5.1 Crime Count By Education Level

Figure 9 show the same crime count but differentiated by education level.

The education levels are mutually exclusive (i.e. if a respondent select "Yes" for "Elementary/junior/high school" education level, then he/she can not select "Yes" for the other 2 questions). The 3 plots all have similar shapes to Figure 8, i.e. the most frequent crime categories in Figure 8 are also the most frequent crimes in Figure 9.

Within Figure 9, the subplot "University Education Crime Count" has a obviously different shape from the other 2 education level.

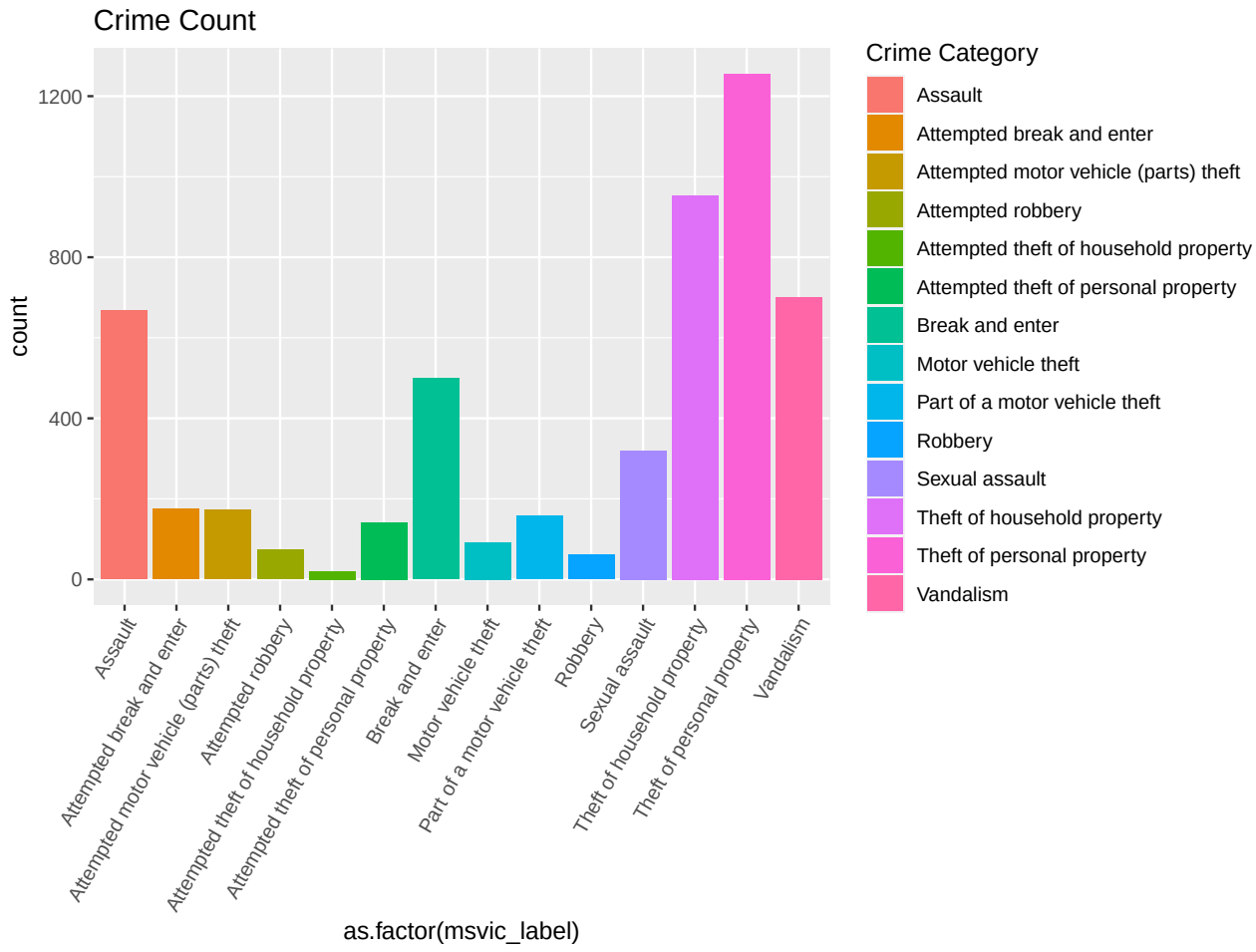


Figure 8: Crime Count By Category

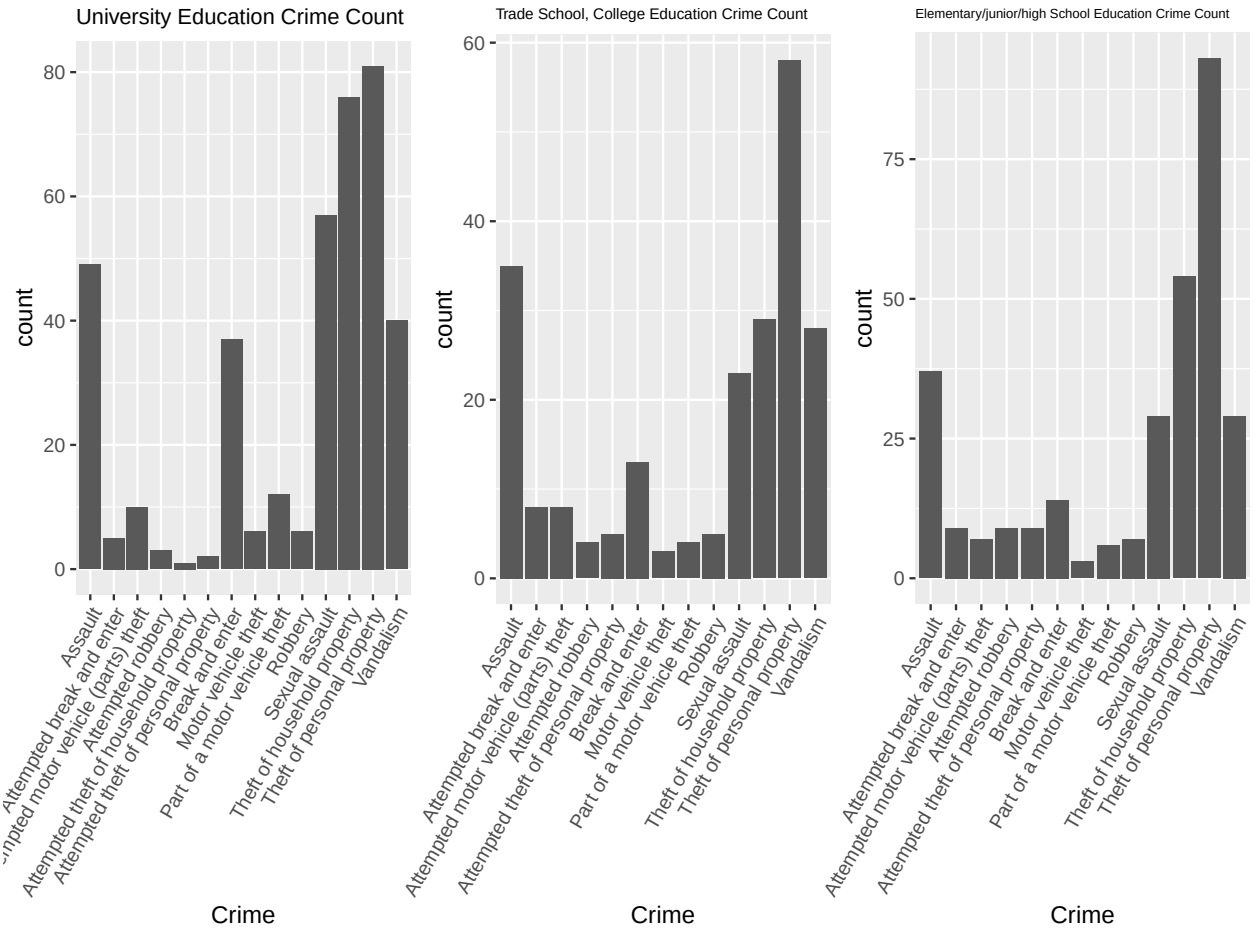


Figure 9: Crime By Education Level

It seems like samples with University Education have higher chance of getting “Sexual Assault”, “Vandalism” “Theft of household property”. Higher “Theft of household property” and “Vandalism” count can be easily explained by, people with higher education may have higher income (higher household property value) which could attract theft.

I couldn’t find a good explanation high “Sexual Assault” for university-education population.

3.6 Discrimination VS Crime

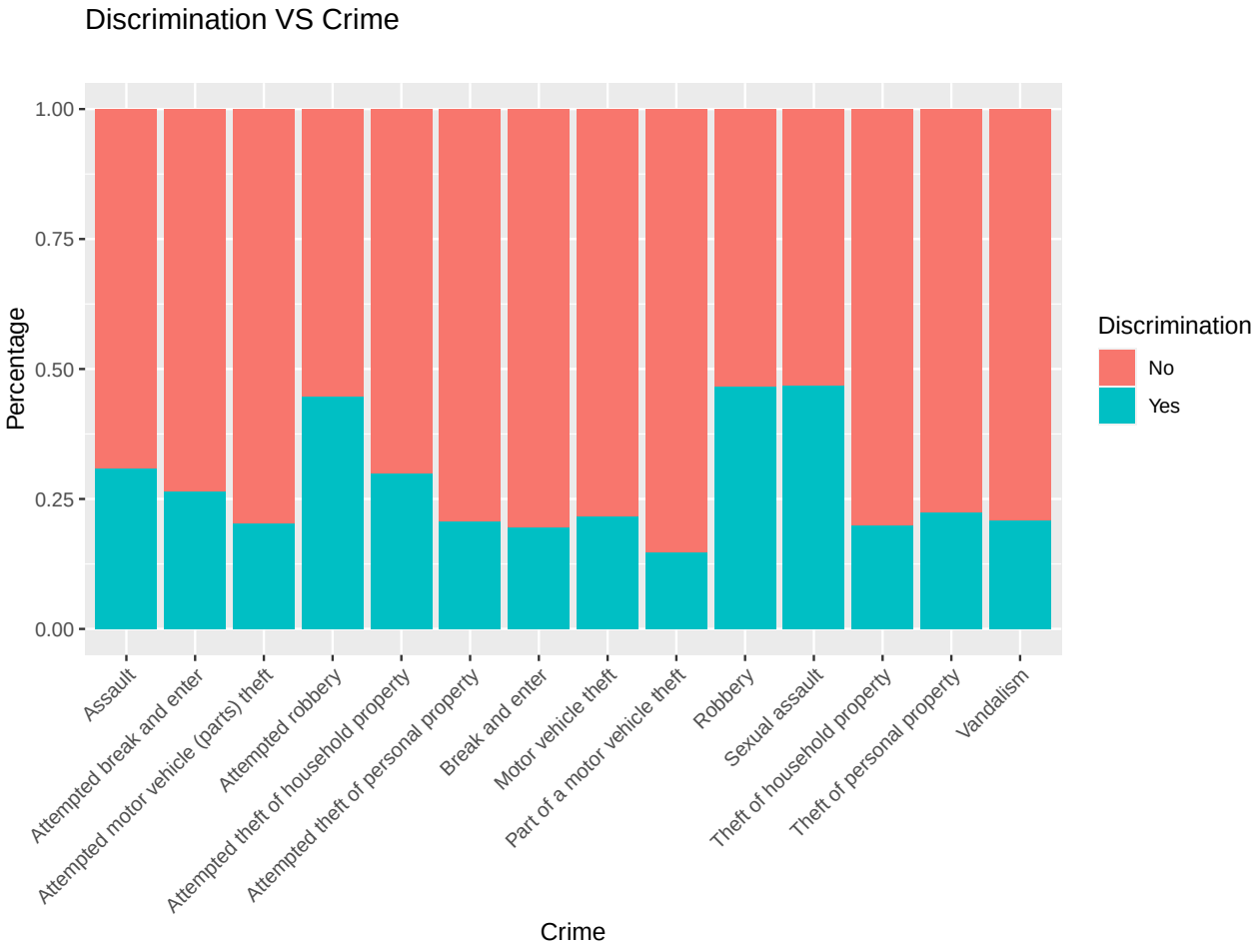


Figure 10: Discrimination VS Crime

Figure 10 plots the relationship between discrimination and crime to show which crimes are more related to discrimination. Crimes like robbery and sexual assault are more likely to happen on people being discriminated.

Figure 11 to Figure 19 in appendix plot the relationship between crime and different discrimination categories.

The following table shows some obvious and proportional positive relationship between crime rate and different types of discrimination (i.e. people experience discrimination x is more likely to experience crime y).

Discrimination	Crime
Sex	Sexual Assault
Ethnicity or Culture	Robbery

Discrimination	Crime
Race and Skin Color	Robbery, Mortar theft, (Sexual) Assault
Physical Appearance	Robbery and Sexual Assault
Religion	Robbery and Sexual Assault
Sexual Orientation	Attempted Robbery and Sexual Assault
Age	Robbery and Attempted theft of household property
Physical or Mental Disability	Robbery and Sexual Assault
Language	None

4 Discussion

4.1 Gender Discrimination in Law Enforcement

Based on results of the survey, every gender group have a similar perception in police and criminal courts. However, it is still too early to conclude that there are no gender discrimination during law enforcement because of the limitations in the survey. In the original survey, when people are asked for their gender, only Male and Female are available to choose from, the other options are either "Valid Skip" or "Refusal", as a result, every survey respondent chose either "Male" or "Female". This makes the results very biased. Suppose that all the *Poor Job* votes are from a minority gender group, the results become deceptive because they were not able to select their own gender.

4.2 Discrimination VS Crime

One special finding is that robbery appears to be very related to discrimination.

Sexual Assault seems to be quite common in both overall crime count (Figure 8) and amoung discriminated people (Figure 10), so it's not surprise that in all types of discrimination, sex assault is almost always one of the top crime (Figure 11 to 19).

However, robbery rate has the opposite phenomenon. In Figure 8, we can see that among all other crimes, (attempted) robbery are one of the least frequent crime. But in Figure 10, robbery and attempted robbery are each as frequent as sexual assault. For all types of discriminations, robbery is also one of the top crime(Figure 11 to 19).

We can draw an hypothesis that people experienced discrimination are more likely to experience robbery.

5 Appendix

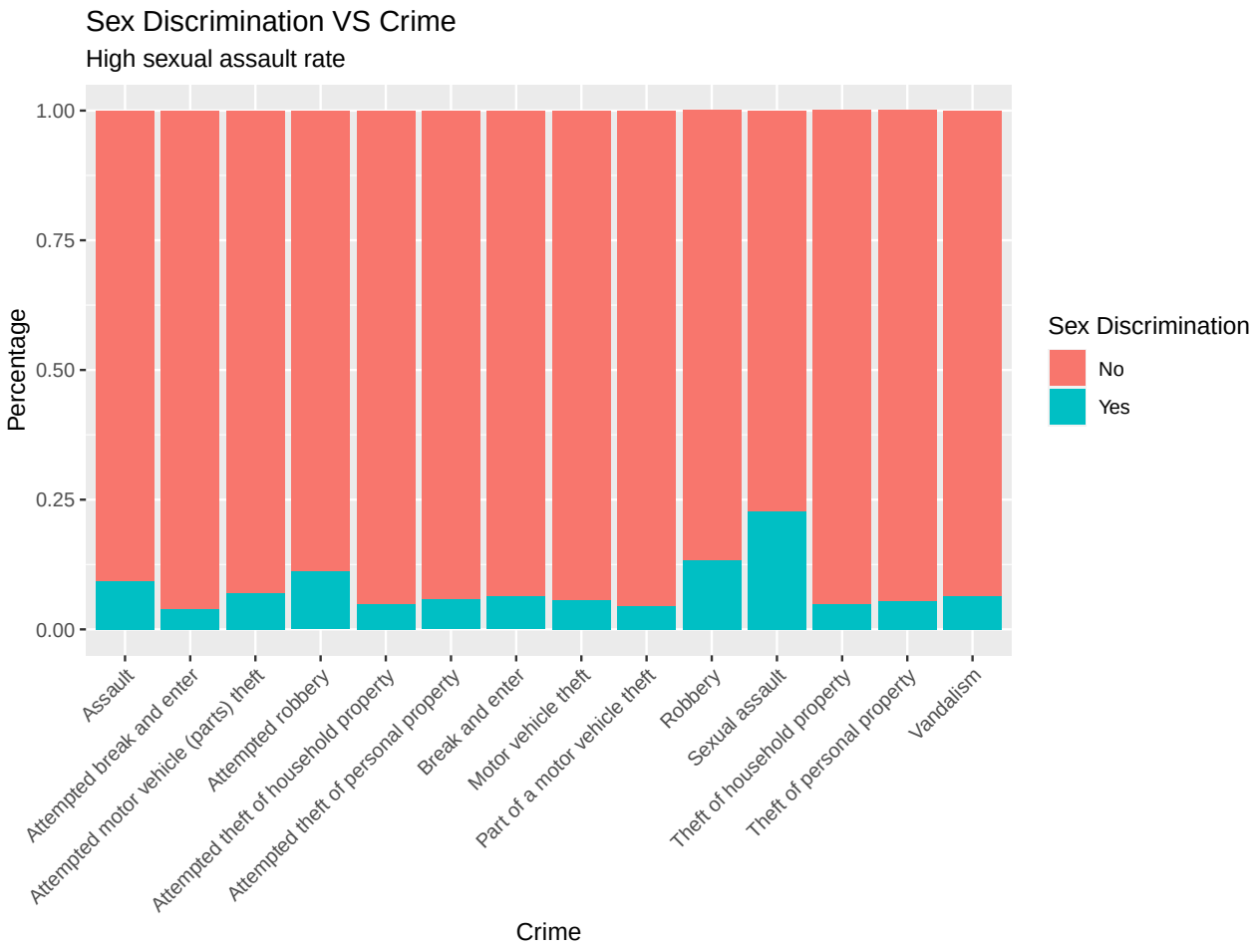


Figure 11: Sex Discrimination VS Crime

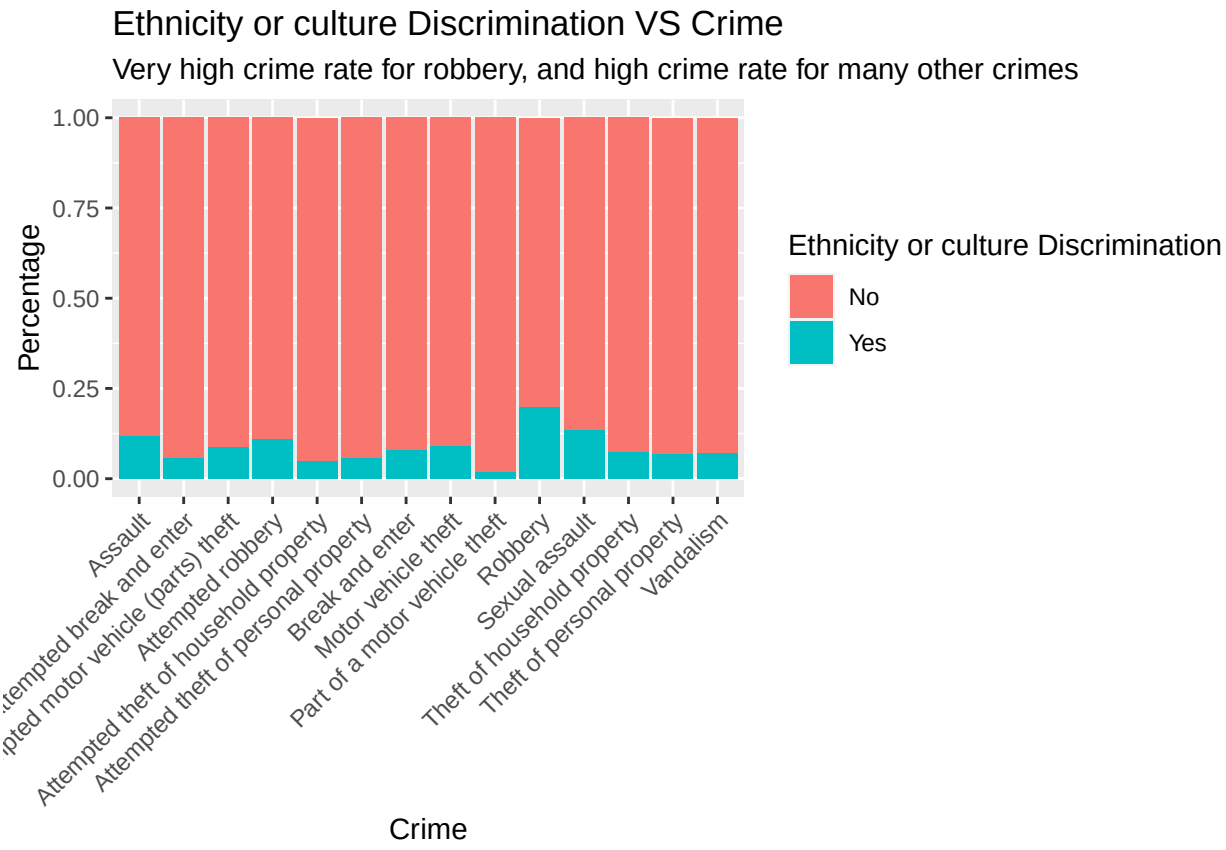


Figure 12: Ethnicity or culture Discrimination VS Crime

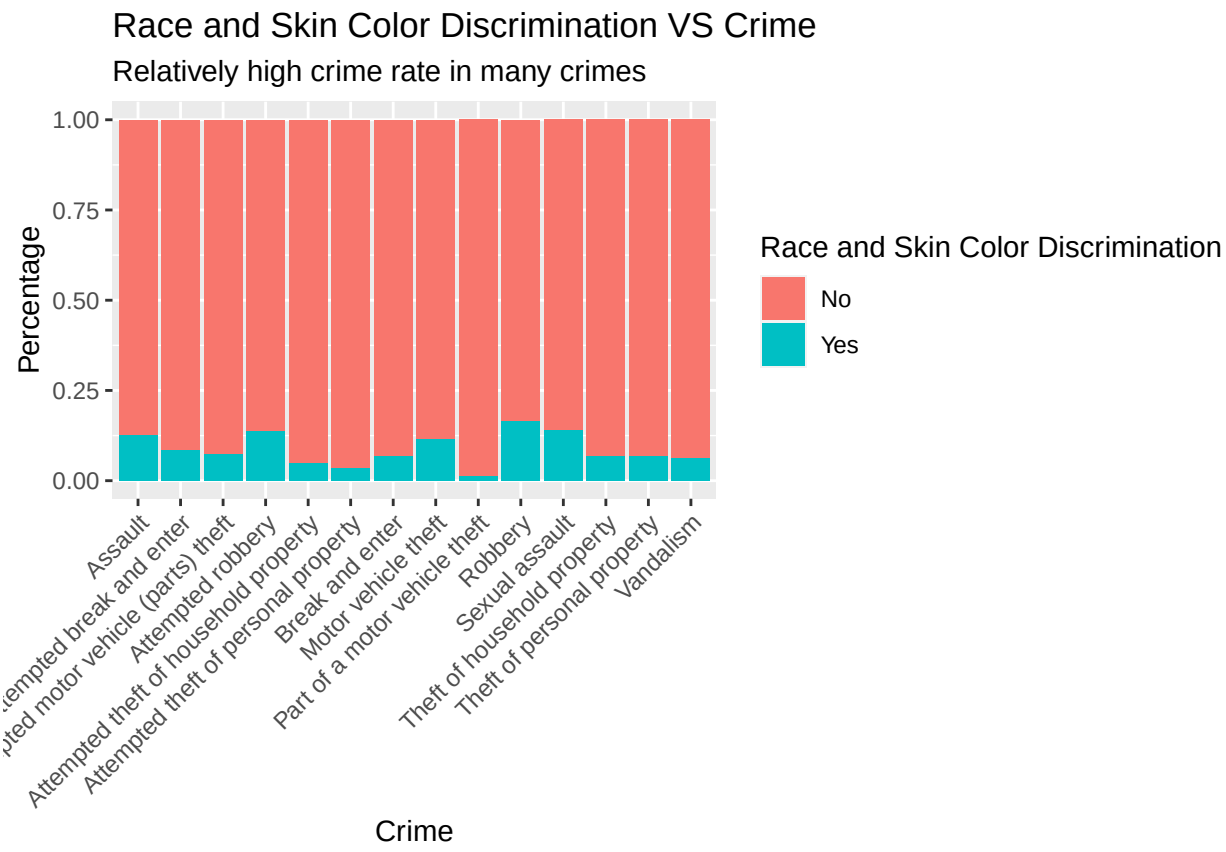


Figure 13: Race and Skin Color Discrimination VS Crime

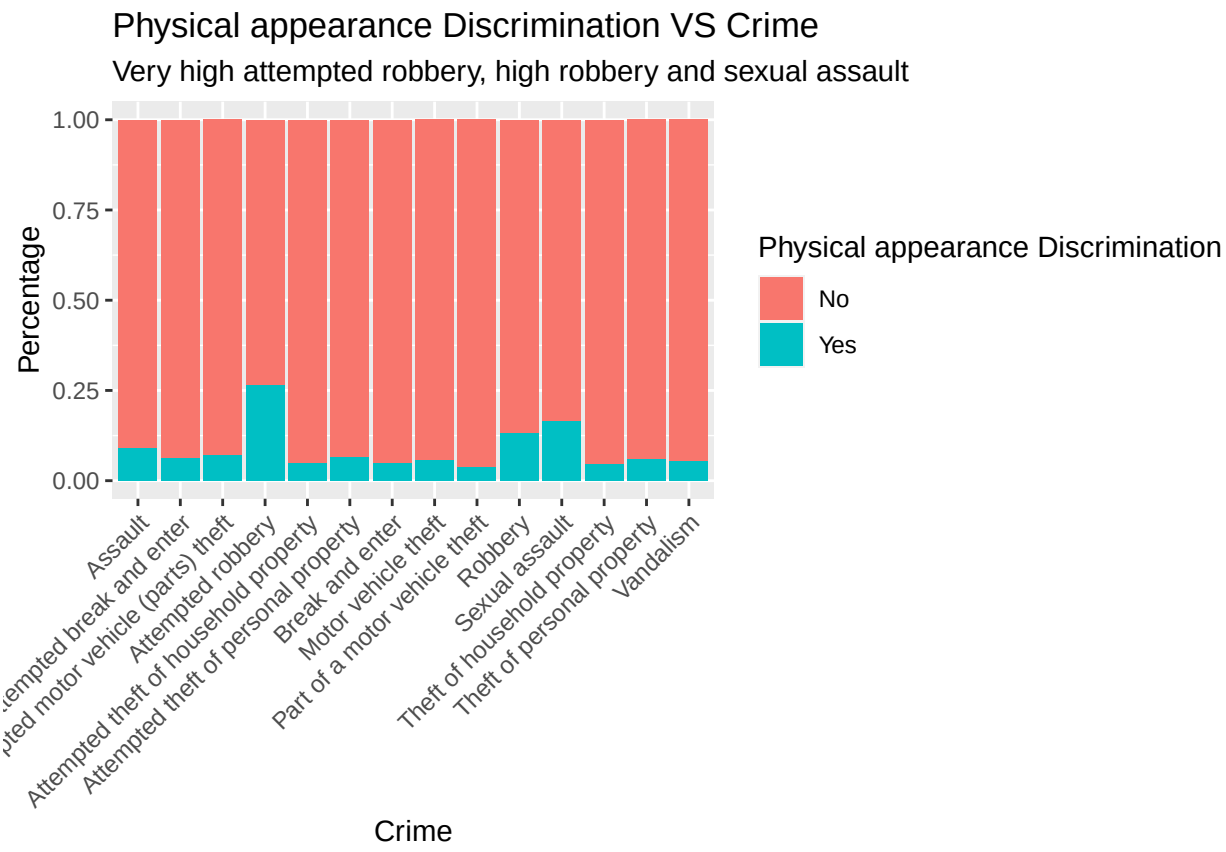


Figure 14: Physical appearance Discrimination VS Crime

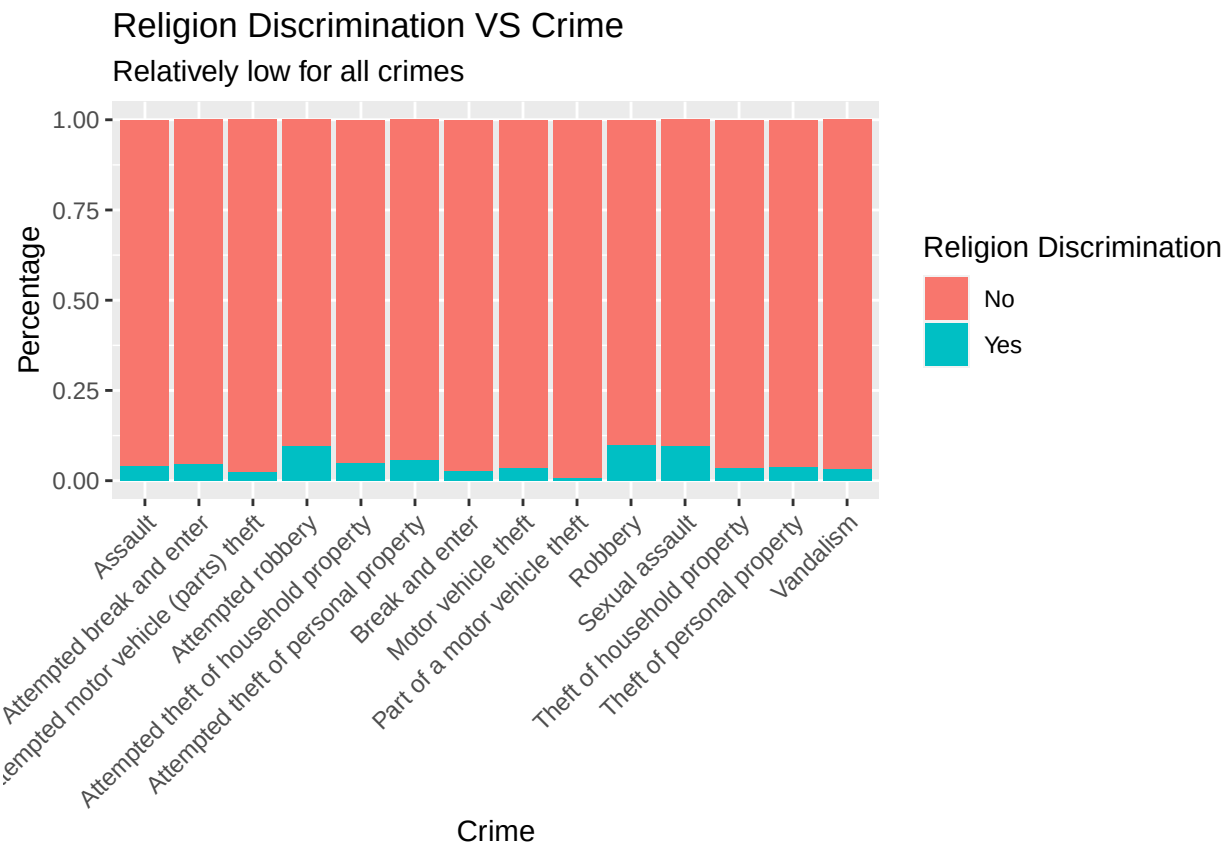


Figure 15: Religion Discrimination VS Crime

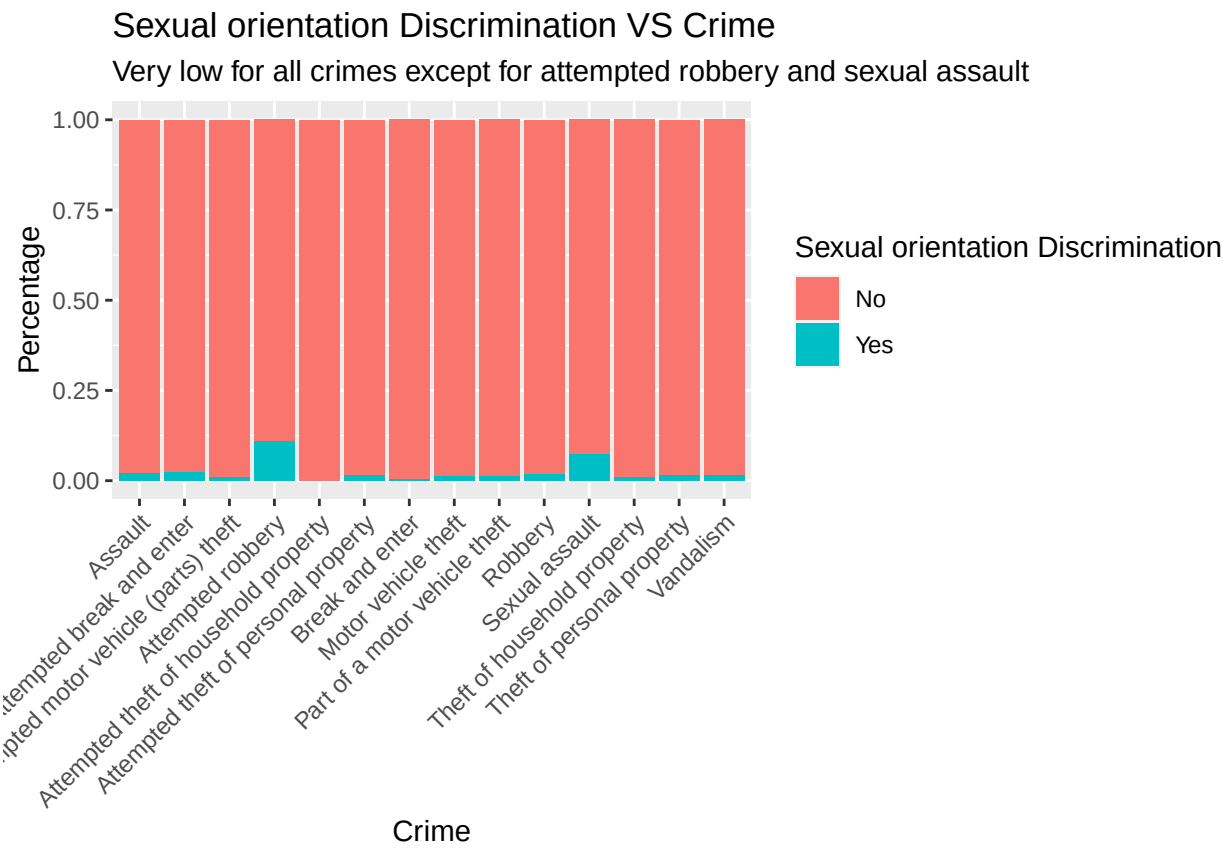


Figure 16: Sexual orientation Discrimination VS Crime

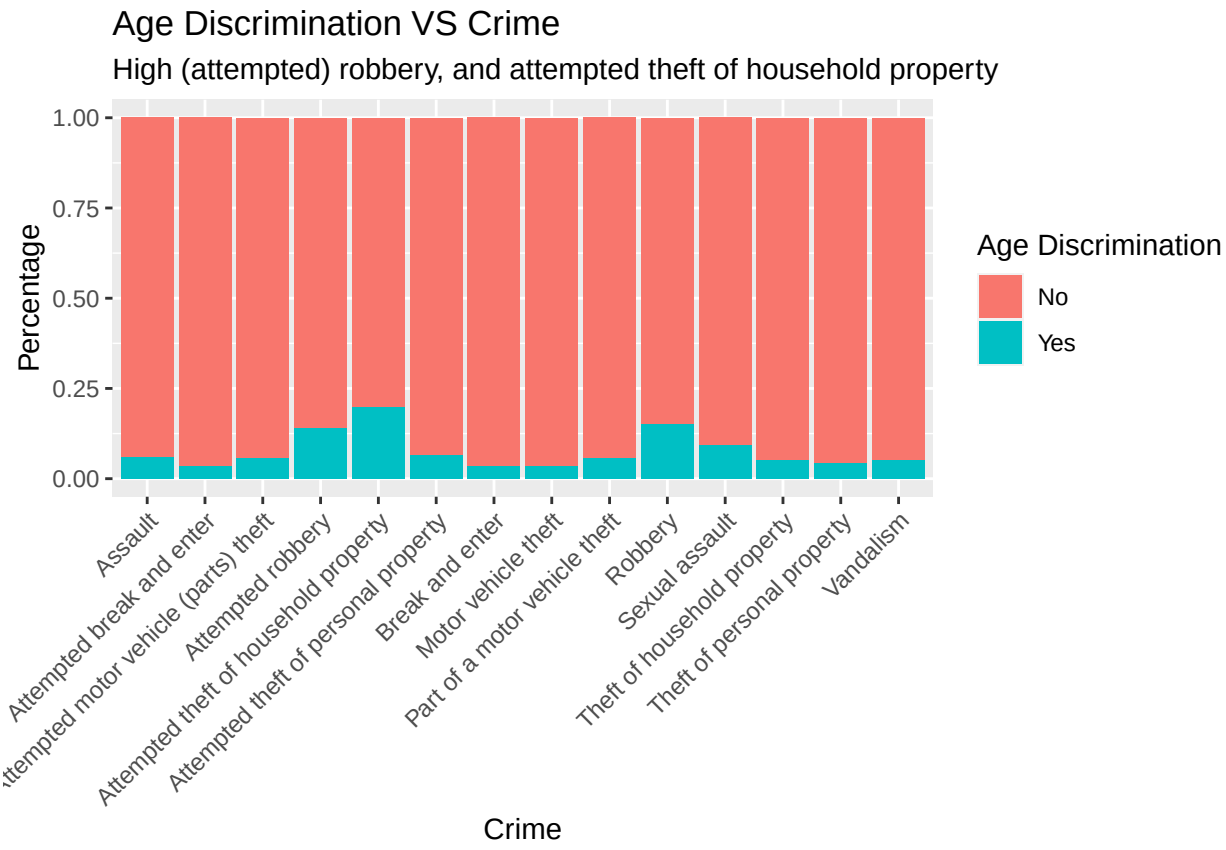


Figure 17: Age Discrimination VS Crime

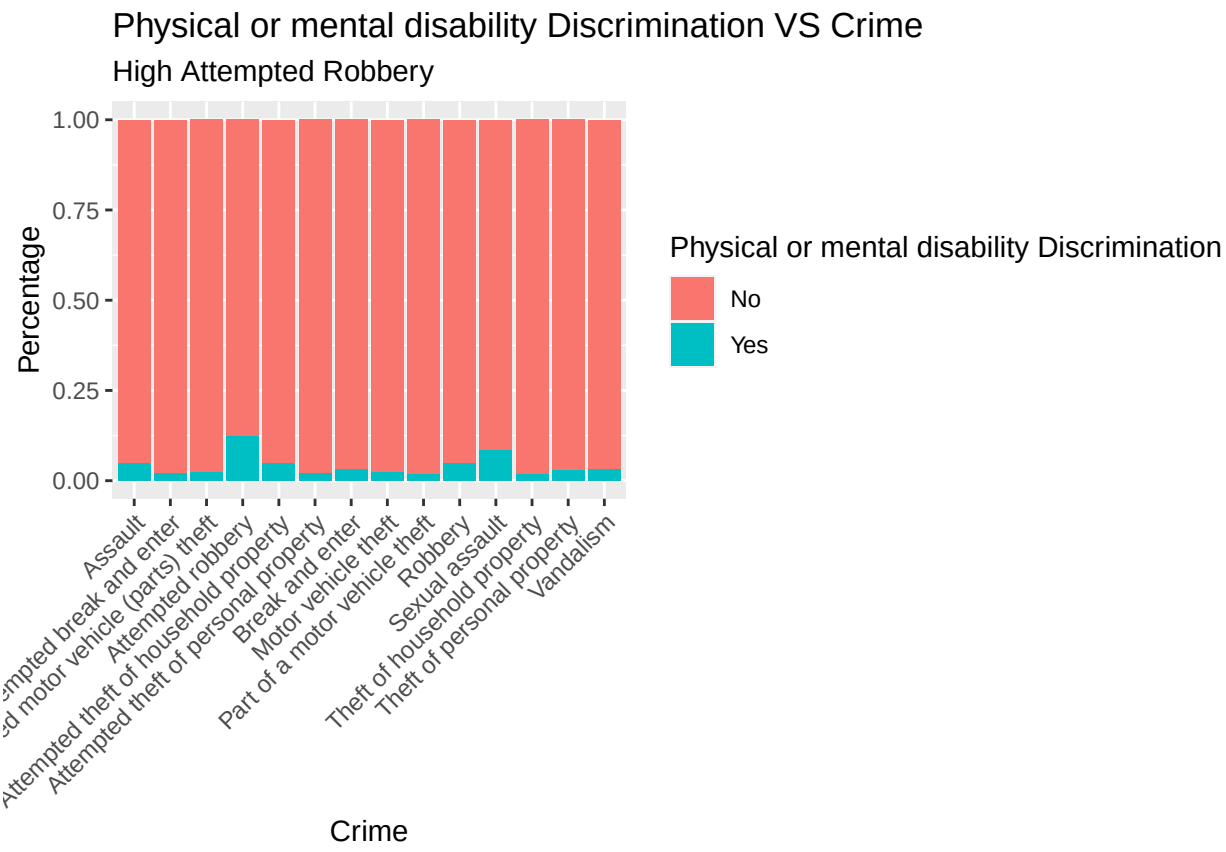


Figure 18: Physical or mental disability Discrimination VS Crime

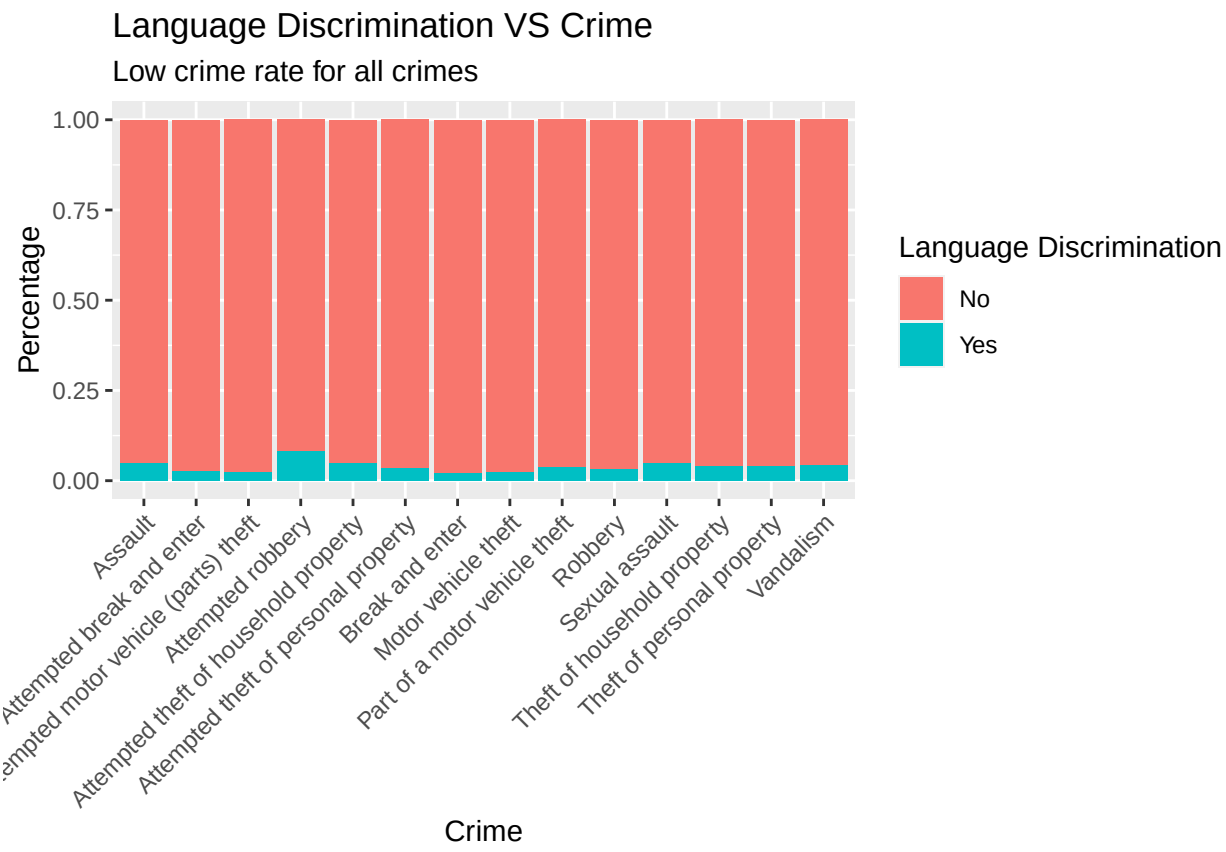
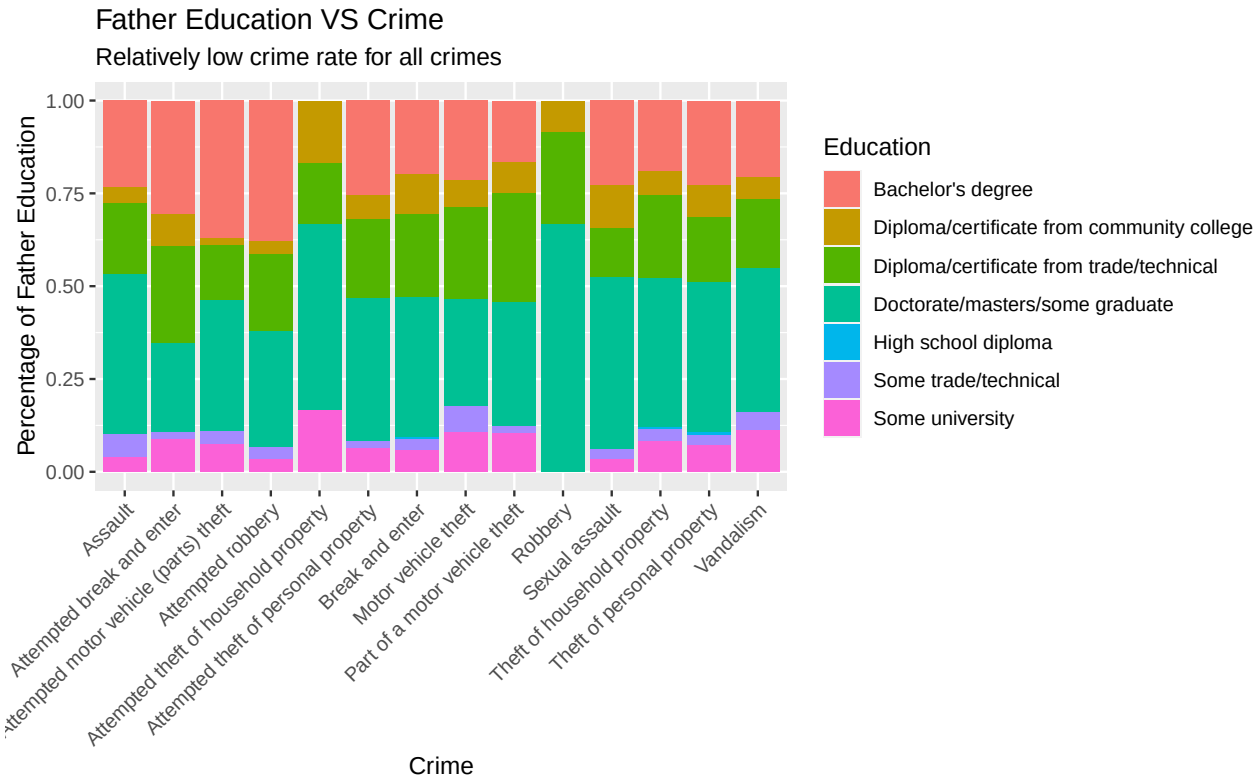


Figure 19: Language Discrimination VS Crime


Father Education VS Crime
Relatively low crime rate for all crimes
Percentage of Father Education
1.00
0.75
0.50
0.25
0.00
Assault
Attempted break and enter
Attempted motor vehicle (parts) theft
Attempted robbery
Attempted theft of household property
Attempted theft of personal property
Break and enter
Motor vehicle theft
Part of a motor vehicle theft
Robbery
Sexual assault
Theft of household property
Theft of personal property
Vandalism
Crime
Education
Bachelor's degree
Diploma/certificate from community college
Diploma/certificate from trade/technical
Doctorate/masters/some graduate
High school diploma
Some trade/technical
Some university

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