sp22_poa_financial_security

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Contents

Financial Security [run gender, family, race, borough]

Income Distribution

```
categories <- attributes(wrangled$inc_after)$labels

wrangled %>%
  select(inc_before, inc_after) %>%
  count(inc_before) %>%
  mutate(across(where(is.labelled), labelled::to_character, .names = "{col}_label"))
```

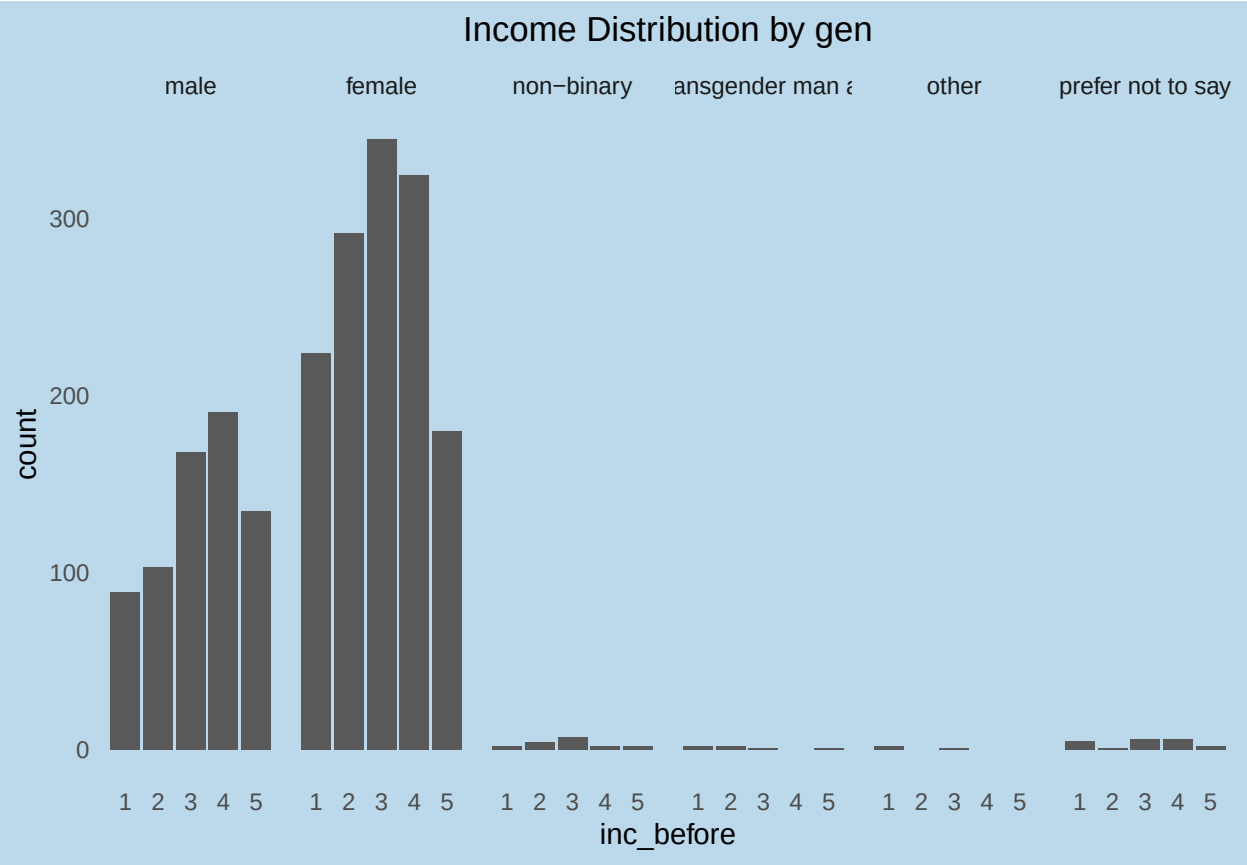
```
## # A tibble: 6 x 3
##                inc_before     n inc_before_label
##                 <int+lbl> <int> <chr>
## 1  1 [under $12,500]        324 under $12,500
## 2  2 [$12,500 - $36,500]    402 $12,500 - $36,500
## 3  3 [$36,501 - $69,500]    528 $36,501 - $69,500
## 4  4 [$69,501 - $139,000]   524 $69,501 - $139,000
## 5  5 [$139,001 or above]    320 $139,001 or above
## 6 NA                         47 <NA>
```

```
arranged <- tibble(range = names(categories)) %>%
  left_join(wrangled %>% mutate(range = labelled::to_character(inc_before)) %>%
              count(range, inc_before)) %>%
  mutate(range = str_replace_all(range, c("under" = "$0 -", "or above" = "- $400,001+"))) %>%
  separate(col = range, into = c("min", "max"), sep = " - ", remove = FALSE) %>%
  mutate(across(min:max, ~as.double(str_replace_all(., "\\$|,|\\+", "")))) %>%

  na.omit()# come back to top bracket later

inc_dist_plot <- arranged %>%

  ggplot(aes(y = reorder(range, max), alpha = n), show.legend = FALSE) +
  #geom_col(aes(x = max)) +
  geom_linerange(aes(xmin = min, xmax = max, size = n), color = project_pal[4], show.legend = FALSE) +
  geom_vline(xintercept = c(35000, 69500),
             #labels = c("poverty line", "median income"),
             lty = "dashed") +
  geom_text(aes(x = max, label = n), hjust = -0.2, color = project_pal[4], size = 3, show.legend = FALSE
  scale_x_continuous(labels = scales::dollar) +
  #annotate("text", x = 0, y = c(poverty_line), label = c("Respondents\nBelow Poverty Line"))
  #geom_jitter(data = wrangled, aes(x = ))
  ylab("Income Bracket\n") + xlab("\nIncome Range") +
  ggtitle("Respondent Income Distribution\n")

inc_dist_plot
```

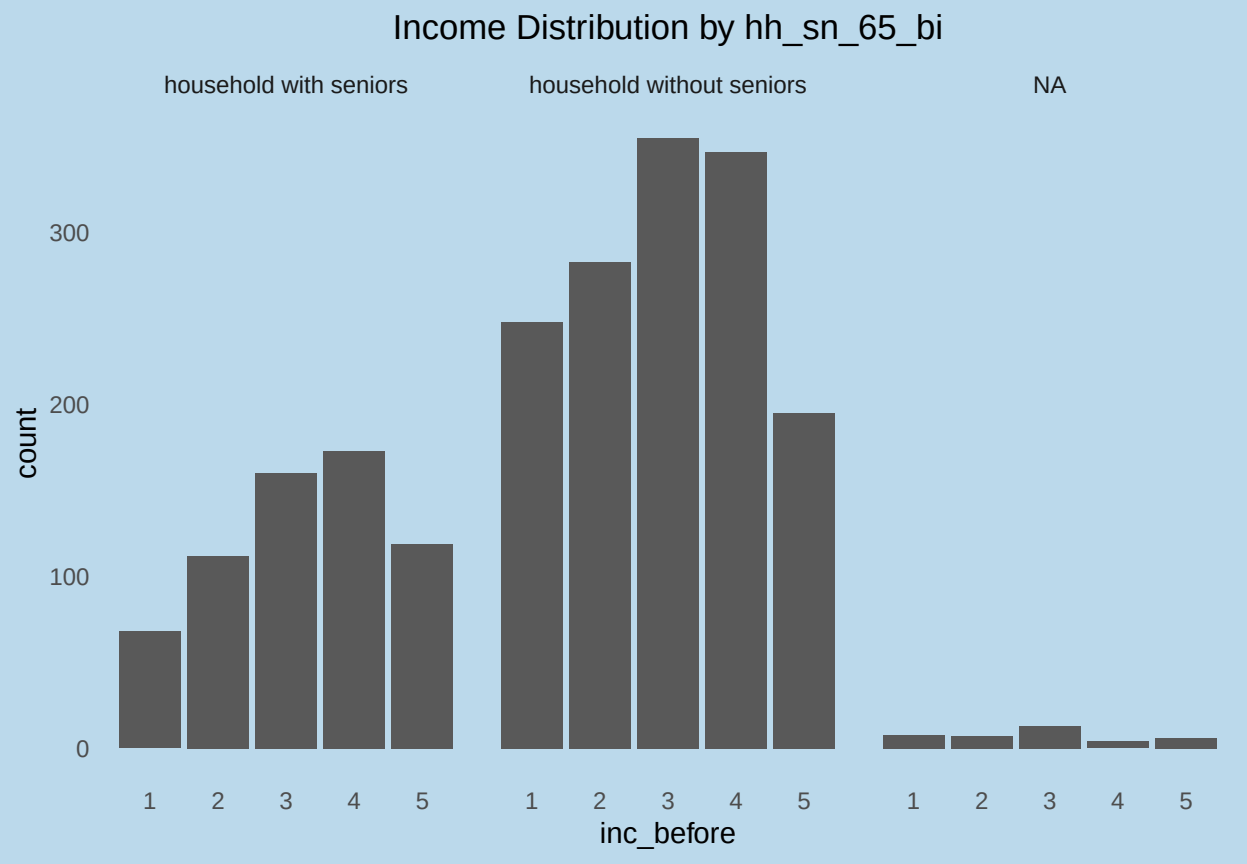
Income Distribution by Demographic

```
lapply(fin_sec_dem, function(facet) {
  sym_facet <- sym(facet)
  wrangled %>% select(inc_before, !!sym_facet) %>%
    mutate(across(!!sym_facet, labelled::to_factor)) %>%
    ggplot() + geom_bar(aes(x = inc_before)) +
    facet_grid(cols = vars(!!sym_facet)) +
    ggtitle(glue::glue("Income Distribution by {facet}"))
})
```

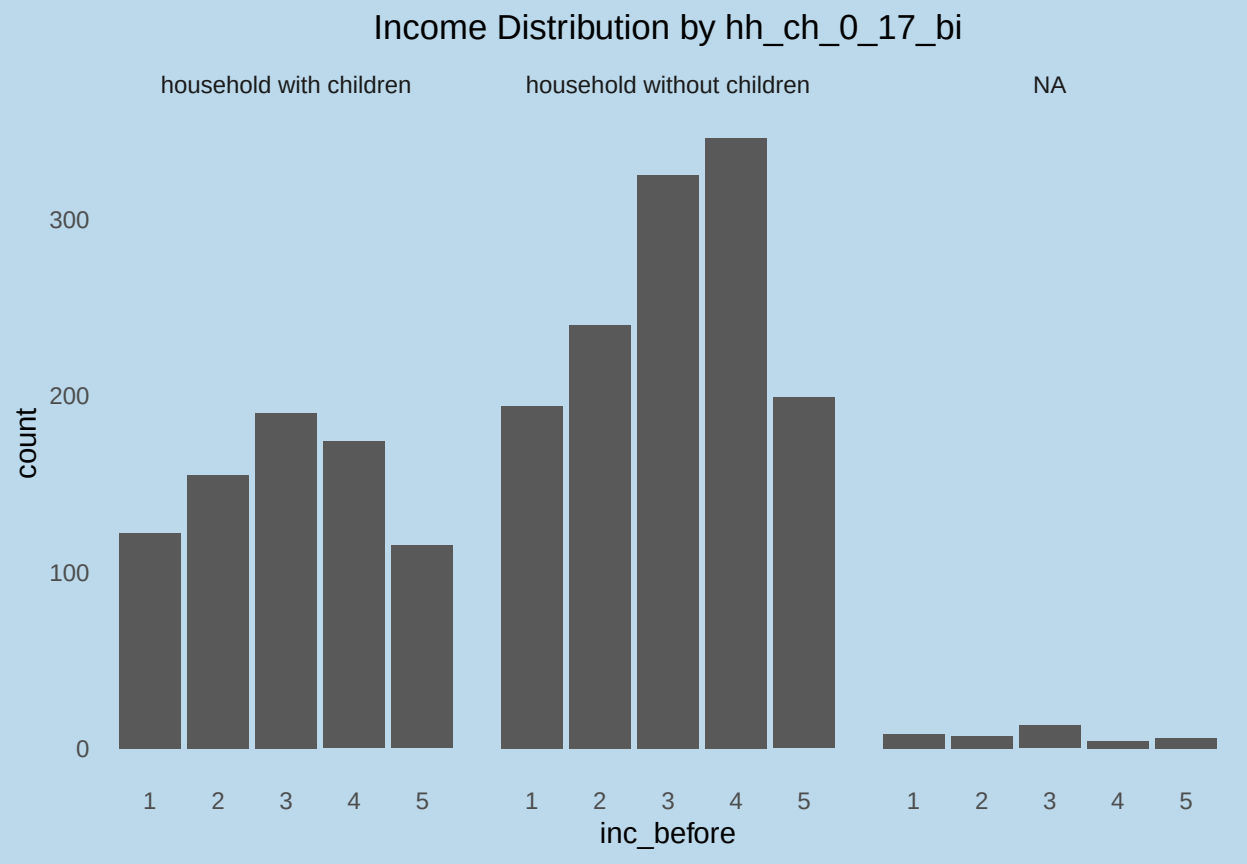
```
## $gen
```



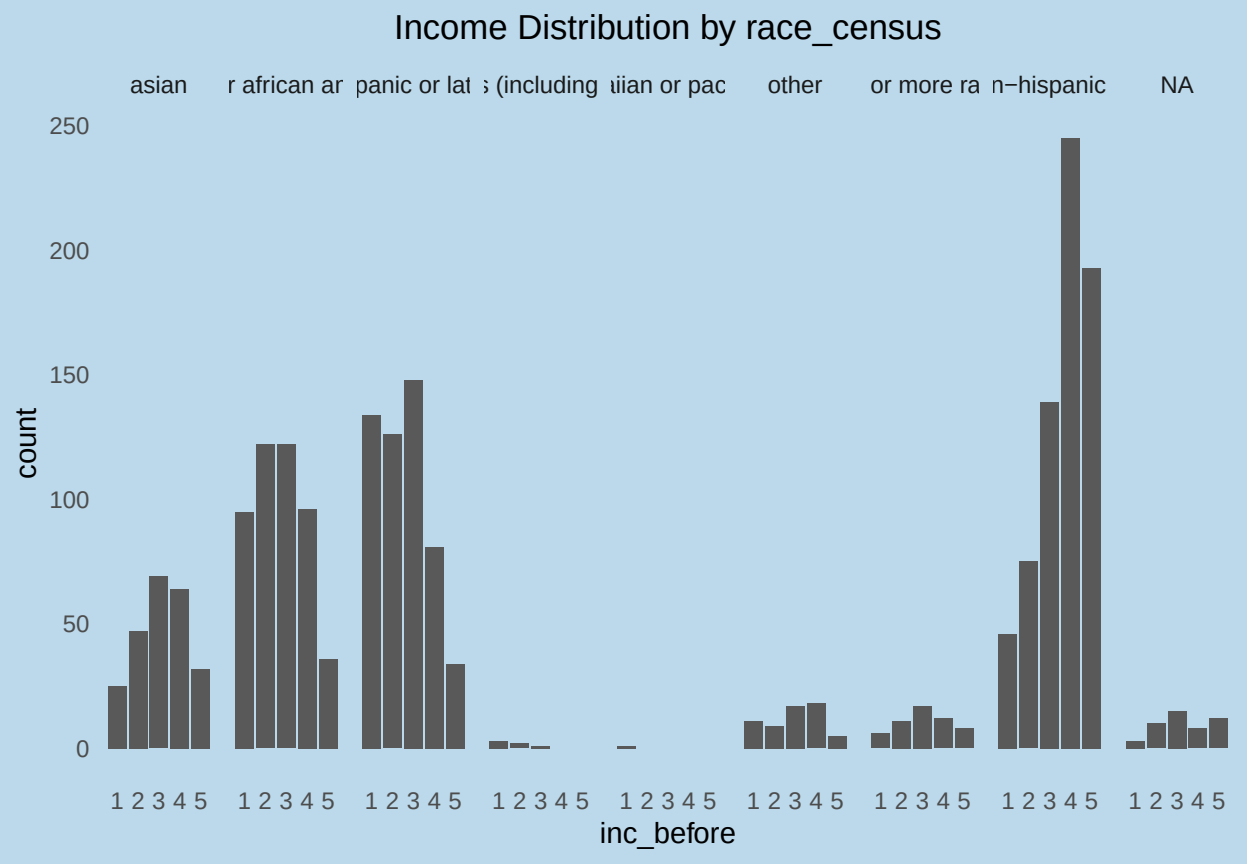

```
##
## $hh_sn_65_bi
```


Income Distribution by hh_sn_65_bi
household with seniors
household without seniors
NA
count
300
200
100
0
1
2
3
4
5
inc_before

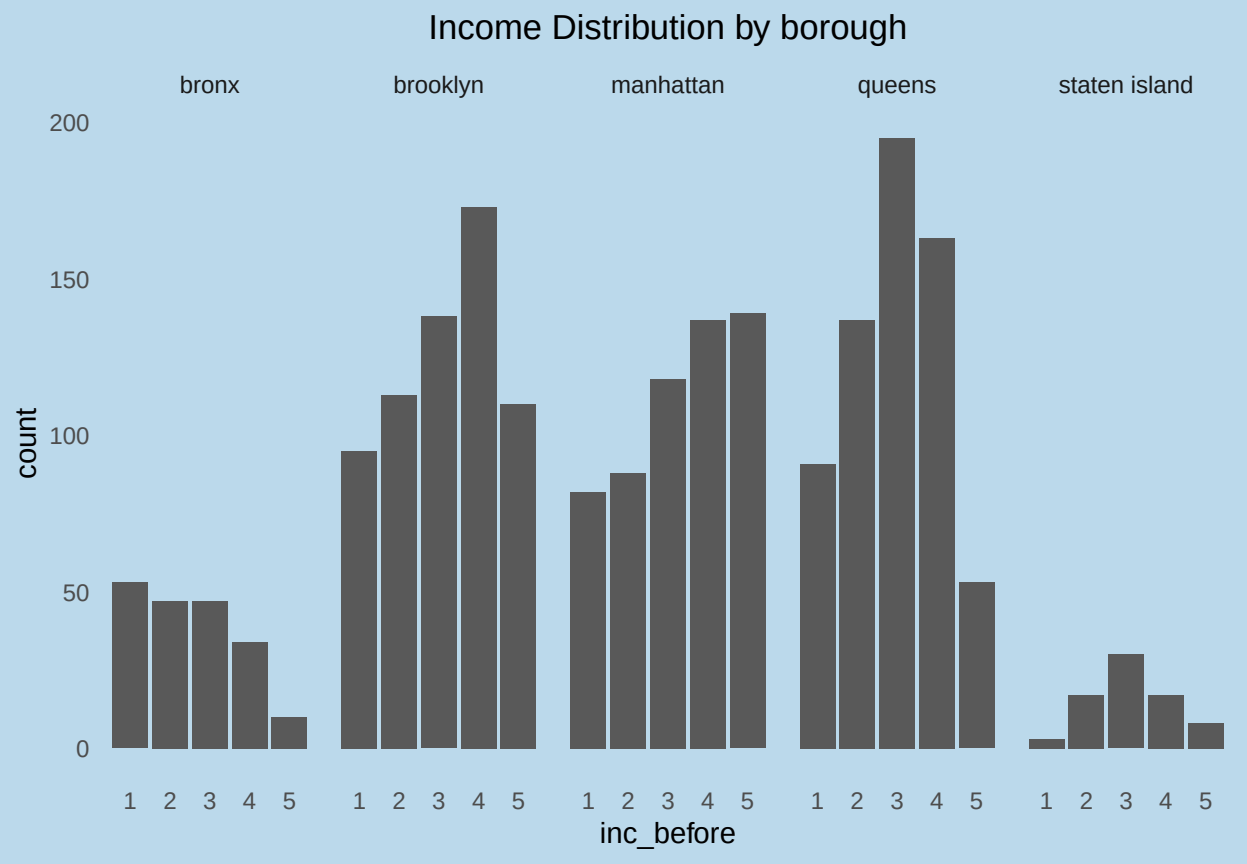
```
##
## $hh_ch_0_17_bi
```


Income Distribution by hh_ch_0_17_bi
household with children
household without children
NA
count
300
200
100
0
1
2
3
4
5
inc_before

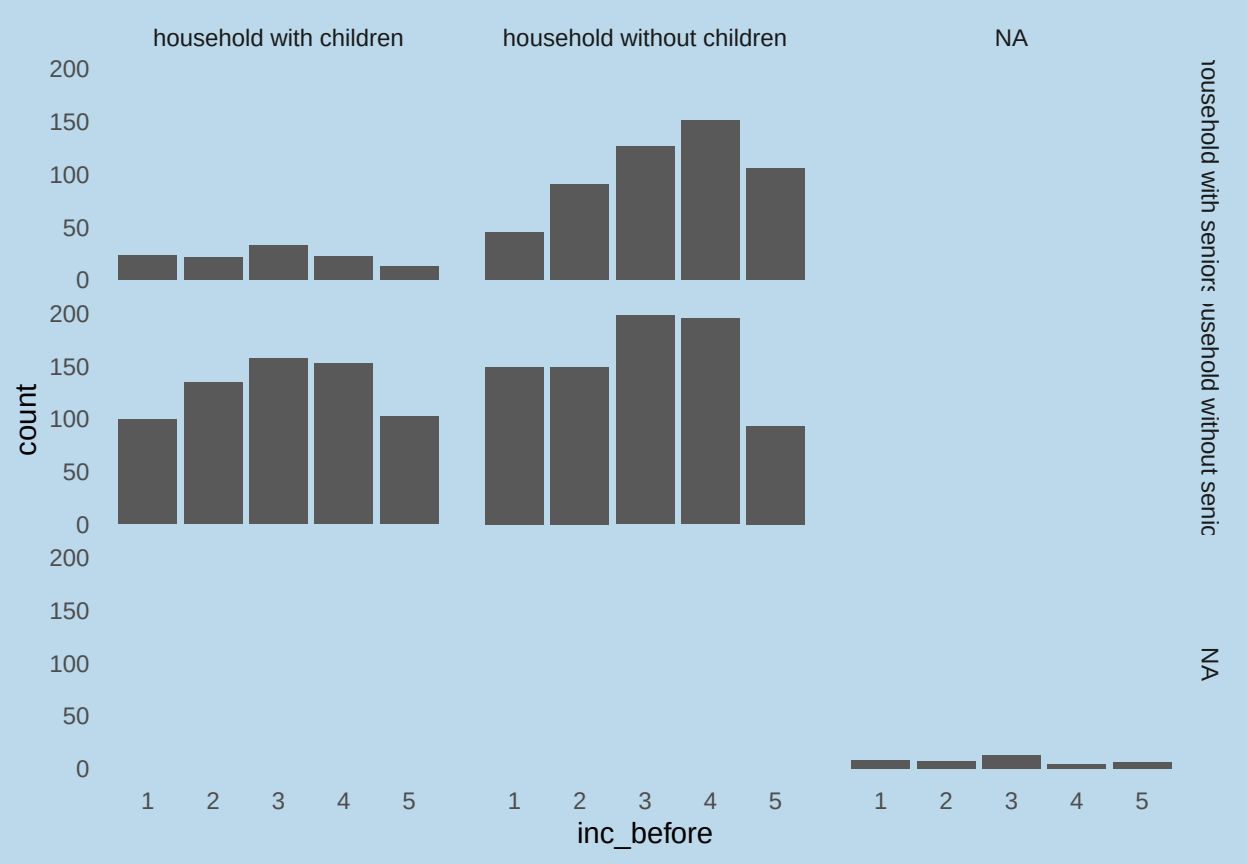
```
##
## $race_census
```


Income Distribution by race_census
asian
r african ar
panic or lat
s (including
iian or pac
other
or more ra
n−hispanic
NA
250
200
150
100
50
0
count
1 2 3 4 5
inc_before

```
##
## $borough
```




```
wrangled %>%
  select(inc_before, fin_sec_dem) %>%
  mutate(across(c(hh_ch_0_17_bi, hh_sn_65_bi), labelled::to_factor)) %>%
  ggplot() + geom_bar(aes(x = inc_before)) +
  facet_grid(vars(hh_sn_65_bi), vars(hh_ch_0_17_bi))
```



POA

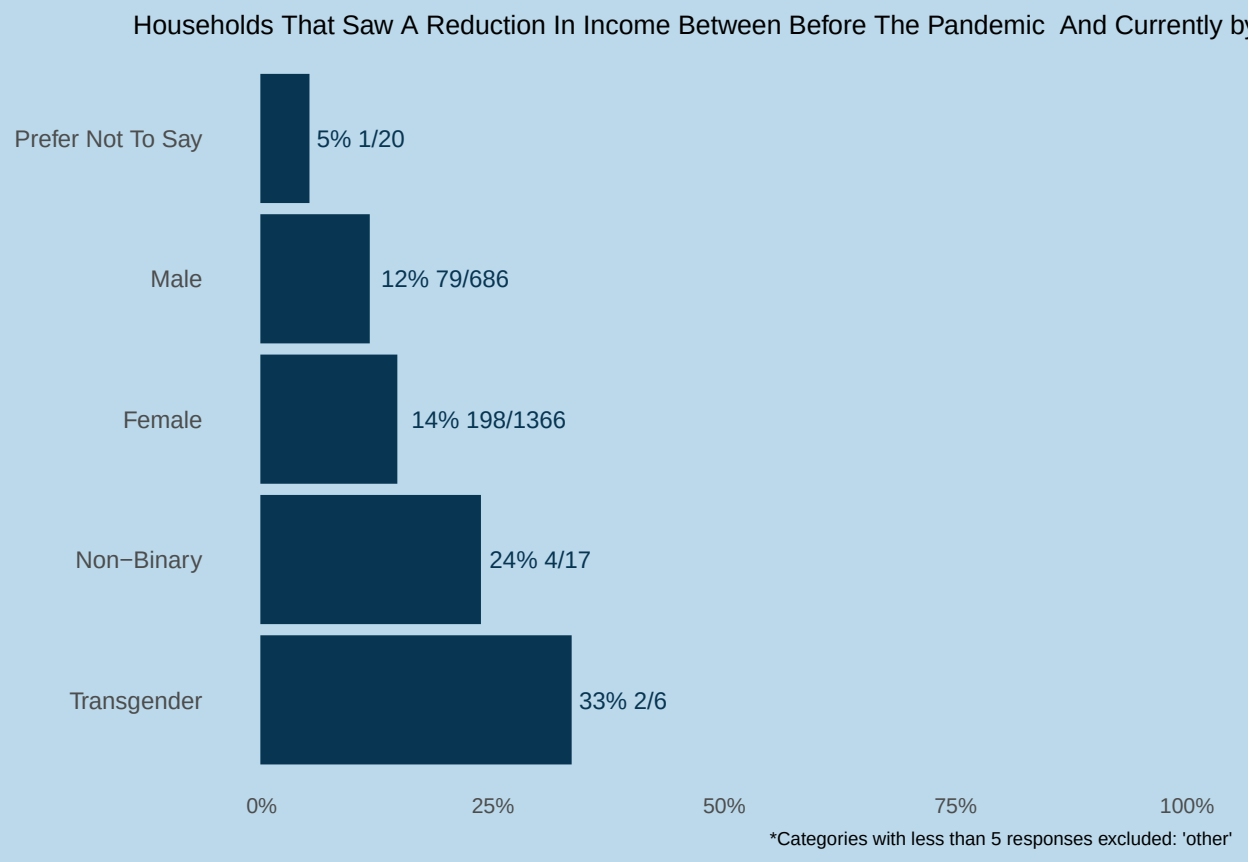
2.1)Households that saw a reduction in income between before the pandemic and currently [12 &13]

1. Compare predicted present income with income before March 2020 income to find positive or negative change
2. Run distribution of negative changes over population
3. Run distribution by sub-demographics (a-k)

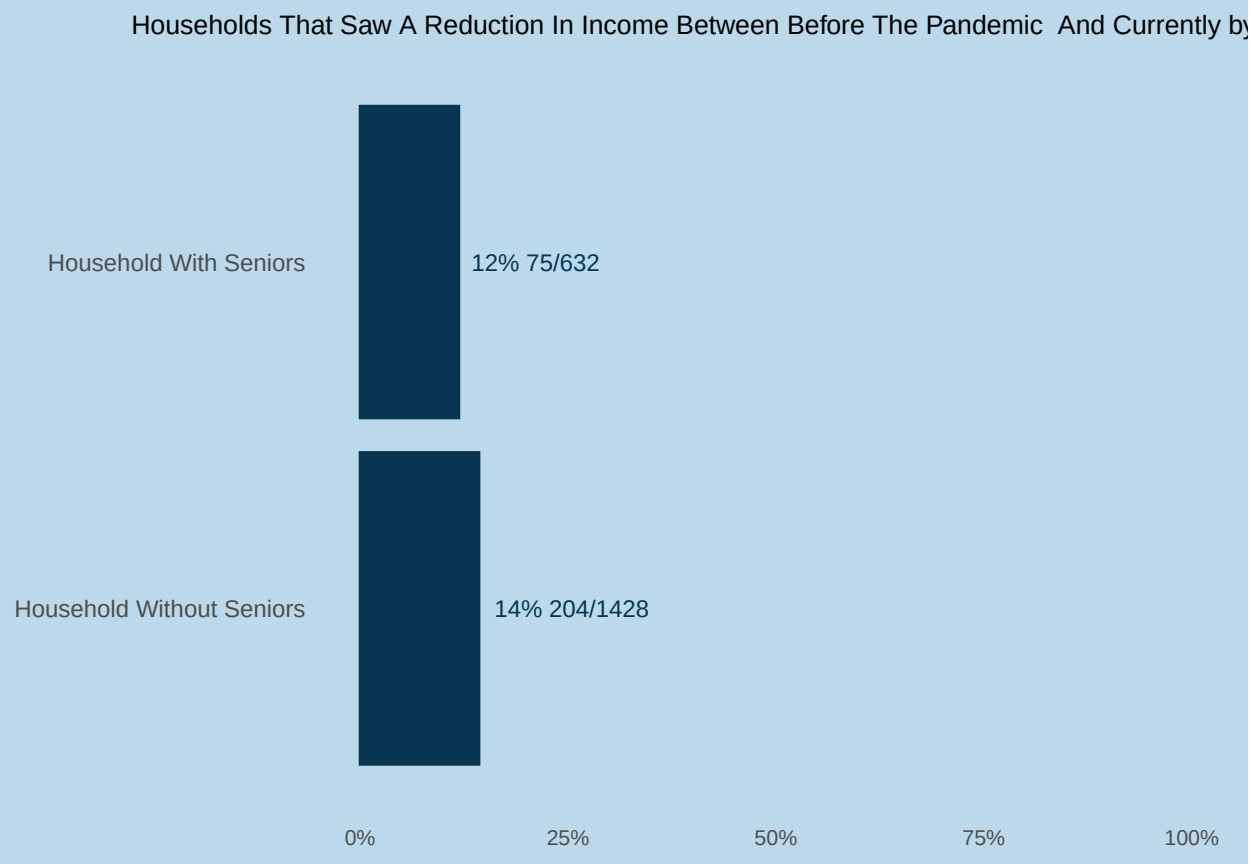
a. Compare and find gaps (test unequal proportions)

```
make_plots(wrangled, fin_sec_dem, "inc_neg", show = "TRUE",
           title = "Households that saw a reduction in income between before the pandemic  and currentl
```

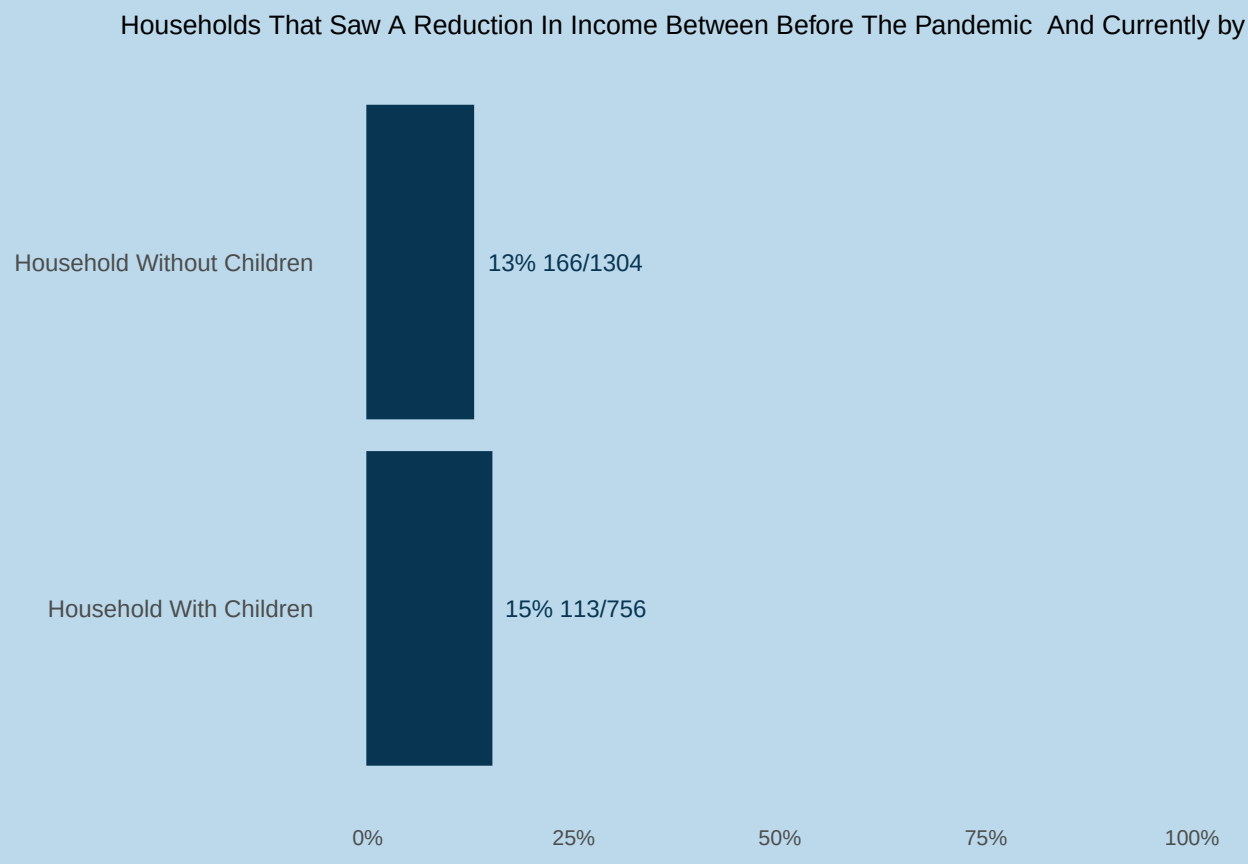
```
## $gen
## $gen$plot
```



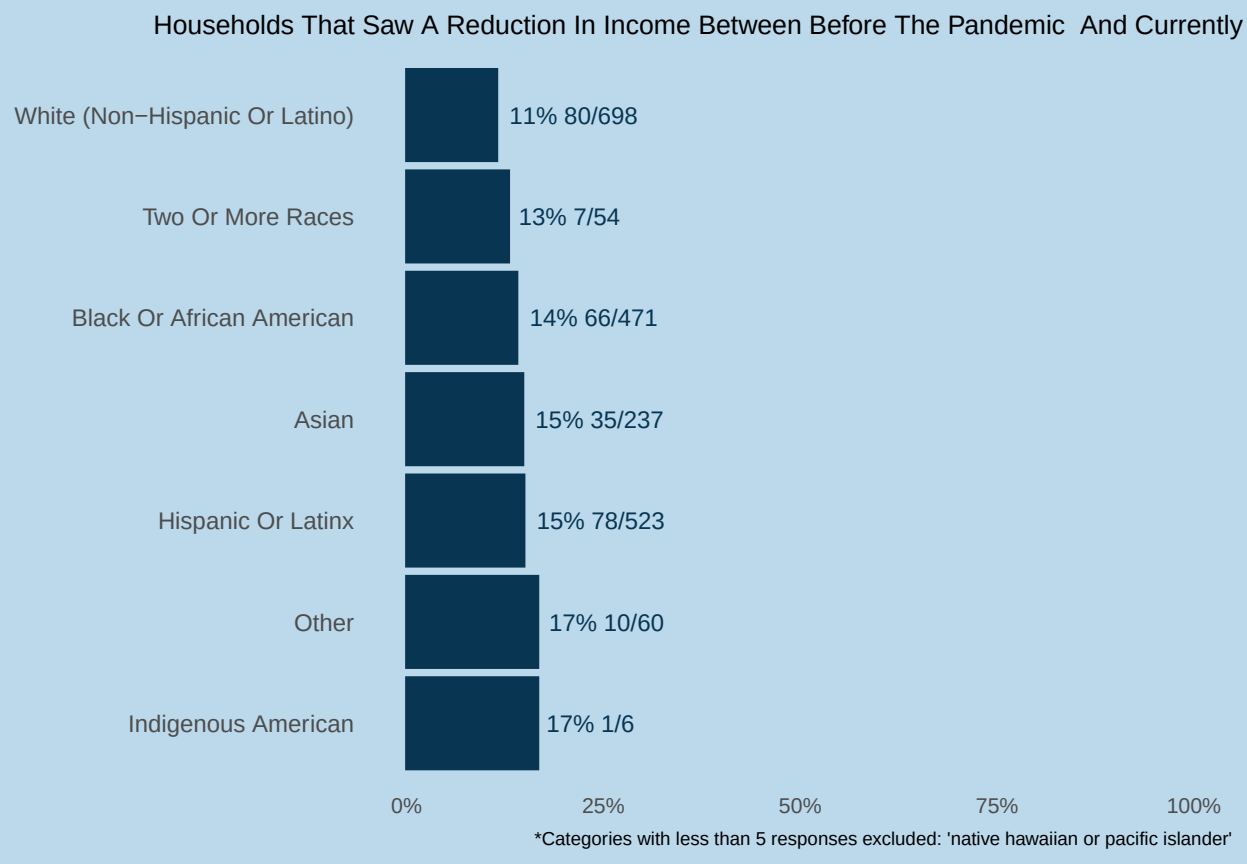

```
##
## $gen$p.values
## $gen$p.values$inc_neg
##                   prefer not to say male female non-binary transgender
## prefer not to say                NA   NA     NA         NA          NA
## male                             NA   NA     NA         NA          NA
## female                           NA   NA     NA         NA          NA
## non-binary                       NA   NA     NA         NA          NA
## transgender                      NA   NA     NA         NA          NA
##
##
##
## $hh_sn_65_bi
## $hh_sn_65_bi$plot
```




```
##
## $hh_sn_65_bi$p.values
## $hh_sn_65_bi$p.values$inc_neg
##                            household with seniors household without seniors
## household with seniors                         NA                        NA
## household without seniors                      NA                        NA
##
##
##
## $hh_ch_0_17_bi
## $hh_ch_0_17_bi$plot
```

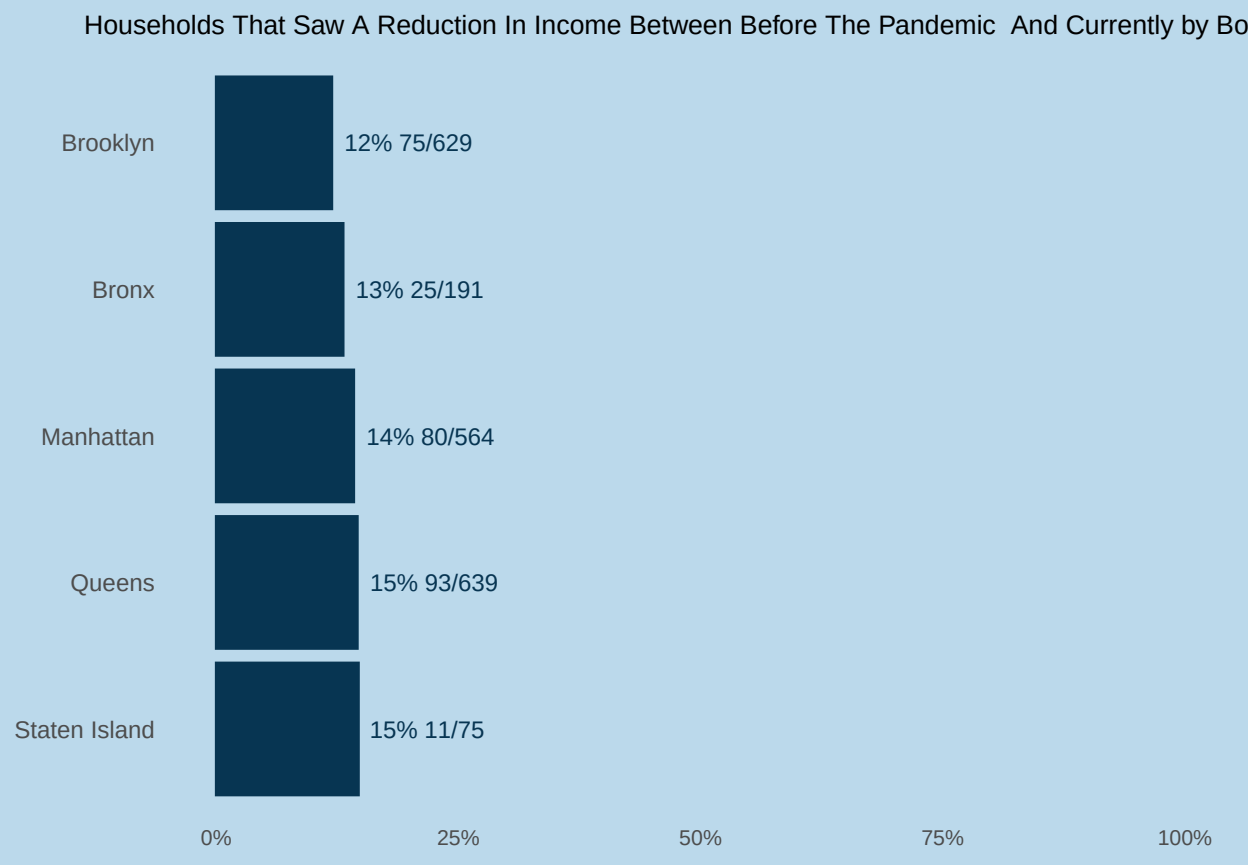



```
##
## $hh_ch_0_17_bi$p.values
## $hh_ch_0_17_bi$p.values$inc_neg
##                             household without children household with children
## household without children                           NA                      NA
## household with children                              NA                      NA
##
##
##
## $race_census
## $race_census$plot
```




```
##
## $race_census$p.values
## $race_census$p.values$inc_neg
##                                 white (non-hispanic or latino) two or more races
## white (non-hispanic or latino)                             NA                NA
## two or more races                                          NA                NA
## black or african american                                  NA                NA
## asian                                                      NA                NA
## hispanic or latinx                                         NA                NA
## Indigenous American                                        NA                NA
## other                                                      NA                NA
##                                 black or african american asian
## white (non-hispanic or latino)                         NA    NA
## two or more races                                      NA    NA
## black or african american                              NA    NA
## asian                                                  NA    NA
## hispanic or latinx                                     NA    NA
## Indigenous American                                    NA    NA
## other                                                  NA    NA
##                                 hispanic or latinx Indigenous American other
## white (non-hispanic or latino)                 NA                    NA    NA
## two or more races                              NA                    NA    NA
## black or african american                      NA                    NA    NA
## asian                                          NA                    NA    NA
## hispanic or latinx                             NA                    NA    NA
## Indigenous American                            NA                    NA    NA
```

```
## other                                          NA                  NA     NA
##
##
##
## $borough
## $borough$plot
```




```
##
## $borough$p.values
## $borough$p.values$inc_neg
##               brooklyn bronx manhattan queens staten island
## brooklyn            NA    NA        NA     NA            NA
## bronx               NA    NA        NA     NA            NA
## manhattan           NA    NA        NA     NA            NA
## queens              NA    NA        NA     NA            NA
## staten island       NA    NA        NA     NA            NA
```

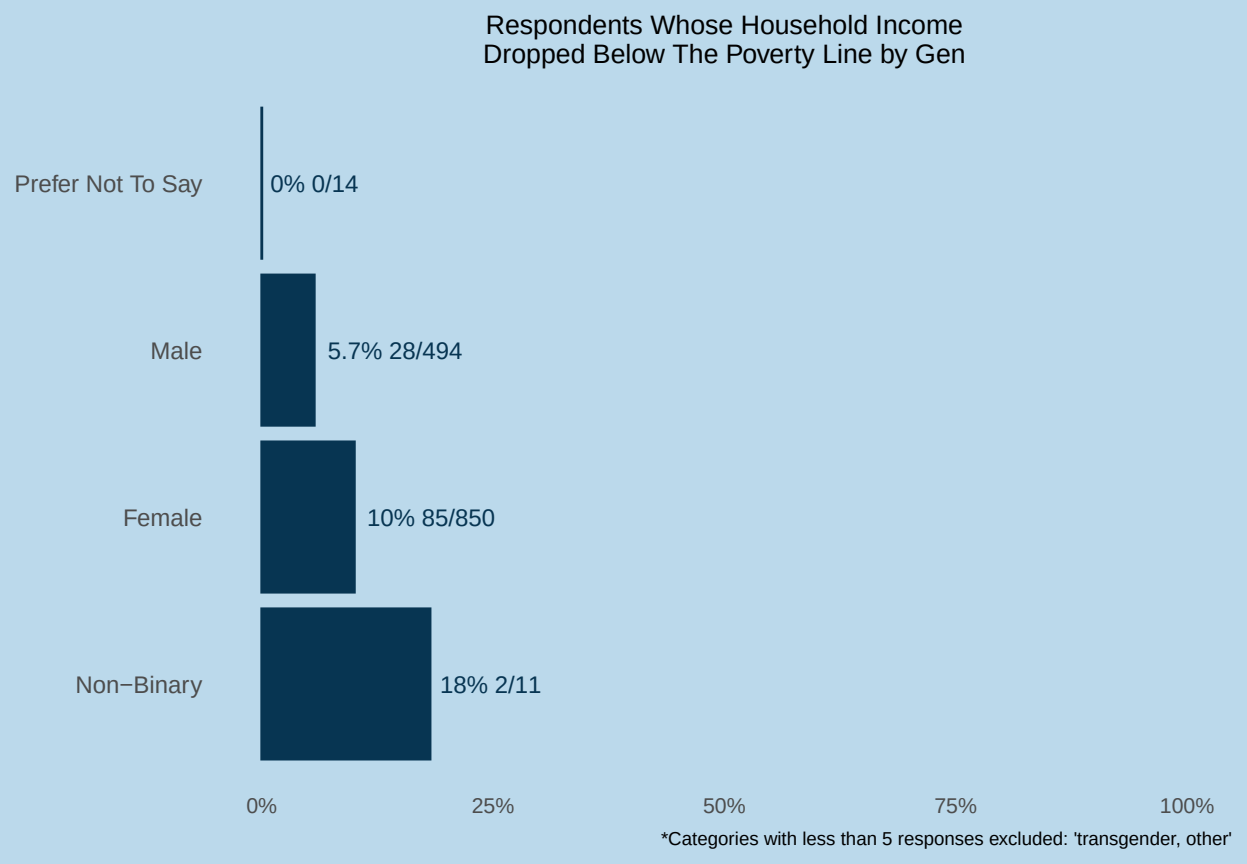
2.2)Households whose income dropped below the poverty line from 2020 to 2021 [12 & 13]

1. Run distribution over population
2. Run distribution by sub-demographics (a-k) and type of previous employment [13]

a. Compare and find gaps (test unequal proportions)

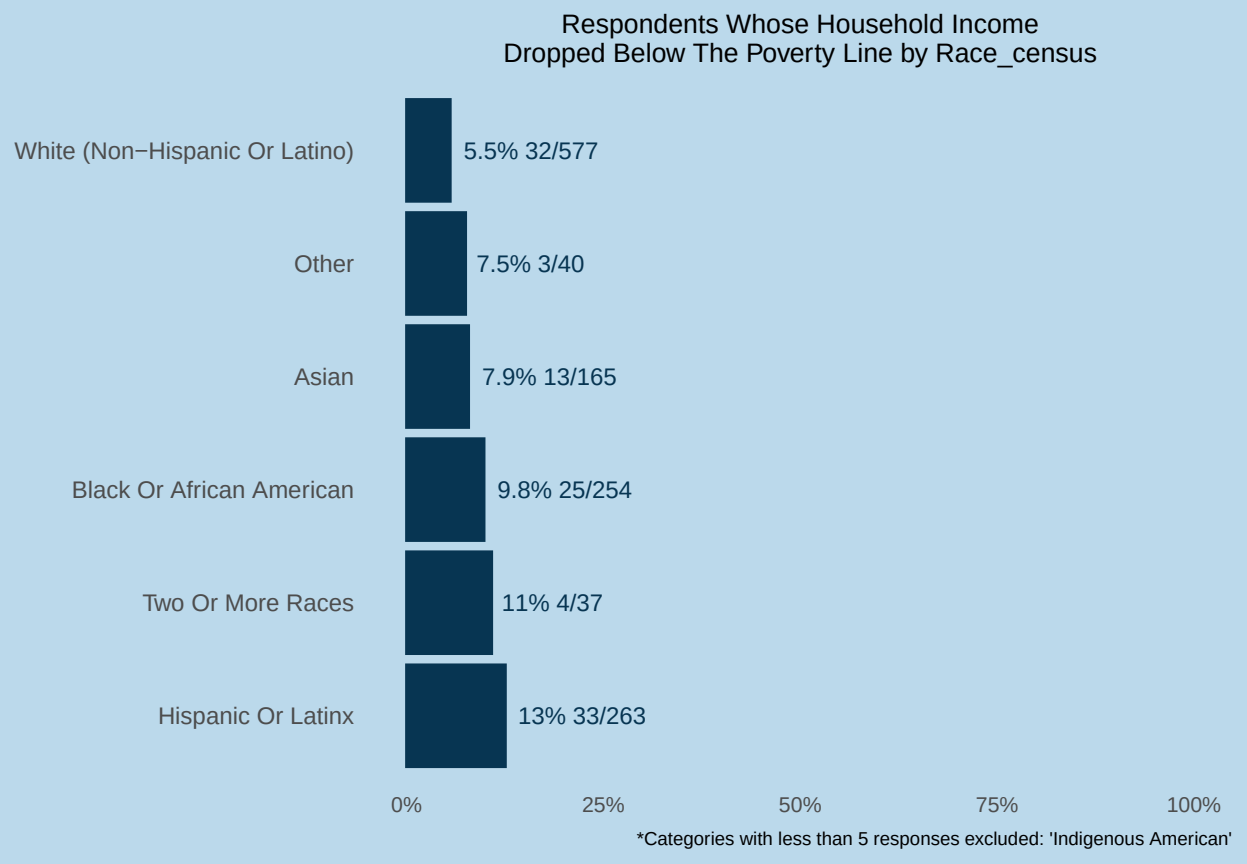
```
make_plots(wrangled %>% filter(inc_be_pov_before == 0), # filter for those who started above the poverty
           by_vars = fin_sec_dem, hyp_var = "inc_drop_pov",
           title = "Respondents whose household income\ndropped below the poverty line")
```

```
## $gen
## $gen$plot
```




```
##
## $gen$p.values
## $gen$p.values$inc_drop_pov
##                   prefer not to say   male female non-binary
## prefer not to say                NA     NA     NA         NA
## male                             NA     NA 0.0079         NA
## female                           NA 0.0079     NA         NA
## non-binary                       NA     NA     NA         NA
##
##
##
## $hh_sn_65_bi
## NULL
##
## $hh_ch_0_17_bi
## NULL
##
```

```
## $race_census
## $race_census$plot
```




```
##
## $race_census$p.values
## $race_census$p.values$inc_drop_pov
##                                 white (non-hispanic or latino) other asian
## white (non-hispanic or latino)                                NA    NA    NA
## other                                                         NA    NA    NA
## asian                                                         NA    NA    NA
## black or african american                                     NA    NA    NA
## two or more races                                             NA    NA    NA
## hispanic or latinx                                       0.00072    NA    NA
##                                 black or african american two or more races
## white (non-hispanic or latino)                         NA                NA
## other                                                  NA                NA
## asian                                                  NA                NA
## black or african american                              NA                NA
## two or more races                                      NA                NA
## hispanic or latinx                                     NA                NA
##                                 hispanic or latinx
## white (non-hispanic or latino)            0.00072
## other                                          NA
## asian                                          NA
## black or african american                      NA
```

```
## two or more races                                NA
## hispanic or latinx                               NA
##
##
##
## $borough
## NULL
```

2.4 - 2.5)People who had difficulty paying bills or rent in the past year

2.4)People who had difficulty paying bills in the past year [21]

1. Run distribution over population
2. Run distribution by sub-demographics (a-k)

a. Compare and find gaps (test unequal proportions)

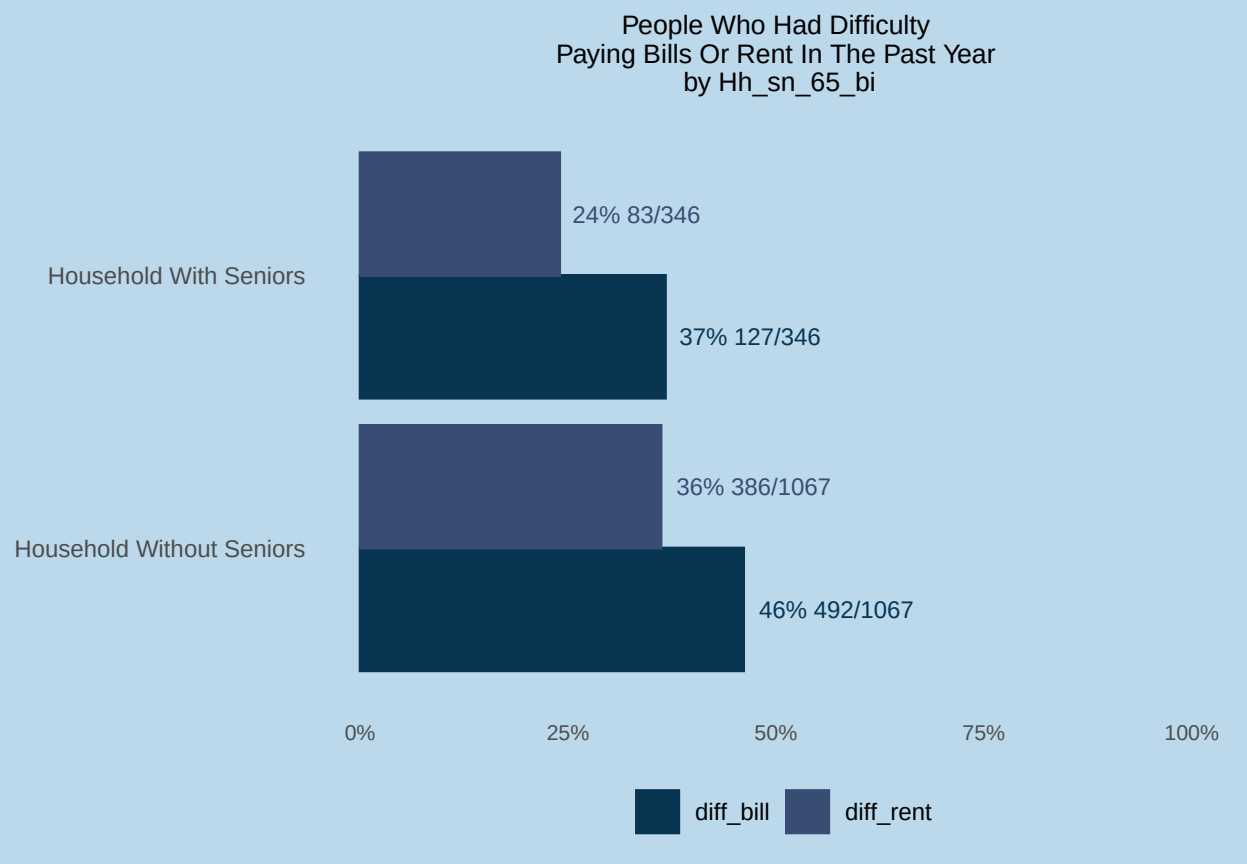
2.5)People who had difficulty paying rent in the past year [21]

1. Run distribution over population
2. Run distribution by sub-demographics (a-k)

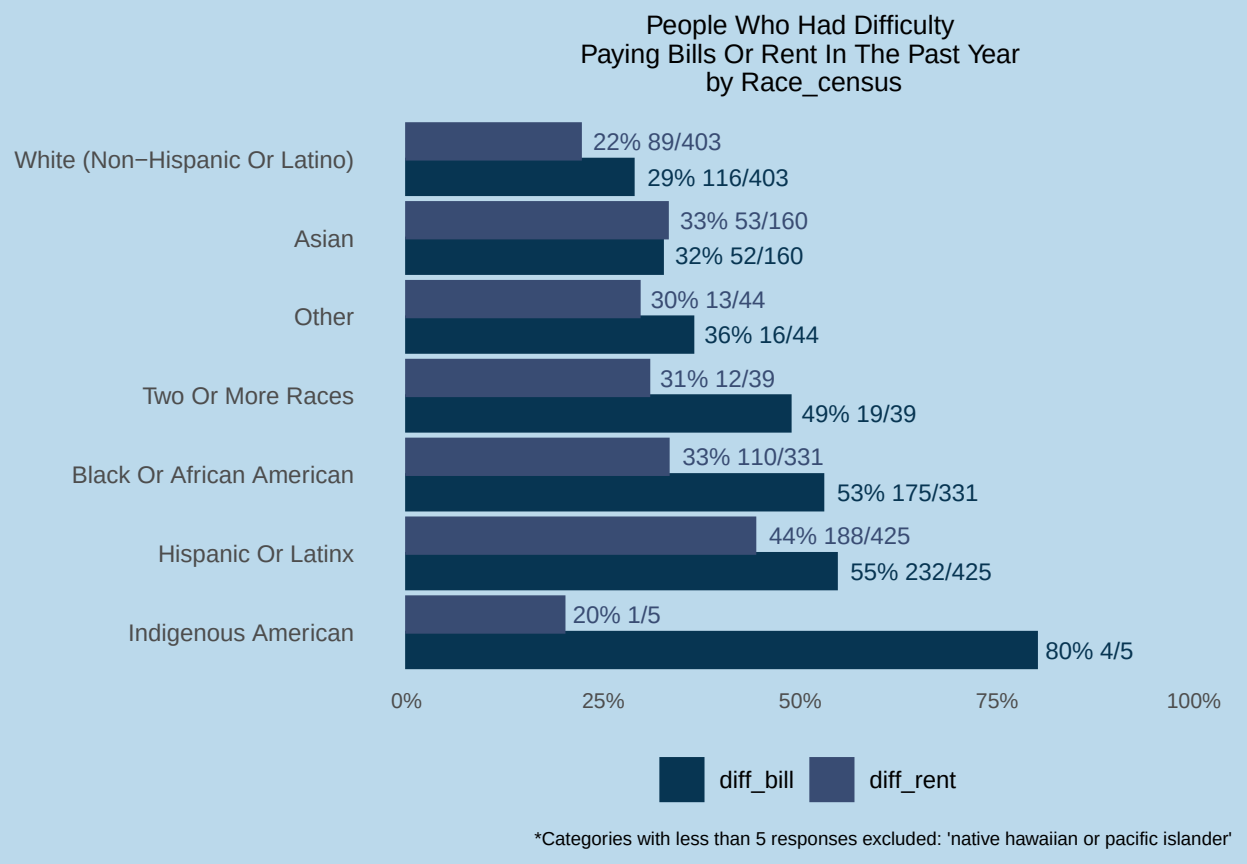
a. Compare and find gaps (test unequal proportions)

```
make_plots(wrangled, fin_sec_dem, c("diff_bill", "diff_rent"),
           title = "People who had difficulty\npaying bills or rent in the past year\n")
```

```
## $gen
## NULL
##
## $hh_sn_65_bi
## $hh_sn_65_bi$plot
```

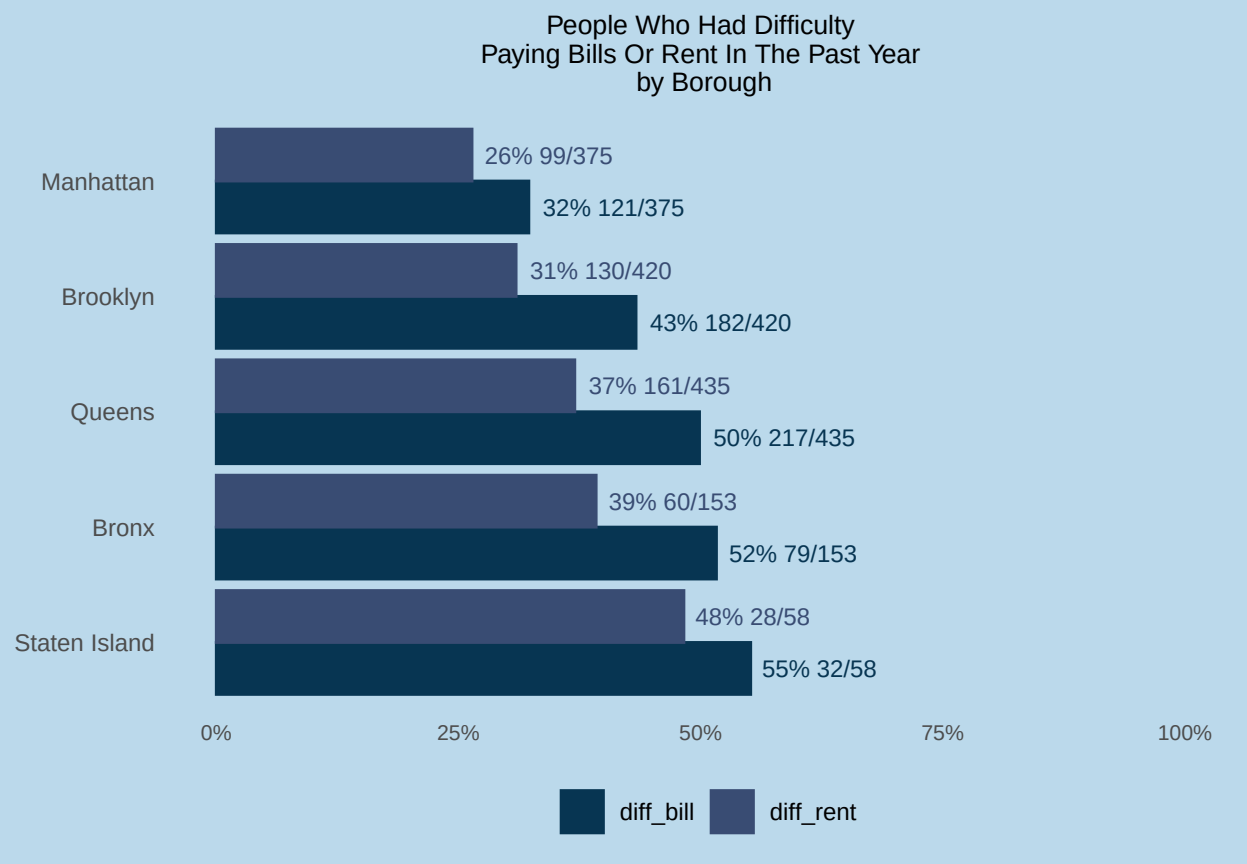



```
##
## $hh_sn_65_bi$p.values
## $hh_sn_65_bi$p.values$diff_bill
##                           household with seniors household without seniors
## household with seniors                        NA                    0.0027
## household without seniors                 0.0027                        NA
##
## $hh_sn_65_bi$p.values$diff_rent
##                           household with seniors household without seniors
## household with seniors                        NA                   3.8e-05
## household without seniors                 3.8e-05                        NA
##
##
##
## $hh_ch_0_17_bi
## NULL
##
## $race_census
## $race_census$plot
```




```
##
## $race_census$p.values
## $race_census$p.values$diff_bill
##                                 white (non-hispanic or latino)   asian other
## white (non-hispanic or latino)                                NA      NA    NA
## asian                                                         NA      NA    NA
## other                                                         NA      NA    NA
## two or more races                                             NA      NA    NA
## black or african american                                5.3e-11 3.4e-05    NA
## hispanic or latinx                                       9.5e-14 3.0e-06    NA
## Indigenous American                                           NA      NA    NA
##                                 two or more races black or african american
## white (non-hispanic or latino)                NA                    5.3e-11
## asian                                         NA                    3.4e-05
## other                                         NA                         NA
## two or more races                             NA                         NA
## black or african american                     NA                         NA
## hispanic or latinx                            NA                         NA
## Indigenous American                           NA                         NA
##                                 hispanic or latinx Indigenous American
## white (non-hispanic or latino)            9.5e-14                   NA
## asian                                     3.0e-06                   NA
## other                                          NA                   NA
## two or more races                              NA                   NA
## black or african american                      NA                   NA
## hispanic or latinx                             NA                   NA
```

```
## Indigenous American                              NA                   NA
##
## $race_census$p.values$diff_rent
##                                 Indigenous American
## Indigenous American                              NA
## white (non-hispanic or latino)                   NA
## other                                            NA
## two or more races                                NA
## asian                                            NA
## black or african american                        NA
## hispanic or latinx                               NA
##                                 white (non-hispanic or latino) other
## Indigenous American                                         NA    NA
## white (non-hispanic or latino)                              NA    NA
## other                                                       NA    NA
## two or more races                                           NA    NA
## asian                                                  9.0e-03    NA
## black or african american                              9.8e-04    NA
## hispanic or latinx                                     2.4e-11    NA
##                                 two or more races asian
## Indigenous American                            NA    NA
## white (non-hispanic or latino)                 NA 0.009
## other                                          NA    NA
## two or more races                              NA    NA
## asian                                          NA    NA
## black or african american                      NA    NA
## hispanic or latinx                             NA    NA
##                                 black or african american hispanic or latinx
## Indigenous American                                    NA                 NA
## white (non-hispanic or latino)                    0.00098            2.4e-11
## other                                                  NA                 NA
## two or more races                                      NA                 NA
## asian                                                  NA                 NA
## black or african american                              NA            2.7e-03
## hispanic or latinx                                0.00270                 NA
##
##
##
## $borough
## $borough$plot
```




```
##
## $borough$p.values
## $borough$p.values$diff_bill
##               manhattan brooklyn  queens   bronx staten island
## manhattan            NA   0.0017 5.8e-07 4.8e-05        0.0012
## brooklyn        1.7e-03       NA      NA      NA            NA
## queens          5.8e-07       NA      NA      NA            NA
## bronx           4.8e-05       NA      NA      NA            NA
## staten island   1.2e-03       NA      NA      NA            NA
##
## $borough$p.values$diff_rent
##               manhattan brooklyn queens bronx staten island
## manhattan            NA       NA 0.0016 0.005        0.0012
## brooklyn             NA       NA     NA    NA            NA
## queens           0.0016       NA     NA    NA            NA
## bronx            0.0050       NA     NA    NA            NA
## staten island    0.0012       NA     NA    NA            NA
```

2.6) Households that fell below median income from before the pandemic (2020) to 2021

1. Run distribution over population
2. Run distribution over all the sub demographic group

```
make_plots(wrangled, fin_sec_dem, "inc_drop_med",
           title = "Households that fell below median income\n")
```

```
## $gen
## NULL
##
## $hh_sn_65_bi
## NULL
##
## $hh_ch_0_17_bi
## NULL
##
## $race_census
## NULL
##
## $borough
## NULL
```

2.7 - 2.8)Houoseholds that experienced food insecuirty in the past year [21, 25]

2.7)Households that experienced food insecurity in the past year [21]

1. Run binary distribution over population

a. Indicators: worried about food running out, ran out of food/ unable to afford food
b. Yes = 1+ indicator
c. No = 0 indicators

2. Run continuous distribution over population

a. Indicators: worried about food running out, ran out of food/ unable to afford food
b. Very food insecure = 2 indicators
c. Somewhat food insecure = worried about food not lasting (OR experienced food bought didn't last i.e. 1 indicator?)
d. Not food insecure = 0 indicators

2.8)Households with children were more likely to experience food insecurity in the past year [25,21]

1. Find respondents who had at least one child (child under 4 or school-aged child) [25]

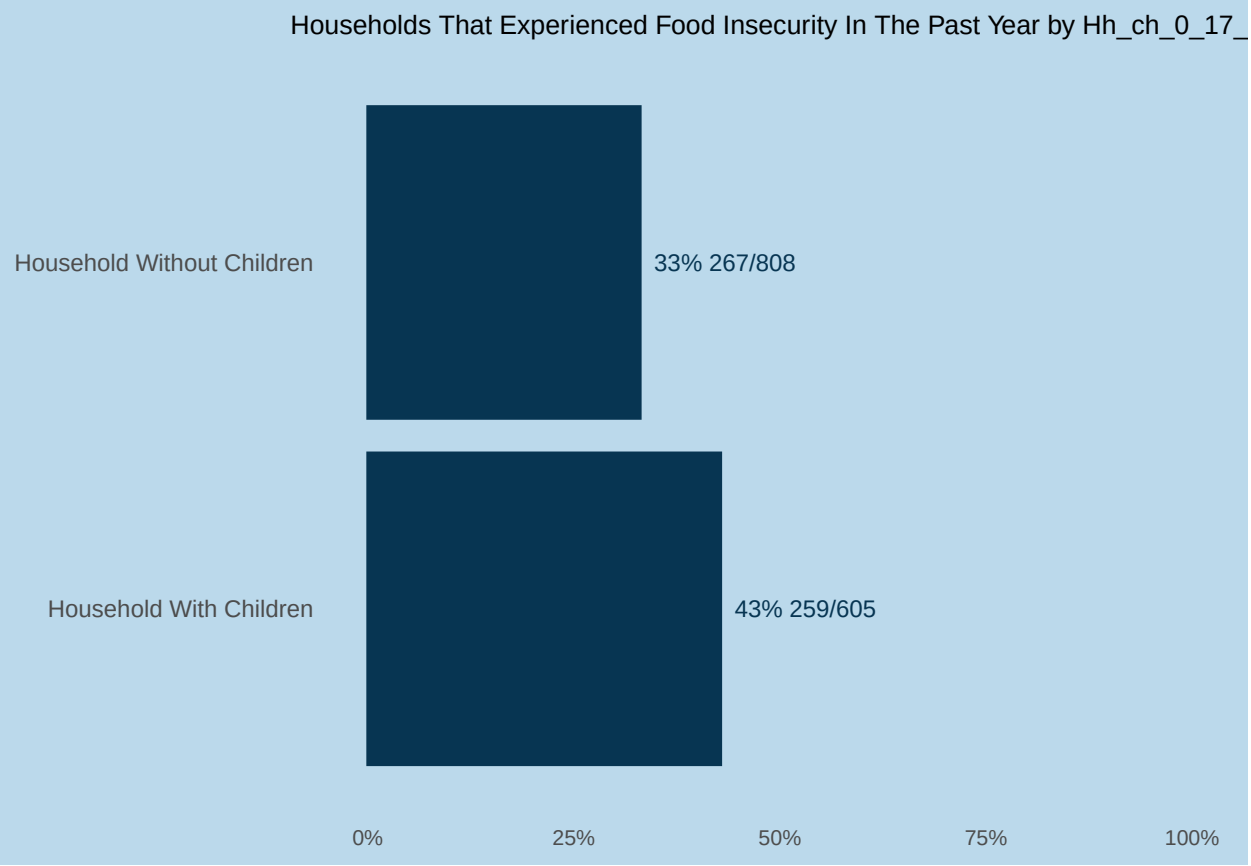
a. Find proportion of subset who are considered food insecure [21] (use binary definition above)
b. Find proportion not in subset who are considered food insecure and compare (test unequal proportions)

```
mean(wrangled$food_insec, na.rm = TRUE)
```

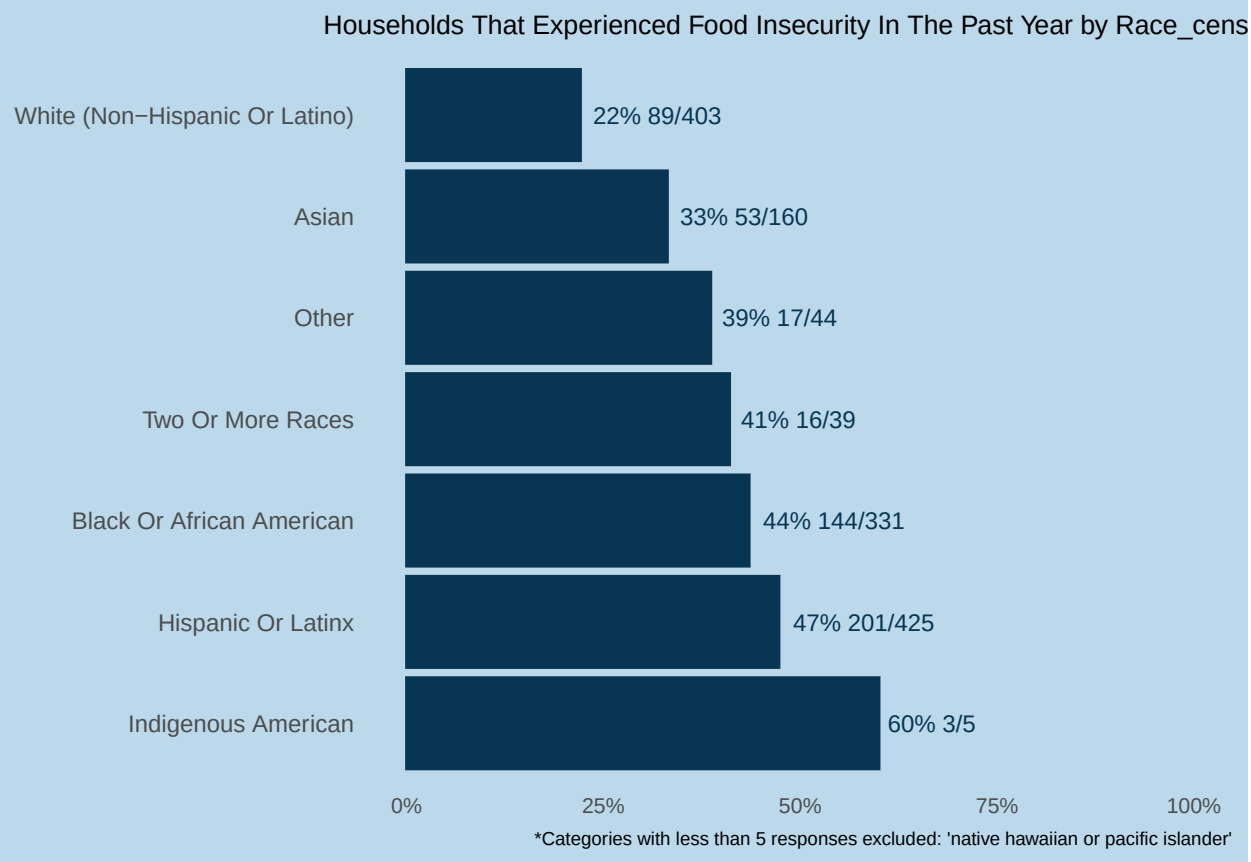
```
## [1] 0.3726579
```

```
make_plots(wrangled, fin_sec_dem, "food_insec",
           title = "Households that experienced food insecurity in the past year")
```

```
## $gen
## NULL
##
## $hh_sn_65_bi
## NULL
##
## $hh_ch_0_17_bi
## $hh_ch_0_17_bi$plot
```

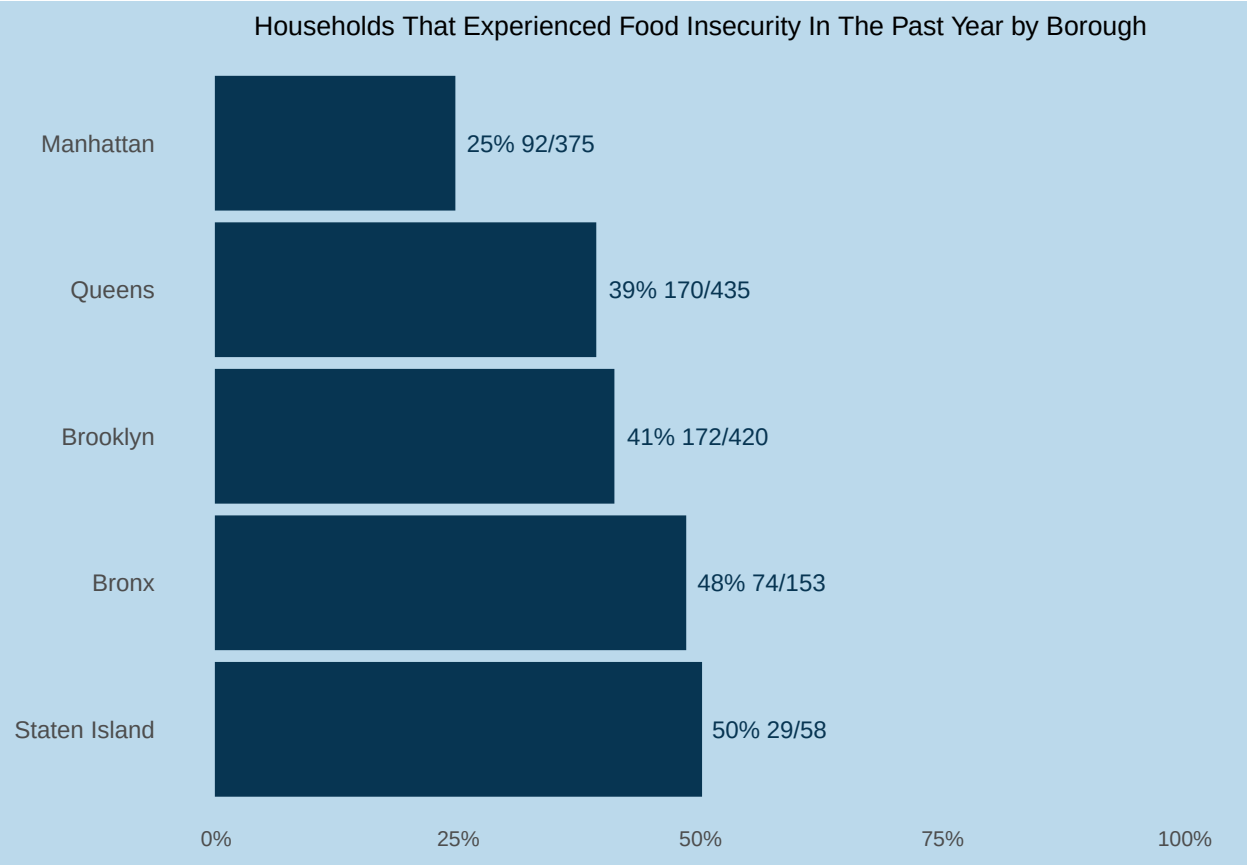



```
##
## $hh_ch_0_17_bi$p.values
## $hh_ch_0_17_bi$p.values$food_insec
##                            household without children household with children
## household without children                         NA                 0.00021
## household with children                        0.00021                      NA
##
##
##
## $race_census
## $race_census$plot
```




```
##
## $race_census$p.values
## $race_census$p.values$food_insec
##                                 white (non-hispanic or latino)  asian other
## white (non-hispanic or latino)                              NA 0.0090    NA
## asian                                                  9.0e-03     NA    NA
## other                                                       NA     NA    NA
## two or more races                                           NA     NA    NA
## black or african american                              9.1e-10     NA    NA
## hispanic or latinx                                     5.2e-14 0.0028    NA
## Indigenous American                                         NA     NA    NA
##                                 two or more races black or african american
## white (non-hispanic or latino)                NA                    9.1e-10
## asian                                         NA                         NA
## other                                         NA                         NA
## two or more races                             NA                         NA
## black or african american                     NA                         NA
## hispanic or latinx                            NA                         NA
## Indigenous American                           NA                         NA
##                                 hispanic or latinx Indigenous American
## white (non-hispanic or latino)            5.2e-14                   NA
## asian                                     2.8e-03                   NA
## other                                          NA                   NA
## two or more races                              NA                   NA
## black or african american                      NA                   NA
## hispanic or latinx                             NA                   NA
```

```
## Indigenous American                          NA                  NA
##
##
##
## $borough
## $borough$plot
```




```
##
## $borough$p.values
## $borough$p.values$food_insec
##               manhattan  queens brooklyn   bronx staten island
## manhattan            NA 1.4e-05  1.4e-06 1.5e-07       0.00011
## queens          1.4e-05      NA       NA      NA            NA
## brooklyn        1.4e-06      NA       NA      NA            NA
## bronx           1.5e-07      NA       NA      NA            NA
## staten island   1.1e-04      NA       NA      NA            NA
```