

ADAPTATION OF DATA VISUALIZATION THROUGH TABLEAU SOFTWARE AND CONTRIBUTIONS OF WOMEN IN THE FIELD OF ANALYTICS

Shaheba Iqbal Penbelli, Puja Vitthal Deshmukh

(Asst. Professor)
M.M.S(Systems) , M.Com(Accountancy)
B.N.N College , Bhiwandi.
shahebashaikh@gmail.com
9527645343

(Asst. Professor)
M.com(Accountancy)
B.N.N College , Bhiwandi.
puja.pd235@gmail.com
9623115032

Abstract

This Article deals with Data visualization tool with special reference to Tableau Software. Big Data analysis gets tedious if it is worked on complete data basis. Tableau Software helps to analyse the data in huge quantity in graphical formats. Data viewed in such formats are easy to understand, with colourful identification and is a faster way of representing data at a glance. As all countries and companies are becoming digital, it is the need of the hour to use tools that are smart, easy and generates quick responses to user queries. Data Visualization is predominantly a male dominated industry as it includes a lot of analytics. However, there are Women professionals, who have created recognition and niche for themselves in the field of analytics. Tableau Desktop interface is user friendly and adds ease, convenience to the developers. This software is different from the conventional business information analysis tools. The objective of this software is to create effective visualizations for specific business intelligence analysis, and it demonstrates how to achieve it with known features and techniques, making it easier for IT managers, Business analysts and developers. Tableau functions, calculations, use cases are advanced techniques /features to showcase data in dynamic and best of breed visualizations. Tableau is software that can help users explore and understand their data by creating interactive visualizations. The software has the advantage that it can be integrated with all types of available databases, and its drag and drop methodology helps to create an interactive visualization expressed in the desired format.

Keywords: Data Visualization, Tableau, Analytics, Women

INTRODUCTION

Data visualization is the art of representing information and data in a graphic manner using visual elements like charts, graphs, and maps. Data visualization tools and technologies are crucial in the Big Data realm to analyse large amounts of information and make decisions based on it.

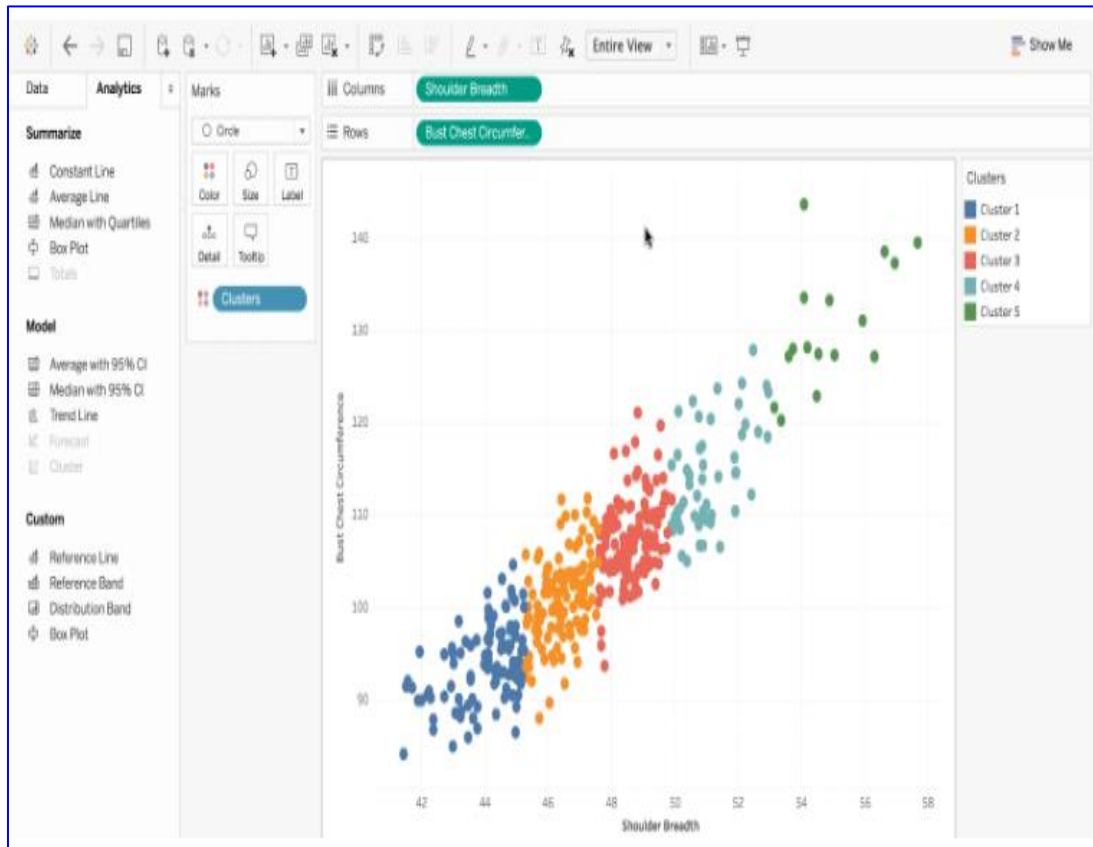
OBJECTIVE OF THE RESEARCH

- To understand the working of Tableau software as a data visualization tool.
- To understand the ratio of women in analytics field.
- To understand Technological and Legal impact of data visualisation in India .

WHY DATA VISUALIZATION IS IMPORTANT

The proper visualization can bring everyone on the same page, whether it's simple or complex, regardless of their level of expertise. Visualization is one of the most useful professional skills to develop due to its widespread use. The more visually proficient you are at conveying your points, whether on a dashboard or a slide deck, the more you can utilize that information. It is becoming more valuable for professionals to have the ability to use data to make decisions and to use visuals to tell stories about when data informs the who, what, when, where, and how. Data visualization, situated in the intersection of analysis and visual storytelling, is highly valued in today's professional world.

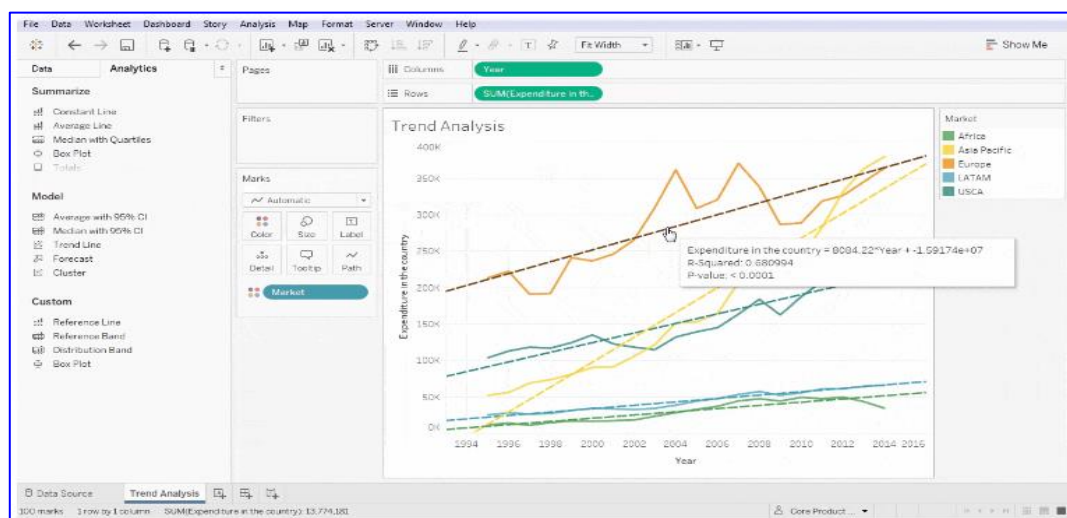
Examples of data visualization



Knowing where to begin can be difficult due to the presence of public data visualization galleries and data everywhere online. The free Tableau Public tool is used to showcase a vast array of visualizations in Tableau's public gallery.

Different types of visualizations

Simple bar graphs or pie charts are probably the first thing that comes to mind when you think of data visualization. Although these are an essential component of data visualization and a common standard for many data graphics, the right visualization needs to be combined with the correct information. There is a diverse range of visualization techniques that can be utilized to present data in a manner that is both effective and captivating.



<https://www.gapbodhitaru.org/>

General Types of Visualizations

- Chart: A tabular and graphical format is used to present information that is displayed on two axes. It can also be presented in the form of a graph, diagram, or map.
- Table: The table of figures is arranged in rows and columns.
- Graph: A diagram that shows points, lines, segments, curves, or areas that represent various variables in comparison, usually along two axes at the right angle
- Geospatial: A visualization that displays data in a map format with various shapes and colors to demonstrate the connection between data and specific locations
- Infographic: The use of charts or diagrams is a common method for representing data through a combination of visuals and words.
- Dashboards: A collection of visualizations and data that are displayed in a single location to aid in the analysis and presentation of data
- Area Map: Area maps are a type of geospatial visualization that displays specific values on maps of countries, states, counties, or other geographical locations. Area maps can be divided into choropleths and isopleths.
- Bar charts: Comparing numerical values is the purpose of bar charts. Each variable's value is indicated by the length of its bar.
- Highlight Table: By using color to categorize similar data, a table can be read more easily and intuitively by the viewer.
- Heat Map: A geospatial visualization that uses maps to present specific data values in different colors.
- Tree map: A kind of chart that presents diverse related values in the form of nested rectangles.

Tableau Software:

Software is based on the concept of Graphic user interface. Thereby making it user friendly and convenient software to operate. Professionals who are non – technical can also learn this software very easily. Coding knowledge is not essential for working on it.

The complexity of these varies from simple to complex, from intuitive to obscure. Not every tool is capable of scaling to industry or enterprise purposes. Data visualization theory and skills that are well-developed will extend beyond specific tools and products. It's crucial to establish a foundation of analysis, storytelling, and exploration that you can rely on no matter what tools or software you use. TABLEAU has the ability to connect to various data sources, such as data warehouses, and files that contain disparate data and are stored on different storage media. Accessing data from the cloud is possible for TABLEAU, which can include spreadsheets, big data, non-relational data, and more. By managing data from multiple sources and blending them, TABLEAU can produce complex and detailed data.

This industry is majorly dominant by males , however recently the number of womens in this field are rapidly increasing. **Indian women such as Dr. Radhika Kulkarni, Rwitwika Bhattacharya, Mamatha Upadhyaya, and Ujjyaini Mitra are known for their expertise and knowledge in this field. They are renowned throughout the world in the analytics community both in India and abroad.**

Technological Impact of Data Visualization

- Interactive Visualization: Real time visualization allows users to interact with data visualizations on live environments. This enables users to get specific data values, filter information, and explore variant scenarios. By providing an interactive experience, users can get the advantage of having expert insights on data and make data-driven decisions more realistic and informative.
- Predictive Visualization: Trend Analysis based on data visualization can be more useful compared to historical analysis of predictive insights. Training models on historical data, helps in generating visualizations that will have the ability to forecast future trends and outcomes. Thus this software empowers the decision makers with foresight, and enables them to plan and strategize activities on a proactive basis.

Legal Impact of Data Visualization

- Balanced data and secured safeguarding access are essential elements that can help retain privacy and data security . These are complex issues that has to be dealt with data visualization. Encryption, restriction of data access , imposition of entry level controls, and compliance with data protection laws such as GDPR and CCPA guidelines , helps in ensuring data security.
- Privacy of individuals data and Dignity : Personally identifiable information (PII) and sensitive personal information if used without intimating the users , can land up the company in legal trouble . Therefore utmost care has to be taken in this territory.

- Misrepresenting data can have consequences that can result in levy of huge penalties for practices for fraudulent means. Deceiving others and not portraying correct data ends up in a legal battle. Compliance with laws is a must.

Collaborations of Tableau in India :

- Tableau has partnered with **All India Council for Technical Education (AICTE)** to make students literate on data skills . 10,500 institutions across India will be working on Tableau Software as per AICTE guidelines.
- **LinkedIn's** , Business Intelligence department proactively uses Tableau to process petabytes of customer data. 90 percent of LinkedIn's sales force uses Tableau on weekly basis. Sales Analytics evaluates performance using Tableau dashboards.
- Tableau's connector are installed at **Amazon** . Multiple connectors such as EMR , Redshift and Relational Database Service (Amazon RDS) have the potential to be connected to Tableau Servers.
- Tableau at **Ferrari** , resulted in making the whole process easy , more efficient , time saving after Tableau which is deployed as an in-house implementation that is well within the budget of Ferrari.
- Enhancing existence with the help of cloud data couldn't get easier than how **Adobe India** is doing it with the help of adaptation of Tableau Software . Datawarehouse of Adobe have added its components to Tableau , resulting in delighted clients that can use Tableau to Extract data easily from Marketing Cloud. Thereby bringing digital information to clients in a simpler and direct manner.

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