

Intro to Econometrics Software: Excel

Dragos Ailoae
dailoae@gradcenter.cuny.edu

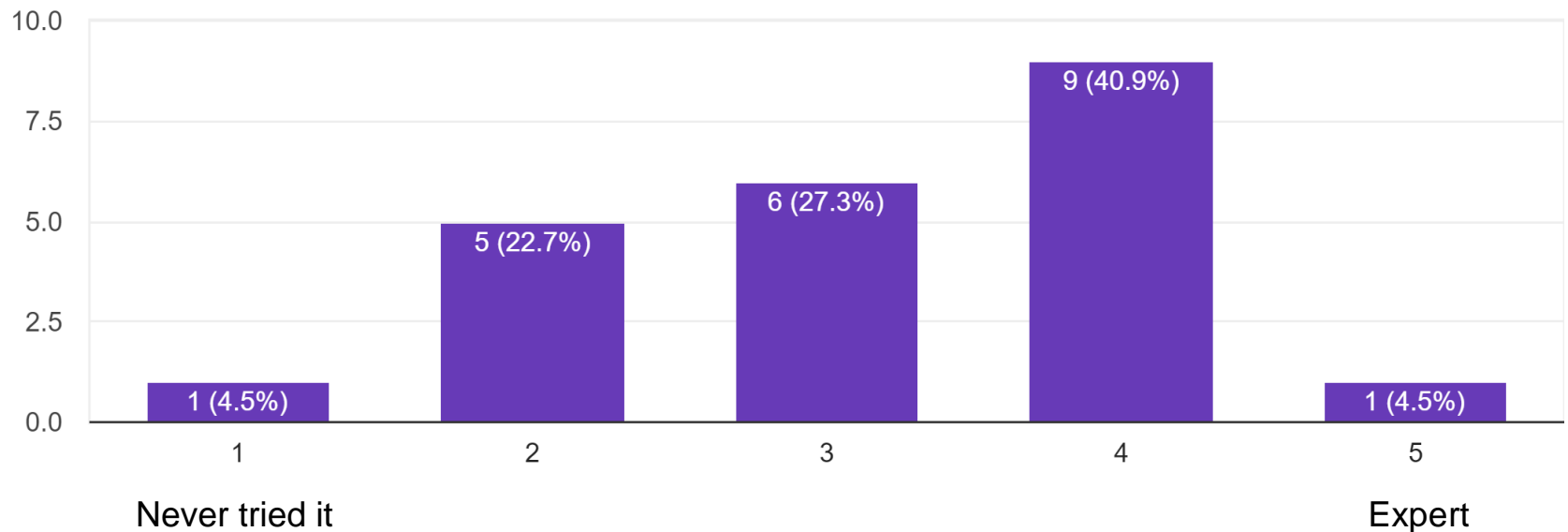
Advanced Economics and Business Statistics
ECON-4400w

Brooklyn College
Spring 2022

About You: Software experience

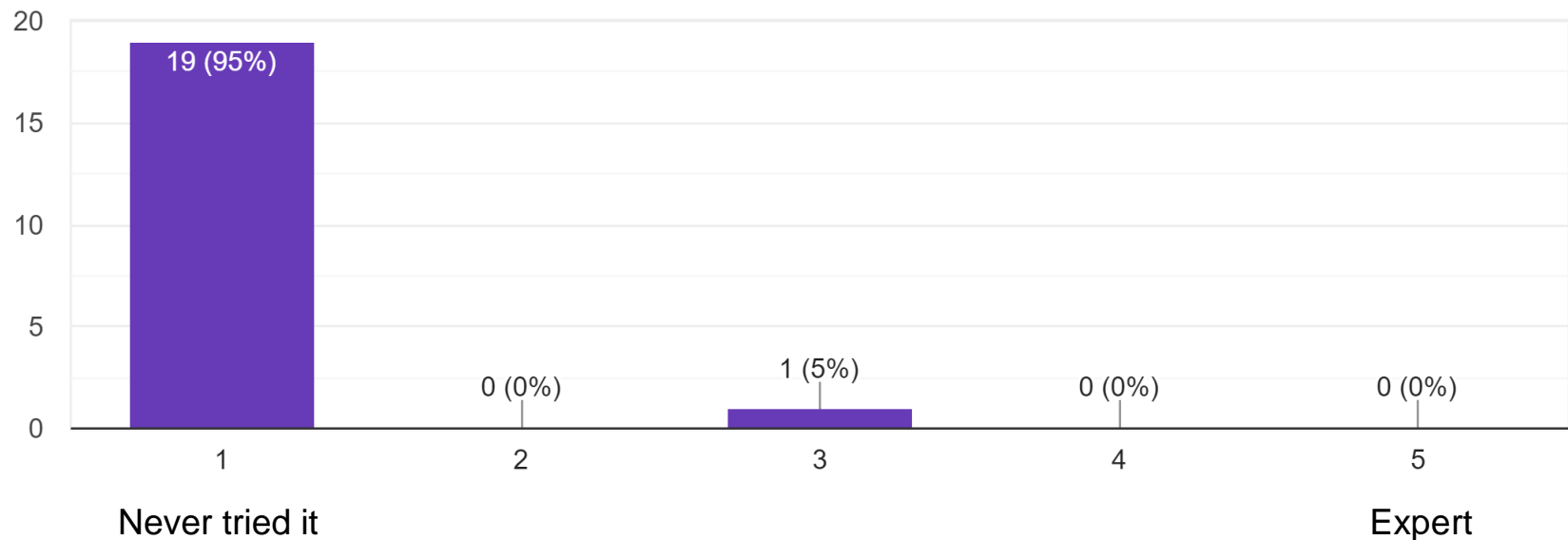
Excel

22 responses



About You: Software experience

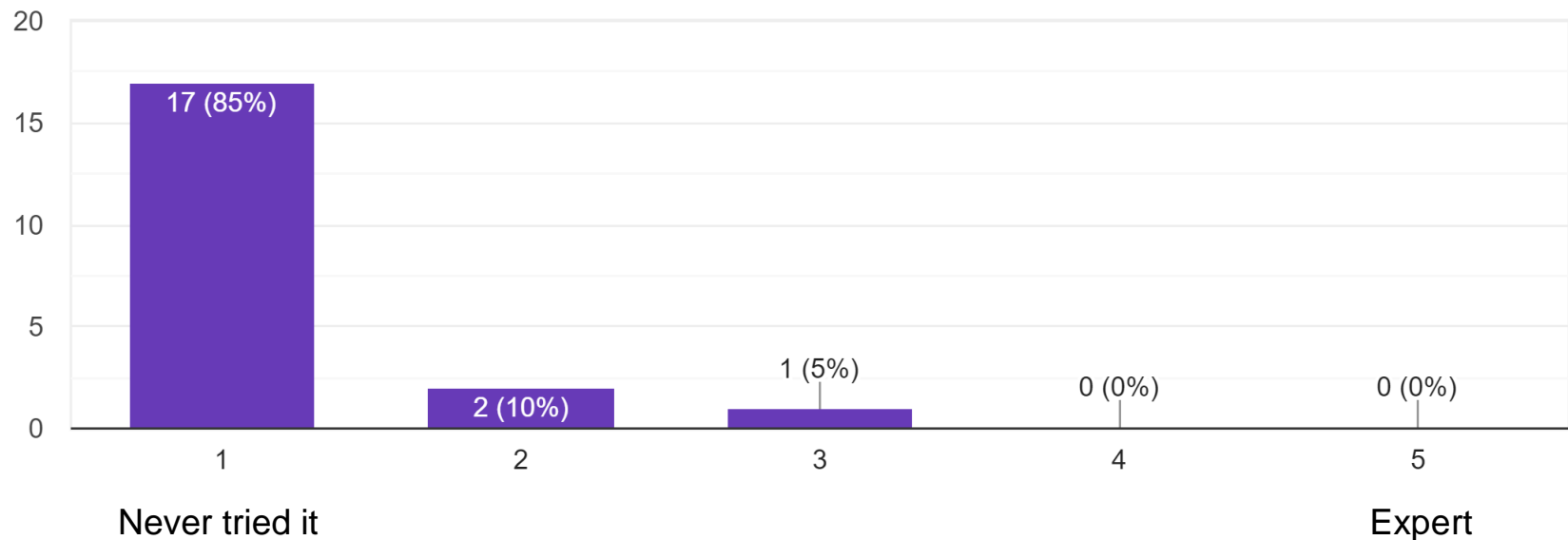
R
20 responses



About You: Software experience

Python

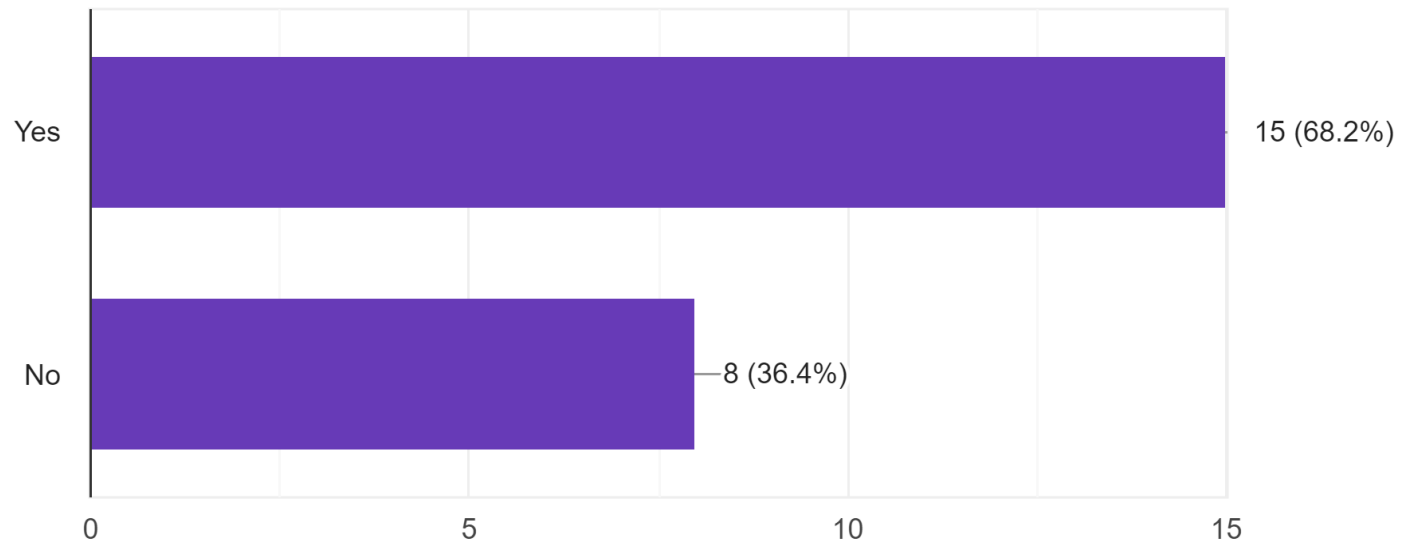
20 responses



About You: Econometrics

This is my first econometrics course

22 responses

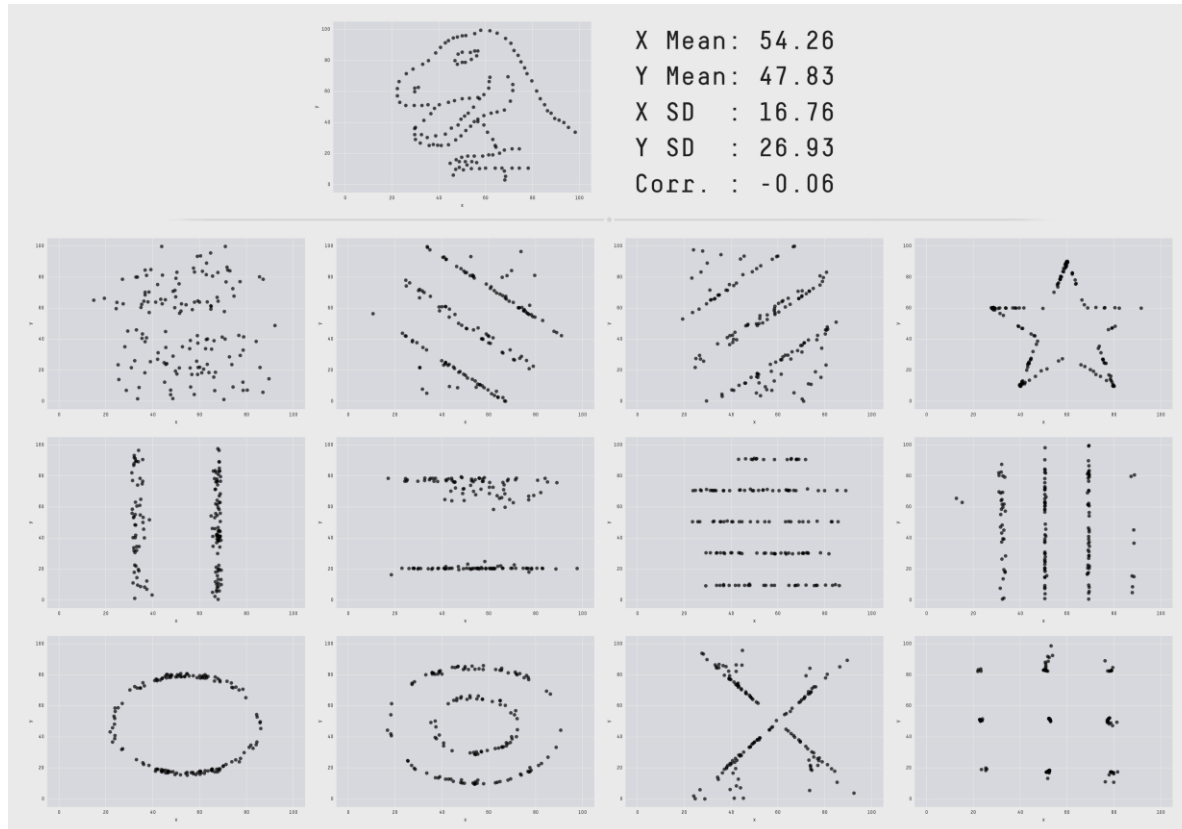


Intro to Excel for Data Analysis

Excel Basics

[Excel live session]

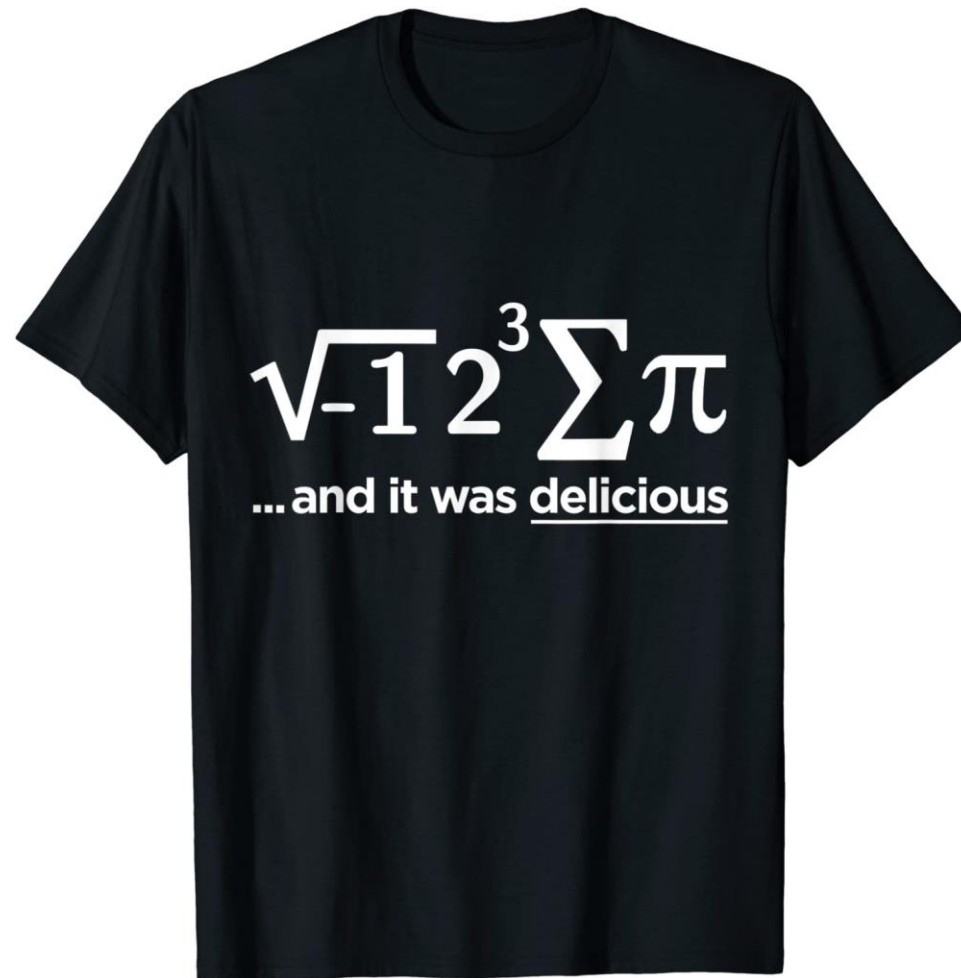
Descriptive statistics not enough: important to visualize our data



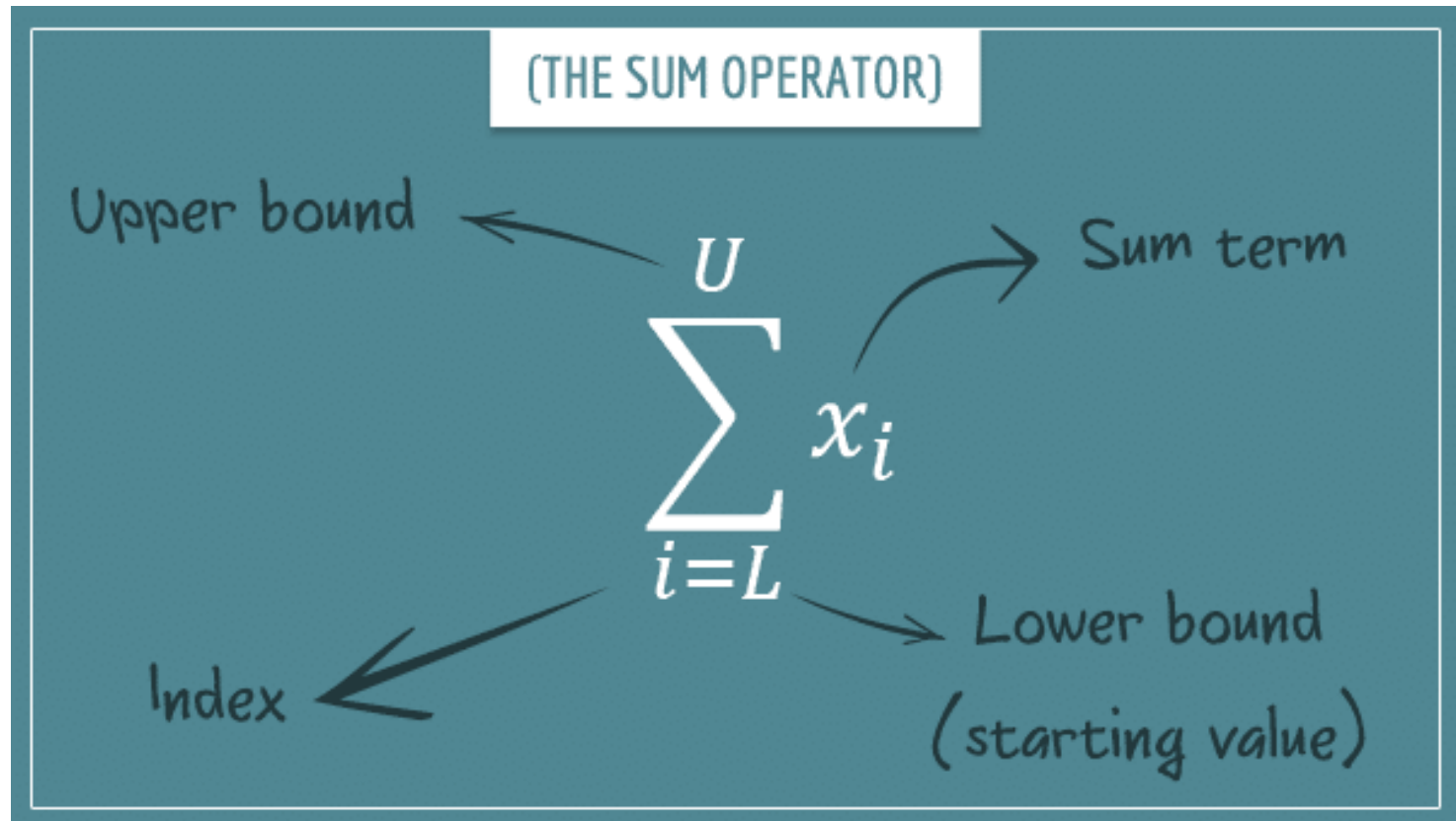
<https://www.autodesk.com/research/publications/same-stats-different-graphs>

Next Steps

Notation



Summation



Summation rules

$$\sum_{i=1}^n x_i = x_1 + x_2 + \cdots + x_n$$

$$\sum_{i=1}^n a = na$$

$$\sum_{i=1}^n ax_i = a \sum_{i=1}^n x_i$$

$$\sum_{i=1}^n (x_i + y_i) = \sum_{i=1}^n x_i + \sum_{i=1}^n y_i$$

$$\sum_{i=1}^n (ax_i + by_i) = a \sum_{i=1}^n x_i + b \sum_{i=1}^n y_i$$

$$\sum_{i=1}^n (a + bx_i) = na + b \sum_{i=1}^n x_i$$

$$\bar{x} = \frac{\sum_{i=1}^n x_i}{n} = \frac{x_1 + x_2 + \cdots + x_n}{n}$$

$$\sum_{i=1}^n (x_i - \bar{x}) = 0$$

$$\begin{aligned} \sum_{i=1}^2 \sum_{j=1}^3 f(x_i, y_j) &= \sum_{i=1}^2 [f(x_i, y_1) + f(x_i, y_2) + f(x_i, y_3)] \\ &= f(x_1, y_1) + f(x_1, y_2) + f(x_1, y_3) \\ &\quad + f(x_2, y_1) + f(x_2, y_2) + f(x_2, y_3) \end{aligned}$$

Expected value (mean) is just SUMPRODUCT()

KEY CONCEPT

Expected Value and the Mean

2.1

Suppose the random variable Y takes on k possible values, y_1, \dots, y_k , where y_1 denotes the first value, y_2 denotes the second value, and so forth, and that the probability that Y takes on y_1 is p_1 , the probability that Y takes on y_2 is p_2 , and so forth. The expected value of Y , denoted $E(Y)$, is

$$E(Y) = y_1 p_1 + y_2 p_2 + \cdots + y_k p_k = \sum_{i=1}^k y_i p_i, \quad (2.3)$$

where the notation $\sum_{i=1}^k y_i p_i$ means “the sum of $y_i p_i$ for i running from 1 to k .” The expected value of Y is also called the mean of Y or the expectation of Y and is denoted μ_Y .