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## Name: Robert James
## Assignment: Lab 4
## Date: 12/03/2023
## Purpose: Explore the Relationship Education levels, Race, age, and Opinion on status of improving the condition of Black people
# install packages
install.packages("remotes", repos = "http://cran.us.r-project.org")
install.packages("tidyverse", repos = "http://cran.us.r-project.org")
install.packages("tidyr", repos = "http://cran.us.r-project.org")
install.packages("survey", repos = "http://cran.us.r-project.org")
install.packages("srvyr", repos = "http://cran.us.r-project.org")

# load gssr package
remotes::install_github("kjhealy/gssr")



# load libraries
library(gssr)
library(critstats)
library(dplyr)
library(tidyr)
library(ggplot2)
library(haven)
library(tibble)
library(survey)
library(srvyr)

# load the data
data(gss_all)
data(gss_doc)
data(gss_dict)
gss_dict


gss_all %>% # check for variable in each year
  gss_which_years(c("degree", "educ", "natrace", "age", "race", "wtssall")) %>%
  print(n = Inf)
gss18 <- gss_all %>% filter(year == 2018)
df <- gss18 %>%
  select(c("degree", "educ", "natrace", "age", "race", "wtssall")) %>%
  drop_na()
sapply(df, function(x) sum(is.na(x)))
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cat_vars = c("degree", "natrace", "race")
cont_vars = c("age", "educ")
wt_vars = c("wtssall")

# use variable lists to mutate the variables
dfc <- df %>% # create a clean data set
  mutate(wtssall = as.numeric(wtssall)) %>%
  mutate(across(all_of(cat_vars), forcats::as_factor))
dfc


mlm1 <- lm(cbind(degree, natrace, race) ~ age + educ, data = df, weight = wtssall)
summary(mlm1)

manova(mlm1)
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