Data Analysis Report: Bike Sales Analysis

Project Objective:

The Bike Sales Report aims to provide the owner with strategic insights into their customer base and sales growth strategies, utilizing the "Bike Sales Data" dataset.

Dataset used:

The dataset utilized for this analysis is the "Bike Sales Data."

Questions (KPIs):

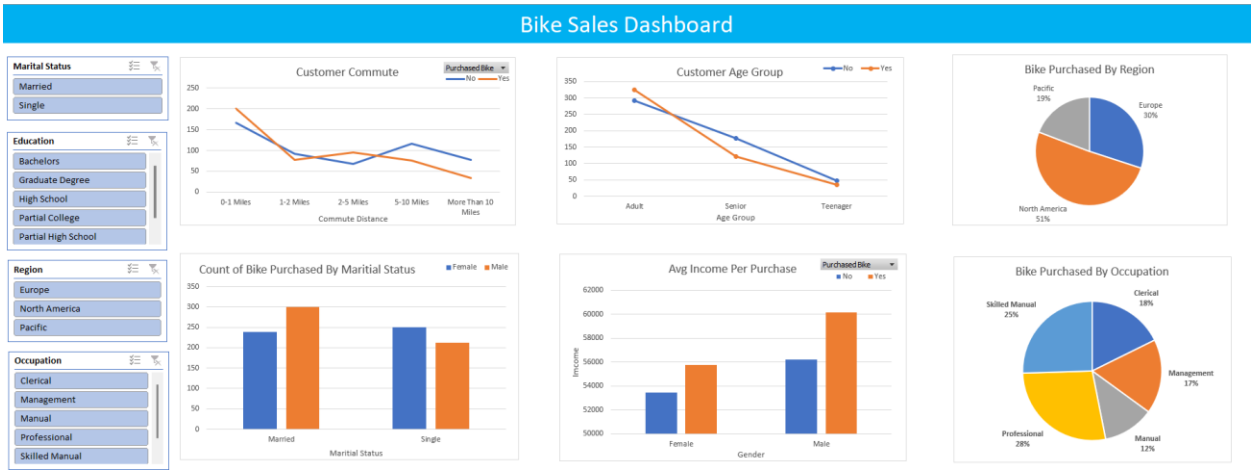
- Distance Commute vs. Bike Purchases: Explored the relationship between distance commuted and bike purchases.
- Gender-Based Purchases: Analyzed bike purchase patterns among married men and women, identifying the predominant group.
- Top Sales Contributing Region: Identified the top region contributing significantly to bike sales.
- Age Group Analysis: Explored the correlation between age groups and the number of bike purchases.
- Income-Based Analysis: Investigated bike purchases based on average income, differentiating between male and female buyers.
- Occupation-Based Sales Distribution: Analyzed bike sales distribution across various occupations, highlighting key contributing professions.

Process:

The following steps were taken to accomplish the project objectives:

- Data Verification and Cleansing: The dataset was thoroughly reviewed for missing values and anomalies. Any identified issues were resolved to ensure data consistency and cleanliness regarding data types, formats, and values.
- Pivot Table Creation: Pivot tables were created to address each of the questions posed.
- Dashboard Development: The pivot tables were merged into a single interactive dashboard, incorporating slicers for dynamic exploration.

Dashboard:



Analysis:

1. <u>Customer Commute:</u>

Figure 1: Customer Commute

- Employed Microsoft Excel for data analysis, creating a line graph to showcase commute patterns.
- Analyzed and interpreted the line graph, highlighting the inverse relationship between commute distance and bike purchases.
- Utilized data visualization methods to identify the most preferred commute distance (0-1 miles) for bike purchases.

2. Customer Age Group:

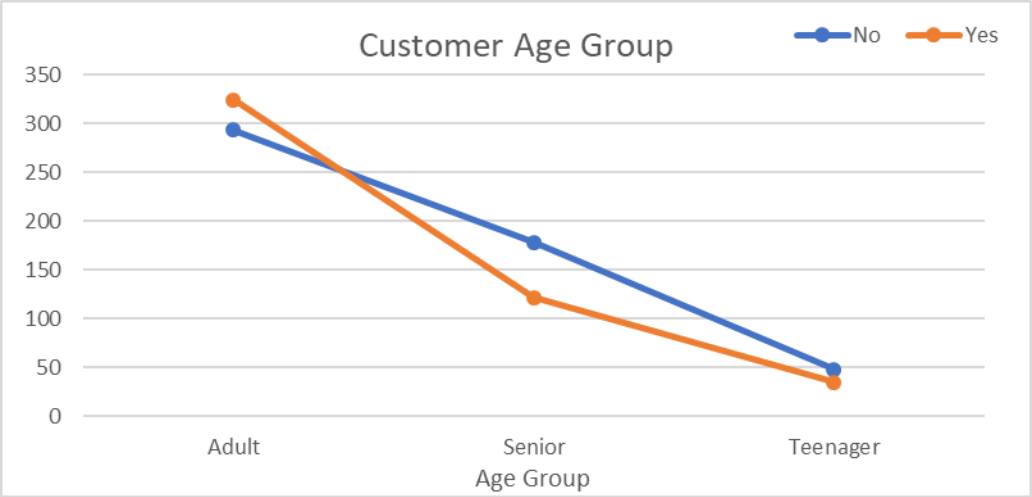


Figure 2: Sales (Different Age Group)

- Utilized Microsoft Excel for data analysis, creating a line graph depicting the relationship between age, income, and bike purchases.
- Analyzed and interpreted the line graph, highlighting the positive correlation between increasing age, income, and bike purchases.
- Employed data visualization methods to showcase the clear decline in bike purchases among teenagers compared to adults and seniors.

3. Bike Purchased by Region:

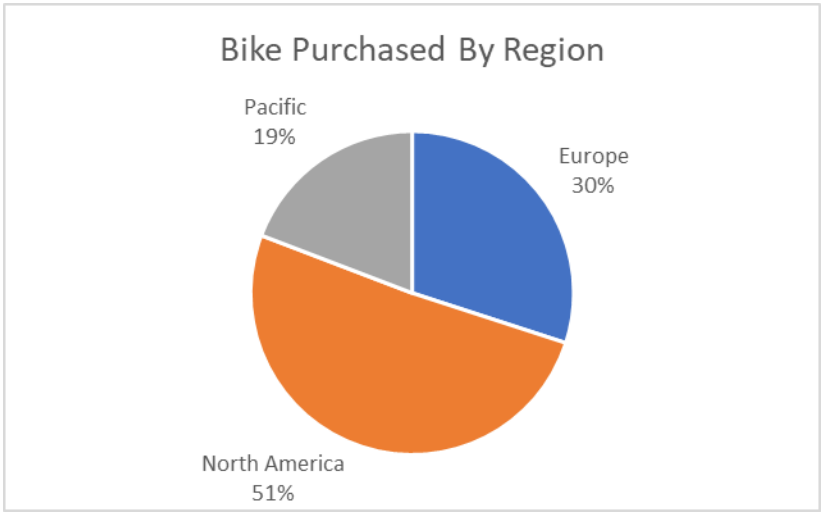


Figure 3: Bike purchased by region

- Analyzed and visualized regional bike sales using Microsoft Excel, creating a pie diagram for clear representation.
- Identified North America as the primary contributor, with approximately 51% of bike sales.

- Utilized data visualization methods to convey regional distribution, emphasizing North America, Europe, and the Pacific as significant portions.

4. Count of Bike Purchased by Marital Status:

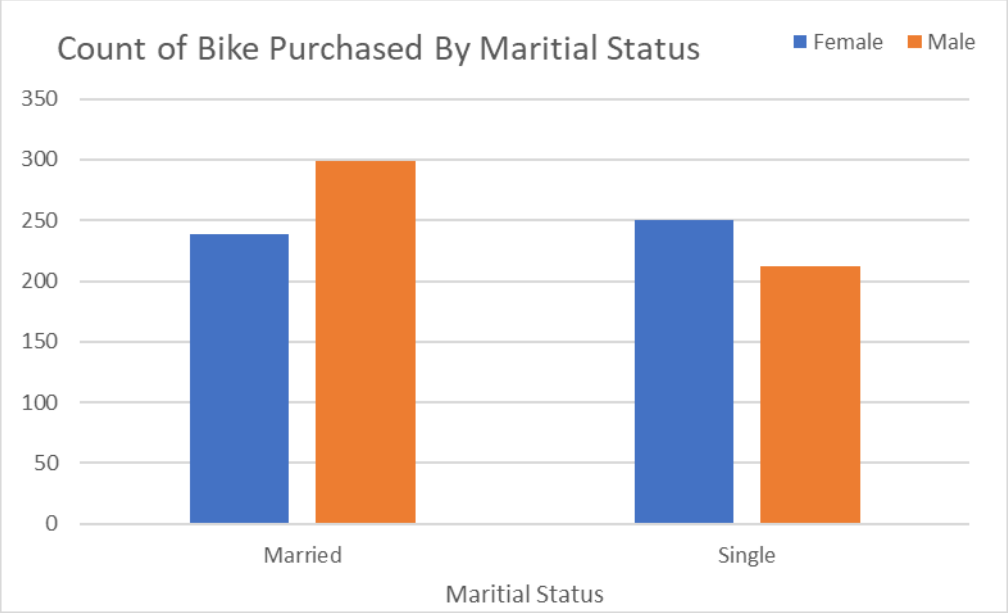


Figure 4: Count of Bike Purchased by Marital Status

- Utilized Microsoft Excel for data analysis, creating a bar graph to compare bike purchases among different gender and marital status.
- Analyzed and interpreted the bar graph, revealing that married males make more bike purchases than married females.
- Employed data visualization methods to highlight the distinct purchasing patterns, showcasing higher bike purchases by single females compared to single males.

5. Average Income Per Purchase:

Figure 5: Average Income Per Purchase

- Utilized Microsoft Excel for data analysis, creating a bar graph to compare average income and bike purchases between genders.
- Analyzed and interpreted the bar graph, revealing that females, with lower average income, make fewer bike purchases compared to males.
- Employed data visualization methods to highlight the income-based disparities, showcasing a clear correlation between higher income and increased bike purchases.

6. Bike Purchased by Occupation:

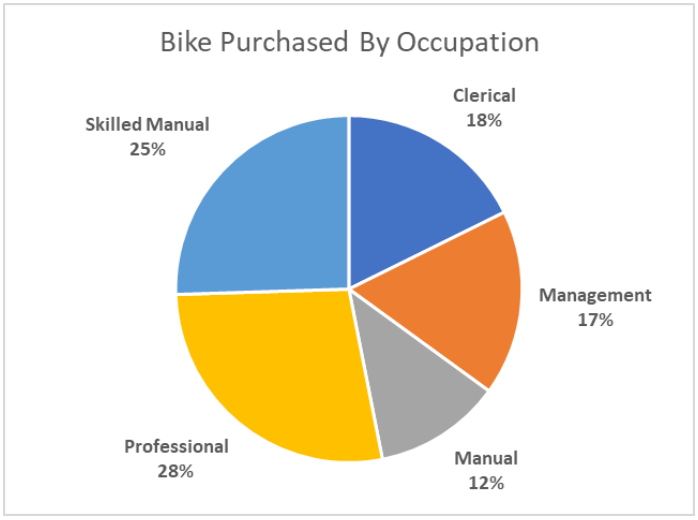


Figure 6: Bike Purchased by Occupation

- Utilized Microsoft Excel to create a pie diagram analyzing bike purchases based on different occupations.
- Organized and visualized data to highlight the significant contribution of professional and skilled manual occupations to bike sales.
- Recommended focusing marketing efforts on professional and skilled manual segments to enhance overall sales performance effectively.

Project Insight:

Based on the analysis, the following key insights were gained:

- Commute Patterns: Optimal bike purchases align with commutes of 0-1 miles, suggesting a preference for short-distance travel.
- Age Group Influence: The adult age group emerges as the primary demographic for bike purchases.
- Regional Sales Impact: North America stands out as the top region for significant bike sales.
- Marital Status and Gender Dynamics: Married males surpass single men in bike purchases, indicating a specific market preference.
- Income Dynamics: On average, males contribute more to bike purchases, revealing a gender-based trend.
- Occupational Trends: Professionals, constituting 28%, lead in bike purchases based on occupation, showcasing specific occupational preferences.

Final Conclusion:

To optimize bike sales and align with customer preferences effectively, the following targeted strategies are recommended:

- Concentrate advertising, offers, and coupons on the age group between 0-1 miles, the primary contributors to bike purchases.
- Focus marketing efforts on the adult age group, as they emerge as the main demographic for bike sales.
- Direct marketing efforts towards the North America region, the top contributor to significant bike sales.
- Prioritize married males in marketing strategies, acknowledging their higher preference for bike purchases.
- Implement gender-based marketing strategies, recognizing the gender-based trend of higher contributions from males.
- Enhance marketing efforts targeting professionals, constituting 28% of bike purchases based on occupation.
- Utilize income-based marketing strategies, recognizing the gender-based trend of higher contributions from males.
- Implement targeted advertising and offers for short-distance commuters (0-1 miles), catering to their specific preferences.