2. Empirical Application

(a) . The unit of observation is an individual course evaluation, because each observation is a specific course taught by a professor at the University of Texas at Austin during the academic years 2000-2002.

TeachingRatings {AER} R Documentation

Impact of Beauty on Instructor's Teaching Ratings

Description

Data on course evaluations, course characteristics, and professor characteristics for 463 courses for the academic years 2000–2002 at the University of Texas at Austin.

Usage

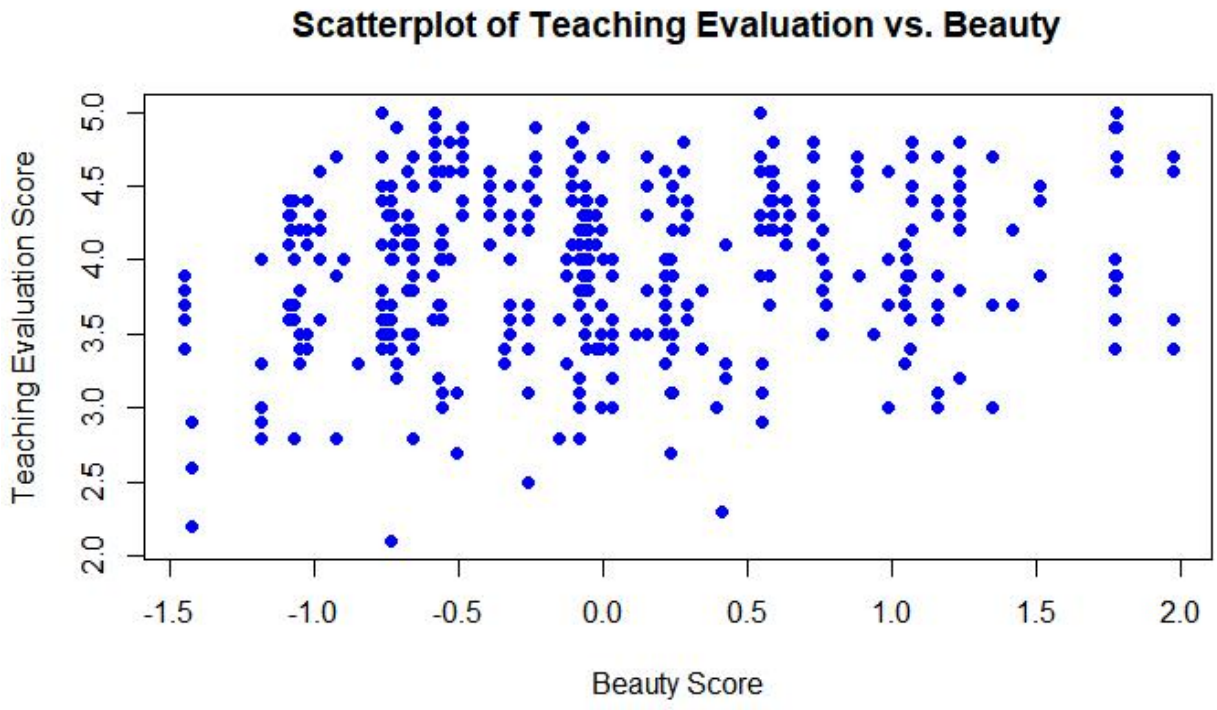
```
data("TeachingRatings")
```

(b) . Summary of the data.

Statistic	N	Mean	St. Dev.	Min	Max
eval	463	3.998	0.555	2.100	5.000
beauty	463	0.00000	0.789	-1.450	1.970
age	463	48.365	9.803	29	73
allstudents	463	55.177	75.073	8	581

	Variable	MissingValues
1	eval	0
2	beauty	0
3	age	0
4	allstudents	0
5	gender	0
6	minority	0

(c) . Plotting data can help us to identify the pattern and relationships between variables (e.g positive or negative correlation), and it can also help us to find the outliers.



(d) . Relative to the average courses, rating of the instructor's physical appearance increases by 1, the course overall teaching evaluation score increases by 0.133.

```
> print(paste0("beta_hat_1 = ", beta_hat_1))
[1] "beta_hat_1 = 3.9982721298984"
> print(paste0("beta_hat_2 = ", beta_hat_2))
[1] "beta_hat_2 = 0.133001448286825"
```

(e) . It is important to include a constant in the above regressions, because the constant means the evaluation score when the beauty is 0. Also there exists negative beauty value, without constant term, the evaluation score will also be negative and it will increase the residual.