USJudges_RMarkdown

fabianbohnenberger

25 September 2015

Aim

The aim of this document is to develop a weighted index of Judge's performance based on R's **"USJudgeRatings"** database. The dataset contains lawyers' ratings of State Judges in the US Superior Court. Additional information on the dataset can be found here: https://stat.ethz.ch/R-manual/R-devel/library/datasets/html/USJudgeRatings.html

Data on four variables will be used:

variable	abbreviation
Judicial integrity	INTG
Preparation for trial	PREP
Sound oral rulings	ORAL
Physical ability	PHYS

Setting working directory

```
setwd("C:/Users/Fabian/Documents/GitHub/repo1/analysis/USJudges")

list.files()
```

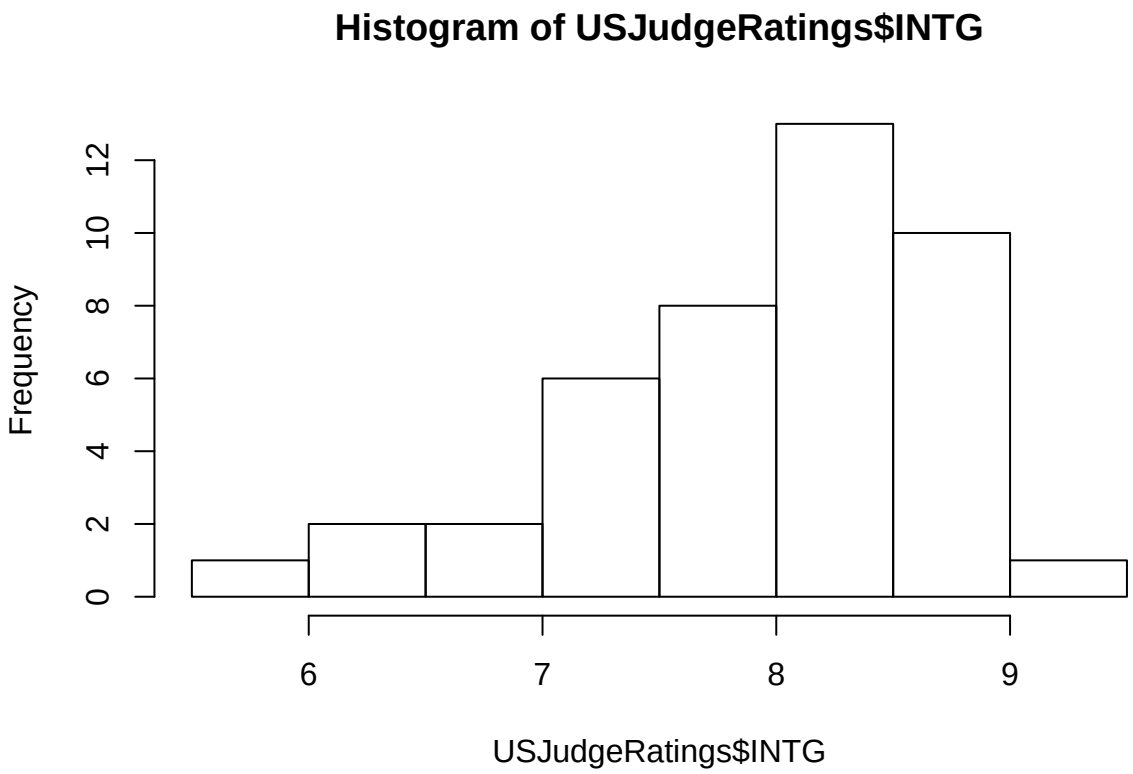
```
## [1] "R_files"                  "test_files"
## [3] "USJudges_RMarkdown.html" "USJudges_RMarkdown.pdf"
## [5] "USJudges_RMarkdown.Rmd"
```

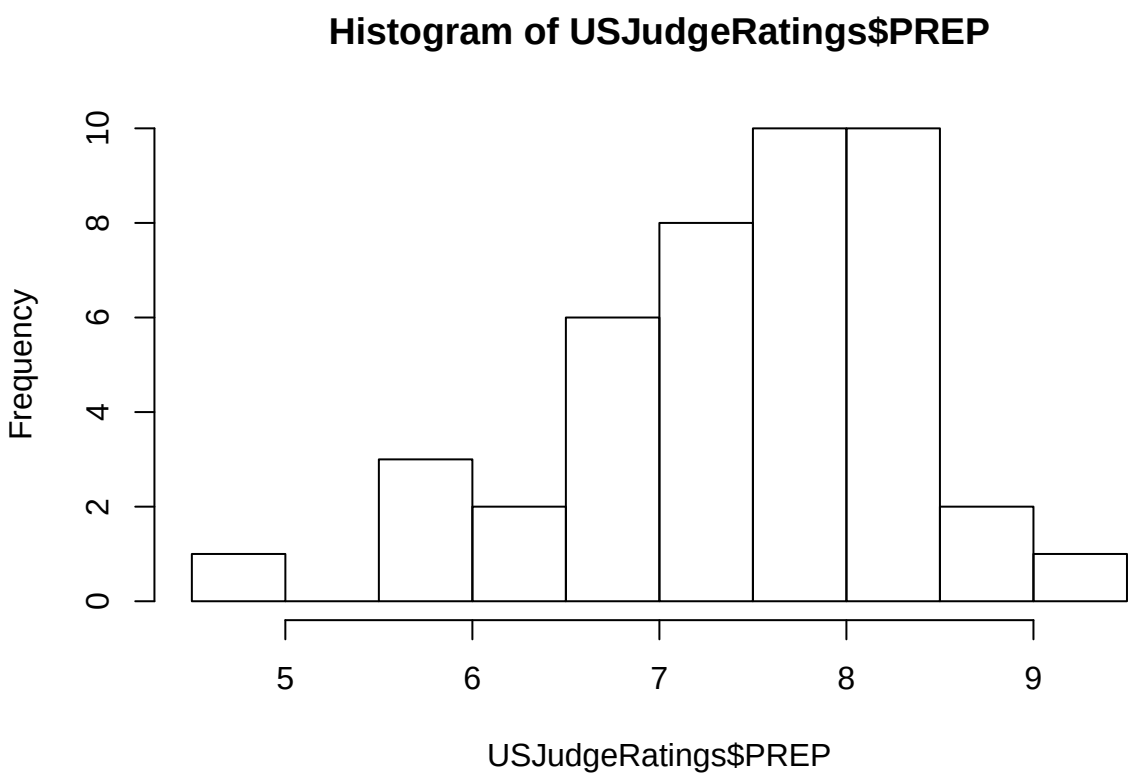
Descriptive Statistics

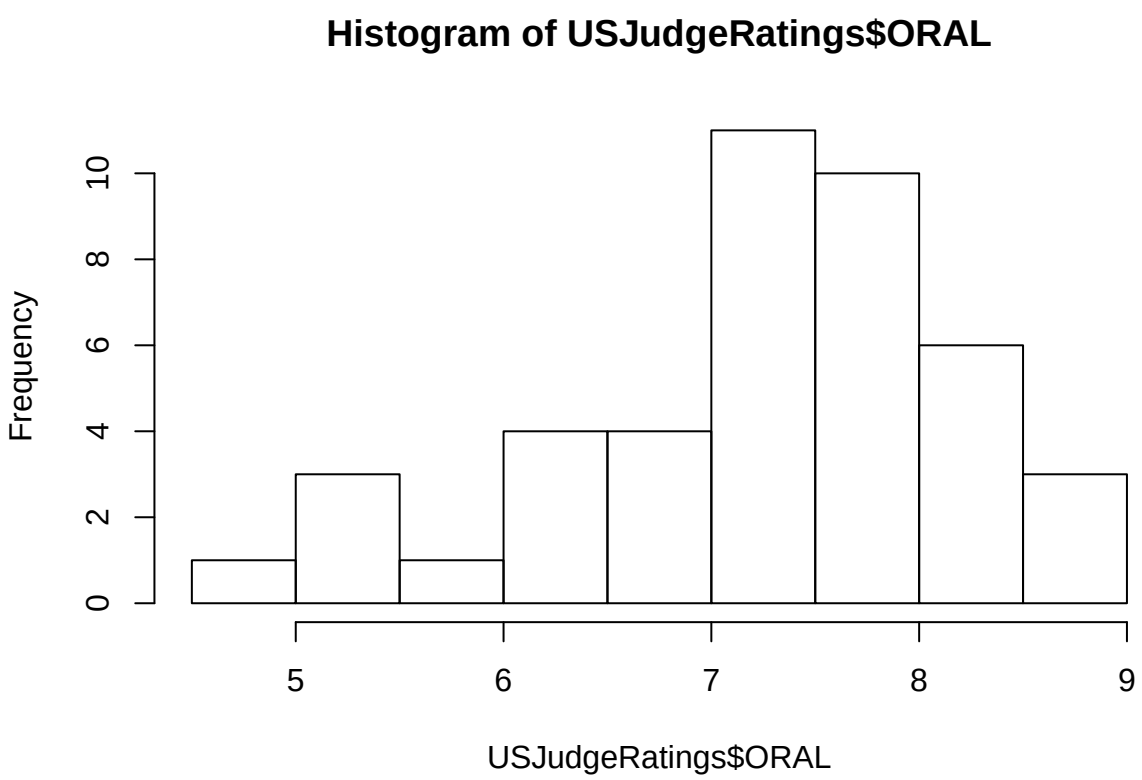
Overview

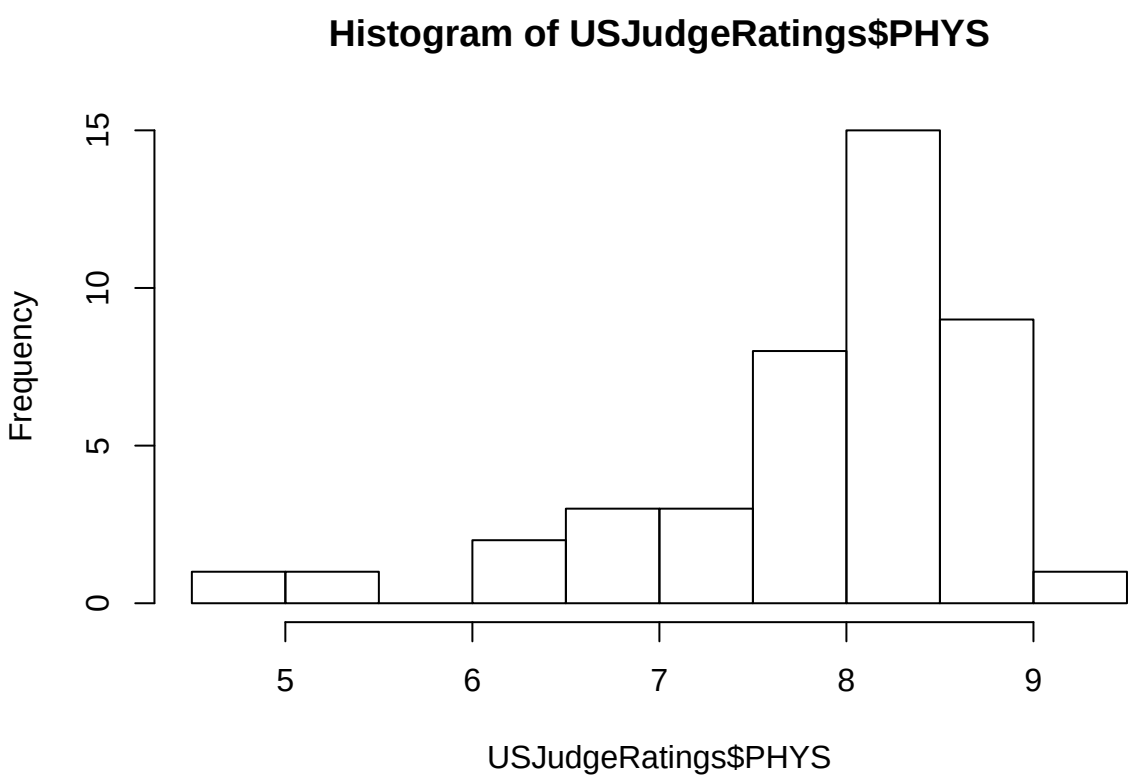
variable	abbreviation	range	mean	median	standard deviation
Judicial integrity	INTG	5.9, 9.2	8.0209302	8.1	0.7701447
Preparation for trial	PREP	4.8, 9.1	7.4674419	7.7	0.9533702
Sound oral rulings	ORAL	4.7, 8.9	7.2930233	7.5	1.0100437
Physical ability	PHYS	4.7, 9.1	7.9348837	8.1	0.9395753

Histograms


Histogram of USJudgeRatings$INTG
Frequency
0
2
4
6
8
10
12
6
7
8
9
USJudgeRatings$INTG


Histogram of USJudgeRatings$PREP
Frequency
0
2
4
6
8
10
5
6
7
8
9
USJudgeRatings$PREP


Histogram of USJudgeRatings$ORAL
Frequency
0
2
4
6
8
10
5
6
7
8
9
USJudgeRatings$ORAL



Creating a weighted index

Defining weights for the Index

At present, weights are applied equally across variables.

```
w1 <- 0.25
w2 <- 0.25
w3 <- 0.25
w4 <- 0.25
```

Creating a function for the weighted Index

- r identifies the row/Judge in the dataframe
- x1 = INTG, x2 = PREP, x3 = ORAL, x4 = PHYS
- w1 = weight for x1, ...
- Index will be adjusted to display an error message for numbers for r other than integers between 1 and 43 (see Markdown file)

```
weighted_index <- function(r){
  x1[r]*w1+x2[r]*w2+x3[r]*w3+x4[r]*w4
}
```

Results

	names	IndexResults
1	AARONSON,L.H.	7.600
2	ALEXANDER,J.M.	8.300
3	ARMENTANO,A.J.	7.700
4	BERDON,R.I.	8.675
5	BRACKEN,J.J.	5.675
6	BURNS,E.B.	8.375
7	CALLAHAN,R.J.	8.800
8	COHEN,S.S.	5.550
9	DALY,J.J.	8.625
10	DANNEHY,J.F.	8.000
11	DEAN,H.H.	7.650
12	DEVITA,H.J.	7.200
13	DRISCOLL,P.J.	7.750
14	GRILLO,A.E.	6.650
15	HADDEN,W.L.JR.	8.050
16	HAMILL,E.C.	7.600
17	HEALEY.A.H.	6.925
18	HULL,T.C.	7.500
19	LEVINE,I.	7.850
20	LEVISTER,R.L.	6.525
21	MARTIN,L.F.	7.300
22	MCGRATH,J.F.	6.850
23	MIGNONE,A.F.	5.775
24	MISSAL,H.M.	7.650
25	MULVEY,H.M.	8.575
26	NARUK,H.J.	8.900
27	O'BRIEN,F.J.	8.100
28	O'SULLIVAN,T.J.	8.625
29	PASKEY,L.	8.175
30	RUBINOW,J.E.	9.025
31	SADEN.G.A.	7.925
32	SATANIELLO,A.G.	7.775
33	SHEA,D.M.	8.425
34	SHEA,J.F.JR.	8.650
35	SIDOR,W.J.	5.850
36	SPEZIALE,J.A.	8.100
37	SPONZO,M.J.	7.975
38	STAPLETON,J.F.	7.975
39	TESTO,R.J.	7.175
40	TIERNEY,W.L.JR.	7.875
41	WALL,R.A.	7.000
42	WRIGHT,D.B.	8.125
43	ZARRILLI,K.J.	7.375

The Index mean is 7.6790698. A histogram of the values of the weighted index is displayed below.