**Project Report: Bike Sales Analysis**

This report provides an in-depth analysis of bike sales, focusing on key factors driving the market, customer preferences, sales trends, and forecasts. The purpose of this project is to uncover insights that can guide business decisions, including marketing strategies, product development, and pricing adjustments.

**1.** **Introduction**

**2. Objectives**

The primary objectives of the bike sales analysis are:

1. To identify factors influencing bike sales, including consumer demographics, price sensitivity, and market trends.
2. To analyse the current and projected demand for bikes.
3. Provide actionable recommendations and also driving growth to enhance customer satisfaction.
4. Uncovering trends, customer behaviours and revenue opportunities.

**3.** **Data Collection**

The analysis was conducted using a dataset that includes the following data points:

* **Sales data**: Data covering bike sales (including product category, price, and purchase date).
* **Customer demographics**: Age, gender, income level, and location of buyers.

**3.1 Data Loading and Preparation**

* Bike Sales datasets  from Elite Bike Store (EBS)
* An Excel workbook dataset was transformed and clean but importing in Power BI and was cleaned using Power query.

**4. Methodology**

The methodology followed for this project involves several steps:

1. **Data Cleaning and Preparation**: The raw data was cleaned by removing duplicates, correcting inconsistencies in product categories, and handling missing values. The dataset was then normalized and merged with demographic and trend data for a comprehensive view.
2. An Excel workbook dataset was transformed and clean but importing in Power BI and was cleaned using Power query.

**Exploratory Data Analysis (EDA)**: Descriptive statistics were used to understand overall bike sales trends, customer preferences, and seasonality. Visualizations such as bar charts, pie charts, and line graphs were created to reveal patterns in the data

**5. Key Findings**

* 1000 individual and 48.1% of customer purchased bikes ,where we have 51.9% not purchased
* Silver Riders age 25-40 represent the largest age group accounting for 42.6% of customer
* Middle income earners contributing most Sales of $1.56millon

**5.2 Customer Demographics**

* Silver Riders (Ages 25-40) dominate the customer base, representing 42.6% of the total, followed by Sapphire Cruisers (Ages 41-50) at 29.8% and Golden Gliders (51+) at 27.6%.
* Middle-income customers make up 45% of the customer base, contributing $1.56 million in sales, while low-income customers represent the largest portion at 48%, generating $0.71 million in sales.
* High-income customers are a smaller but valuable segment, accounting for 8% of customers and contributing $0.51 million in sales.

**5.3 Regional Sales Trends**

* The North America dominated the Sales landscape with $1.43 million other regions such as Europe and the Pacific are under penetrated
* Sales peak during the spring and early summer months, with September being the top-performing month at $298k.
* A drop in sales is observed during October and November, indicating seasonal fluctuations in demand that should be strategically addressed.

**5.4 Gender and Purchase behaviour**

* The gender split is nearly balanced, with 51% male and 49% female customers. Female customers account for 49.69% of bike purchases, slightly lower than their male counterparts at 50.31%.

**5.5 By occupation**

* Professionals and skilled manual workers represent key segments, generating $1.13 million and $0.62 million in sales, respectively.
* Occupations like clerical and manual labour remain under-leveraged in terms of total sales.

**5.6 Income and sales distribution**

* The average customer income is $56.36k, sales conversion across income brackets shows a disparity.
* Middle-income customers contribute the largest share of sales, but there is untapped potential within the low-income segment, which represents nearly half the customer base but generates lower sales.

**6. Recommendations**

**Based on the analysis, the following strategies are recommended to boost bike sales:**

* **Target Customer Segmentation**: Analyse the demographics of high-frequency bike purchasers, such as age, gender, income level, and geographic location. Focus marketing efforts on segments with the highest purchase rates, tailoring promotions, messaging.
* **Price Sensitivity and Financing Options**: Assess the price points at which customers are most responsive and explore flexible pricing strategies such as installment plans or financing options. This will make higher-end bikes more accessible to a broader audience and drive higher sales
* **Customer Feedback and Reviews**: Analyse customer reviews and feedback on different bike models to identify strengths and weaknesses. Use this data to inform product development or adjust inventory and marketing strategies to focus on bikes with the highest customer satisfaction and ratings.
* The freedom to innovate offers a $2 billion potential through the development of premium, high-tech bike models for high-income customers and specific commuter groups. Lastly, with few competitors focusing on niche markets like professionals, skilled manual workers, and female customers, there is an additional $1 billion growth opportunity.

**7. Conclusion**

In conclusion, Elite Bike Store has significant opportunities for growth across multiple segments. By addressing the untapped 51.9% of non-buying customers, targeting low- and middle-income groups, and expanding into underdeveloped regions like Europe and the Pacific, the business can capitalize on a $3 billion market opportunity.

By focusing on these strategic areas, Elite Bike Store can solidify its market position, drive sales, and increase long-term profitability.