



# Bike Sales Analysis Project

This project analyzes a dataset of bike buyers to understand the key factors influencing bike purchases.

It includes data cleaning, exploratory analysis, pivot tables, and dashboards to extract business insights.

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## Project Documentation

- Document 1: Key Questions  
Outlines the main business questions we wanted to answer with this dataset.
  - Document 2: Data Cleaning Process  
Explains how the raw dataset was cleaned, standardized, and transformed for analysis.
  - Document 3: Insights & Recommendations  
Provides insights from the data and actionable recommendations for businesses in the bike industry.
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## Key Questions Explored

1. Does income level influence the likelihood of purchasing a bike?
  2. How does marital status (Single vs Married) affect bike purchases?
  3. Are men or women more likely to buy a bike?
  4. How does the number of children in a household affect bike purchasing behavior?
  5. What role does education level play in bike purchases?
  6. Which occupations are more likely to purchase bikes?
  7. Does being a home owner influence the decision to purchase a bike?
  8. How does car ownership affect bike purchases?
  9. What is the relationship between commute distance and bike purchases?
  10. Are there regional differences in bike buying behavior?
  11. How does age (or age brackets) impact the likelihood of buying a bike?
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## Data Cleaning Summary

- Standardized categorical values (M → Married, F → Female, etc.)
  - Fixed inconsistent casing (e.g., ProFessional → Professional)
  - Created new Age Brackets (Youth, Middle Age, Old)
  - Verified numeric fields and handled missing values
  - Standardized Yes/No fields
  - Prepared dataset for pivot table analysis and dashboard visualization
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## Insights

- Higher income individuals are more likely to purchase bikes.
  - Married people tend to buy more bikes compared to singles.
  - Men purchase slightly more bikes than women.
  - Families with fewer children are more likely to buy bikes.
  - Higher education levels (Bachelors, Graduate) correlate with higher bike purchases.
  - Professionals and skilled manual workers are strong buyers.
  - Home owners are more likely to purchase bikes.
  - Those with fewer cars tend to buy more bikes.
  - Short-distance commuters (0-5 miles) are the most frequent bike buyers.
  - Middle-aged individuals are the largest bike-buying group.
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## Business Recommendations

- Target high-income professionals with premium bike models.
- Create family and couple packages to attract married customers.
- Use gender-inclusive marketing campaigns.
- Offer youth discounts to build long-term loyalty.
- Focus marketing in urban areas with short commutes.
- Partner with employers and housing communities for group sales programs.

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## Project Files

- Raw Data: Raw Data\_Bike\_Buyers (Excel sheet)
- Cleaned Data: Cleaned Data (Excel sheet)
- Pivot Tables & Dashboard: Provided in Excel file
- Documentation: .docx files in this repository

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