**Project Implementation Steps**

This document explains the detailed steps taken to develop the dashboard:

1. **Data Collection:**

- Used a Bike Sales Dataset.

1. **Dataset Columns:**

- ID

- Marital Status

- Gender

- Income

- Children

- Education

- Occupation

- Home Owner

- Cars

- Commute Distance

- Region

- Age

- Purchased Bike

1027 rows x 13 columns

1. **Data Preparation:**

- Cleaned and pre-processed the data to remove duplicates and handle missing values.

- Used “Find & Replace” to convert “M” to “Married” & “S” to “Single” in “Marital Status” column, “M” to “Male” & “F” to “Female” in “Gender” column.

- Removed decimal places from “Income” column.

- Changed “10+ Miles” to “More than 10 Miles” in “Commute Distance” column, so that our pivot table & charts don’t mess up.

- Made a new column “Age Brackets” from “Age” column by using this formula: =IF(L2>55,"Old",IF(L2>=31,"Middle Age",IF(L2<31,"Adolescent","Invalid"))), so we have groups of age rather than every individual age.

- Made 3 pivot tables, 1st is a column chart showcasing average income of male & female & how many of them have purchased the bike, 2nd is a line chart showing the relationship between commute distance & the bike purchase, 3rd is a line chart showing the relation between age brackets & bike purchases.

1. **Dashboard Design:**

- Grouped the charts on a single page & inserted meaningful slicers & connected them to all 3 charts.

1. **Data Analysis:**

* **Higher Income Individuals Are More Likely to Purchase Bikes**

**- Business Action:** Position bikes as aspirational or premium products for higher-income customers and consider financing options for lower-income groups.

* **Females Who Purchase Bikes Earn More Than Males Who Purchase**

**- Business Action:** Target high-income women with marketing campaigns emphasizing fitness, convenience, and lifestyle benefits.

* **Middle-Aged Individuals Are the Primary Buyers**

**- Business Action:** Focus marketing efforts, financing options, and product designs on this demographic.

* **Adolescents and Older Individuals Buy Fewer Bikes**

**- Business Action:** Investigate barriers (cost, preference for alternative transport, lack of need) and offer solutions like discounts, rentals, or targeted promotions.

* **Commute Distance Affects Bike Purchases**

**-** People commuting moderate distances (e.g., 5–10 miles) are most likely to buy bikes.

- **Business Action:** Market bikes as a convenient commuting solution and highlight benefits like cost savings and health advantages.

* **Short & Long-Distance Commuters Buy Fewer Bikes**

- Very short-distance commuters may not see the need.

- Long-distance commuters might find bikes impractical.

**Business Action:** Introduce e-bikes or hybrid options for long commutes and promote cycling benefits for short trips.