Bias Incidents

Juan Nunez

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Set working directory.

setwd("C:\\Users\\Juan Nunez\\Desktop\\DATA\_Capstone")

Open packages.

library(dplyr)

##   
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':  
##   
## filter, lag

## The following objects are masked from 'package:base':  
##   
## intersect, setdiff, setequal, union

library(readr)  
library(ggplot2)  
library(tidyr)

Open the data.

bias <- read\_csv("DATASETS\\MCPD\_Bias\_Incidents.csv")

## Parsed with column specification:  
## cols(  
## `Incident Date` = col\_character(),  
## ID = col\_double(),  
## District = col\_character(),  
## `Bias Code` = col\_character(),  
## `Bias Code2` = col\_character(),  
## Bias = col\_character(),  
## Status = col\_character(),  
## `# of Victims` = col\_double(),  
## `Victim Type` = col\_character(),  
## `# of Suspects` = col\_double(),  
## `# Suspects less than 18 years old` = col\_double(),  
## `# Suspects 18-35 years old` = col\_double(),  
## `# Suspects 36-45 years old` = col\_double(),  
## `# Suspects 46-55 years old` = col\_double(),  
## `# Suspects >55 years old` = col\_double(),  
## Unknown = col\_character()  
## )

Look at the data.

dim(bias)

## [1] 329 16

head(bias)

## # A tibble: 6 x 16  
## `Incident Date` ID District `Bias Code` `Bias Code2` Bias Status  
## <chr> <dbl> <chr> <chr> <chr> <chr> <chr>   
## 1 03/21/2017 1.70e7 1D 21 - Anti-~ 12 - Anti-B~ Vand~ OPEN   
## 2 06/14/2016 1.60e7 4D 14 - Anti-~ <NA> Verb~ N/A   
## 3 10/27/2017 1.71e8 6D 43 - Anti-~ <NA> Assa~ OPEN   
## 4 08/22/2017 1.71e8 3D 24 - Anti-~ <NA> Verb~ UNF   
## 5 12/16/2017 1.71e8 2D 12 - Anti-~ <NA> Verb~ OPEN   
## 6 08/06/2017 1.71e8 4D 12 - Anti-~ <NA> Vand~ UNF   
## # ... with 9 more variables: `# of Victims` <dbl>, `Victim Type` <chr>, `#  
## # of Suspects` <dbl>, `# Suspects less than 18 years old` <dbl>, `#  
## # Suspects 18-35 years old` <dbl>, `# Suspects 36-45 years old` <dbl>,  
## # `# Suspects 46-55 years old` <dbl>, `# Suspects >55 years old` <dbl>,  
## # Unknown <chr>

Add underscores to the names of the columns.

colnames(bias) = gsub(" ", "\_",colnames(bias))

Make a copy of the data.

bias2 <- bias  
head(bias2)

## # A tibble: 6 x 16  
## Incident\_Date ID District Bias\_Code Bias\_Code2 Bias Status  
## <chr> <dbl> <chr> <chr> <chr> <chr> <chr>   
## 1 03/21/2017 1.70e7 1D 21 - Ant~ 12 - Anti~ Vand~ OPEN   
## 2 06/14/2016 1.60e7 4D 14 - Ant~ <NA> Verb~ N/A   
## 3 10/27/2017 1.71e8 6D 43 - Ant~ <NA> Assa~ OPEN   
## 4 08/22/2017 1.71e8 3D 24 - Ant~ <NA> Verb~ UNF   
## 5 12/16/2017 1.71e8 2D 12 - Ant~ <NA> Verb~ OPEN   
## 6 08/06/2017 1.71e8 4D 12 - Ant~ <NA> Vand~ UNF   
## # ... with 9 more variables: `#\_of\_Victims` <dbl>, Victim\_Type <chr>,  
## # `#\_of\_Suspects` <dbl>, `#\_Suspects\_less\_than\_18\_years\_old` <dbl>,  
## # `#\_Suspects\_18-35\_years\_old` <dbl>,  
## # `#\_Suspects\_36-45\_years\_old` <dbl>,  
## # `#\_Suspects\_46-55\_years\_old` <dbl>, `#\_Suspects\_>55\_years\_old` <dbl>,  
## # Unknown <chr>

Change the name and class of the date variable.

colnames(bias2)[colnames(bias2)=="Incident\_Date"] <- "Date"

bias2$Date <- as.Date(bias2$Date, "%m/%d/%Y")  
class(bias2$Date)

## [1] "Date"

Fix the district numbers.

table(bias2$District)

##   
## 1D 2D 3D 4D 5D 6D GCPD RCPD TPPD   
## 53 70 36 54 36 34 14 25 7

bias2$District\_n <- bias2$District  
bias2$District\_n[bias2$District== "GCPD"] <- "Other"  
bias2$District\_n[bias2$District== "RCPD"] <- "Other"  
bias2$District\_n[bias2$District== "TPPD"] <- "Other"

table(bias2$District\_n)

##   
## 1D 2D 3D 4D 5D 6D Other   
## 53 70 36 54 36 34 46

Fix the bias codes.

table(bias$Bias\_Code)

##   
## 11 - Anti-white 12- Anti-Black   
## 12 1   
## 12-Anti-Black 12 - Anti-Black   
## 1 88   
## 14 - Anti-Asian 15 - Anti-Multi-Racial   
## 7 2   
## 15 - Anti-multi racial 21 - Anti-Jewish   
## 16 98   
## 22 - Anti-Catholic 22 - Anti-Jewish   
## 4 1   
## 24 - Anti-Islamic 25 - Anti-Other Religion   
## 19 2   
## 26 - Anti-Multi religious group 31 - Anti-Arab   
## 4 1   
## 32 - Anti-Hispanic 33- Anti-other Ethnicity   
## 20 5   
## 33 - Anti-Other Ethnicity 43 - Anti-Homosexual   
## 2 33   
## 71 - Anti-Transgender 72 - Anti Gender Non-conforming   
## 10 3

bias2$bias\_n <- bias2$Bias\_Code  
bias2$bias\_n[bias2$bias\_n== "12- Anti-Black"] <- "Anti-black"  
bias2$bias\_n[bias2$bias\_n== "12-Anti-Black"] <- "Anti-black"  
bias2$bias\_n[bias2$bias\_n== "12 - Anti-Black"] <- "Anti-black"  
bias2$bias\_n[bias2$bias\_n== "11 - Anti-white"] <- "Anti-white"  
bias2$bias\_n[bias2$bias\_n== "15 - Anti-Multi-Racial"] <- "Anti-multi-racial"  
bias2$bias\_n[bias2$bias\_n== "15 - Anti-multi racial"] <- "Anti-multi-racial"  
bias2$bias\_n[bias2$bias\_n== "14 - Anti-Asian"] <- "Anti-asian"  
bias2$bias\_n[bias2$bias\_n== "21 - Anti-Jewish"] <- "Anti-jewish"  
bias2$bias\_n[bias2$bias\_n== "22 - Anti-Catholic"] <- "Anti-catholic"  
bias2$bias\_n[bias2$bias\_n== "22 - Anti-Jewish"] <- "Anti-jewish"  
bias2$bias\_n[bias2$bias\_n== "24 - Anti-Islamic"] <- "Anti-islamic"  
bias2$bias\_n[bias2$bias\_n== "25 - Anti-Other Religion"] <- "Anti-other-religion"  
bias2$bias\_n[bias2$bias\_n== "26 - Anti-Multi religious group"] <- "Anti-multi-religious-group"  
bias2$bias\_n[bias2$bias\_n== "31 - Anti-Arab"] <- "Anti-arab"  
bias2$bias\_n[bias2$bias\_n== "32 - Anti-Hispanic"] <- "Anti-hispanic"  
bias2$bias\_n[bias2$bias\_n== "33- Anti-other Ethnicity"] <- "Anti-other-ethnicity"  
bias2$bias\_n[bias2$bias\_n== "33 - Anti-Other Ethnicity"] <- "Anti-other-ethnicity"  
bias2$bias\_n[bias2$bias\_n== "43 - Anti-Homosexual"] <- "Anti-homosexual"  
bias2$bias\_n[bias2$bias\_n== "71 - Anti-Transgender"] <- "Anti-transgender"  
bias2$bias\_n[bias2$bias\_n== "72 - Anti Gender Non-conforming"] <- "Anti-gender-non-conforming"  
table(bias2$bias\_n)

##   
## Anti-arab Anti-asian   
## 1 7   
## Anti-black Anti-catholic   
## 90 4   
## Anti-gender-non-conforming Anti-hispanic   
## 3 20   
## Anti-homosexual Anti-islamic   
## 33 19   
## Anti-jewish Anti-multi-racial   
## 99 18   
## Anti-multi-religious-group Anti-other-ethnicity   
## 4 7   
## Anti-other-religion Anti-transgender   
## 2 10   
## Anti-white   
## 12

Create a shorter version of the bias categories.

bias2$bias\_cat <- bias2$bias\_n  
bias2$bias\_cat[bias2$bias\_cat== "Anti-arab"] <- "Anti-other"  
bias2$bias\_cat[bias2$bias\_cat== "Anti-asian"] <- "Anti-other"  
bias2$bias\_cat[bias2$bias\_cat== "Anti-catholic"] <- "Anti-other"  
bias2$bias\_cat[bias2$bias\_cat== "Anti-gender-non-conforming"] <- "Anti-LGBTQ"  
bias2$bias\_cat[bias2$bias\_cat== "Anti-homosexual"] <- "Anti-LGBTQ"  
bias2$bias\_cat[bias2$bias\_cat== "Anti-multi-religious-group"] <- "Anti-other"  
bias2$bias\_cat[bias2$bias\_cat== "Anti-other-ethnicity"] <- "Anti-other"  
bias2$bias\_cat[bias2$bias\_cat== "Anti-other-religion"] <- "Anti-other"  
bias2$bias\_cat[bias2$bias\_cat== "Anti-transgender"] <- "Anti-LGBTQ"  
  
table(bias2$bias\_cat)

##   
## Anti-black Anti-hispanic Anti-islamic Anti-jewish   
## 90 20 19 99   
## Anti-LGBTQ Anti-multi-racial Anti-other Anti-white   
## 46 18 25 12

class(bias2$bias\_cat)

## [1] "character"

Clean the bias variable.

bias2$Bias\_n <- bias2$Bias  
bias2$Bias\_n[bias2$Bias\_n== "Miscellaneous"] <- "Other"  
bias2$Bias\_n[bias2$Bias\_n== "Harassing Communication"] <- "Other"  
bias2$Bias\_n[bias2$Bias\_n== "Flyer left behind"] <- "Other"  
bias2$Bias\_n[bias2$Bias\_n== "Assault (Aggravated)"] <- "Assault"  
bias2$Bias\_n[bias2$Bias\_n== "Assault (intimidation)"] <- "Assault"  
bias2$Bias\_n[bias2$Bias\_n== "Assault (Intimidation)"] <- "Assault"  
bias2$Bias\_n[bias2$Bias\_n== "Assault (physical)"] <- "Assault"  
bias2$Bias\_n[bias2$Bias\_n== "Assault (simple)"] <- "Assault"  
bias2$Bias\_n[bias2$Bias\_n== "Damage property"] <- "Vandalism"  
bias2$Bias\_n[bias2$Bias\_n== "Damage property"] <- "Vandalism"  
bias2$Bias\_n[bias2$Bias\_n== "Verbal Intimidation"] <- "Intimidation"  
bias2$Bias\_n[bias2$Bias\_n== "Written Intimidation"] <- "Intimidation"  
  
table(bias2$Bias\_n)

##   
## Assault Intimidation Other Vandalism   
## 56 111 33 129

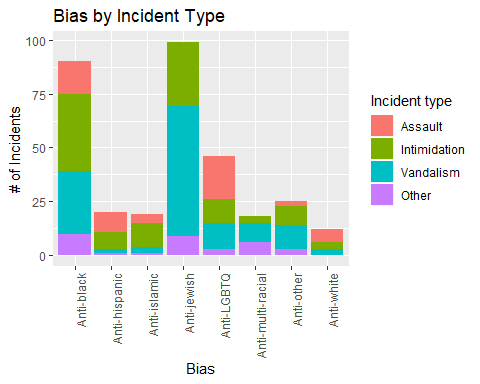
bias2$biascat\_n <- bias2$Bias\_n  
bias2$biascat\_n <- factor(bias2$biascat\_n, levels = c("Assault", "Intimidation", "Vandalism", "Other"))  
table(bias2$biascat\_n)

##   
## Assault Intimidation Vandalism Other   
## 56 111 129 33

table(bias2$Bias\_n)

##   
## Assault Intimidation Other Vandalism   
## 56 111 33 129

bias2 %>%   
ggplot(aes(x = bias\_cat, fill = biascat\_n)) +  
geom\_bar() +  
labs(title = "Bias by Incident Type", x= "Bias", y = "# of Incidents") +  
guides(fill=guide\_legend(title = "Incident type")) +  
 theme(axis.text.x = element\_text(angle = 90, hjust = 1))



table(bias$Bias)

##   
## Assault (Aggravated) Assault (intimidation) Assault (Intimidation)   
## 1 3 1   
## Assault (physical) Assault (simple) Damage property   
## 44 7 3   
## Flyer left behind Harassing Communication Intimidation   
## 19 2 7   
## Miscellaneous Other Vandalism   
## 2 10 126   
## Verbal Intimidation Written Intimidation   
## 50 54

table(bias2$Status)

##   
## CLOSED-EXCEPTION CLOSED - ADMIN CLOSED - ARREST   
## 9 34 30   
## CLOSED - EXCEPTION INACTIVE N/A   
## 7 51 70   
## OPEN RTOJ UNF   
## 112 3 13

table(bias2$`#\_of\_Victims`)

##   
## 0 1 2 3 4 6   
## 2 146 27 5 2 1

Change the victim column name.

colnames(bias2)[colnames(bias2)=="#\_of\_Victims"] <- "Victim\_Num"

table(bias2$Victim\_Num)

##   
## 0 1 2 3 4 6   
## 2 146 27 5 2 1

See in which incidents there were 0 victims.

bias2[which(bias2$Victim\_Num == 0), ]

## # A tibble: 2 x 21  
## Date ID District Bias\_Code Bias\_Code2 Bias Status Victim\_Num  
## <date> <dbl> <chr> <chr> <chr> <chr> <chr> <dbl>  
## 1 2016-11-29 1.61e7 1D 21 - Ant~ <NA> Vand~ INACT~ 0  
## 2 2016-04-23 1.60e7 4D 12 - Ant~ <NA> Misc~ N/A 0  
## # ... with 13 more variables: Victim\_Type <chr>, `#\_of\_Suspects` <dbl>,  
## # `#\_Suspects\_less\_than\_18\_years\_old` <dbl>,  
## # `#\_Suspects\_18-35\_years\_old` <dbl>,  
## # `#\_Suspects\_36-45\_years\_old` <dbl>,  
## # `#\_Suspects\_46-55\_years\_old` <dbl>, `#\_Suspects\_>55\_years\_old` <dbl>,  
## # Unknown <chr>, District\_n <chr>, bias\_n <chr>, bias\_cat <chr>,  
## # Bias\_n <chr>, biascat\_n <fct>

Create a dummy variable for victim type.

table(bias2$Victim\_Type)

##   
## Business/ Financial Institution Government   
## 5 17   
## Individual Individual(s)   
## 1 181   
## Other Religious Organization   
## 9 25   
## School/College Society   
## 72 19

bias2$Victim\_DUM <- bias2$Victim\_Type  
bias2$Victim\_DUM[bias2$Victim\_DUM== "Individual"] <- "Individual(s)"  
bias2$Victim\_DUM <- recode(bias2$Victim\_DUM, "Individual(s)" = "Person(s)", .default = "Other")  
table(bias2$Victim\_DUM)

##   
## Other Person(s)   
## 147 182

Change the column name for number of suspects and age of suspects.

colnames(bias2)[colnames(bias2)=="#\_of\_Suspects"] <- "Suspect\_Num"

table(bias2$Suspect\_Num)

##   
## 1 2 3 4   
## 99 13 6 4

colnames(bias2)[colnames(bias2)=="#\_Suspects\_less\_than\_18\_years\_old"] <- "Sus\_18orless"  
colnames(bias2)[colnames(bias2)=="#\_Suspects\_18-35\_years\_old"] <- "Sus\_18to25"  
colnames(bias2)[colnames(bias2)=="#\_Suspects\_46-55\_years\_old"] <- "Sus\_46to55"  
colnames(bias2)[colnames(bias2)=="#\_Suspects\_>55\_years\_old"] <- "Sus\_55plus"  
head(bias2)

## # A tibble: 6 x 22  
## Date ID District Bias\_Code Bias\_Code2 Bias Status Victim\_Num  
## <date> <dbl> <chr> <chr> <chr> <chr> <chr> <dbl>  
## 1 2017-03-21 1.70e7 1D 21 - Ant~ 12 - Anti~ Vand~ OPEN NA  
## 2 2016-06-14 1.60e7 4D 14 - Ant~ <NA> Verb~ N/A 2  
## 3 2017-10-27 1.71e8 6D 43 - Ant~ <NA> Assa~ OPEN 1  
## 4 2017-08-22 1.71e8 3D 24 - Ant~ <NA> Verb~ UNF 1  
## 5 2017-12-16 1.71e8 2D 12 - Ant~ <NA> Verb~ OPEN 1  
## 6 2017-08-06 1.71e8 4D 12 - Ant~ <NA> Vand~ UNF 1  
## # ... with 14 more variables: Victim\_Type <chr>, Suspect\_Num <dbl>,  
## # Sus\_18orless <dbl>, Sus\_18to25 <dbl>,  
## # `#\_Suspects\_36-45\_years\_old` <dbl>, Sus\_46to55 <dbl>,  
## # Sus\_55plus <dbl>, Unknown <chr>, District\_n <chr>, bias\_n <chr>,  
## # bias\_cat <chr>, Bias\_n <chr>, biascat\_n <fct>, Victim\_DUM <chr>

dim(bias2)

## [1] 329 22

table(bias2$Unknown)

##   
## X   
## 220

Create a dummy variable for the unknown variable.

bias2$Unknown[is.na(bias2$Unknown)] <- "No"  
bias2$Unknown <- recode(bias2$Unknown, "X" = "Yes")  
table(bias2$Unknown)

##   
## No Yes   
## 109 220

The crosstabs function is used to gain knowledge about how the variable relate to each other.

# Load function  
source("http://pcwww.liv.ac.uk/~william/R/crosstab.r")

head(bias2)

## # A tibble: 6 x 22  
## Date ID District Bias\_Code Bias\_Code2 Bias Status Victim\_Num  
## <date> <dbl> <chr> <chr> <chr> <chr> <chr> <dbl>  
## 1 2017-03-21 1.70e7 1D 21 - Ant~ 12 - Anti~ Vand~ OPEN NA  
## 2 2016-06-14 1.60e7 4D 14 - Ant~ <NA> Verb~ N/A 2  
## 3 2017-10-27 1.71e8 6D 43 - Ant~ <NA> Assa~ OPEN 1  
## 4 2017-08-22 1.71e8 3D 24 - Ant~ <NA> Verb~ UNF 1  
## 5 2017-12-16 1.71e8 2D 12 - Ant~ <NA> Verb~ OPEN 1  
## 6 2017-08-06 1.71e8 4D 12 - Ant~ <NA> Vand~ UNF 1  
## # ... with 14 more variables: Victim\_Type <chr>, Suspect\_Num <dbl>,  
## # Sus\_18orless <dbl>, Sus\_18to25 <dbl>,  
## # `#\_Suspects\_36-45\_years\_old` <dbl>, Sus\_46to55 <dbl>,  
## # Sus\_55plus <dbl>, Unknown <chr>, District\_n <chr>, bias\_n <chr>,  
## # bias\_cat <chr>, Bias\_n <chr>, biascat\_n <fct>, Victim\_DUM <chr>

crosstab(bias2, row.vars = "bias\_cat", col.vars = "Bias\_n", type = "f")

## Bias\_n Assault Intimidation Other Vandalism Sum  
## bias\_cat   
## Anti-black 15 36 10 29 90  
## Anti-hispanic 9 8 1 2 20  
## Anti-islamic 4 11 1 3 19  
## Anti-jewish 0 30 9 60 99  
## Anti-LGBTQ 20 11 3 12 46  
## Anti-multi-racial 0 3 6 9 18  
## Anti-other 2 9 3 11 25  
## Anti-white 6 3 0 3 12  
## Sum 56 111 33 129 329

crosstab(bias2, row.vars = "bias\_cat", col.vars = "Bias\_n", type = "c")

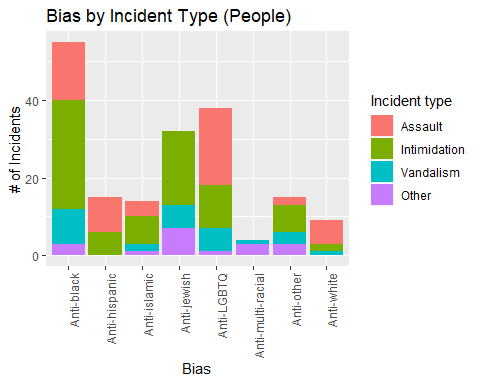
## Bias\_n Assault Intimidation Other Vandalism  
## bias\_cat   
## Anti-black 26.79 32.43 30.30 22.48  
## Anti-hispanic 16.07 7.21 3.03 1.55  
## Anti-islamic 7.14 9.91 3.03 2.33  
## Anti-jewish 0.00 27.03 27.27 46.51  
## Anti-LGBTQ 35.71 9.91 9.09 9.30  
## Anti-multi-racial 0.00 2.70 18.18 6.98  
## Anti-other 3.57 8.11 9.09 8.53  
## Anti-white 10.71 2.70 0.00 2.33  
## Sum 100.00 100.00 100.00 100.00

crosstab(bias2, row.vars = "bias\_cat", col.vars = "Bias\_n", type = "r")

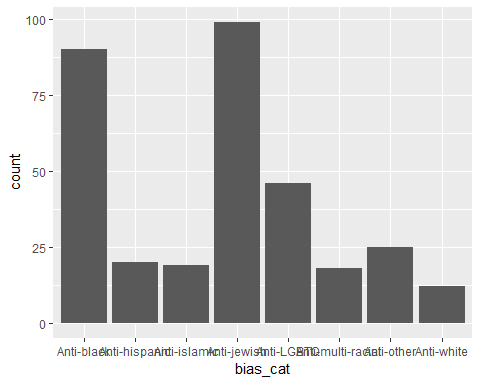
## Bias\_n Assault Intimidation Other Vandalism Sum  
## bias\_cat   
## Anti-black 16.67 40.00 11.11 32.22 100.00  
## Anti-hispanic 45.00 40.00 5.00 10.00 100.00  
## Anti-islamic 21.05 57.89 5.26 15.79 100.00  
## Anti-jewish 0.00 30.30 9.09 60.61 100.00  
## Anti-LGBTQ 43.48 23.91 6.52 26.09 100.00  
## Anti-multi-racial 0.00 16.67 33.33 50.00 100.00  
## Anti-other 8.00 36.00 12.00 44.00 100.00  
## Anti-white 50.00 25.00 0.00 25.00 100.00

We see above that the majority of offenses are vandalism and intimidation. We also see that the largest percentage of assaults happen to LGBT. We also see that jewish risk vandalism more. We see there were no assault on jews. Below we use a facet graph to see these associations.

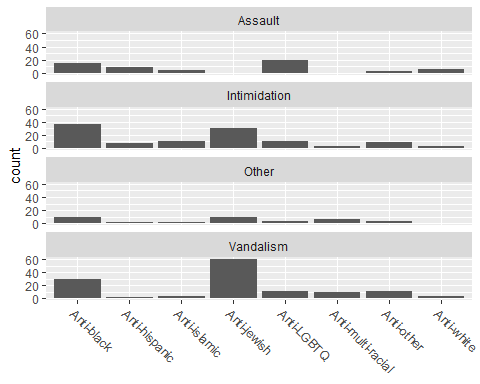
bias2 %>% filter(Victim\_DUM == "Person(s)") %>%  
ggplot(aes(x = bias\_cat, fill = biascat\_n)) +  
geom\_bar() +  
labs(title = "Bias by Incident Type (People)", x= "Bias", y = "# of Incidents") +  
guides(fill=guide\_legend(title = "Incident type")) +  
 theme(axis.text.x = element\_text(angle = 90, hjust = 1))



library(ggplot2)  
  
ggplot(bias2, aes(bias\_cat)) + geom\_bar()



ggplot(bias2, aes(bias\_cat)) + geom\_bar() +  
 facet\_wrap(~ Bias\_n, ncol = 1) +  
 theme(axis.text.x=element\_text(angle = -45, hjust = 0)) +  
 theme(axis.title.x = element\_blank())



Just because a group suffers from bias doesn’t mean they are the most vulnerable as the graphs above suggest.

table(bias2$District\_n)

##   
## 1D 2D 3D 4D 5D 6D Other   
## 53 70 36 54 36 34 46

Create a variable for city.

bias2$City[bias2$District\_n== "1D"] <- "Rockville"

## Warning: Unknown or uninitialised column: 'City'.

bias2$City[bias2$District\_n== "2D"] <- "Bethesda"  
bias2$City[bias2$District\_n== "3D"] <- "Silver Spring"  
bias2$City[bias2$District\_n== "4D"] <- "Wheaton"  
bias2$City[bias2$District\_n== "5D"] <- "Germantown"  
bias2$City[bias2$District\_n== "6D"] <- "Gaithersburg / Montgomery Village"  
bias2$City[bias2$District\_n== "Other"] <- "Other"  
table(bias2$City)

##   
## Bethesda Gaithersburg / Montgomery Village   
## 70 34   
## Germantown Other   
## 36 46   
## Rockville Silver Spring   
## 53 36   
## Wheaton   
## 54

Below we use the crosstabs function to see which biases happen in which cities.

crosstab(bias2, row.vars = "bias\_cat", col.vars = "City", type = "f")

## City Bethesda Gaithersburg / Montgomery Village Germantown Other Rockville Silver Spring Wheaton Sum  
## bias\_cat   
## Anti-black 24 11 7 8 16 10 14 90  
## Anti-hispanic 1 1 3 3 1 5 6 20  
## Anti-islamic 1 2 4 1 2 4 5 19  
## Anti-jewish 24 7 6 18 22 10 12 99  
## Anti-LGBTQ 10 9 4 5 4 4 10 46  
## Anti-multi-racial 2 3 3 3 4 0 3 18  
## Anti-other 7 1 5 5 3 1 3 25  
## Anti-white 1 0 4 3 1 2 1 12  
## Sum 70 34 36 46 53 36 54 329

crosstab(bias2, row.vars = "bias\_cat", col.vars = "City", type = "c")

## City Bethesda Gaithersburg / Montgomery Village Germantown Other Rockville Silver Spring Wheaton  
## bias\_cat   
## Anti-black 34.29 32.35 19.44 17.39 30.19 27.78 25.93  
## Anti-hispanic 1.43 2.94 8.33 6.52 1.89 13.89 11.11  
## Anti-islamic 1.43 5.88 11.11 2.17 3.77 11.11 9.26  
## Anti-jewish 34.29 20.59 16.67 39.13 41.51 27.78 22.22  
## Anti-LGBTQ 14.29 26.47 11.11 10.87 7.55 11.11 18.52  
## Anti-multi-racial 2.86 8.82 8.33 6.52 7.55 0.00 5.56  
## Anti-other 10.00 2.94 13.89 10.87 5.66 2.78 5.56  
## Anti-white 1.43 0.00 11.11 6.52 1.89 5.56 1.85  
## Sum 100.00 100.00 100.00 100.00 100.00 100.00 100.00

crosstab(bias2, row.vars = "bias\_cat", col.vars = "City", type = "r")

## City Bethesda Gaithersburg / Montgomery Village Germantown Other Rockville Silver Spring Wheaton Sum  
## bias\_cat   
## Anti-black 26.67 12.22 7.78 8.89 17.78 11.11 15.56 100.00  
## Anti-hispanic 5.00 5.00 15.00 15.00 5.00 25.00 30.00 100.00  
## Anti-islamic 5.26 10.53 21.05 5.26 10.53 21.05 26.32 100.00  
## Anti-jewish 24.24 7.07 6.06 18.18 22.22 10.10 12.12 100.00  
## Anti-LGBTQ 21.74 19.57 8.70 10.87 8.70 8.70 21.74 100.00  
## Anti-multi-racial 11.11 16.67 16.67 16.67 22.22 0.00 16.67 100.00  
## Anti-other 28.00 4.00 20.00 20.00 12.00 4.00 12.00 100.00  
## Anti-white 8.33 0.00 33.33 25.00 8.33 16.67 8.33 100.00

There is a lot of bias against hispanics in wheaton. We see Bethesda has high percentages in each category except against hispanic and islamic. It’s strange that Bethesda has such a high anti jewish and anti black bias. Rockville also saw a lot of bias towards jewish. Itls also interesting that Bethesda has the highest number of incidents but not the highest number of crimes.

Below is an interesting analysis of the types of victims compared to the biasa category.

crosstab(bias2, row.vars = "bias\_cat", col.vars = "Victim\_DUM", type = "f")

## Victim\_DUM Other Person(s) Sum  
## bias\_cat   
## Anti-black 35 55 90  
## Anti-hispanic 5 15 20  
## Anti-islamic 5 14 19  
## Anti-jewish 67 32 99  
## Anti-LGBTQ 8 38 46  
## Anti-multi-racial 14 4 18  
## Anti-other 10 15 25  
## Anti-white 3 9 12  
## Sum 147 182 329

crosstab(bias2, row.vars = "bias\_cat", col.vars = "Victim\_DUM", type = "c")

## Victim\_DUM Other Person(s)  
## bias\_cat   
## Anti-black 23.81 30.22  
## Anti-hispanic 3.40 8.24  
## Anti-islamic 3.40 7.69  
## Anti-jewish 45.58 17.58  
## Anti-LGBTQ 5.44 20.88  
## Anti-multi-racial 9.52 2.20  
## Anti-other 6.80 8.24  
## Anti-white 2.04 4.95  
## Sum 100.00 100.00

crosstab(bias2, row.vars = "bias\_cat", col.vars = "Victim\_DUM", type = "r")

## Victim\_DUM Other Person(s) Sum  
## bias\_cat   
## Anti-black 38.89 61.11 100.00  
## Anti-hispanic 25.00 75.00 100.00  
## Anti-islamic 26.32 73.68 100.00  
## Anti-jewish 67.68 32.32 100.00  
## Anti-LGBTQ 17.39 82.61 100.00  
## Anti-multi-racial 77.78 22.22 100.00  
## Anti-other 40.00 60.00 100.00  
## Anti-white 25.00 75.00 100.00

We see above that whites, hispanics, islamics, and the lgbtq community suffer personally at a higher rate. We see that almost half of the non-person bias is directed towards the jewish category.

write.csv(bias2, "bias2.csv")

Data missing anti rich/anti poor.