■■■■ Bike Buyers Analysis – Portfolio Report

Dataset: 1,000+ customer records with demographics, commute, income, and bike purchase status.

Project Overview

This project explores consumer behavior and demographics associated with bicycle purchases. We engineered KPIs and used pivot-style summaries to analyze relationships between income, gender, age, marital status, number of cars, and commute distance. Findings are summarized below with clean visuals suitable for a portfolio.

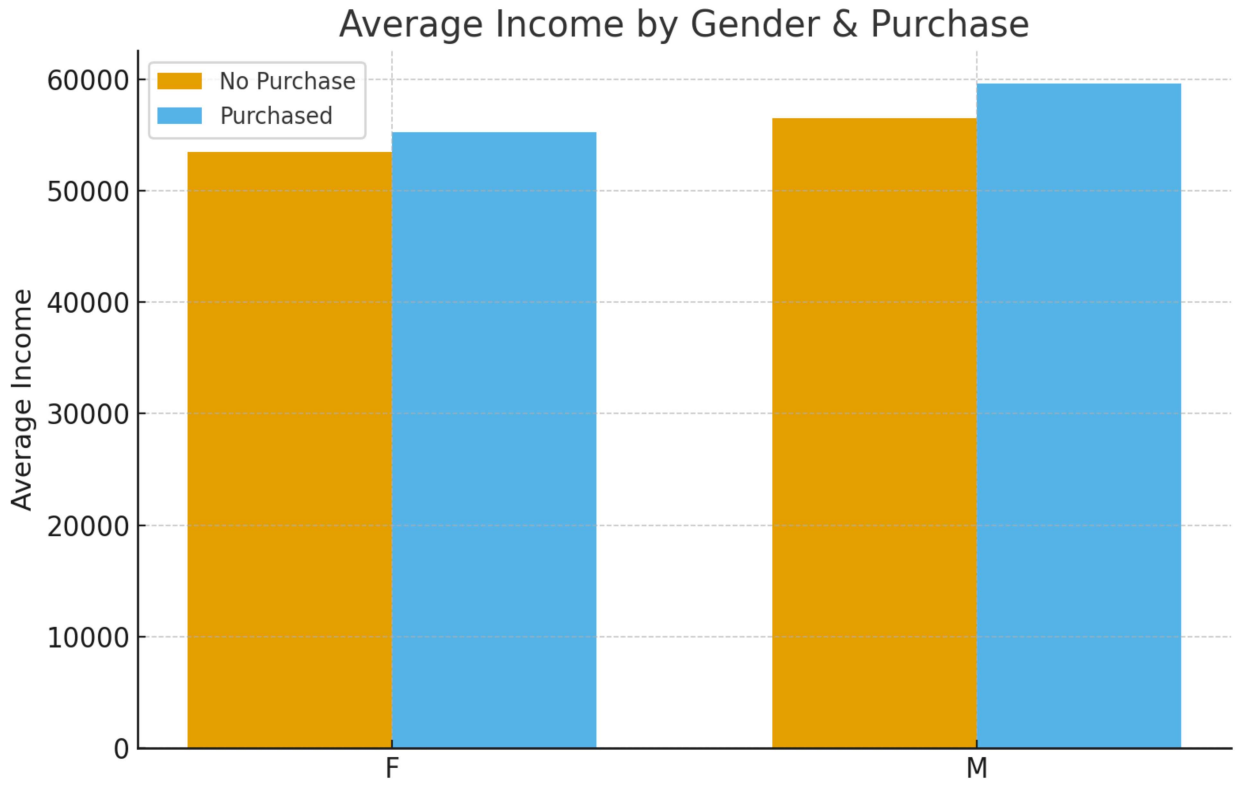
Key KPIs & Insights

1) Bike Purchase Rates by Gender

• Females – Avg income: Purchased ■55,267.49 | Not purchased ■53,449.61

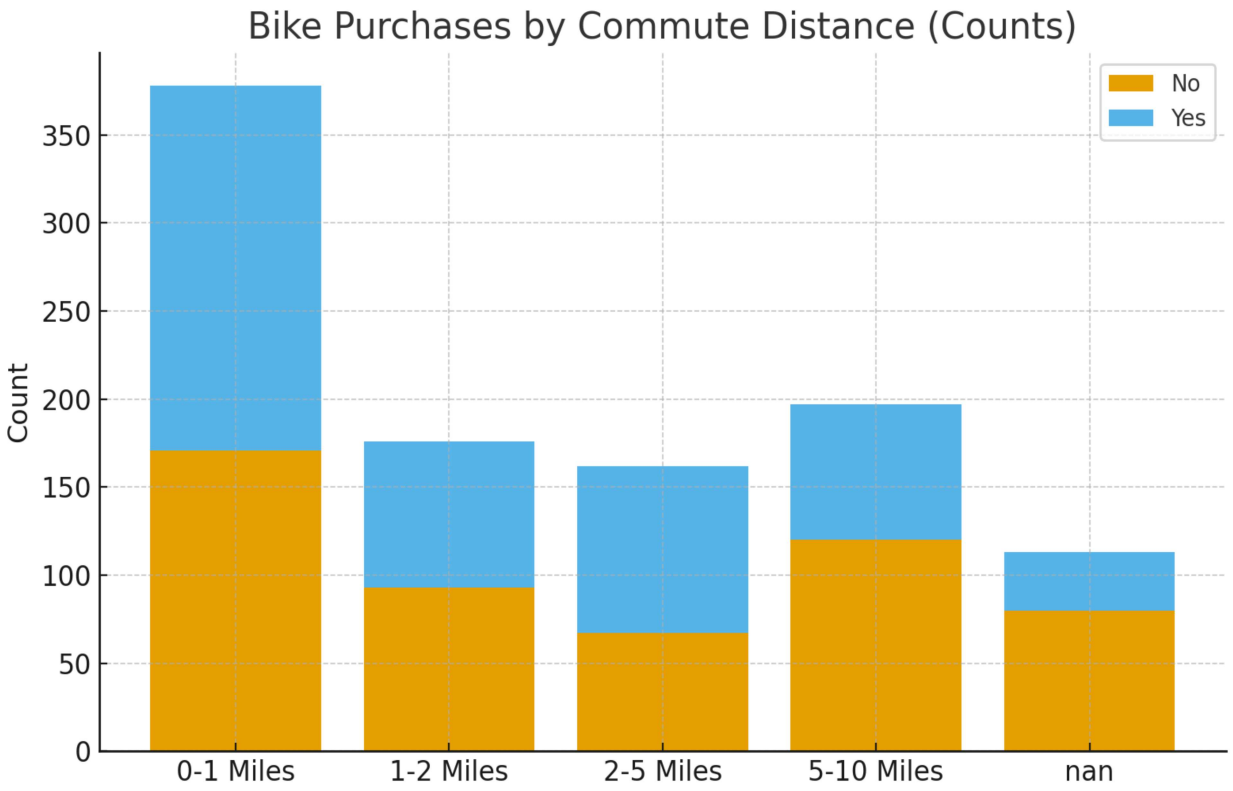
• Males – Avg income: Purchased ■59,603.17 | Not purchased ■56,520.15

Insight: Higher income is associated with purchasing across both genders, with males showing a stronger effect.



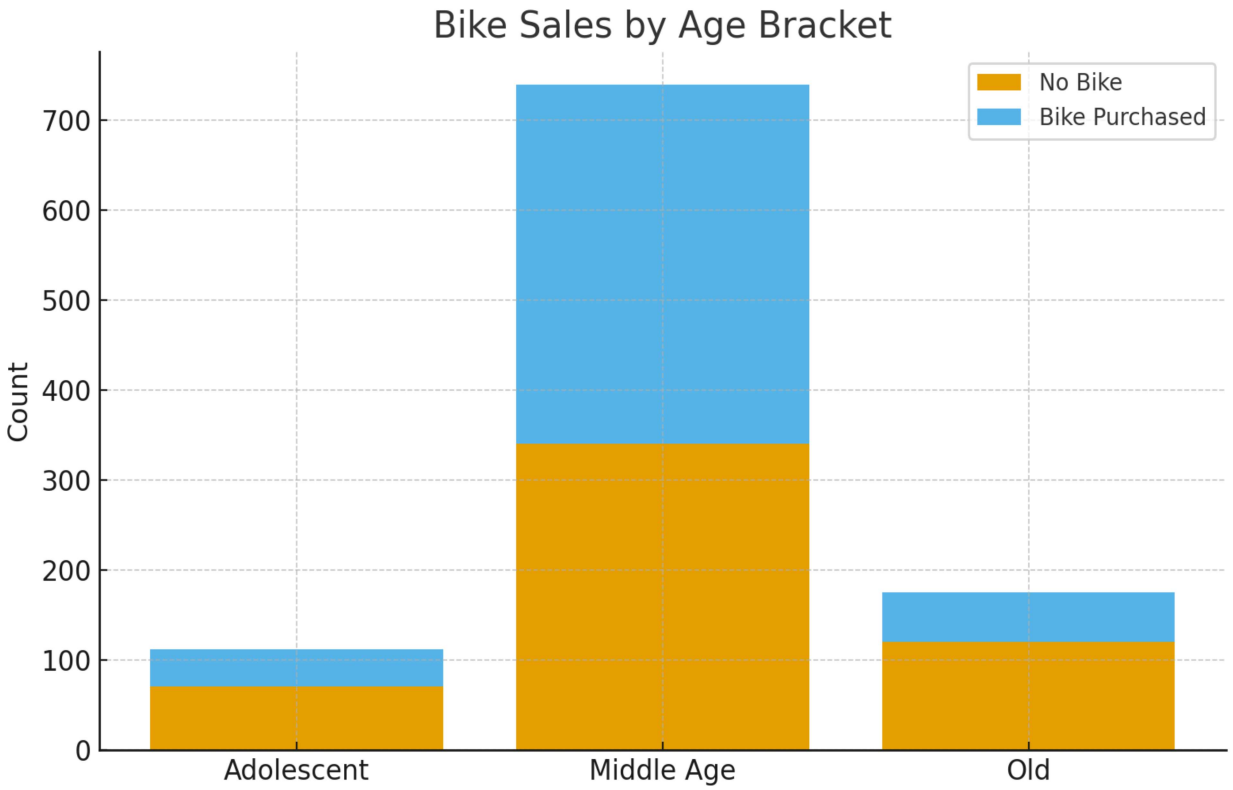
2) Commute Distance & Bike Purchases – Shorter commutes correlate with higher purchase counts; there is a notable presence for 2–5 mile commuters as well.

Commute Distance	Count-No	Count-Yes	Total
0-1 Miles	171	207	378
1-2 Miles	93	83	176
2-5 Miles	67	95	162
5-10 Miles	120	77	197
nan	80	33	113

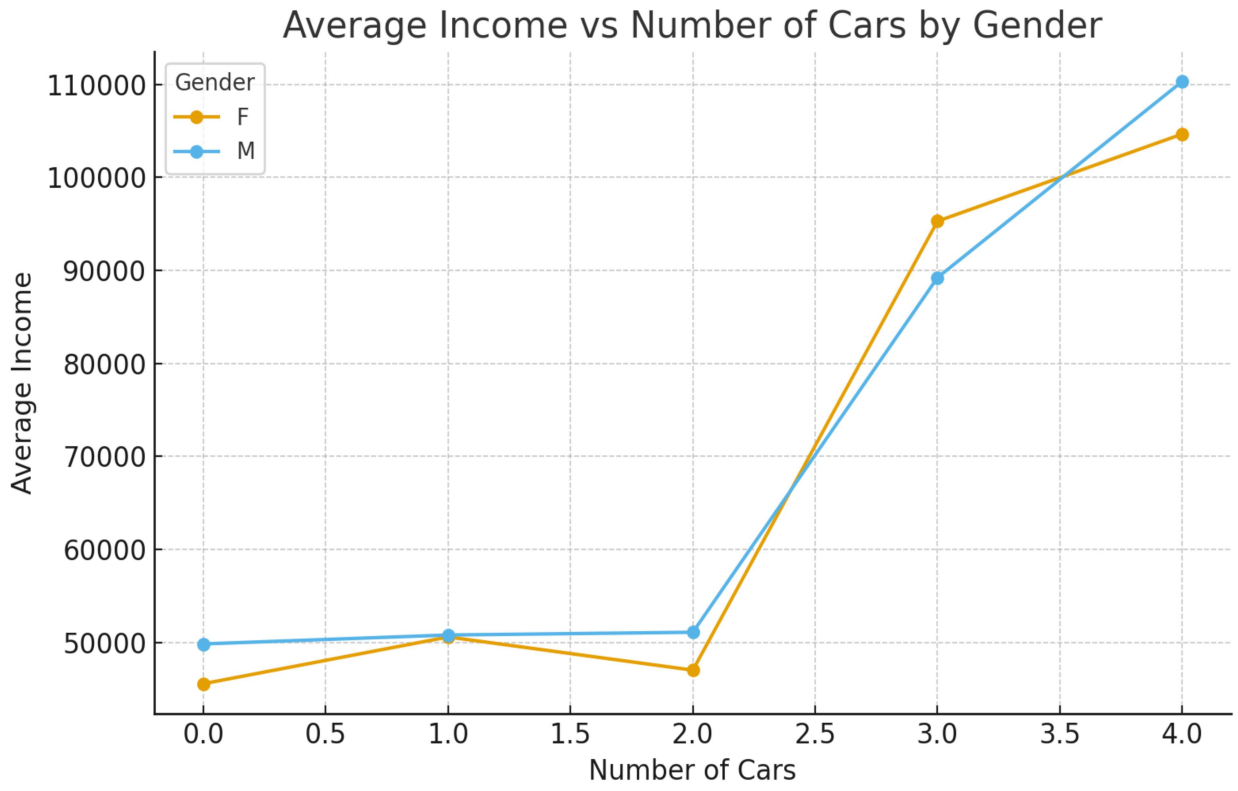


3) Bike Sales by Age Bracket – Purchases peak among middle-aged individuals; adolescents and older groups trail.

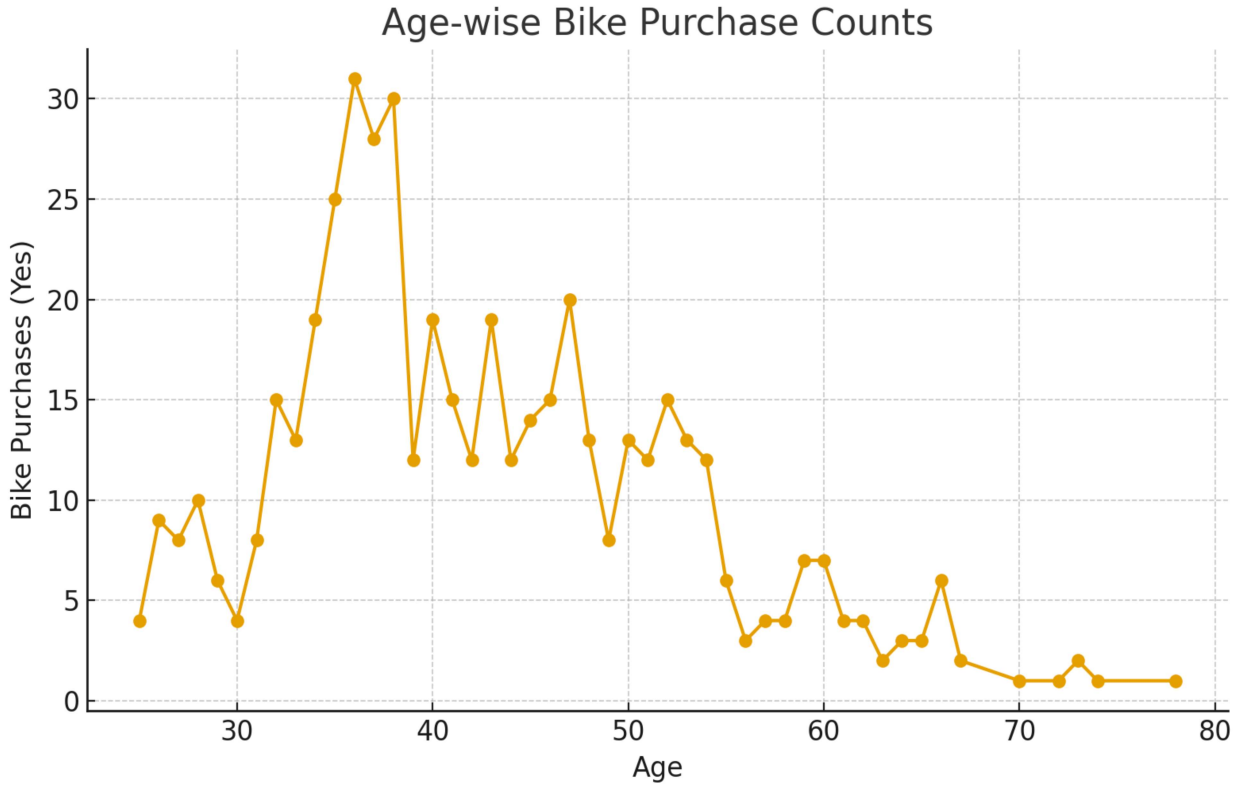
Age Bracket	No Bike	Bike Purchased	Total
Adolescent	71	41	112
Middle Age	340	399	739
Old	120	55	175



4) Income and Car Ownership Trends – Average income rises with number of cars for both genders. Despite this, many buyers have zero or one car, underscoring bikes as first or alternative vehicles.



5) Detailed Age-wise Distribution – Top buyer ages: Age 36: 31 buyers | Age 38: 30 buyers | Age 37: 28 buyers. Early middle age emerges as a peak buying window.



Graph & Pivot Table Interpretations

• Gender & Income: Buyers in both genders have higher average incomes than non-buyers, indicating a positive link between disposable income and bike ownership.
• Commute Distance: Short commutes (0–1 miles) feature the highest buyer counts overall; 2–5 miles also shows solid adoption, highlighting utility for near-distance commutes.
• Age Brackets: Middle-aged customers dominate purchases, reflecting work-life transportation needs and lifestyle usage.
• Car Ownership: Average income scales with car count, but many bike buyers still come from 0–1 car households, suggesting bikes as either first vehicles or complements.
• Age Distribution: Specific ages cluster with higher buys, supporting targeted marketing & promotions.

Conclusion: This project demonstrates end-to-end analysis with KPIs, pivot-like summaries, and clear visuals. It is presentation-ready for a data analytics portfolio and can be extended with model-driven predictions or interactive dashboards.