# **Report On Bike Purchase Insight Dashboard**

#### 1. Introduction:

This report analyzes a dataset containing demographic, economic, and lifestyle information on 1,026 individuals. The dataset includes variables such as marital status, gender, income, education, occupation, home ownership, region, and whether individuals have purchased a bike. The goal of this analysis is to identify patterns and correlations within the data to better understand the factors that influence income and consumer behavior, particularly in relation to bike purchases.

### 2. Data Preprocessing with Excel:

Data was checked to ascertain the data quality. check for duplicates were done and checks for blanks. The data was ascertained for completeness and no inconsistencies were found. The Marital Status and Gender column weren't in the correct data and changes were made using the Find and Replace FORMULA, (Ctrl H) to find and replace abbreviations. Before this, a new column was created Age Bracket to give an insight of the age grade.

# 3. Data Analysis in Excel:

After preprocessing, the data was exported to Pivot tables for analysis.

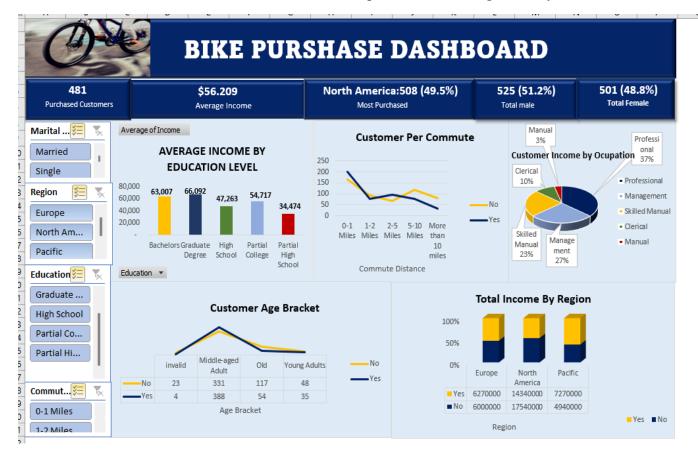
Pivot Tables: Pivot tables were created to summarize key metrics, such as the total income by region, correlation analysis to identify relationships between Income, Age and Number of Children. Customer Purchase Status Calculations: Various calculations were performed, such as average income by education level across different regions

Insights: These tables helped in deriving insights such as highlighting key trends in demographics, income, education, and purchasing behavior.

		-	_	-	-		-			-
1										
2	Average Income b	y Education Lev	el	Customer	Age Bracket				Customer	Income by Ocupation
3	ow Labels   Average of Income		e	Count of PurColumn Labels					Row Labels 🔟 Sum of Income	
4	Bachelors	63,007		Row Lab∉ ▼	No	Yes	Grand Total		Professional	20,720,000
5	Graduate Degree	66,092		invalid	23	4	27		Management	14,990,000
6	High School	47,263		Middle-aged	331	388	719		Skilled Manua	13,160,000
7	Partial College	54,717		Old	117	54	171		Clerical	5,500,000
	Partial High School	34,474		Young Adults	48	35	83		Manual	1,990,000
9	Grand Total	56,360		<b>Grand Total</b>	519	481	1,000		Grand Total	56,360,000
10										
11						Total Incom	e By Region			
12	Customer Per Com	nmute				Sum of Income	Column Labels 🔻			
13	Count of Purchased Bik	e Column Labels 🔻				Row Labels	No	Yes	Grand Total	
14	Row Labels	√ No	Yes	<b>Grand Total</b>		Europe	6,000,000	6,270,000	12,270,000	)
15	0-1 Miles	166	200	366		North America	17,540,000	14,340,000	31,880,00	)
16	1-2 Miles	92	77	169		Pacific	4,940,000	7,270,000	12,210,00	)
	2-5 Miles	67	95	162		Grand Total	28,480,000	27,880,000	56,360,00	0
18	5-10 Miles	116	76	192						
19	More than 10 miles	78	33	111		Customer Pu	urchase Status			
20	Grand Total	519	481	1,000		Sum of Income Column Labels 🔻				
21						Row Labels 🔻	No	Yes	<b>Grand Total</b>	
22	Correlation Ana	lysis				Married	17,650,000	13,940,000	31,590,00	0
23		INCOME 1	ILDRE	l Age		Single	10,830,000	13,940,000	24,770,000	0
24	INCOME 1	1		Ĭ		Grand Total	28,480,000	27,880,000	56,360,00	)
25	CHILDREN 1	0.258602621	1							
26	Age	0.170076736	0.53	1						
27	1									

# 4. Visualization on Excel:

Excel was used to create an interactive dashboard that presents the findings visually:



Total Income by Region: A bar chart was used to compares the Demographics and income generated across different regions.

Customer Age Bracket: A line chart shows the age range in bike purchases, with a slight majority not purchasing bikes.

Customer Income by Occupation: A pie chart displays the top roles by income, showing which occupation are the most lucrative.

Customer Per Commute: A line chart was used to ascertain commute distance of bikes purchased by customers.

Average Income by Education Level: A line chart was used to show that higher educational attainment generally correlates with higher income, with graduate degree holders earning the most.

Correlation Analysis: This was used to generate a correlation matrix to identify relationships between Income, Age and Number of Children.

Key Metrics: Total income and bike purchases provide a comprehensive overview of the dataset, helping to understand the population's characteristics, financial status, and behaviors.

**5. Conclusion:** The Bike Purchase Insight Dashboard provided an uncovered regional variation and the influence of socioeconomic factors on bike purchasing decisions. It shows a comprehensive insights into the demographics, income distribution, education levels, and consumer behavior patterns of 1,026 individuals. The data highlights the strong correlation between education and income, with higher educational attainment leading to better economic outcomes. Additionally, professional and management roles are associated with higher income levels, making these individuals key targets for premium product offerings.