BIKES SALES ANALYSIS USING EXCEL

DATA DESCRIPTION

The Bike Sales Analysis Project aimed to explore customer purchasing behavior and identify key factors influencing bike sales using Microsoft Excel. The dataset comprised 13 columns and 1,001 rows, focusing on bike sales. It encompassed customer information and demographics related to bike purchases. These columns included customer ID, marital status, gender, income, number of children, education level, occupation, homeownership status, car ownership, commute distance, region, age, and bike purchase status.

DATA CLEANING

- Checked for duplicates (26 duplicates were found and removed leaving 1000 unique values using the Remove duplicates feature), missing values but there were none.
- Scanned through each of the columns one by one, replaced M with Married and S with Single in the Marital Status column, replaced M with Male and F with Female in the Gender column, using the Find and Replace feature.
- Created a new column named “Age group” from the Age column using the Nested If statement.
- And also I have calculated Average Income, Unit sold, Purchase rate and Average Age Group for the Dashboard.

DATA ANALYSIS AND VISUALIZATION

I utilized a data analytics tool “pivot table” to organize and analyze my data systematically, facilitating visualization. With the help of the pivot table, I was able to create a chart to represent my findings.

1. Average Income by Gender and Bike Purchase Status: Explored how the average income varies between genders among those who bought bikes and those who did not.

2. Impact of Commute Distance on Bike Purchase Rate: Investigated whether customers' commute distance influences their likelihood to purchase bikes.

3. Preferred Age Bracket for Bike Purchases: Identified which age group made the most bike purchases.

Each of these questions was analyzed and visually represented to provide clear insights.

FINDINGS:

1. **Average Income Analysis by Gender and Bike Purchase:**

- I investigated the average income of individuals based on gender and their bike purchase status.
- Through the pivot table, I discerned that individuals with higher average incomes tended to purchase more bikes compared to those with lower average incomes.
- Additionally, the analysis revealed that males generally had higher incomes than females, and consequently, they purchased more bikes.

2. **Impact of Commute Distance on Bike Purchases**: I explored whether the commute distance of customers influenced their bike purchase behavior.

- The analysis suggested that customers with shorter commute distances tended to purchase more bikes compared to those with longer distances.
- However, it's noteworthy that the data also indicated a considerable number of customers who did not purchase bikes despite having shorter commute distances, suggesting that distance alone may not be the sole determinant of bike purchases.

3. **Preferred Age Bracket for Bike Purchases**: Investigating the age brackets, I found that the middle-aged group, aged between 31 and 54 years, made the most bike purchases.

DASHBOARD AND ENHANCEMENT WITH SLICERS:

To enhance the presentation and accessibility of my findings, I created a dashboard featuring visually appealing charts. To further improve flexibility and user experience, I incorporated "slicers" into the dashboard. These slicers enable interactive filtering, allowing users to explore

different subsets of data intuitively. This addition enhances the dashboard's usability, facilitating quick and seamless data exploration for any additional findings or insights.

Demographic Insights

1. Age Bracket Influence
    - Majority of bike purchases come from Middle-Aged customers (30–50 years).
    - Old and Adolescent customers show very few purchases, indicating limited interest.
2. Gender Differences
    - Male customers purchase more bikes compared to females.
    - Both genders show higher bike purchase rates at higher income levels, suggesting income is a stronger driver than gender alone.
3. Income Impact
    - Customers with higher income (above average income range) are more likely to buy bikes.
    - Lower-income groups show low purchase behavior.
4. Marital Status
    - Both single and married customers purchase bikes, but single middle-aged males show stronger buying behavior.
5. Commute Distance
    - Customers with short commutes (0–5 miles) buy more bikes.
    - Customers with long commutes (10+ miles) rarely purchase bikes.

REPORT SUMMARY

The demographic analysis shows that bike sales are concentrated among middle-aged, high-income, urban male customers with short commutes. Lower-income, adolescent, and elderly customers show little interest, highlighting the importance of targeting marketing efforts towards professionals aged 30–50 with higher income levels.