

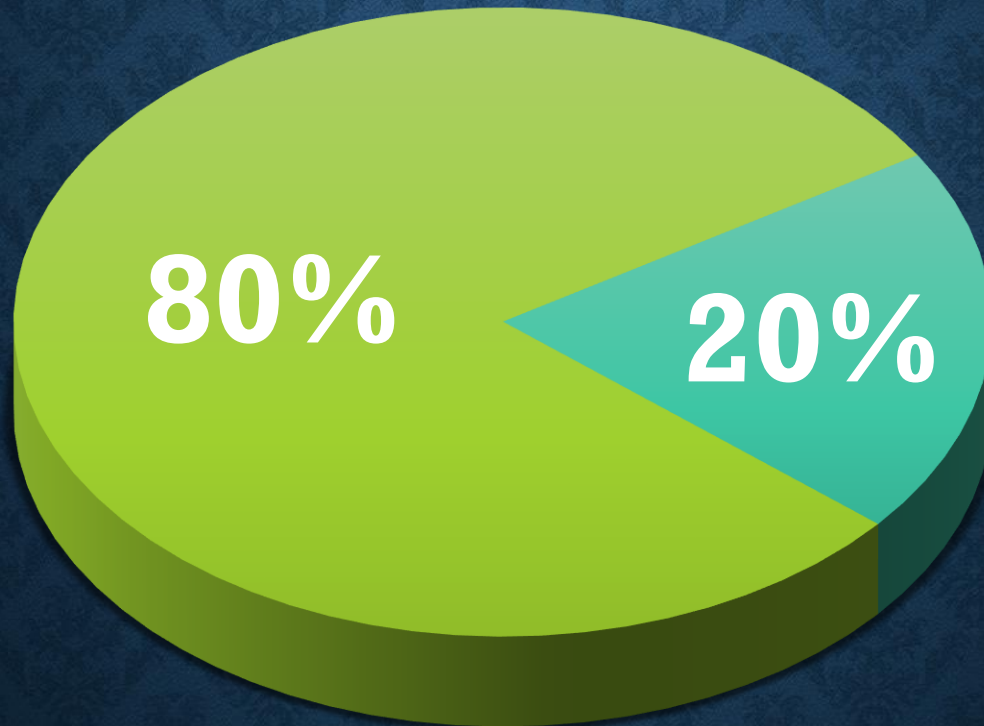
# THE ANATOMY OF DATA ANALYSIS

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1. *Feasible research question* – a question that can be answered with the available resources and in the allotted time. It defines the purpose and the outline of the research process.
2. *Data cleaning and preparation* – clean and prepare data for proper data analysis, merge necessary files, reshape data if needed.
3. *Descriptive statistics* – provide big picture of the data using measures of central tendency, variability, distribution, and frequency.
4. *Data visualization* – finding trends and patterns through visuals: histograms, scatterplots, time series plots, bar graphs, etc.
5. *Inference statistics/model design* – testing hypothesis, extraction of meaning from data using statistical analysis like mean comparison, linear and non-linear regression, panel data regression (fixed and random effects for both linear non-linear models), multilevel models, time series and more.
6. *Model outcome interpretation/presentation* – what is the analysis and model(s) telling? What did we learn?

# THE ANATOMY OF DATA ANALYSIS

*Distribution of time spent on the main components of data analysis*



- Research question, collection, cleaning and preparation
- Descriptives, visuals, inference, interpretation