

DATA STORYTELLING

Chart

Types Of Chart

When To Use It

Example Of Use Case



Bar Chart

Compare Quantities Across Categories

Compare Sales Of Different Products.



Line Chart

Show Trends Over Time

Display The Growth Of Website Traffic Over A Year.



Pie Chart

Highlight Proportion And Percentages

Illustrate The Breakdown Of Expenses In A Budget



Scatter Plot

Represent Relationships Between Variables

Identify Correlations Between Marketing Spend And ROI.



Histogram

Visualize The Distribution Of Data

Show The Age Distribution Of Survey Respondents.



Radar Chart

Compare Multiple Categories Across Dimensions

Evaluate The Performance Of A Product In Various Areas.



Map

Visualize Geospatial Data

Display Regional Sales Performance On A Map.



Heatmap

Visualize Data Density And Patterns Especially In Large Data Set

Identifying Hotspots Of Customer Activity In A Shopping Mall.



Bubble Chart

Represent Three-Dimensional Data

Compare Revenue, Cost, & Profit In Three Dimensions



Donut Chart

Emphasize Specific Parts Within A Whole

Show The Distribution Of Marketing Expenditures.



Statistical Test	Use	Assumptions	Example Use Case
t-Test	Compare means of two groups	Normally distributed data, equal variances	Compare test scores of two teaching methods
ANOVA	Compare means of more than two groups	Normally distributed data, equal variances	Compare test scores among three teaching methods
Chi-Square Test	Test independence between categorical variables	Random sample, Large enough sample size	Test if there's an association between gender and preference for tea or coffee
Pearson Correlation	Measure linear association between two continuous variables	Linearity, Homoscedasticity	Examine the relationship between age and income
Regression Analysis	Predict a continuous dependent variable based on one or more independent variables	Linearity, Homoscedasticity, Independence of errors	Predicting house prices based on square footage, number of bedrooms, etc.
Mann-Whitney U Test	Compare distributions of two independent groups	Independence of observations	Compare test scores between two different schools
Kruskal-Wallis Test	Compare distributions of more than two independent groups	Independence of observations, Similar distributions	Compare performance of different teaching methods across multiple schools
Wilcoxon Signed-Rank Test	Compare distributions of two related groups	Dependent variable should be continuous or ordinal	Compare pre-test and post-test scores within a group
McNemar's Test	Compare paired proportions or frequencies in a 2x2 contingency table	Binary data, Dependent groups	Compare the effectiveness of two treatments on a binary outcome
Fisher's Exact Test	Compare proportions in a 2x2 contingency table	Low sample size (< 20), Independence of observations	Assess the association between gender and smoking status in a small sample