**Bike Sales Dashboard Project Report**

**Overview**

This project involved building an interactive dashboard using Microsoft Excel to analyze bike purchase behavior across various demographics. The dataset contained 1,027 records and multiple attributes including gender, age, income, commute distance, marital status, education, and region. The goal was to identify customer segments with higher bike purchase rates and provide data-driven insights for marketing and business strategies.

**Objectives**

* Analyze bike purchase trends across age, gender, and commute distance.
* Segment data into age brackets to better understand buying behavior.
* Create an interactive dashboard with slicers for dynamic filtering based on marital status, education, and region.

**Tools Used**

* Microsoft Excel
  + Pivot Tables
  + Charts (Bar and Line)
  + Slicers
  + Data Cleaning Features

**Data Cleaning**

* Standardized raw age data into three brackets:
  + **Adolescent**: below 30
  + **Middle Aged**: 30–50
  + **Old Aged**: above 50
* Verified and handled missing or inconsistent values (if any).
* Ensured correct data types for each column.

**Dashboard Highlights**

**1. Gender vs Income and Purchases**

* Created a bar chart comparing average income of males and females.
* Overlaid with bike purchase status to visualize purchase trends.
* Insight: Males showed higher income and bike purchases overall.

**2. Sales According to Age Bracket**

* Line chart showing bike purchases across three age segments.
* Insight: Middle-aged customers are more likely to purchase bikes.

**3. Purchases by Commute Distance**

* Line chart analyzing purchase behavior over different commute ranges.
* Insight: Customers with 2–5 miles of commute show the highest purchase frequency.

**4. Interactive Slicers**

* Slicers for **Marital Status**, **Education**, and **Region** were added to filter all charts simultaneously.
* Enabled users to dynamically explore insights by customer segments.
* Insight: Regions and educational background significantly impact purchase decisions.

**Insights & Recommendations**

* **Target middle-aged and commuting customers** with personalized offers.
* **Design region-specific marketing campaigns** to boost conversion rates.
* **Use educational background** as a factor for tailoring messaging.

**Conclusion**

The Bike Sales Dashboard offers a clear view of customer behavior, helping stakeholders make informed decisions. With interactive elements and clean visual storytelling, it serves as a powerful tool for marketing, inventory, and sales strategy refinement.