

Student Evaluations of Teaching (Mostly) Do Not Measure Teaching Effectiveness

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Boring, A., K. Ottoboni and P.B. Stark, 2016. Teaching Evaluations (Mostly) Do Not Measure Teaching Effectiveness, ScienceOpen Research.

Student evaluations of teachers (SET) are used to

- ▶ Quantify teaching effectiveness
- ▶ Compare instructors across courses
- ▶ Make hiring, firing, and promotion decisions

Are SET a valid measure of teaching effectiveness?

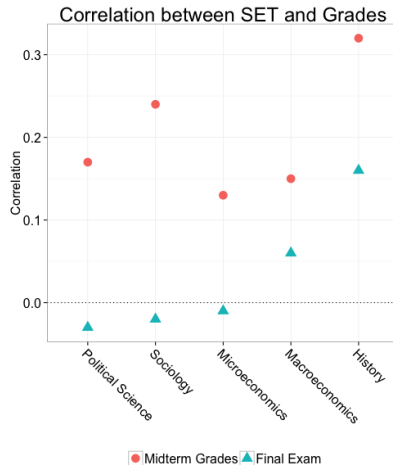
No!

We reanalyzed data from two studies:

- ▶ a natural experiment in France (Boring [2015])
- ▶ a randomized experiment in the US (MacNell et al. [2014])

Data from Boring [2015]

- ▶ Census of SET by first-year undergraduates, collected 2008–2013
- ▶ Students sign up for class times, don't know instructors; it's “as if” at random
- ▶ Male instructors are rated higher by male students than by female students
- ▶ SET correlate with grade expectations but not final grades



- ▶ Students randomized to 4 online sections of a course
- ▶ In two sections, the TAs swapped identities
- ▶ Female-identified TA was rated lower on average in all categories

Characteristic	F - M
Overall	-0.47
Caring	-0.52
Consistent	-0.47
Enthusiastic	-0.57
Fair	-0.76
Feedback	-0.47
Helpful	-0.46
Knowledgeable	-0.35
Praise	-0.67
Professional	-0.61
Prompt	-0.80
Respectful	-0.61
Responsive	-0.22

- ▶ SET measure “customer satisfaction”
- ▶ Ratings are biased against female instructors
- ▶ Biases are inconsistent across universities and disciplines, so it's impossible to “adjust” SET

Data Science?

- ▶ Carefully designed statistical tests to match the experimental design
- ▶ Python package: permute
<https://github.com/statlab/permute>
- ▶ Analyses in Jupyter notebooks in a GitHub repository
<https://github.com/kellieotto/SET-and-gender-bias>
- ▶ Open access, post-pub peer review journal
<https://www.scienceopen.com>

Thanks!

- Anne Boring. Gender biases in student evaluations of teachers.
Document de travail OFCE 13, OFCE, April 2015.
- L. MacNell, A. Driscoll, and A. N. Hunt. Whats in a name:
Exposing gender bias in student ratings of teaching. *Innovative
Higher Education*, pages 1–13, 2014.