Poli 5D Social Science Data Analytics

R: Regression & Function

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Contact Information

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The teaching staff is a team!

Professor Roberts	M	1600-1800 (SSB 299)
Jason Bigenho	Th	1000-1200 (Econ 116)
Shane Xuan	M	1100-1150 (SSB 332)
	Th	1200-1250 (SSB 332)

Supplemental Materials

UCLA STATA starter kit

`http://www.ats.ucla.edu/stat/stata/sk/`

Princeton data analysis

`http://dss.princeton.edu/training/`

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  - Your opinion is really important to future students because the teaching staff are constantly making adjustments to the course so that students can get the most out of the it

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Some quick notes before we start today's section:

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- We will talk about function in R

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  - Step 3: Add the regression line using `abline(m1)`

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  - Within the `data.frame` object `data`, find the country with maximum residuals

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Note that the plots are saved in your working directory

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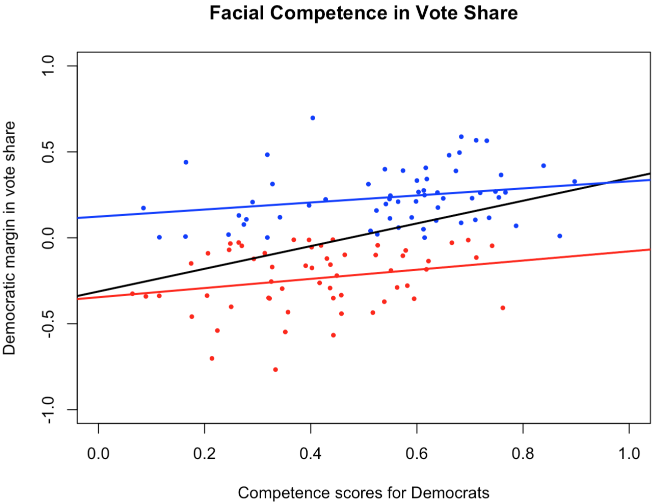

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```

Regression

```
fit <- lm(diff.share~d.comp, data=face)
fit.D <- lm(diff.share~d.comp, data=face[face$w.party=="D",]
fit.R <- lm(diff.share~d.comp, data=face[face$w.party=="R",]
```

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```

Generate the plot

```
plot(face$d.comp, face$diff.share, pch=19, cex=0.5,
  col=ifelse(face$w.party=="R", "red", "blue"))
abline(fit.D, col="blue")
abline(fit.R, col="red")
abline(fit, lwd=2)
```

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- Syntax:

```
myfunction <- function(x,y,z,...){
  ... # your code here to get output
  return(output)
}
```

Function in R: Example

- Example:

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  ```
  > ourExample(2)
  [1] 4
  ```

Function in R: Exercise

- I have the formula[1]

$$A = P \times \left(1 + \frac{R}{100}\right)^n$$

Write R code to calculate A, where n changes from 1 to 15, if $P_0 = 5000$ and $R_0 = 11.5\%$.

[1] Exercise adapted from Adams & Stephens's *Introduction to R*, available at `http://wwwf.imperial.ac.uk/~das01/RCourse/`.

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- Result

```
> difference
[1] 81.19778
```

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  withinParenthesis <- 1+R/100
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Results

```
A.year0 <- calculateA(P0, R0, n0)
A.year1 <- calculateA(P0, R0, n1)
difference <- A.year1 - A.year0
difference
```