

Versa Research Masterclass

All Things Quantitative Research

A research approach that focuses on quantifying behaviors, opinions, and attitudes.



Photo by Katerina Holmes from Pexels



Data, Research & Consulting

Welcome to our quantitative research masterclass!

INDUSTRY EXPERTS IN PRODUCT, CONSUMER
& MARKET RESEARCH

Using a scientific approach to conduct quantitative, qualitative & neuromarketing projects.

BUILDING SCALABLE & SUSTAINABLE
BUSINESS

Since 2018 with over 100 quantitative research projects completed.

In this Masterclass, Here is what we'll discuss

What is quantitative research?

Why quantitative research?

How to collect Quantitative data



How to analyze Quantitative data

Types of Quantitative data

- Quantitative Research, Defined
- Why Quantitative Research
- Job Opportunities
- Quantitative Research Tools
 - Experiments
 - Surveys
- Sample Design
- Quantitative Data Analysis
- Quantitative Analysis Tools
- Data Visualization

Quantitative Research *Defined*

- Quantitative research is a research process used in collecting numeric data.
- It uses numbers to QUANTIFY behaviors, opinions, and patterns from data.
- It uses a larger and well-defined sample size which makes it easy to generalize the finding from the data and possibly replicate.



Why Quantitative Research

- Quantitative research allows you to gather and analyze a large amount of data scientifically which erases bias.
- Quantitative research uses standardized research tools to collect data to ensure the accuracy, reliability, and validity of data.
- Data can be collected in any form of numbers, statistics, tables, graphs, or figures.
- You can duplicate and repeat the study because it is highly reliable
- Data derived from quantitative analysis can be used to predict outcomes
- You can collect and analyze data faster using quantitative analysis

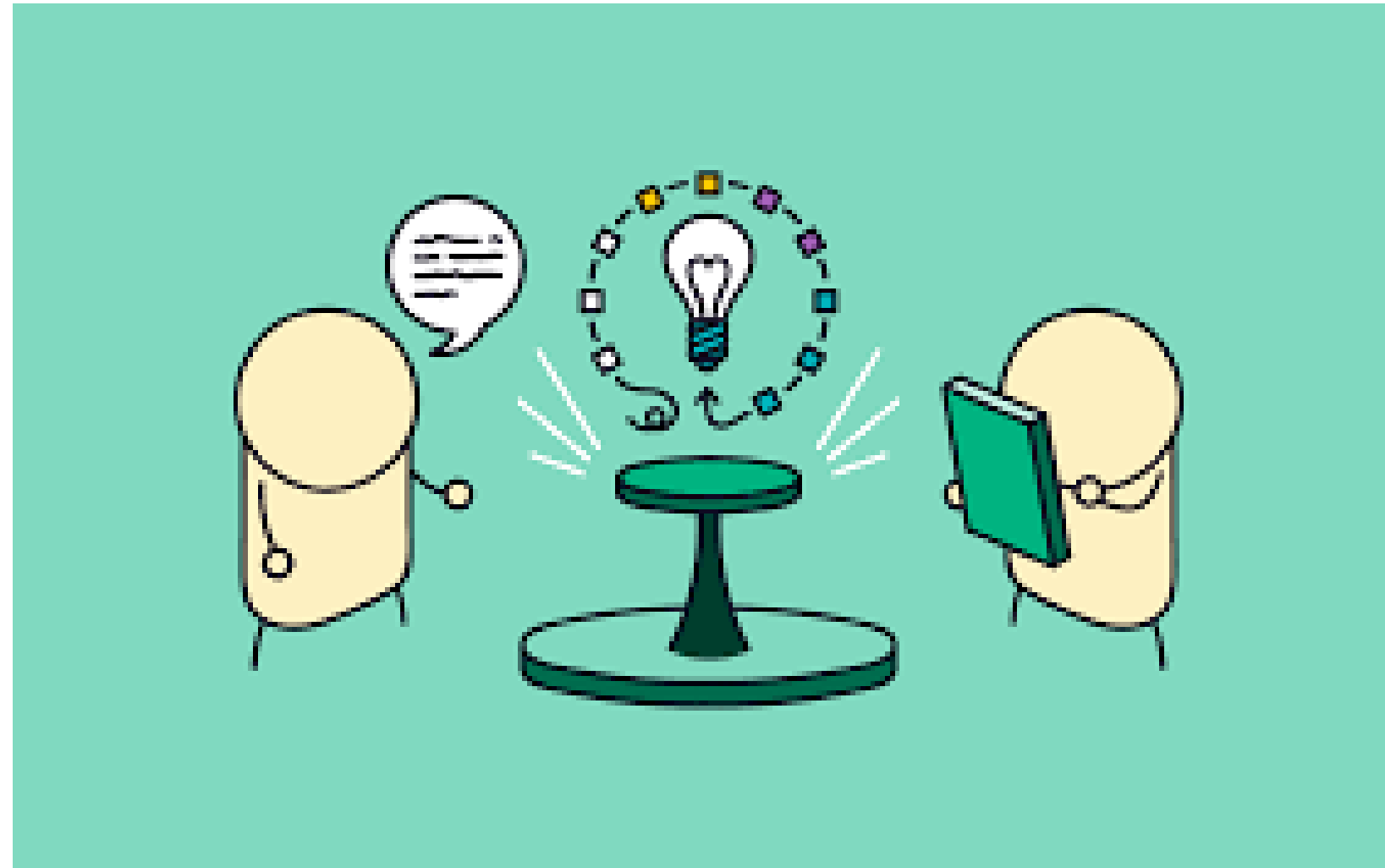
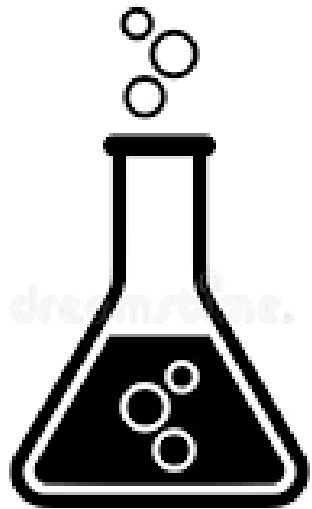


Job Opportunities

- Economist
- Research Analyst
- Business Analyst
- Product Analyst
- Product Manager

Quantitative Research Tools

EXPERIMENT



SURVEY

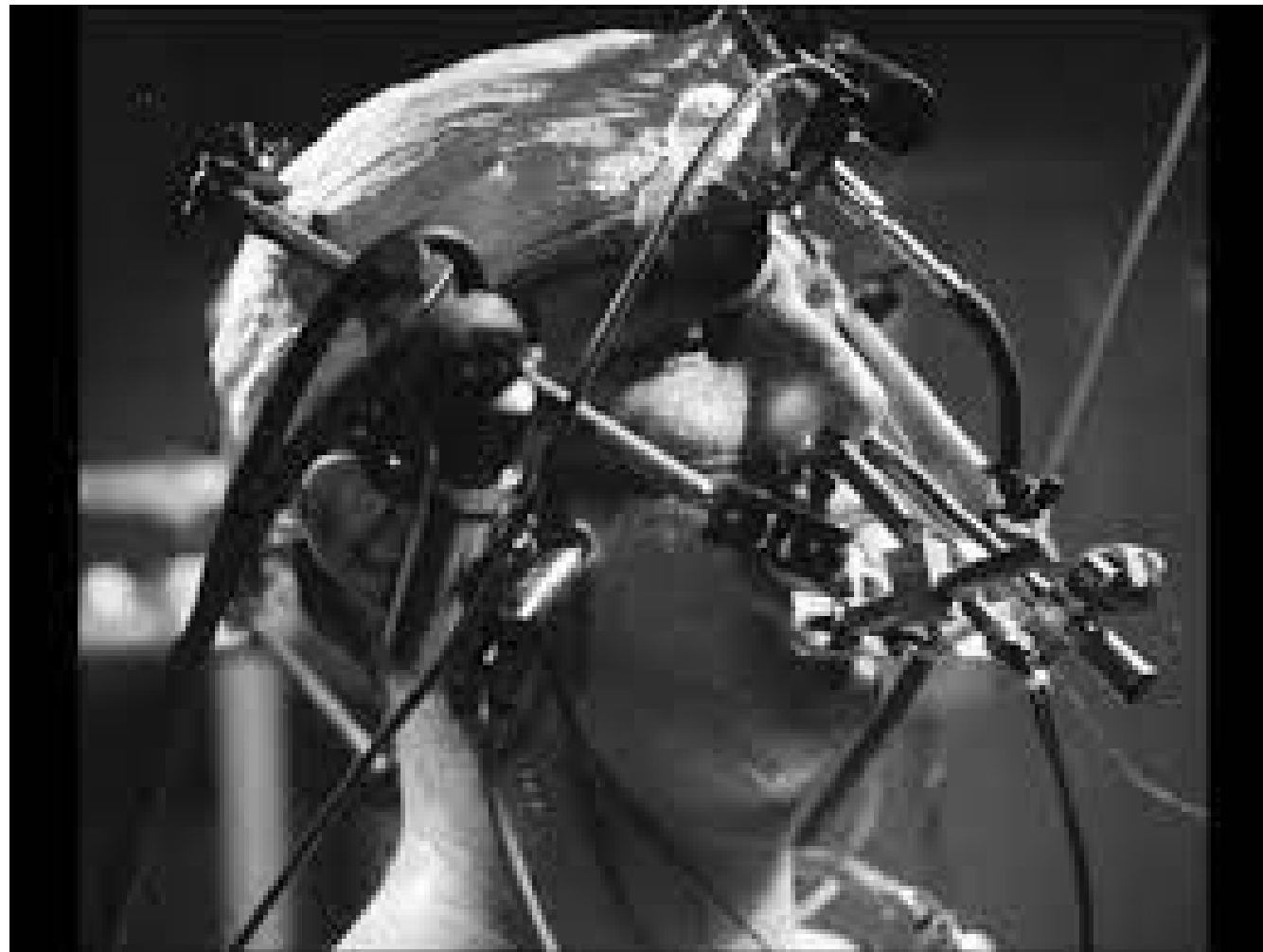


Quantitative Research Tools: Experiments



- Experimental research is the process of making observations under controlled conditions to understand cause-effect relationship; a relationship in which one event causes another to happen.
- Experimental research relies on theories, hypotheses, and observations. This research method seeks to verify or refute a theory and validate a hypothesis through observations.
- When carrying out experiments, 2 factors must be satisfied;
 - There is a *controlled group* that won't be subject to the experiment
 - There is an *experimental group* that would be subject to the experiment
- For example, when testing a new drug, let's say the Covid Vaccine, the scientists would test the effectiveness of the vaccine. They will group their sample into 2 groups to observe, and measure; the controlled group and the experimental group.
 - The controlled group gets a Placebo which is an inactive vaccine. While the experimental group gets the actual vaccine.
- With Experimental Research to avoid biases, you can have a blind study where participants are not told which group they are in or a double-blind study where participants and the researcher who interacts with the participants are not told which group they are in.

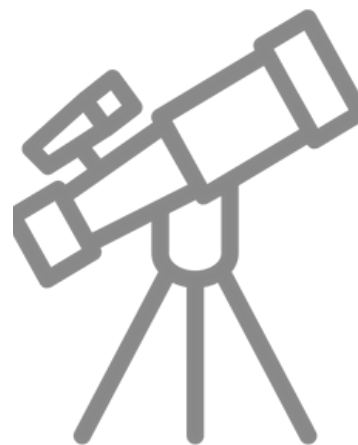
Quantitative Research Tools: Experiments



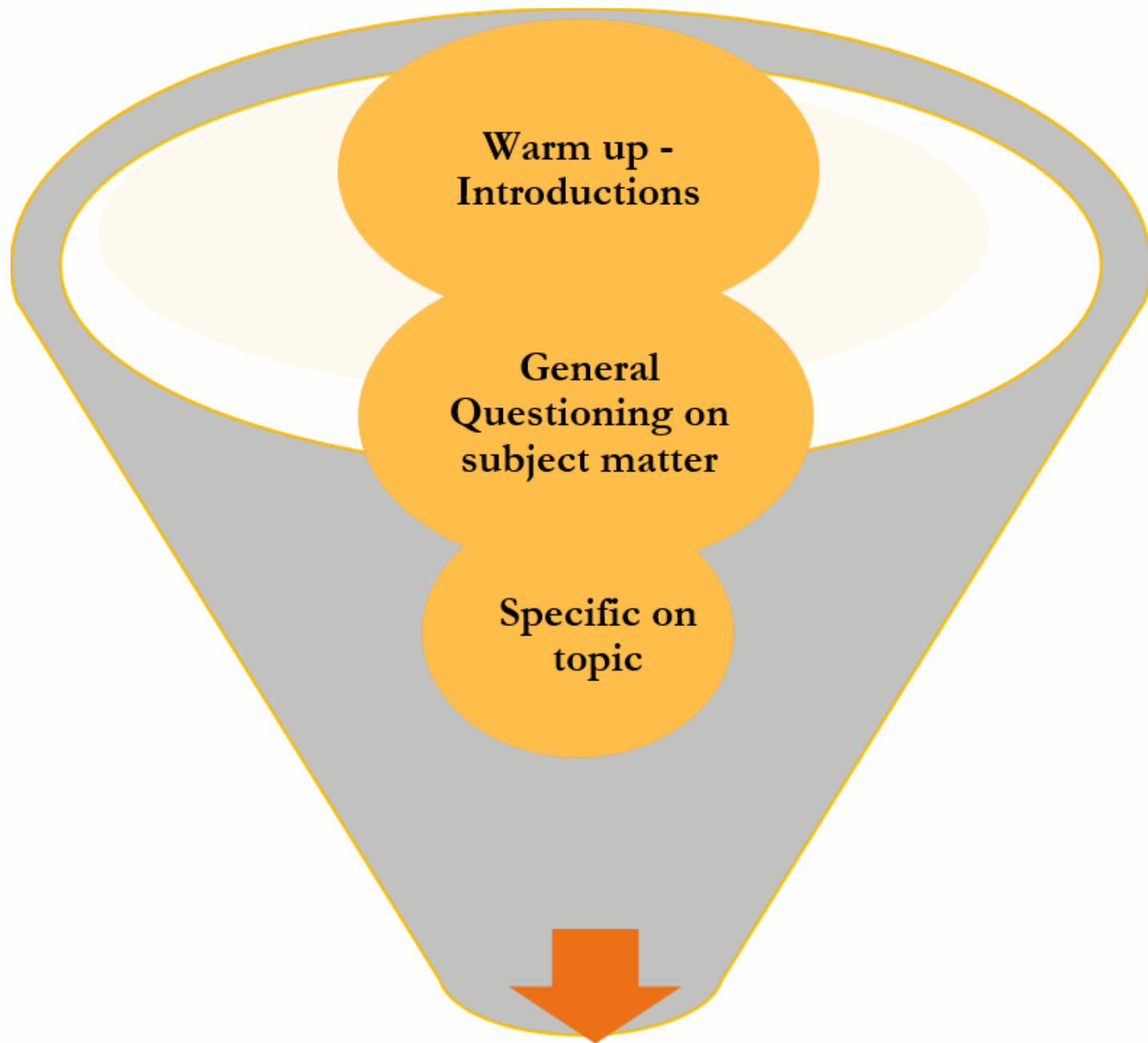
Examples of traditional experimental research are experiments conducted during WWII, one of which is Dr Josef Mengele who conducted deadly genetic research on human subjects and his primary focus was on twins. Dr. J Marion Sims experimented on slave women to find a solution to vesicovaginal fistula.

Which do you feel works better?

An example of modern day experimental research is User Experience Testing. User Experience Testing is a collection of processes applied in understanding users' reasons for arriving at a reported experience. Basically, it explains how, why and what influenced their perception of a product design.



Quantitative Research Tools: *Surveys*



- Surveys are a research tool used in collecting data from a group of people via telephones, online, in-person digital, or in-person paper.
- Surveys are highly representative as they allow for the collection of data from a large subset of the population (sample)
- They also measure the diversity in the population and highlight the various characteristics
- They are cost-efficient and quick as they allow for the collection of data via various channels
- Almost everyone at some point in their lives has completed a survey whether it be a 1 question survey or a 20 question survey

Sample Design: Type

- Sample design refers to techniques used in obtaining a sample from a given population. It must show the appropriate representation of the population being used.
- Researchers may adopt the

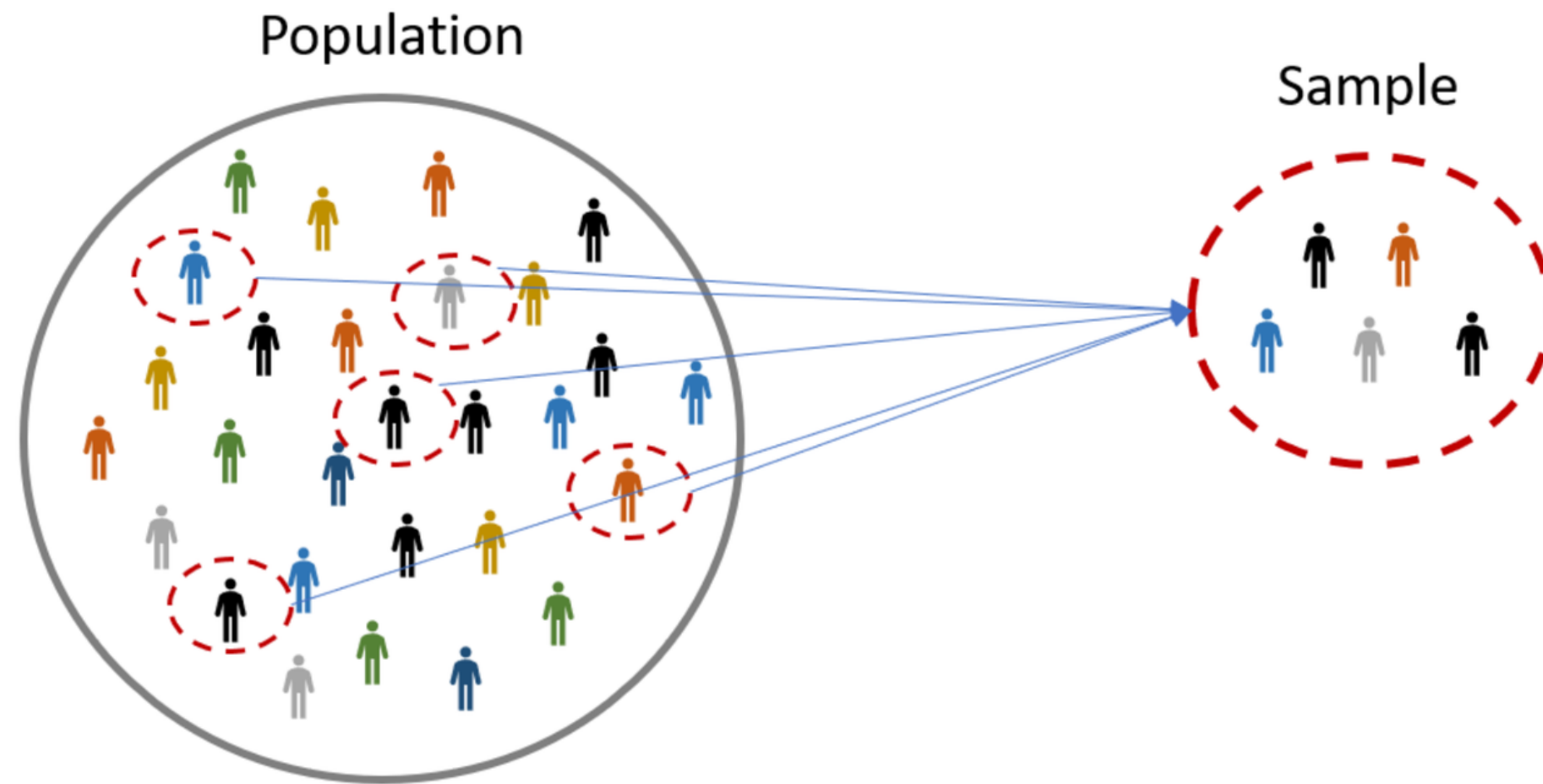
1) Probability Sampling

- Simple random
- Systematic
- Stratified
- Cluster

2) Non-probability Sampling

- Quota
- Purposive
- Intercept/Convenience
- Snowball
- Voluntary

Sample Design: Type



When carrying out quantitative research, it is important to have a minimum sample of 30 per group.

Quantitative Data *Analysis*



Download Data File

Download the data file from Qualtrics, Survey Monkey or Google sheets and save as Raw data.

Checking

Duplicate file, Ensure there is no missing data, check all spellings are correct and consistent.

Save this file as your clean data.

Clean Data

Ensure open ended data are coded, duplicate file and save as working data.

Check multiple response questions

Ensure your multiple response questions are coded, and then import working data into SPSS.

Analysis preparation

In SPSS, create check/add variable name, format, missing values, value label, variable label

Analysis preparation

Run frequency on to make sure everything looks good then begin your analysis.

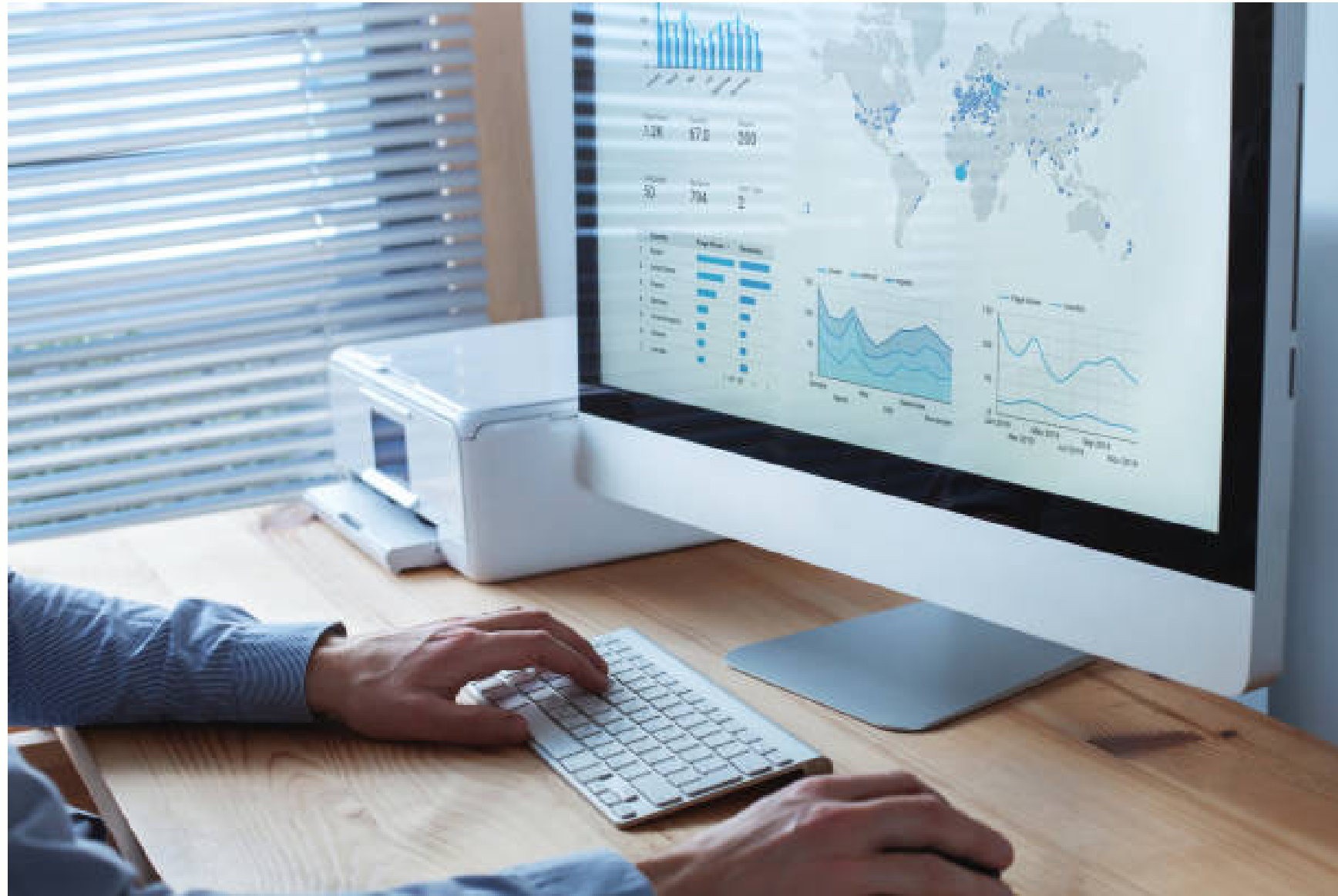


Quantitative Data Analysis



- Create an analysis plan and ensure all questions are analyzed
- Take note of the variable type, use string variables for verbatims, and numerical variable for numbers, use Scale Variable when analyzing data such as height
- If you have 1 variable to analyze and it is a categorical variable, use FREQUENCIES but if a scale variable use DESCRIPTIVE statistics (Mean, Median..)
- If you want to see the relationship between two variables, and they are both scale variables use CORRELATIONS
- If you want to create groups of multiple variables, and they are scale variables use FACTOR Analysis, if they are categorical variables, use CORRESPONDENCE Analysis and if they are a mix of scale and categorical variables use CLUSTER Analysis
- If you want to know which variables are important to people, for both categorical and scale variables use CONJOINT Analysis
- If you want to measure the relationship between a dependent variable and independent variable for scale variables use REGRESSION and if categorical use LOGIT Regression

Quantitative Data Analysis Tools



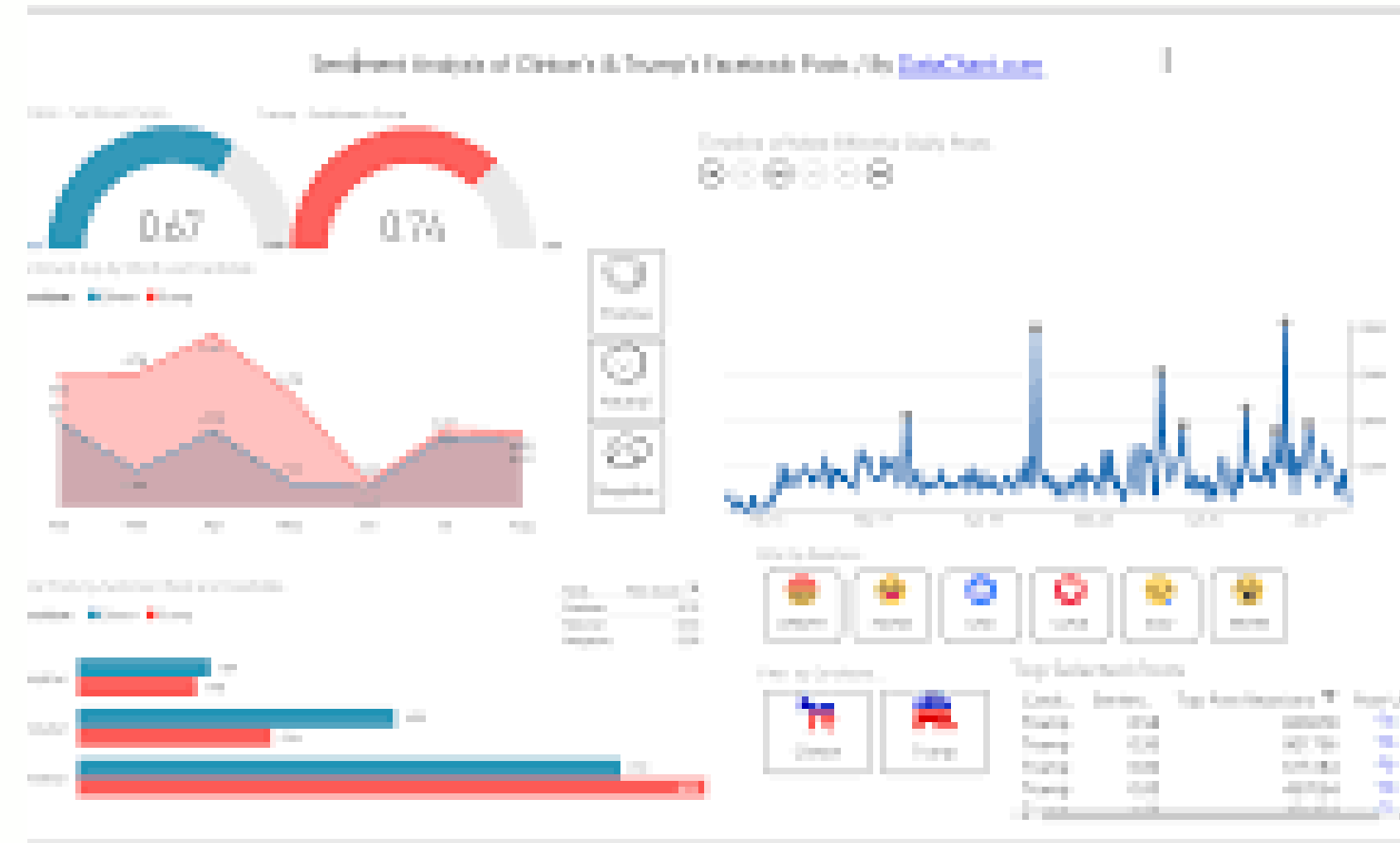
- Microsoft Excel - Microsoft Excel is a software package used in organizing and analyzing numbers and data with formulas and functions.
- SPSS - This is a software used in performing quantitative analysis. Its ability to process and analyze survey data makes it a unique software.
- R - This is a programming language used for statistical computing, data analytics, and scientific research
- Python - This is a high-level programming language used in data analysis and data visualization.

Quantitative Data Visualization

- Quantitative data consists of information that can be measured and written down in numbers, therefore they can be displayed through graphs, charts, tables, and maps.

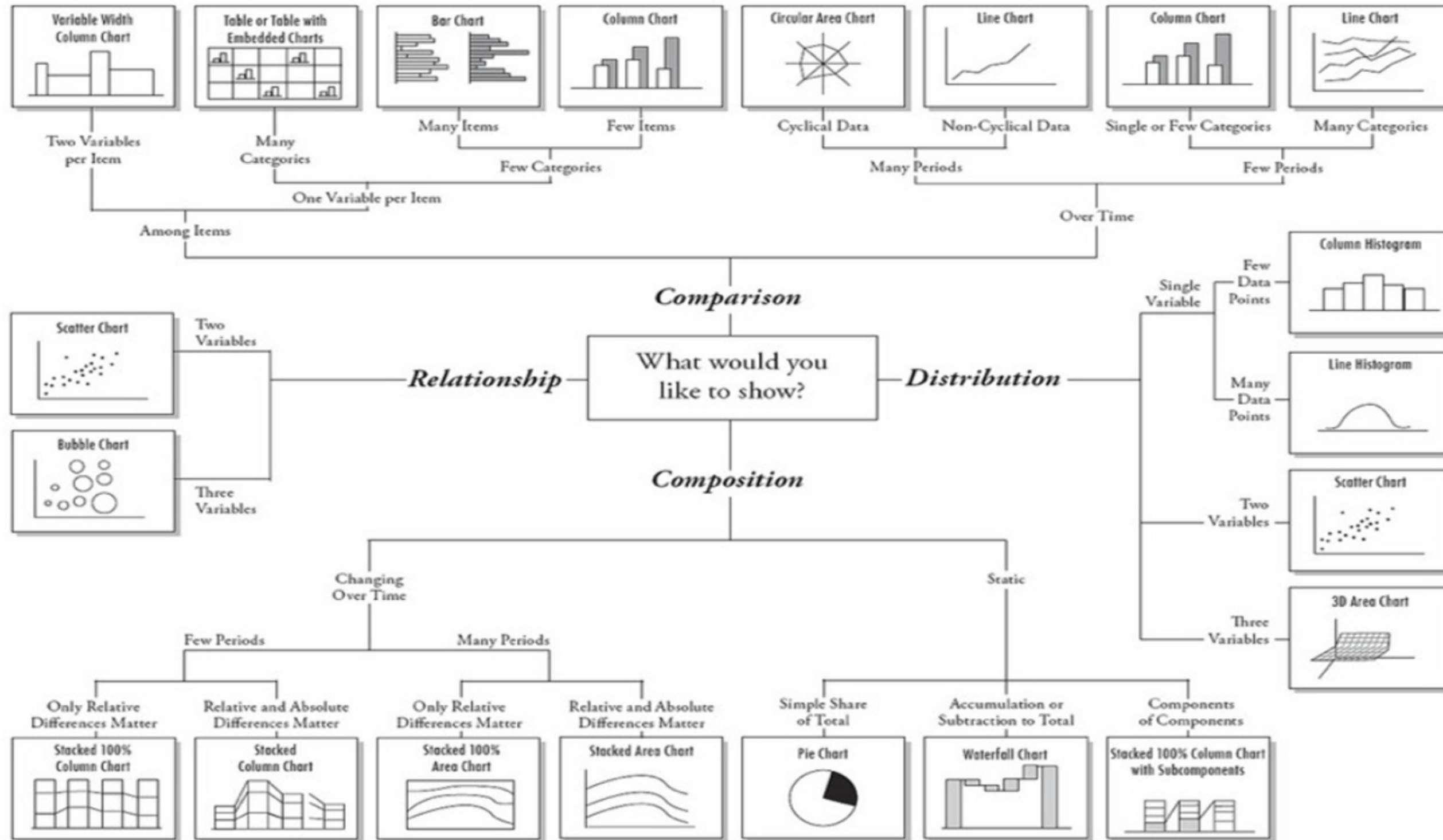
- Tableau - Tableau is a visualization tool that allows you to create interactive charts and dashboards. It has 2 versions, Tableau Desktop & Tableau Public. Tableau Desktop is the original product with a subscription plan, while tableau public is the free version but with limitations.

- Microsoft Power BI- This is a visualization tool that can be used for reporting, self-service analytics, and predictive analytics.



Quantitative Data Visualization

Chart Suggestions—A Thought-Starter





Q & A?

Thank You!

