InClassAssign2 Cudjoe Smith

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Surveys are frequently used to measure political behavior such as voter turnout, but some researchers are concerned about the accuracy of self-reports. In particular, they worry about possible social desirability bias where, in postelection surveys, respondents who did not vote in an election lie about not having voted because they may feel that they should have voted. Is such a bias present in the American National Election Studies (ANES)? ANES is a nationwide survey that has been conducted for every election since 1948. ANES is based on face-to-face interviews with a nationally representative sample of adults. Table 1.3 displays the names and descriptions of variables in the turnout.csv data file.

1. Load the data into R and check the dimensions of the data. Also, obtain a summary of the data. How many observations are there? What is the range of years covered in this data set?

turnout <- read.csv("turnout (1).csv")  
class(turnout)

## [1] "data.frame"

dim(turnout)

## [1] 14 9

range(turnout$year)

## [1] 1980 2008

summary(turnout)

## year VEP VAP total   
## Min. :1980 Min. :159635 Min. :164445 Min. : 64991   
## 1st Qu.:1986 1st Qu.:171192 1st Qu.:178930 1st Qu.: 73179   
## Median :1993 Median :181140 Median :193018 Median : 89055   
## Mean :1993 Mean :182640 Mean :194226 Mean : 89778   
## 3rd Qu.:2000 3rd Qu.:193353 3rd Qu.:209296 3rd Qu.:102370   
## Max. :2008 Max. :213314 Max. :230872 Max. :131304   
##   
## ANES felons noncit overseas osvoters   
## Min. :47.00 Min. : 802 Min. : 5756 Min. :1803 Min. :263   
## 1st Qu.:57.00 1st Qu.:1424 1st Qu.: 8592 1st Qu.:2236 1st Qu.:263   
## Median :70.50 Median :2312 Median :11972 Median :2458 Median :263   
## Mean :65.79 Mean :2177 Mean :12229 Mean :2746 Mean :263   
## 3rd Qu.:73.75 3rd Qu.:3042 3rd Qu.:15910 3rd Qu.:2937 3rd Qu.:263   
## Max. :78.00 Max. :3168 Max. :19392 Max. :4972 Max. :263   
## NA's :13

1. Calculate the turnout rate based on the voting age population or VAP. Note that for this data set, we must add the total number of eligible overseas voters since the VAP variable does not include these individuals in the count. Next, calculate the turnout rate using the voting eligible population or VEP. What difference do you observe?

VAPtr <- turnout$total / (turnout$VAP + turnout$overseas) \* 100  
VAPtr

## [1] 52.03972 40.24522 52.53748 36.07845 49.72260 35.93884 54.04097 38.03086  
## [9] 47.53376 34.83169 49.34211 35.82850 54.54777 55.67409

names(VAPtr) <- turnout$year  
VAPtr

## 1980 1982 1984 1986 1988 1990 1992 1994   
## 52.03972 40.24522 52.53748 36.07845 49.72260 35.93884 54.04097 38.03086   
## 1996 1998 2000 2002 2004 2008   
## 47.53376 34.83169 49.34211 35.82850 54.54777 55.67409

VEPtr <- turnout$total / turnout$VEP \* 100  
VEPtr

## [1] 54.19551 42.13701 55.24860 38.14115 52.76848 38.41895 58.11384 41.12625  
## [9] 51.65793 38.09316 54.22449 39.51064 60.10084 61.55433

names(VEPtr) <- turnout$year  
diff <- VEPtr - VAPtr  
names(diff) <- turnout$year  
diff

## 1980 1982 1984 1986 1988 1990 1992 1994   
## 2.155785 1.891789 2.711115 2.062703 3.045878 2.480105 4.072866 3.095397   
## 1996 1998 2000 2002 2004 2008   
## 4.124166 3.261470 4.882388 3.682145 5.553078 5.880239

(diff - diff[1]) / diff[1] \*100

## 1980 1982 1984 1986 1988 1990 1992   
## 0.000000 -12.245918 25.759993 -4.317784 41.288590 15.044203 88.927299   
## 1994 1996 1998 2000 2002 2004 2008   
## 43.585622 91.306930 51.289216 126.478459 70.803020 157.589635 172.765581

1. Compute the differences between the VAP and ANES estimates of turnout rate. How big is the difference on average? What is the range of the differences? Conduct the same comparison for the VEP and ANES estimates of voter turnout. Briefly comment on the results.

diffVAP <- turnout$ANES - VAPtr  
summary(diffVAP)

## Min. 1st Qu. Median Mean 3rd Qu. Max.   
## 11.06 18.22 20.62 20.33 22.42 26.17

diffVEP <- turnout$ANES - VEPtr  
summary(diffVEP)

## Min. 1st Qu. Median Mean 3rd Qu. Max.   
## 8.581 15.267 16.893 16.836 18.529 22.489

1. Compare the VEP turnout rate with the ANES turnout rate separately for presidential elections and midterm elections. Note that the data set exclude 5. Divide the data into half by election years such that you subset the data into two periods. Calculate the difference between the VEP turnout rate and the ANES turnout rate separately for each year within each period. Has the bias of ANES increased over time?

n.obs <- nrow(turnout)  
pres <- c(seq(from = 1, to = n.obs, by = 2), n.obs)  
pVEPtr <- VEPtr[pres]  
names(pVEPtr) <- turnout$year[pres]  
pVEPtr

## 1980 1984 1988 1992 1996 2000 2004 2008   
## 54.19551 55.24860 52.76848 58.11384 51.65793 54.22449 60.10084 61.55433

mid<- seq(from=2, to= (n.obs-1), by = 2)  
mVEPtr <- VEPtr[mid]  
names(mVEPtr) <- turnout$year[mid]  
mVEPtr

## 1982 1986 1990 1994 1998 2002   
## 42.13701 38.14115 38.41895 41.12625 38.09316 39.51064

mean(pVEPtr) - mean(mVEPtr)

## [1] 16.41181

1. ANES does not interview prisoners and overseas voters. Calculate an adjustment to the 2008 VAP turnout rate. Begin by subtracting the total number of ineligible felons and noncitizens from the VAP to calculate an adjusted VAP. Next, calculate an adjusted VAP turnout rate, taking care to subtract the number of overseas ballots counted from the total ballots in 2008. Compare the adjusted VAP turnout with the unadjusted VAP, VEP, and the ANES turnout rate. Briefly discuss the results.

adj.VAP.turnout.rate <- ((turnout$total[14] - turnout$osvoters[14]) /  
(turnout$VAP[14] - turnout$felons[14] - turnout$noncit[14] - turnout$overseas[14])) \* 100  
adj.VAP.turnout.rate

## [1] 64.43699

adj.VAP.turnout.rate

## [1] 64.43699

VAPtr[14]

## 2008   
## 55.67409

VEPtr[14]

## 2008   
## 61.55433

turnout$ANES[14]

## [1] 78