

# **The Organization and Graphic Presentation of Data**

**EDP 613**

**Week 2**

# Basic Ideas



- **Distribution** - All of the possible values for a variable and how often they occur
- **Frequency distribution** - A table that displays a distribution
- **Relative frequency** - How often something happens divided by all outcomes

# Professor Salaries



Search:

	Rank	Discipline	Years Since PhD	Years of Service	Sex	Salary in USD
1	Professor	Applied	19	18	Male	139750
2	Professor	Applied	20	16	Male	173200
3	Assistant Professor	Applied	4	3	Male	79750
4	Professor	Applied	45	39	Male	115000
5	Professor	Applied	40	41	Male	141500

Showing 1 to 5 of 397 entries

# Frequency Distribution Table



Rank	Frequency
Assistant Professor	67
Associate Professor	64
Professor	266

# Other Descriptive Information

- **Proportion** - A relative frequency taken from the whole frequency and is normally between 0 and 1.
- **Percentage** - A relative frequency taken from the whole frequency and is normally between 0 and 100.

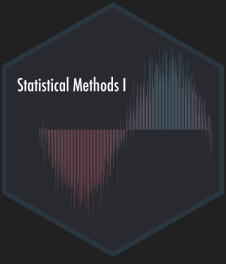
Rank	Frequency	Proportion	Percent
Assistant Professor	67	0.1687657	16.88
Associate Professor	64	0.1612091	16.12
Professor	266	0.6700252	67.00

# Cumulative Distributions

- **Cumulative frequency** - A table that displays the frequencies at or below a given category.

Rank	Frequency	Proportion	Percent	Cumulative Proportion	Cumulative Percent
Assistant Professor	67	0.1687657	16.88	0.1687657	16.88
Associate Professor	64	0.1612091	16.12	0.3299748	33.00
Professor	266	0.6700252	67.00	1.0000000	100.00

# Data Visualization



# Pie Charts

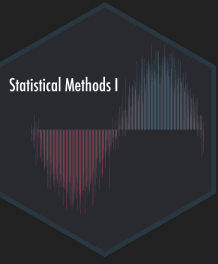
- discrete data



*Friends don't let friends use pie charts!*

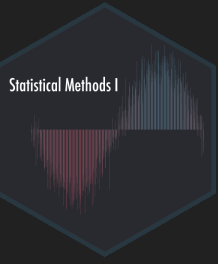


# Bar Plot



- discrete data

# Histogram



- continuous data

# Line graph

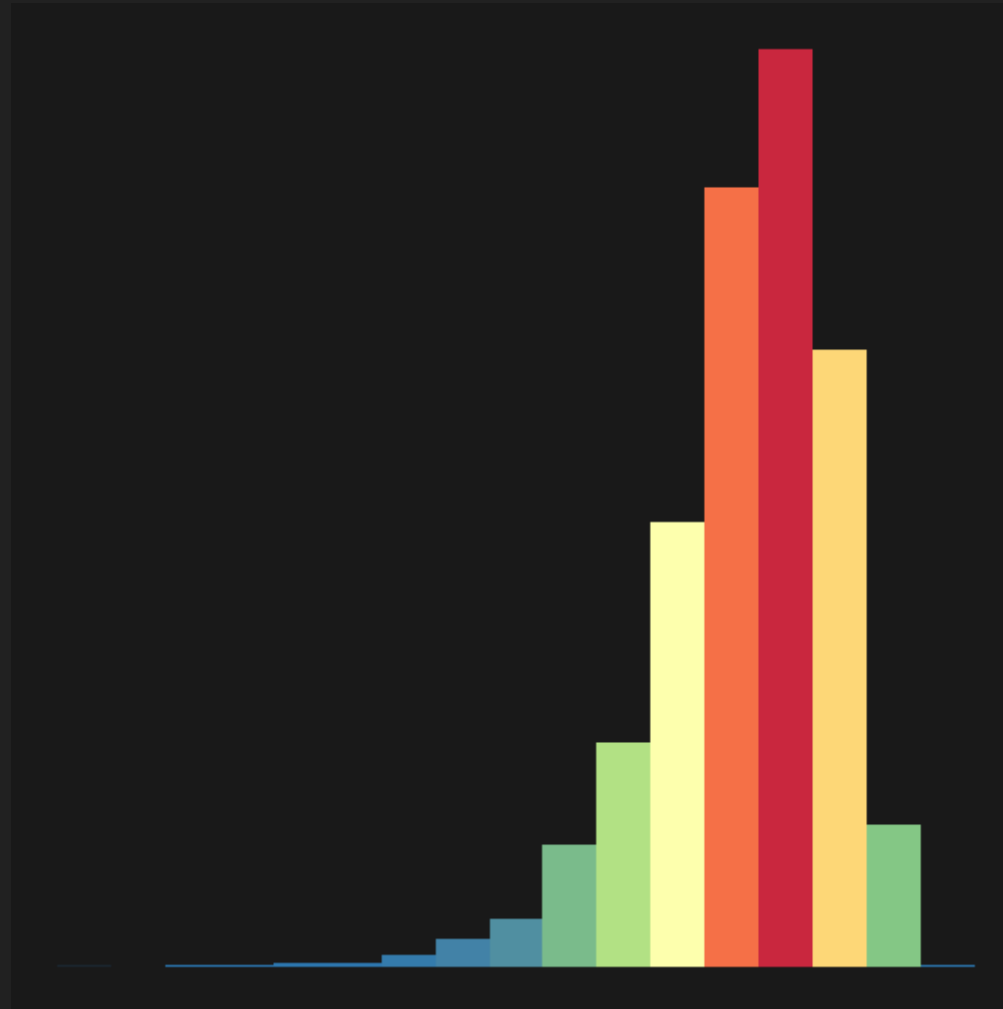
- continuous data



# Special Distributions

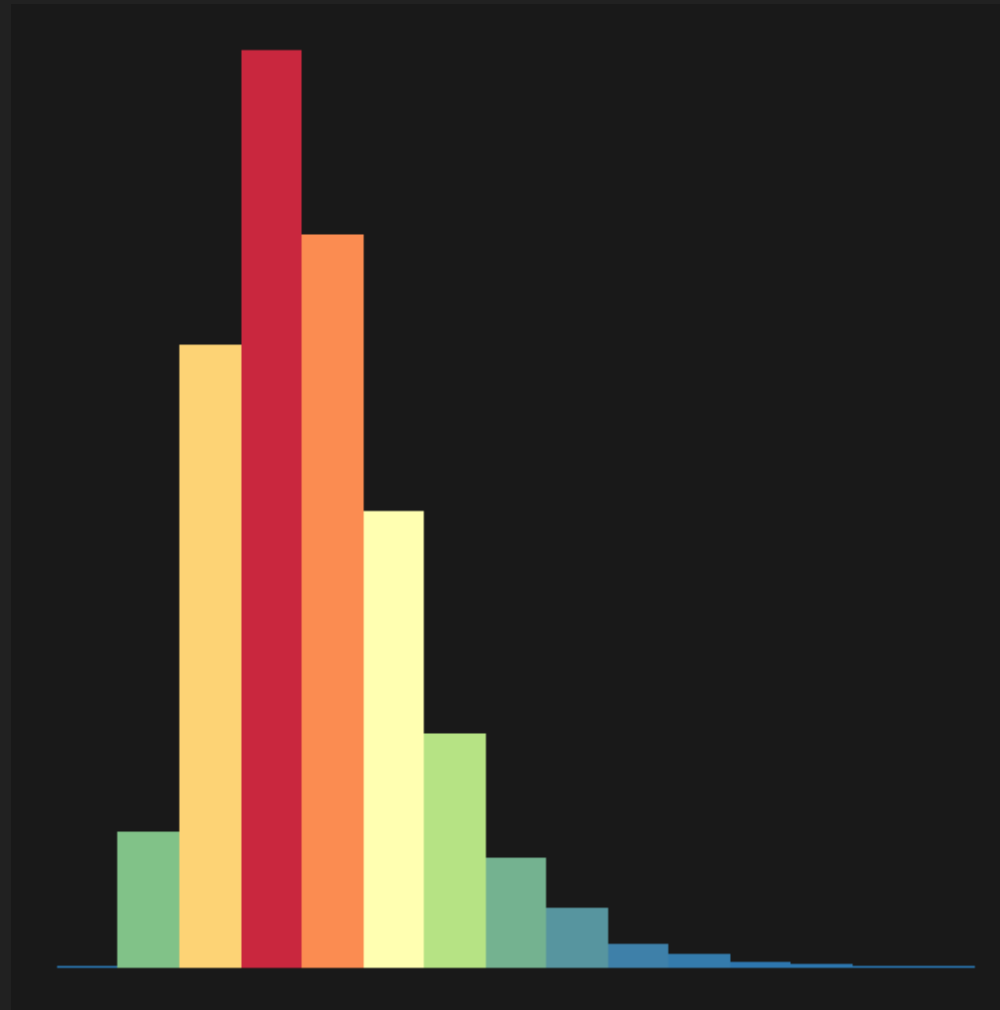


- Skewed left OR Negative skew



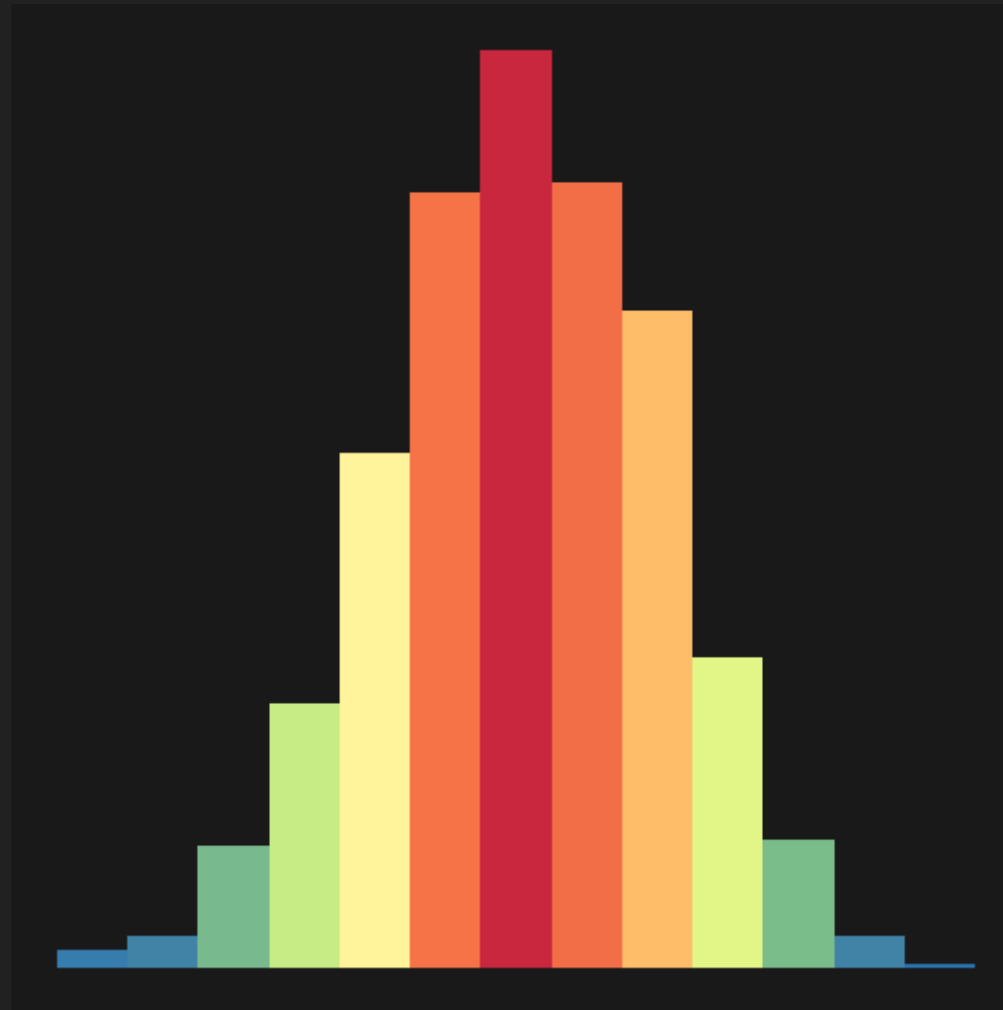
mode < median < mean

- Skewed right OR Positive skew



mode > median > mean

- Normal distribution



mode = median = mean

Remember that most of the time we're going to  
assume normality in this course!



**That's it. Take a break before our R session!**

