

# Analysing Bike Purchases

## Objective:

The objective of this project is to analyse the factors influencing bike purchases among a dataset of individuals. Using Excel, we have created a dashboard that provides insights into the demographics, behaviours, and characteristics of individuals who have bought bikes and those who have not.

## Dataset:

The dataset consists of the following columns:

ID: Unique identifier for each individual

Marital Status: Marital status of the individual (married, single, divorced, etc.)

Gender: Gender of the individual (male, female)

Income: Income level of the individual

Children: Number of children the individual has (0, 1, 2, 3)

Education: Educational qualification of the individual

Occupation: Occupation of the individual

Home Owner: Whether the individual owns a home (yes, no)

Cars: Number of cars owned by the individual

Commute Distance: Distance of commute for the individual

Region: Region where the individual resides

Age: Age of the individual

Purchased Bike: Whether the individual has purchased a bike (yes, no)

## Data Cleaning and Preprocessing:

- Removed duplicate entries to ensure data accuracy.
- Standardized and categorized gender and marital status for clarity and analysis.
- Created an 'Age Bracket' column to group individuals by age ranges for easier analysis.

## Dashboard Components:

### Column Chart: Average Income by Gender and Bike Purchase Status

- Visualizes the average income of individuals grouped by gender and bike purchase status.
- Helps in understanding income disparities between genders and how it correlates with bike purchases.

### Line Chart: Bike Purchases by Age Bracket

- Illustrates the number of individuals who have bought bikes and those who have not, segmented by age brackets.
- Provides insights into age demographics and their propensity to purchase bikes.

### Line Chart: Commute Distance vs. Bike Purchases

- Demonstrates how the distance of commute influences bike purchase decisions.
- Helps in understanding the relationship between commute distance and bike purchases.

### Slicers:

Marital Status Slicer: Allows users to filter data based on marital status to observe how bike purchases vary among different marital statuses.

Children Slicer: Enables filtering based on the number of children individuals have, providing insights into family dynamics and bike purchases.

Region Slicer: Permits users to analyse bike purchases across different regions, identifying geographical trends and preferences.

### Dashboard Interaction:

As users make selections on the slicers, the dashboard dynamically updates to reflect the filtered data.

Charts adjust to display insights specific to the selected marital status, number of children, and region, allowing for a deeper exploration of bike purchase patterns.

## Conclusion:

The Excel dashboard provides a comprehensive overview of bike purchases based on various demographic and behavioural factors. It offers actionable insights for marketers, policymakers, and businesses to understand consumer preferences and tailor strategies accordingly. The interactive nature of the dashboard enhances user experience and facilitates data-driven decision-making.