

Upward Bound

Introduction to Statistics and Enrollment Management Research

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1. Statistics 101

Statistics 101

What is “Statistics”?

Statistics: Often considered the science of uncertainty!

The goal of statistics is to convert data (or samples!) into information that is usable to people!

- ▶ Weather forecasting
- ▶ Emergency preparedness
- ▶ Predicting disease outbreak
- ▶ Political voting polls

Education Research:

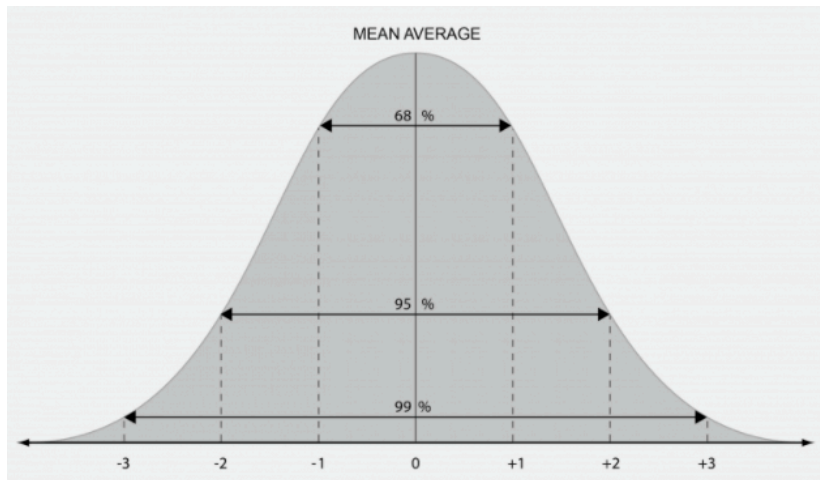
- ▶ Do smaller classes improve learning?
- ▶ Does offering students financial increase college completion?
- ▶ Is online instruction as effective as in-class instruction?

Statistics' One Big Idea: The Normal Curve

The Normal Distribution or Normal Curve: natural phenomena (e.g., age, height, educational attainment) tend to have a similar distributions of values.

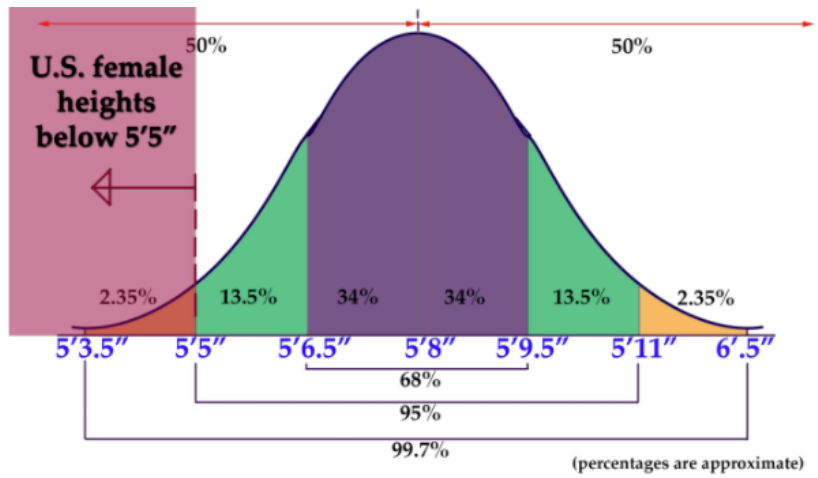
- ▶ There are a few values that are small (outliers!)
- ▶ Lots of values around “the average” (“normal observations”)
- ▶ And a few values that are large (outliers!)

Outliers: observations that deviate from the “normal” bell curve



Statistics' One Big Idea: The Normal Curve

Women's Height in the U.S.



- **BIG TAKEAWAY:** There's a higher probability of data following the "average" or the "norm"

I am an outlier... (or maybe not!)

Ethnicity of full-time professors ...

White professors

73.2%



Hispanic professors

4.7%



is out of step with percentage of undergraduate students

White students

52%



Hispanic students

19.8%



SOURCE American Council on Education analysis of U.S. Department of Education, Integrated Postsecondary Education Data System, 2016

Enrollment Management Research Program

- ▶ Grew tired of mainstream access inequality policy discourse...
 - ▶ Onus on students, families, and K-12 schools
 - ▶ Enrollments can only tell us so much
- ▶ Do the enrollment management policies and practices of public universities undermine access for underserved student populations?
 - ▶ Universities say they care about low-income students, Students of Color
 - ▶ But who do they actually recruit? Use data science to collect recruiting events!
- ▶ Policy implications
 - ▶ Too many policy decisions for increasing access attempt to “fix” student behavior
 - ▶ Assumption: doubling low-income, Students of Color applying to a university will double their enrollment

Examples:

- ▶ The off-campus recruiting project
- ▶ Dissertation Defense

Shift The Normal Distribution!

