Homework 5

Xinyi Lin

10/18/2019

## Question a

## $quantiles  
## 0.5  
## AGEA 43  
##   
## $CIs  
## , , AGEA  
##   
## 0.5  
## (lower 41  
## upper) 45

The estimated population median age is 43 and 95% confidence interval is (41,45).

## Question b

## $quantiles  
## 0.5  
## AGEA 40  
##   
## $CIs  
## , , AGEA  
##   
## 0.5  
## (lower 37  
## upper) 43

## $quantiles  
## 0.5  
## AGEA 45  
##   
## $CIs  
## , , AGEA  
##   
## 0.5  
## (lower 43.00000  
## upper) 47.18563

The median among males is 40 with 95% confidence interval (37,43) and the median among females is 45 with 95% confidence interval (43.000,47.186).

knitr::opts\_chunk$set(echo = FALSE)  
library(survey)  
library(tidyverse)  
library(ggplot2)  
data1 = read.csv("./ess6.csv") %>%   
 mutate(psu = as.factor(psu))  
design = svydesign(id = ~psu, strata = ~stratify, weights = ~PSPWGHT, data = data1)  
design\_median = svyquantile(~AGEA, design, quantiles = 0.5, ci = TRUE, na.rm = TRUE)  
design\_median  
sub1 = subset(design, GNDR==1)  
liner\_male = svyquantile(~AGEA, sub1, quantiles = 0.5, ci = TRUE, na.rm = TRUE)  
liner\_male  
sub2 = subset(design, GNDR==2)  
liner\_female = svyquantile(~AGEA, sub2, quantiles = 0.5, ci = TRUE, na.rm = TRUE)  
liner\_female