Reading: Describe Basic Statistical Analysis Tools

After completing this topic, you will have knowledge about:

Two statistical analysis tools:

1. Tableau

2. SPSS

1. Tableau:

- Tableau is a Business Intelligence tool for analyzing the data visually.
- Users can create and distribute an interactive and shareable dashboard.
- It shows the trends, variations, and density of the data in the form of graphs and charts.
- Tableau allows data blending and real-time collaboration, which makes it very unique.
- It is a leader Business Intelligence and Analytics Platform in Gartner Magic Quadrant.

Application of Tableau:

Businesses, academic research, and many government organizations.

Regular Task in Tableau:

Regular Tasks performed by Tableau

- Sales Data Analysis
- Tracking Budgeting Expense
- User Density Monitoring
- Categorizing and Sub-categorizing Data
- Consumer Segmenting

Features of Tableau:

Unique Features of Tableau:

- Blend Diverse Dataset
- Architecture Agnostic
- Self-Reliant
- Visual Discovery
- Speed of Analysis
- Real-Time Collaboration
- Centralized Data

Tableau Versions:

Tableau Desktop:

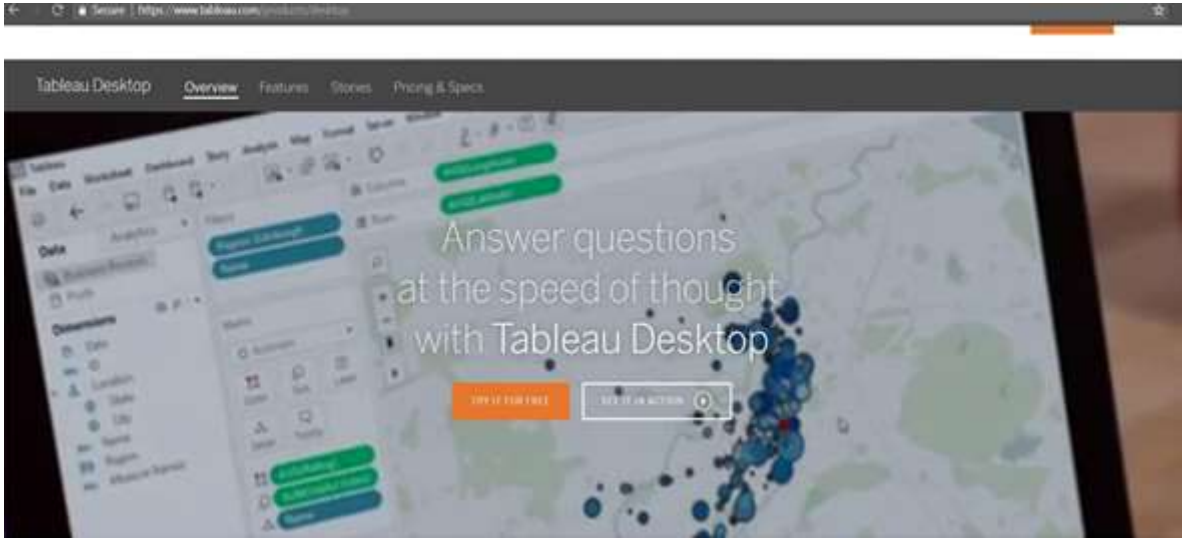


Tableau - Get Started

Three steps involved in creating any Tableau data analysis

1. Data Source Connection: Steps to connect to a data source

- Open Data Source
- Under a header connect select a file or server or saved data source
- Under File, select Excel
- Navigate to the file “Excel File” and select sheet

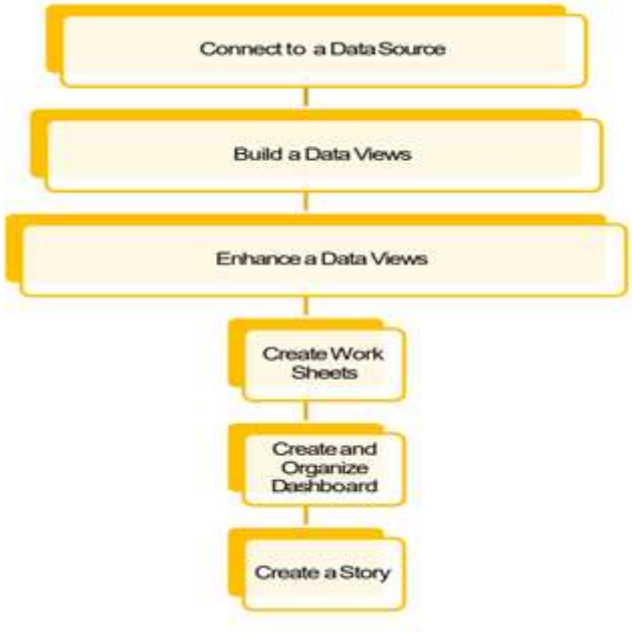
2.Selection of Dimensions and Measures:

- Select the data to be analyzed by deciding on the dimensions and measures.
- Dimensions are the descriptive data
- Measures are numeric data.
- When they are put together, it helps visualize the performance of the dimensional data with respect to the data which are measures.

3.Apply Visualization technique:

- Graphs and charts can be made to make a quick judgment.

Tableau – Design Flow:



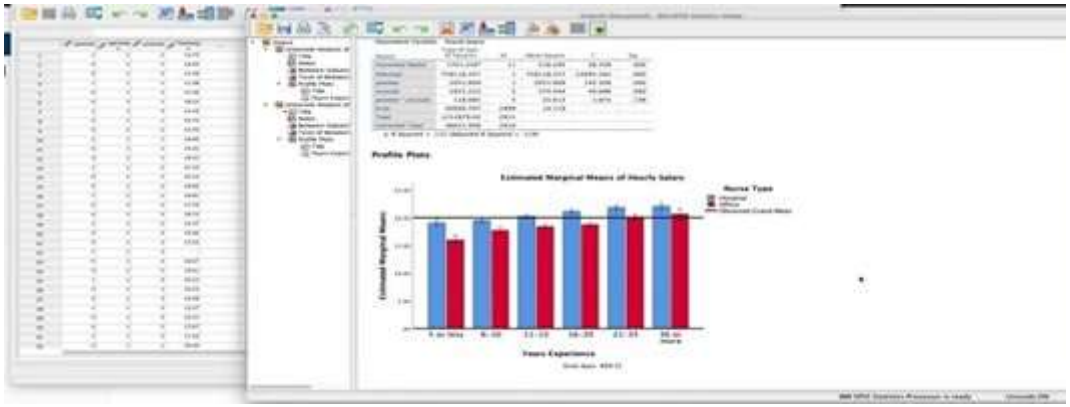
Creating Visualization:

- Bar Chart.
- Line chart.
- Histogram.
- Pie chart.
- Scatter Plot.

2. SPSS

SPSS is short for Statistical Package for the Social Sciences, and it's used by various kinds of researchers for complex statistical data analysis.

SPSS is used by market researchers, health researchers, survey companies, government entities, education researchers, marketing organizations, data miners, and many more for the processing and analysis of survey data.



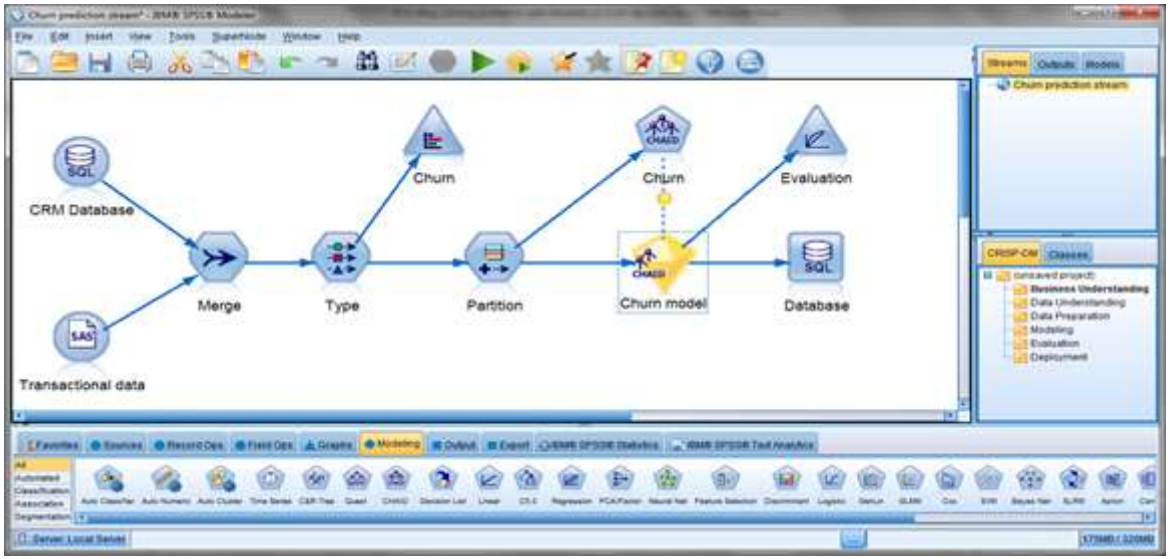
SPSS offers four programs that assist researchers with their complex data analysis needs.

Statistics Program

SPSS's Statistics program provides a plethora of basic statistical functions, some of which include frequencies, cross-tabulation, and bivariate statistics.

Modeler Program

SPSS's Modeler program enables researchers to build and validate predictive models using advanced statistical procedures.



Text Analytics for Surveys Program

SPSS's Text Analytics for Surveys program helps survey administrators uncover powerful insights from responses to open-ended survey questions.

Visualization Designer

SPSS's Visualization Designer program allows researchers to use their data to create a wide variety of visuals like density charts and radial boxplots with ease.

In addition to the four programs mentioned above, SPSS also provides solutions for data management, which allow researchers to perform case selection, create derived data, and perform file reshaping.

SPSS also offers the feature solution of data documentation, which allows researchers to store a metadata dictionary. This metadata dictionary acts as a centralized repository of information pertaining to data such as meaning, relationships to other data, origin, usage, and format.

There are a handful of statistical methods that can be leveraged in SPSS, including:

- Descriptive statistics, including methodologies such as frequencies, cross-tabulation, and descriptive ratio statistics.
- Bivariate statistics, including methodologies such as analysis of variance (ANOVA), means, correlation, and nonparametric tests.
- Numeral outcome prediction such as linear regression.
- Prediction for identifying groups, including methodologies such as cluster analysis and factor analysis.

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