Case Study: Bike Sales & Customer Insights

Objective:

To assess your ability to clean, transform, and analyze real-world retail sales data using **Power Query** and **Excel**. You will work with a single dataset containing information on bike buyers, their demographics, and purchase details. Your task is to prepare the data, calculate relevant KPIs, and generate insights.

Part 1 – Data Preparation

Using the attached Excel file (bike_buyers.xlsx):

1. **Clean the Data** in Power Query:
    - Remove duplicates.
    - Fix any inconsistent text formatting (e.g., gender, marital status).
    - Handle missing values if any.
    - Standardize date formats (if applicable).

Part 2 – KPI Calculations

Calculate the following **sales and customer KPIs**:

1. **Total Customers** = Count of unique Customer IDs
2. **Total Bikes Sold** = Count of records where Purchased Bike = Yes
3. **Bike Purchase Rate** = Bikes Sold / Total Customers
4. **Average Income of Bike Buyers** = Average Income where Purchased Bike = Yes
5. **Average Age of Bike Buyers** = Average Age where Purchased Bike = Yes
6. **BONUS:** Any other relevant KPI (e.g., bike purchase rate by gender, commute distance, or region).

Part 3 – Visualizations

Create visuals in Excel to display analysis by:

- **Gender** – Who buys more bikes, men or women?
- **Age Group** – Which age group has the highest purchase rate?
- **Income Bracket** – Does higher income lead to more purchases?
- **Commute Distance** – Does distance to work affect purchase decision?
- **Region** – Which regions have the highest purchase rates?

Part 4 – Insights

From your visuals, write a short **Insights Summary** (bullet points) answering:

- Which customer segment is more likely to buy a bike?
- Which factors most influence bike purchase decisions?
- Are there any unexpected trends in the data?