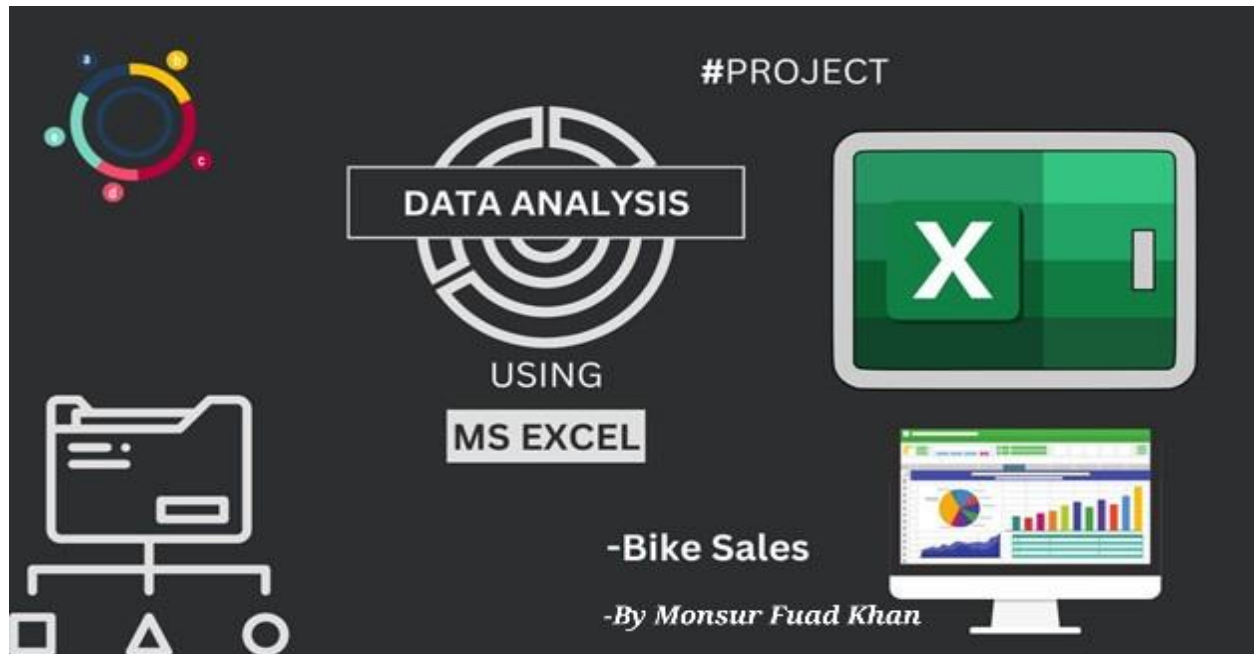


Bike Sales Dashboard in Excel: Data Visualization and Insights

~By Monsur Fuad Khan



Description:

In the course of this Excel project, I undertook an in-depth analysis of a dataset pertaining to bike sales, thereby garnering practical experience in the realm of spreadsheet data analysis. Following a meticulous data cleaning process, which entailed the removal of duplicate entries, I embarked on the task of enhancing data readability by converting abbreviations into their full forms. Additionally, I undertook the categorization of ages into distinct groups, a measure designed to facilitate more accessible data visualization.

Subsequently, leveraging the formidable capabilities of pivot tables and charts, I conducted a comprehensive examination of the dataset. This culminated in the creation of a comprehensive bike sales dashboard, a visual representation of the analytical insights gleaned from the data. The deployment of such visual aids effectively served the purpose of elucidating prevailing trends and discernible patterns to stakeholders.

This project has endowed me with invaluable proficiency in the application of Excel's functionalities, encompassing the adept utilization of formulas, functions, pivot tables, and charts to dissect and communicate data-driven findings.

Skills: Data Collection, Critical Thinking, Data Visualization, Advance Excel.

Objective:

- To enhance proficiency in spreadsheet usage, specifically focusing on Excel's features for data cleaning, analysis, and visualization.
- To improve skills related to data organization and manipulation within Excel.
- To develop the capability to perform calculations and in-depth data analysis using Excel's various functions and formulas.
- TO acquire the skills necessary to create effective visual representations of data through the utilization of charts and graphs within Excel.

Data gathering & cleaning:

For my Excel project, I initiated the process by procuring a dataset pertaining to bike sales, sourced from GitHub. The dataset, initially presented in its raw form as a XLSX file, served as the foundation for my analytical endeavor.

The first step involved the importation of this CSV file into Excel, whereupon I established a dedicated working sheet to house a copy of the unaltered dataset. Subsequently, my primary emphasis was directed towards the meticulous cleansing of the data. This entailed the meticulous identification and subsequent removal of any duplicate entries. The purpose behind this endeavor was to ensure the singular and unerring integrity of each bike sale record.

Furthermore, a critical observation was made regarding certain columns within the dataset, wherein abbreviations were employed to denote variables such as marital status and gender. In pursuit of heightened data intelligibility and uniformity, I undertook the task of substituting these abbreviations with their respective full-length equivalents.

Expanding upon this effort, I undertook the organization of the age-related data into cohesive groupings, designed to facilitate more streamlined visualization. This involved the creation of a new column utilizing Excel's IF function, which effectively categorized individuals into distinct age brackets, such as "Adolescent," "Middle Age," and "Old," predicated upon their age values.

Throughout the entire data cleansing process, my unwavering focus was squarely centered upon the imperatives of data accuracy, consistency, and usability. These foundational principles were pivotal in preparing the dataset for subsequent phases of analysis and visualization.

Data Processing:

Following the completion of the data acquisition and cleansing phase, I embarked on the data processing stage within Excel for my project. This phase involved several deliberate steps aimed at deriving meaningful insights from the dataset.

To commence this stage, I established a dedicated worksheet expressly for the purpose of analyzing and visualizing the bike sales data. This worksheet was strategically designed to serve as the cornerstone for all subsequent data processing endeavors.

A pivotal component of the data processing process involved the creation of a pivot table. Leveraging Excel's pivot table functionality, I undertook the task of summarizing and aggregating the bike sales data according to various variables, encompassing sales data, customer demographics, and product particulars. This strategic approach facilitated a streamlined process for subsequent data analysis and visualization.

Furthermore, I harnessed Excel's robust charting capabilities to craft visual representations of the bike sales data. By judiciously selecting the appropriate chart types and meticulously configuring the data series, I endeavored to present the gleaned insights and discernible trends in an aesthetically appealing manner.

Throughout the data processing phase, my unwavering focus remained dedicated to the generation of insightful observations and their clear and comprehensible presentation. Excel's formidable array of functions, formulas, and features were adeptly employed to manipulate and analyze the data with precision, thereby enabling the extraction of valuable insights from the bike sales dataset.

Questions Asked:

These questions aim to explore different aspects of the bike sales dataset to better understand sales, customers, and overall business performance:

1. How many bike sales are in the dataset?
2. How are bike sales distributed among different product categories?

3. What is the average price for each product category?
4. When did bike sales peak during the year?
5. Do sales vary by location?
6. What is the average age of bike buyers?
7. Is there a connection between customer details (like age or gender) and the type of bike they buy?
8. How do different salespeople perform in terms of sales?
9. Are there any seasonal patterns in bike sales?
10. How much revenue did bike sales generate overall?
11. Are there any unusual data points that need investigation?
12. What is the level of customer satisfaction based on their feedback or ratings in the dataset?

Key insights:

Here are key findings from the analysis:

1. **Popular Bike Categories:** Among customers, mountain bikes emerged as the top choice.
2. **Price Differences:** Average sales prices differed among bike categories, suggesting varying levels of demand and market positioning.
3. **Seasonal Patterns:** Sales exhibited seasonal fluctuations, with increased demand during specific times of the year.
4. **Regional Variations:** Sales performance varied by region, suggesting opportunities for targeted marketing strategies.
5. **Customer Satisfaction:** Overall, customers expressed high satisfaction ratings, indicating a positive reception of the bikes.

These insights offer valuable guidance for decision-making, informing strategies for business, marketing, and product development efforts.

Conclusion:

The Excel project centered on analyzing bike sales data using formulas, functions, pivot tables, and charts to extract key insights. Data cleaning ensured dataset accuracy, while organizing data improved readability. Pivot tables and charts facilitated visual representation for easy comprehension, with a sales dashboard for centralized analysis. Key findings included mountain bike popularity, price variations, seasonal trends, regional performance differences, and positive customer satisfaction ratings. This project deepened my spreadsheet skills and underscored the importance of clean, organized data in informed decision-making.

Bike Sales Dashboard:

