poa employment

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2/11/2022

Contents

Distributions

```
wrangled %>%
  group_by(emp_change, inc_neg) %>%
  mutate(n = factor(n())) %>%
  filter(!is.na(emp_change) & !is.na(inc_neg)) %>%
  ggplot(aes(x = factor(emp_change), y = factor(inc_neg), color = n)) + geom_jitter() +
  scale_color_manual(values = project_pal) +
```

```
  ggtitle("Distribution of Respondents\nby Employment Change and Negative Income Change") +
  xlab("Employment Change") + ylab("Negative Income Change\n")
```

1.1)People who changed employment status between before the pandemic and currently (2021) [14 &15]

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

a. Compare and find gaps (test unequal proportions)

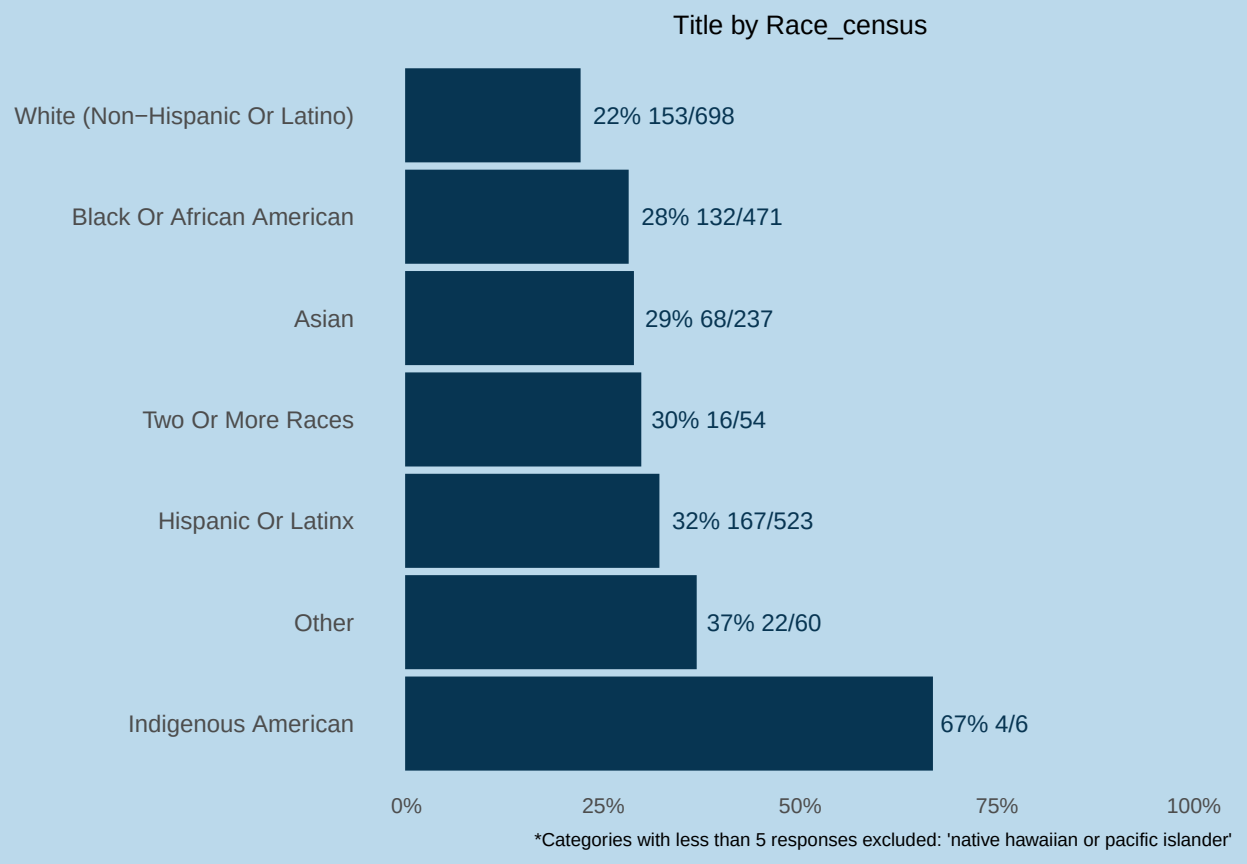
```
mean(wrangled$emp_change, na.rm = TRUE)
```

```
## [1] 0.2740705
```

```
make_plots(wrangled, demographics, "emp_change")
```

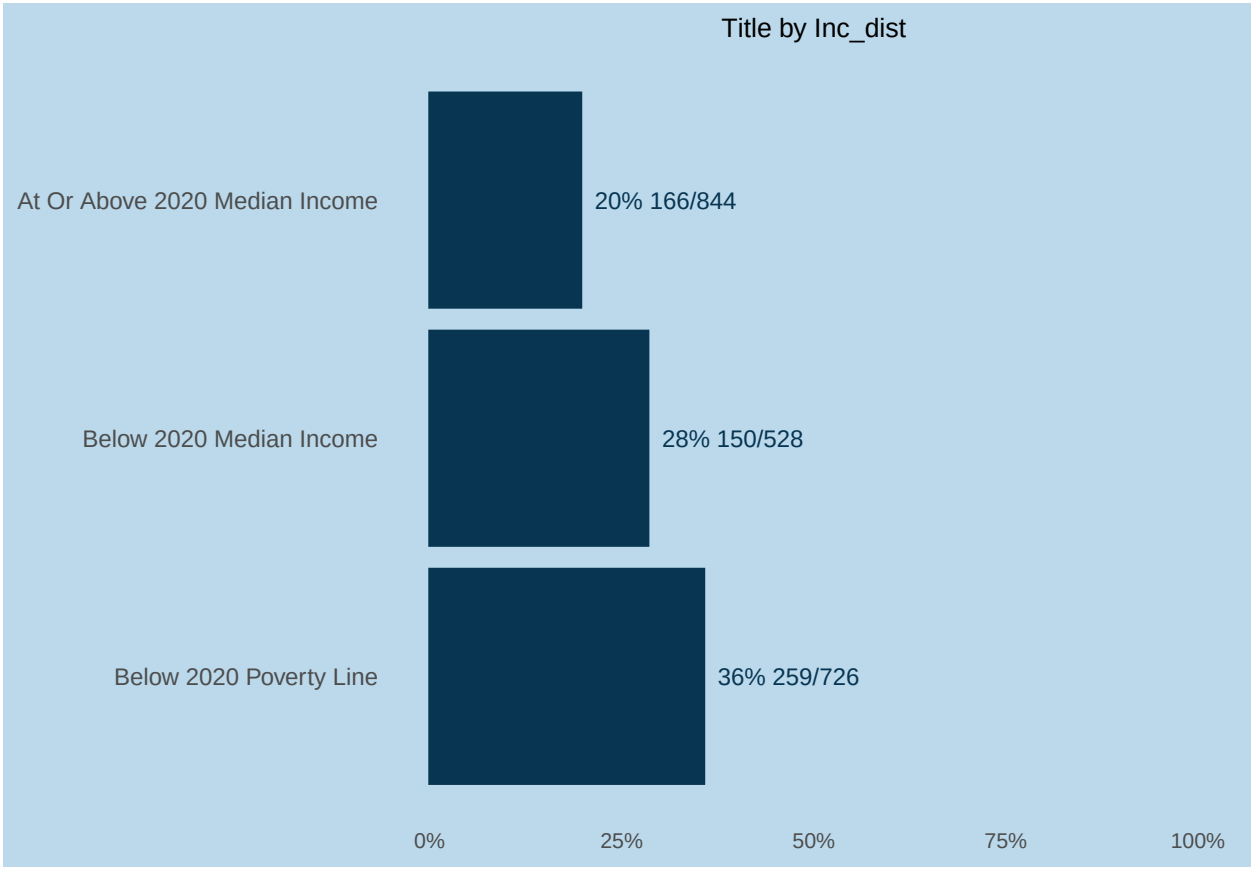
```
## $borough
## NULL
##
## $gen
```

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




```
##
## $race_census$p.values
## $race_census$p.values$emp_change
##                                 white (non-hispanic or latino)
## white (non-hispanic or latino)                              NA
## black or african american                                   NA
## asian                                                       NA
## two or more races                                           NA
## hispanic or latinx                                     0.00011
## other                                                       NA
## Indigenous American                                         NA
##                                 black or african american asian
## white (non-hispanic or latino)                              NA    NA
## black or african american                                   NA    NA
## asian                                                       NA    NA
## two or more races                                           NA    NA
## hispanic or latinx                                          NA    NA
## other                                                       NA    NA
## Indigenous American                                         NA    NA
##                                 two or more races hispanic or latinx other
```

```
## white (non-hispanic or latino)                NA            0.00011    NA
## black or african american                      NA                 NA    NA
## asian                                          NA                 NA    NA
## two or more races                              NA                 NA    NA
## hispanic or latinx                             NA                 NA    NA
## other                                          NA                 NA    NA
## Indigenous American                            NA                 NA    NA
##                                 Indigenous American
## white (non-hispanic or latino)                  NA
## black or african american                       NA
## asian                                           NA
## two or more races                               NA
## hispanic or latinx                              NA
## other                                           NA
## Indigenous American                             NA
##
##
##
## $hh_ch_0_17_bi
## NULL
##
## $hh_sn_65_bi
## NULL
##
## $inc_dist
## $inc_dist$plot
```



```
##
## $inc_dist$p.values
## $inc_dist$p.values$emp_change
##                                 at or above 2020 median income
## at or above 2020 median income                              NA
## below 2020 median income                                 2.4e-04
## below 2020 poverty line                                  1.7e-12
##                                 below 2020 median income below 2020 poverty line
## at or above 2020 median income                  0.00024                  1.7e-12
## below 2020 median income                             NA                  8.1e-03
## below 2020 poverty line                         0.00810                       NA
```

1.2) People who are currently unemployed who were not unemployed in before the pandemic (March 2020) [14&15]

1. Run distribution over population
2. Run distribution by sub-demographics (a-k) and type of previous employment [14]

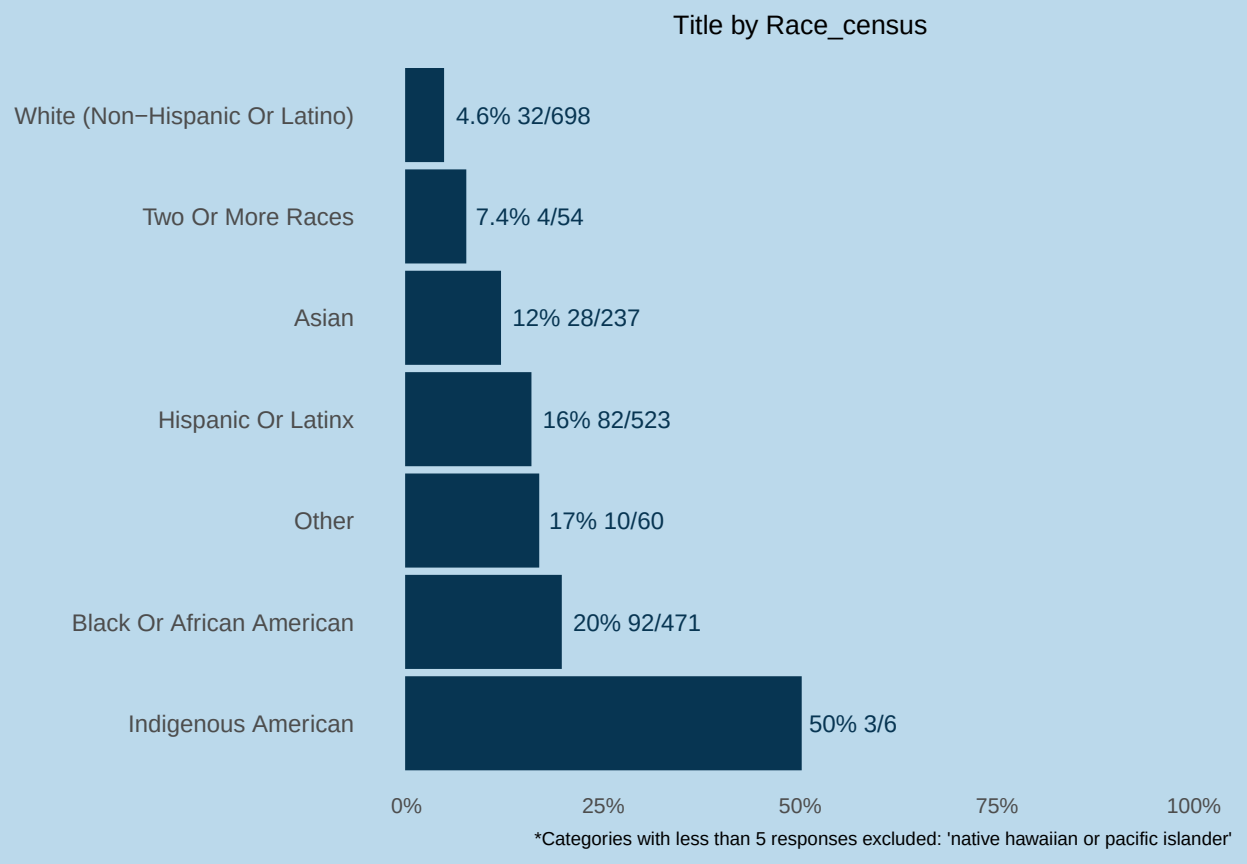
a. Compare and find gaps (test unequal proportions)

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

```
## [1] 0.120591
```

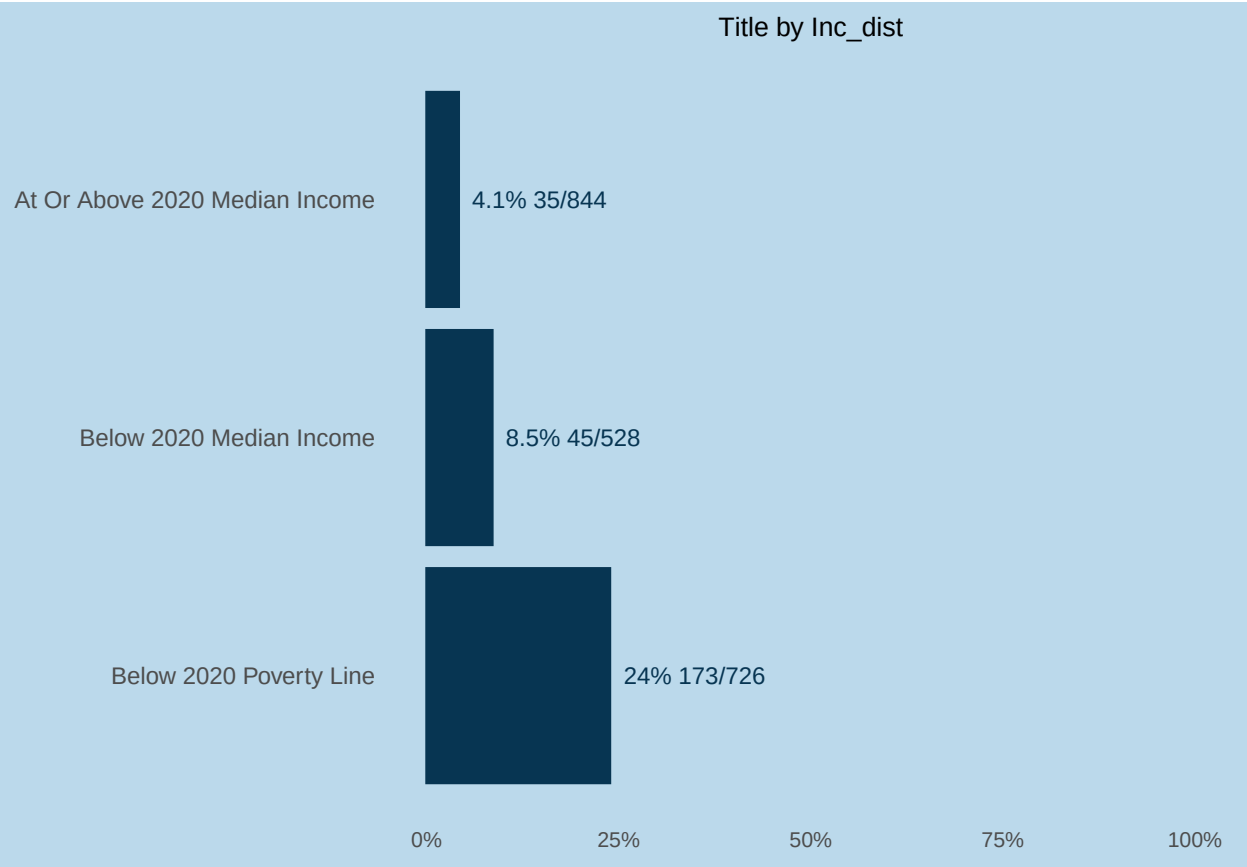
```
make_plots(wrangled, demographics, "emp_after_un")
```

```
## $borough
## NULL
##
## $gen
## NULL
##
## $race_census
## $race_census$plot
```




```
##
## $race_census$p.values
## $race_census$p.values$emp_after_un
##                                 white (non-hispanic or latino) two or more races
## white (non-hispanic or latino)                             NA                NA
## two or more races                                          NA                NA
## asian                                                 1.6e-04                NA
## hispanic or latinx                                    8.4e-11                NA
## other                                                      NA                NA
## black or african american                             8.7e-16                NA
## Indigenous American                                        NA                NA
##                                   asian hispanic or latinx other
## white (non-hispanic or latino) 0.00016            8.4e-11    NA
## two or more races                     NA                 NA    NA
## asian                                 NA                 NA    NA
## hispanic or latinx                    NA                 NA    NA
## other                                 NA                 NA    NA
## black or african american             NA                 NA    NA
## Indigenous American                   NA                 NA    NA
##                                 black or african american Indigenous American
## white (non-hispanic or latino)                    8.7e-16                  NA
## two or more races                                      NA                  NA
## asian                                                  NA                  NA
## hispanic or latinx                                     NA                  NA
## other                                                  NA                  NA
## black or african american                              NA                  NA
```

```
## Indigenous American                                    NA                   NA
##
##
##
## $hh_ch_0_17_bi
## NULL
##
## $hh_sn_65_bi
## NULL
##
## $inc_dist
## $inc_dist$plot
```




```
##
## $inc_dist$p.values
## $inc_dist$p.values$emp_after_un
##                                at or above 2020 median income
## at or above 2020 median income                             NA
## below 2020 median income                              1.2e-03
## below 2020 poverty line                               4.4e-30
##                                below 2020 median income below 2020 poverty line
## at or above 2020 median income                  1.2e-03                 4.4e-30
## below 2020 median income                             NA                 2.8e-12
## below 2020 poverty line                         2.8e-12                      NA
```

1.3)Higher paid employees were less likely to face job status changes during the pandemic [12,14,15]

1. Find proportion of people people who earned salaries above median income [12]

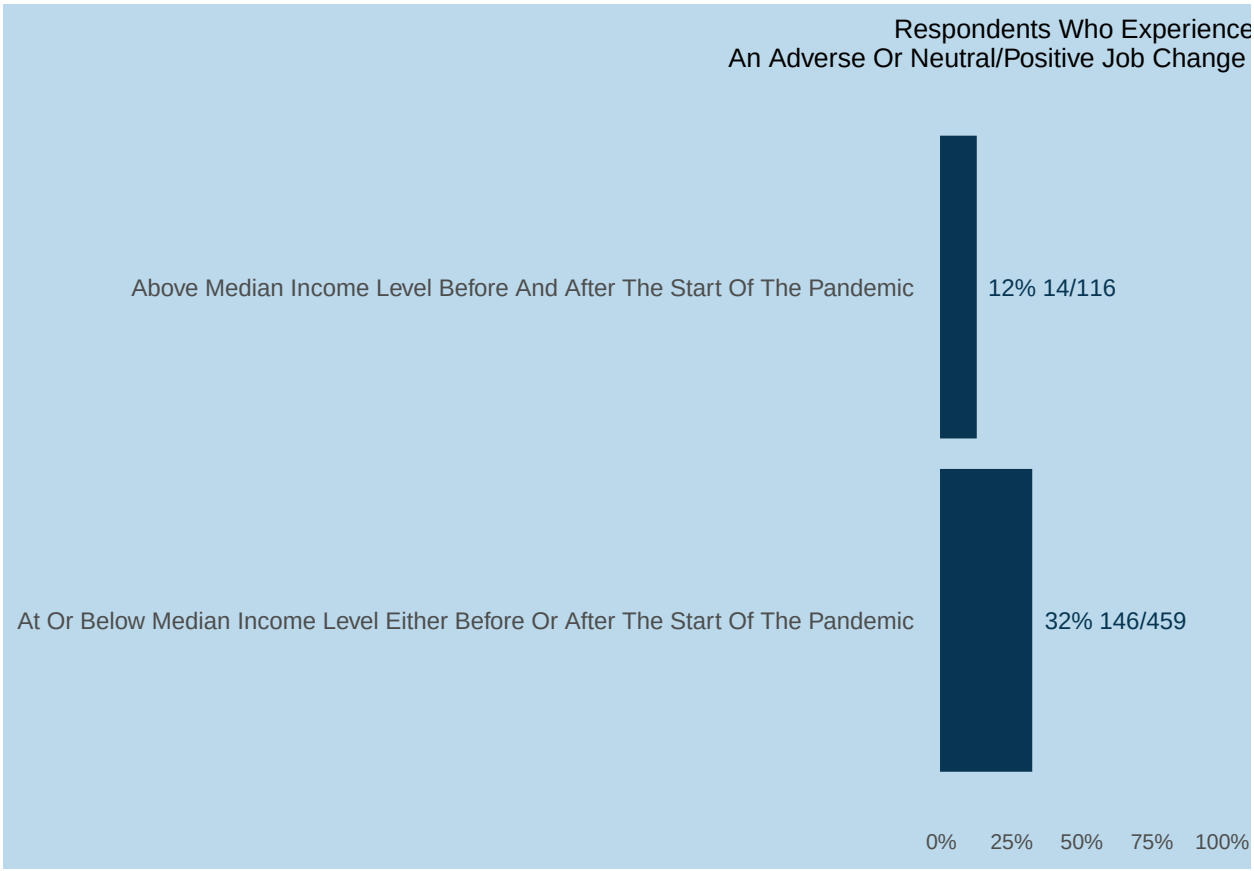
a. Find proportion of subset who faced a job status change [14 &15]
b. Distill the list of of respondents who faced an adverse job change i.e. those who faced an income reduction correspondingly to the job change [14&15]

ii. Job change to be considered adverse only if accompanied by reduction in family income

b. Find proportion not in subset who faced adviser job change and compare (test unequal proportions)

```
make_plots(wrangled %>% filter(emp_change == 1),
           by_vars = c("inc_ab_med", "inc_be_med"), hyp_var = "inc_neg",
           title = "Respondents who experienced\nan adverse or neutral/positive job change")
```

```
## $inc_ab_med
## $inc_ab_med$plot
```




```
##
## $inc_ab_med$p.values
## $inc_ab_med$p.values$inc_neg
```

```
##                                                                                above median income
## above median income level before and after the start of the pandemic
## at or below median income level either before or after the start of the pandemic
##                                                                                at or below median i
## above median income level before and after the start of the pandemic
## at or below median income level either before or after the start of the pandemic
##
##
##
## $inc_be_med
## NULL
```

1.5 - 1.7

1.5)People with at least a Bachelor's degree were more/less likely to face job status changes during the pandemic [11, 14,15]

1. Find proportion of respondents who have a Bachelor's degree and above [11]

a. Find proportion of subset who faced job status changes [14 &15]]. Similar to the hypothesis above, job changes only to be considered adverse if accompanied by reduction in income
b. Find proportion not in subset and compare (test unequal proportions)

1.6)People who had insurance (any form) were less likely to face changes in job status [22,14,15]

1. Find respondents who have any form of insurance [21]

a. Find proportion of subset who faced job status changes [14 & 15] (adverse job status changes)
b. Find proportion not in subset and compare (test unequal proportions)

1.7)People who were on private insurance were least likely to face changes in job status [14,15,22]

1. Find respondents who have private insurance [21]

a. Find proportion of subset who faced job status changes [14 & 15]

2. Find respondents who have insurance that is not private [21]

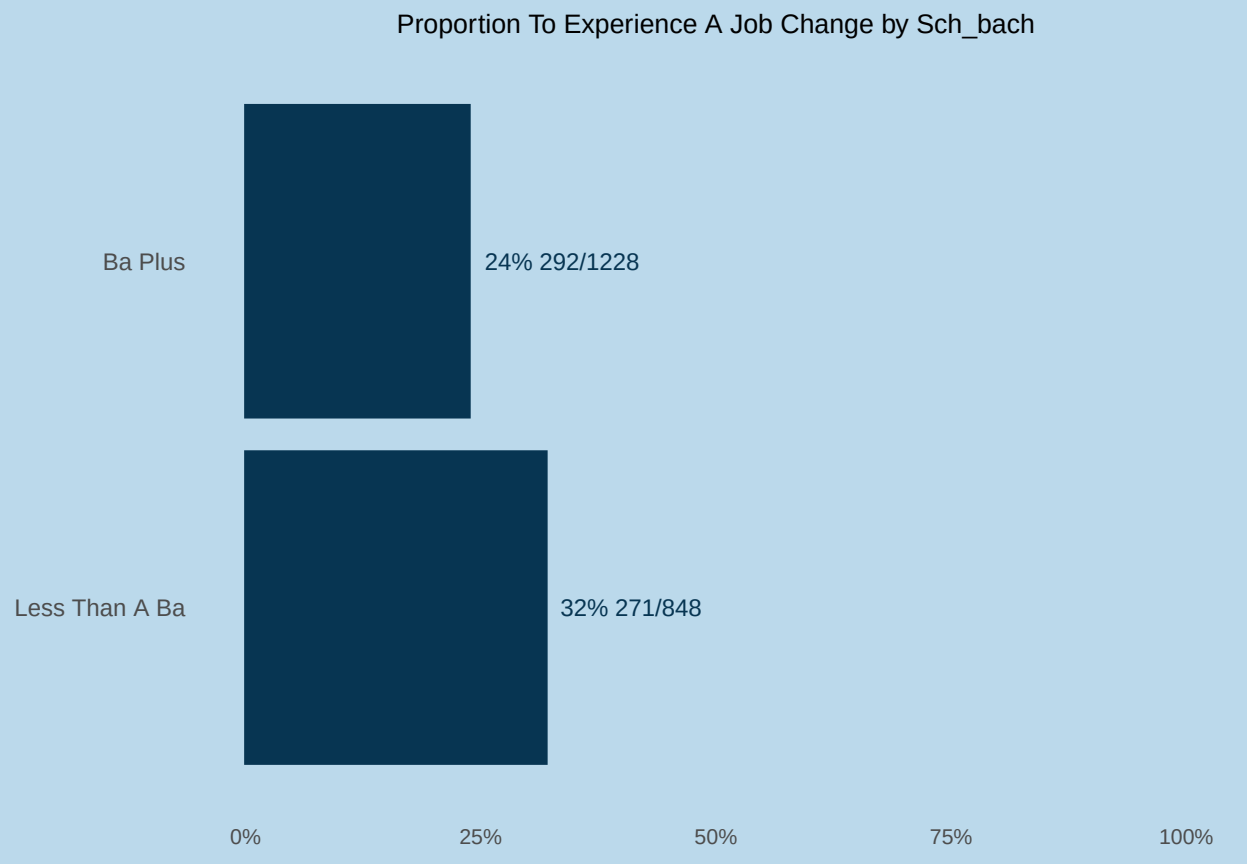
a. Find proportion of subset who faced job status changes [14 &15]

3. Compare groups of privately insured vs those with other types of insurance with respect to job status changes (test unequal proportions)

```
#table(wrangled$ins[str_detect(wrangled$ins, ";")])
new_variables <- c("sch_bach", # 1.5
                   "ins_has", # 1.6
                   "ins_prvt") # 1.7
new_variables <- setNames(new_variables, new_variables)

make_plots(df = wrangled,
           by_vars = new_variables,
           hyp_var = "emp_change", min = 5,
           title = "Proportion to Experience a job change")
```

```
## $sch_bach
## $sch_bach$plot
```




```
##
## $sch_bach$p.values
## $sch_bach$p.values$emp_change
##                 BA plus less than a BA
## BA plus              NA        4.7e-05
## less than a BA 4.7e-05             NA
##
##
##
## $ins_has
```

```
## NULL
##
## $ins_prvt
## NULL
```

```
make_plots(df = wrangled %>% filter(emp_change == 1),
           by_vars = new_variables,
           hyp_var = "inc_neg",
           title = "Proportion to Experience an Adverse job change")
```

```
## $sch_bach
## NULL
##
## $ins_has
## NULL
##
## $ins_prvt
## NULL
```

1.8)Higher paid employees (above median income) were less likely to return to working in-person [12,13,19]

1. Find respondents who are earning above median income [12 &13]

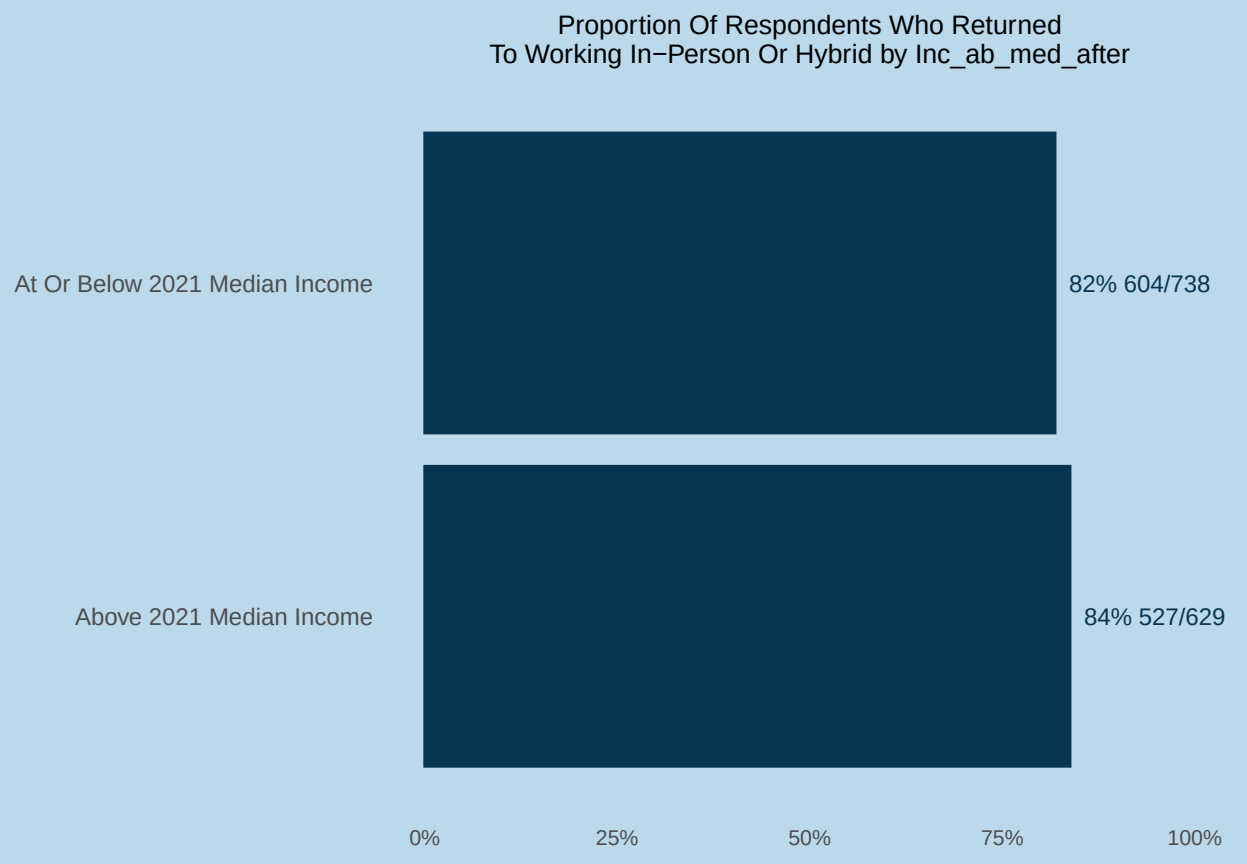
a. Find proportion who are working fully virtual and hybrid mode [18]
b. Find proportion not in subset and compare

2. Find respondents who are earning below median income [12 &13]

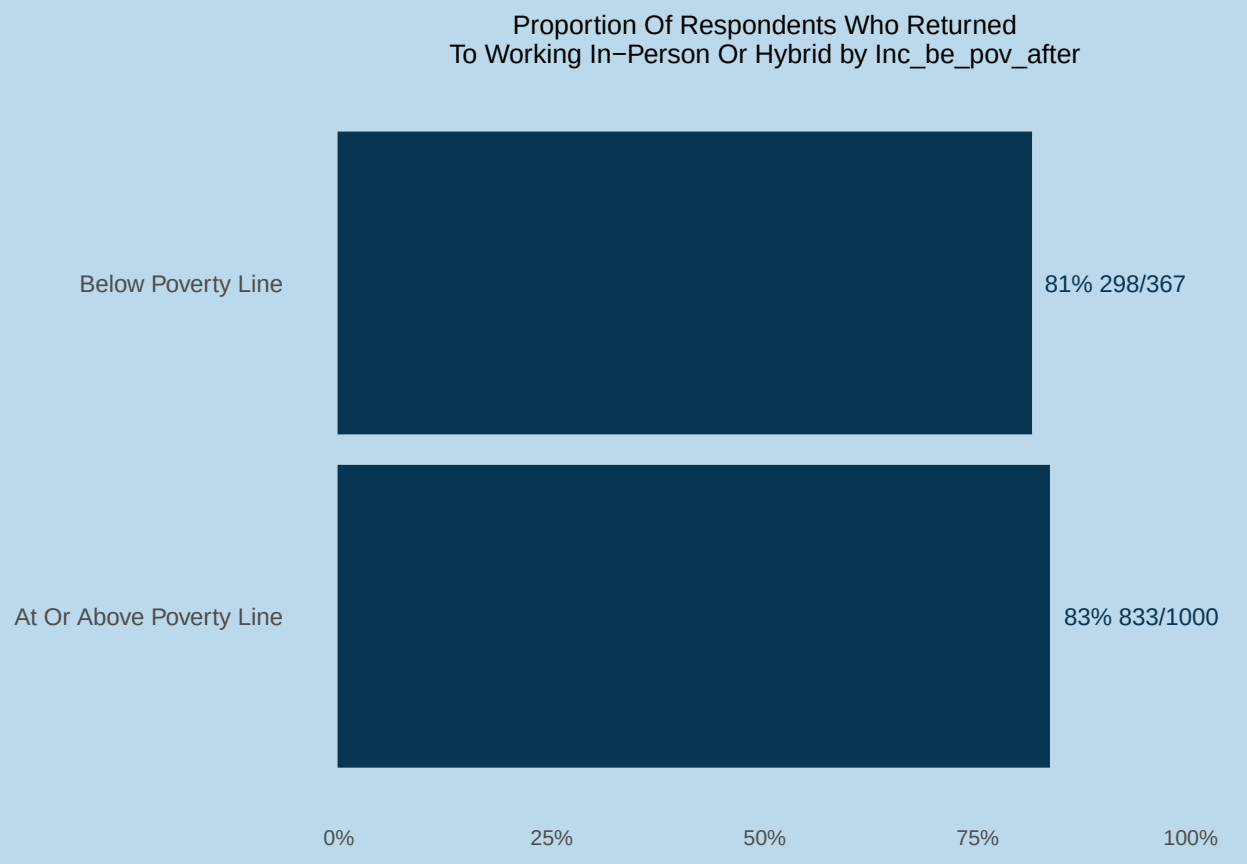
c. Find proportion who are working fully in-person [18]
d. Find proportion not in subset and compare

```
make_plots(wrangled %>% filter(wrk != 4), c("inc_ab_med_after", "inc_be_pov_after"), "wrk_in",
           title = "Proportion of Respondents who returned\nto working in-person or hybrid",
           show = TRUE)
```

```
## $inc_ab_med_after
## $inc_ab_med_after$plot
```




```
##
## $inc_ab_med_after$p.values
## $inc_ab_med_after$p.values$wrk_in
##                                at or below 2021 median income
## at or below 2021 median income                             NA
## above 2021 median income                                   NA
##                                above 2021 median income
## at or below 2021 median income                       NA
## above 2021 median income                             NA
##
##
##
## $inc_be_pov_after
## $inc_be_pov_after$plot
```




```
##
## $inc_be_pov_after$p.values
## $inc_be_pov_after$p.values$wrk_in
##                          below poverty line at or above poverty line
## below poverty line                       NA                       NA
## at or above poverty line                 NA                       NA
```

1.9)People who are unemployed and currently receiving unemployment benefits [17]

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

a. Compare and find gaps (test unequal proportions)

```
mean(wrangled$unemp_ben == 1, na.rm = TRUE)
```

```
## [1] 0.06324111
```

```
make_plots(wrangled %>% mutate(temp = unemp_ben == 1), demographics, "temp")
```

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

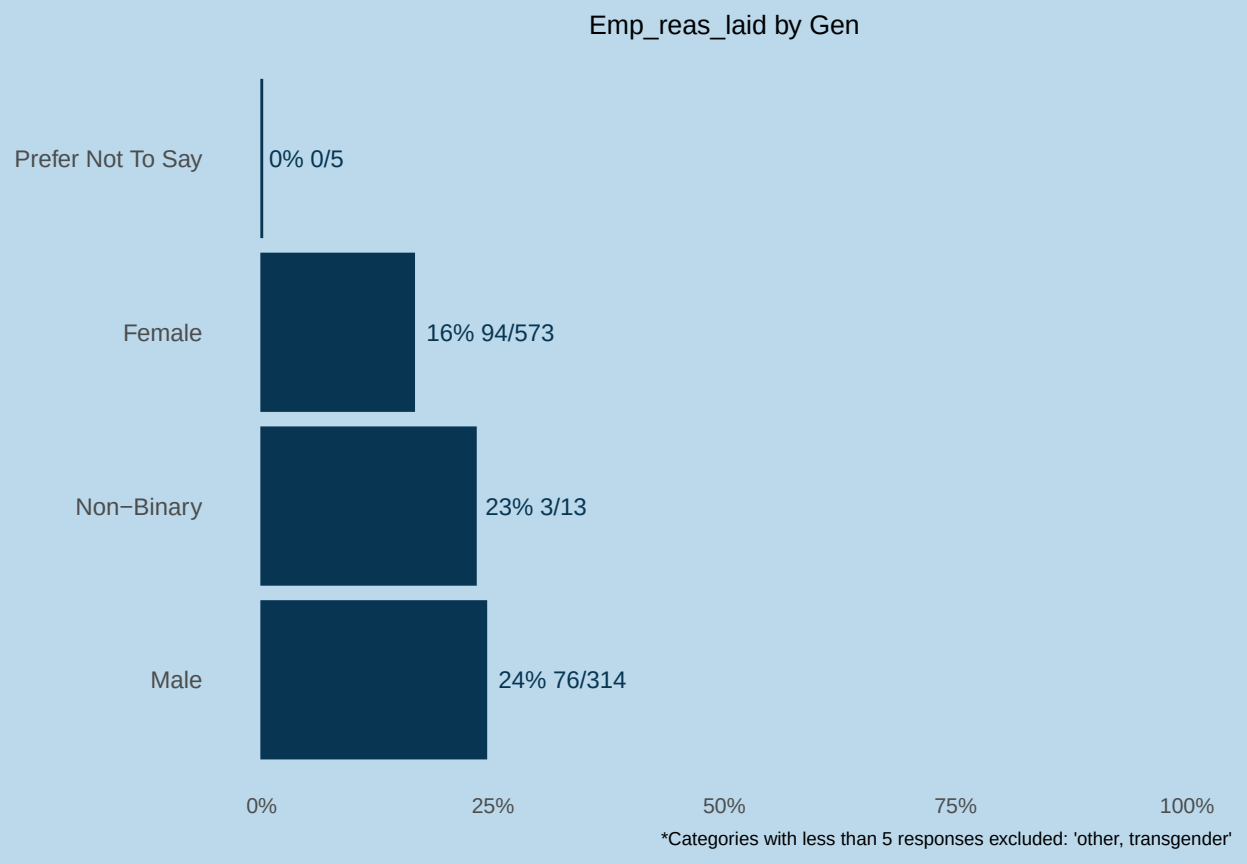
1.10)Reasons for employment change

1. Run sub demographic distribution over each reason of employment change
2. Run distribution over population.

```
emp_reas <- wrangled %>% select(starts_with("emp_reas_")) %>% colnames()
names(emp_reas) <- emp_reas

lapply(emp_reas[1:2], function(reason) {
  make_plots(wrangled, demographics, reason, title = reason)
})
```

```
## $emp_reas_laid
## $emp_reas_laid$borough
## NULL
##
## $emp_reas_laid$gen
## $emp_reas_laid$gen$plot
```




```
##
## $emp_reas_laid$gen$p.values
## $emp_reas_laid$gen$p.values$emp_reas_laid
##                   prefer not to say female non-binary   male
## prefer not to say                NA     NA         NA     NA
## female                           NA     NA         NA 0.0063
## non-binary                       NA     NA         NA     NA
## male                             NA 0.0063         NA     NA
##
##
##
## $emp_reas_laid$race_census
## NULL
##
## $emp_reas_laid$hh_ch_0_17_bi
## NULL
##
## $emp_reas_laid$hh_sn_65_bi
## NULL
##
## $emp_reas_laid$inc_dist
## NULL
##
##
## $emp_reas_fire
## $emp_reas_fire$borough
```

```
## NULL
##
## $emp_reas_fire$gen
## NULL
##
## $emp_reas_fire$race_census
## NULL
##
## $emp_reas_fire$hh_ch_0_17_bi
## NULL
##
## $emp_reas_fire$hh_sn_65_bi
## NULL
##
## $emp_reas_fire$inc_dist
## NULL
```