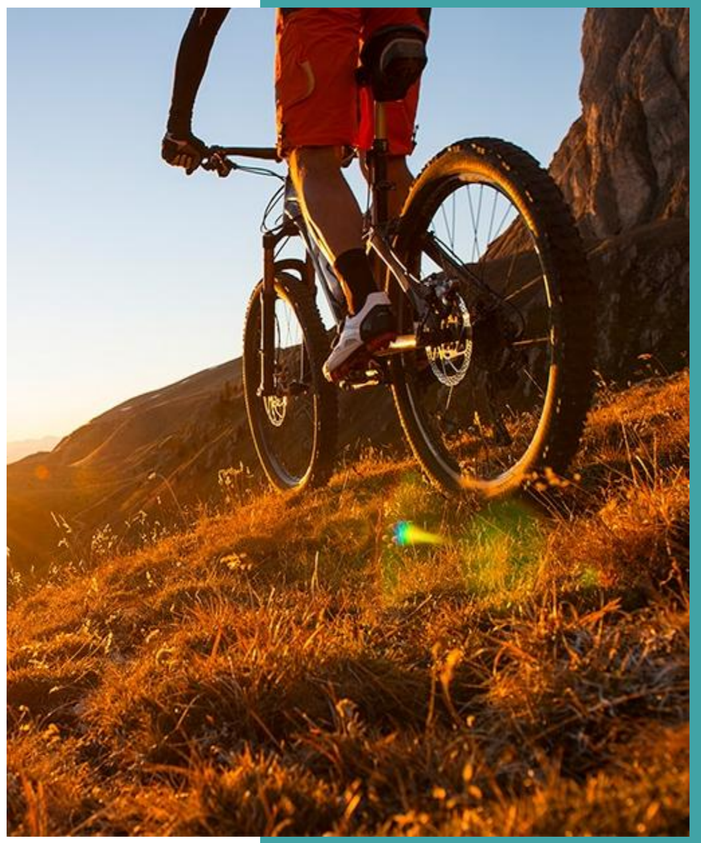
BIKE-SALES Analysis

A Case Study



SOMASRI PATRA

Contents

01 Project Overview

02 Dataset Overview

03 Customer Segmentation Insights

04 Sales Performance

05 Products Category

06 Profit vs Order Quantity

07 Popular Products

08 Geographical Insights

09 Recommendations

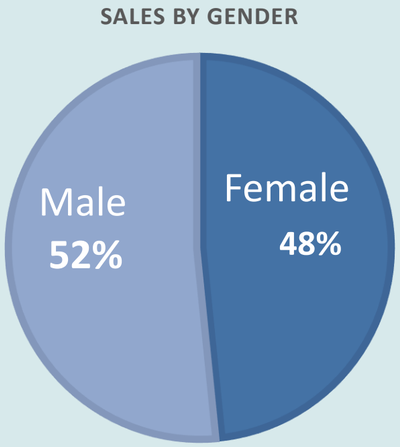
Project Overview

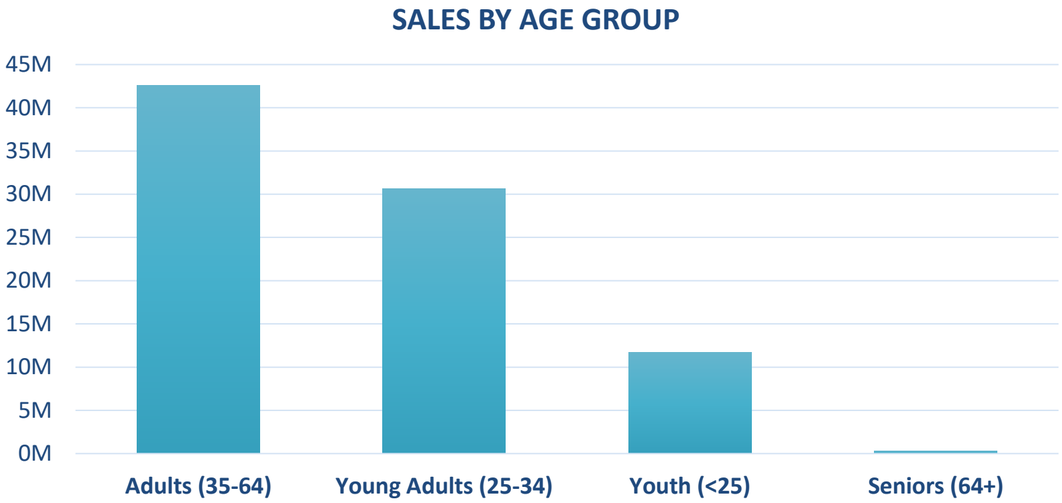
This case study analyzes bike sales data along with related categories such as clothing and accessories (e.g., helmets, water bottles, gloves). It explores sales performance, customer behavior patterns, popular products, and yearly sales trends. The analysis highlights revenue drivers, profit margins, and seasonal variations. Insights from this study can support better inventory planning, marketing strategies, pricing decisions, and customer experience improvements. Overall, it demonstrates how data-driven analysis can enhance business performance in the bike retail industry.

Dataset Overview

- Source: Kaggle – Bike sales data (2011–2016) : Contains details on Bike and with related categories such as clothing and accessories (e.g., helmets, water bottles, gloves), customer demographics, location, product categories, and sales metrics.
- Data is cleaned, standardized, and validated; no missing values identified.
- Tools used: Excel and SQL for analysis and insights.
- Provides a strong foundation to study sales trends, customer behavior, and business performance.

Customer Segmentation Insights

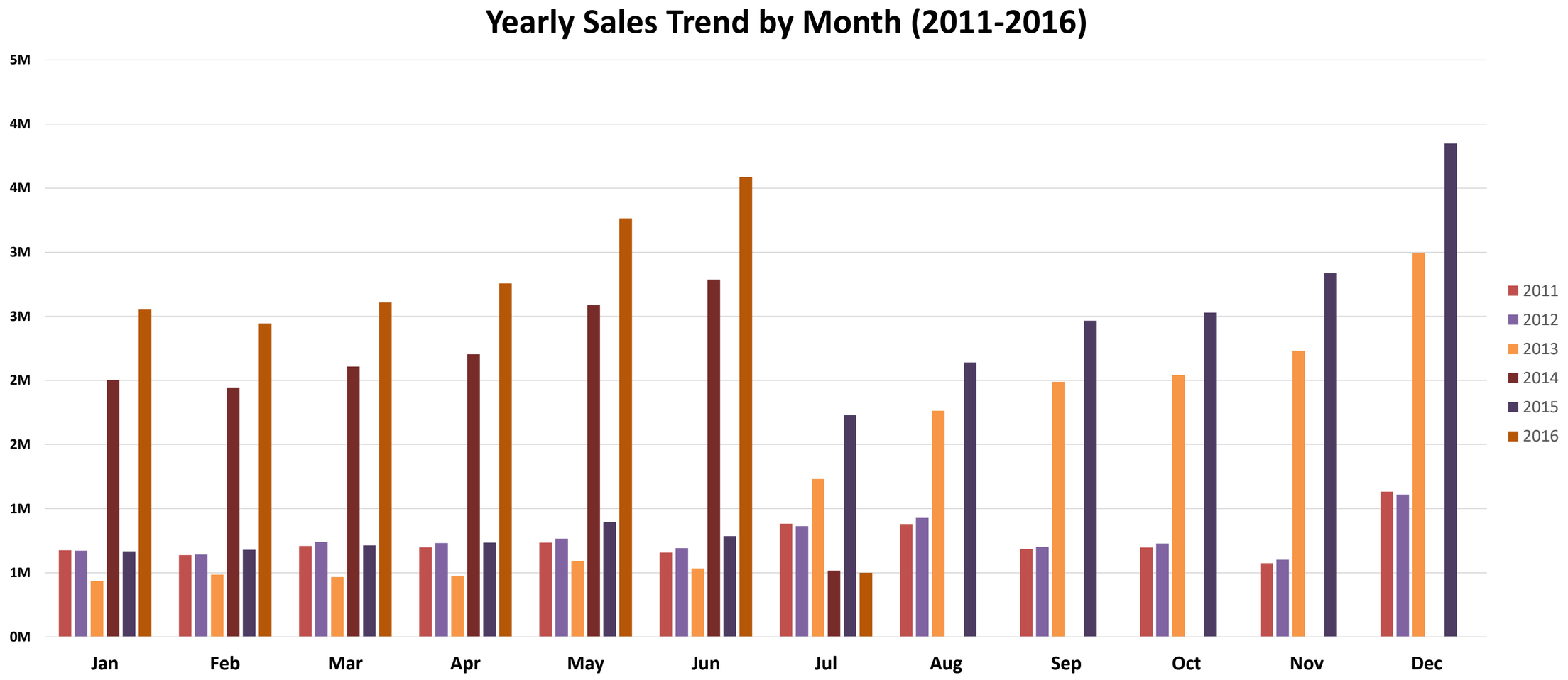


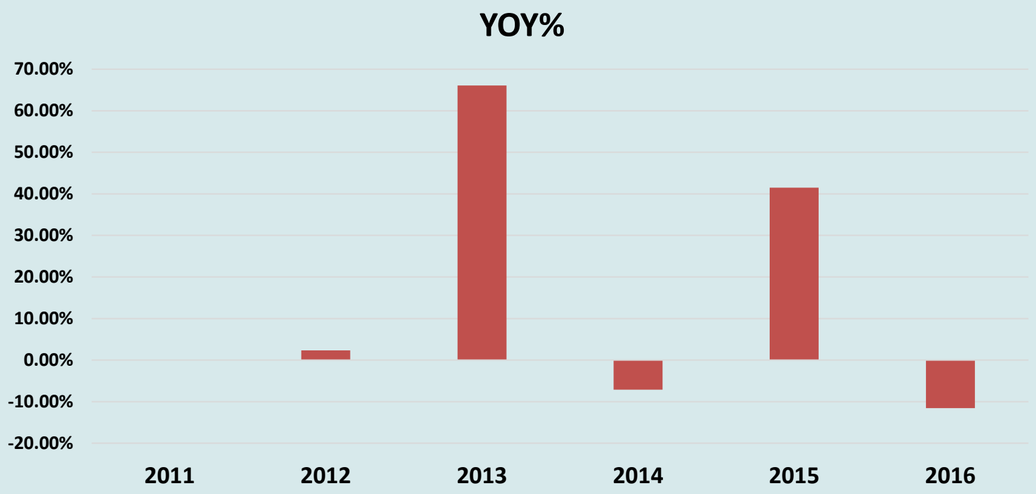


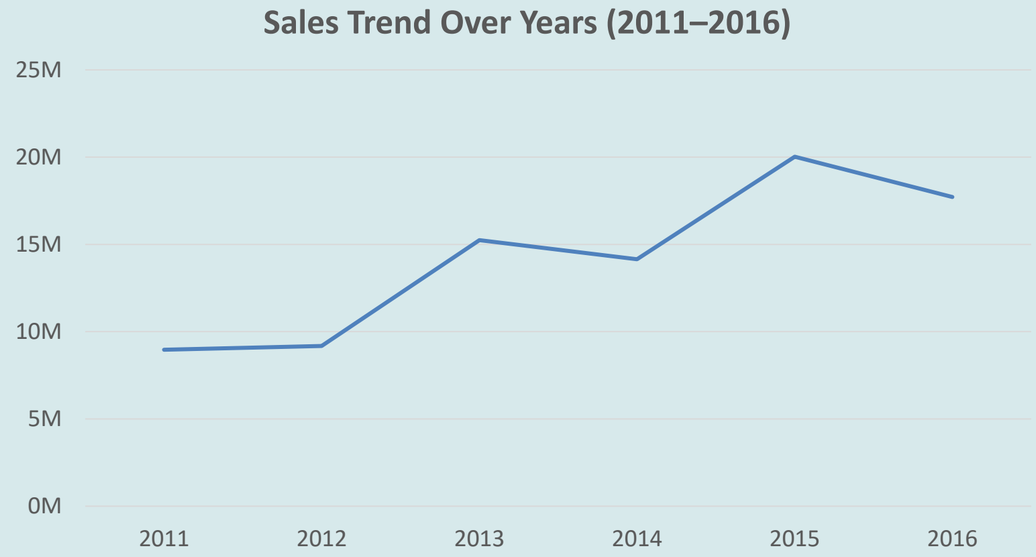
Here M stands for million

- Male customers account for the majority (52%) of total buyers, indicating stronger sales potential among this segment.
- The age group 35–65 represents the largest share of buyers.

Sales Performance





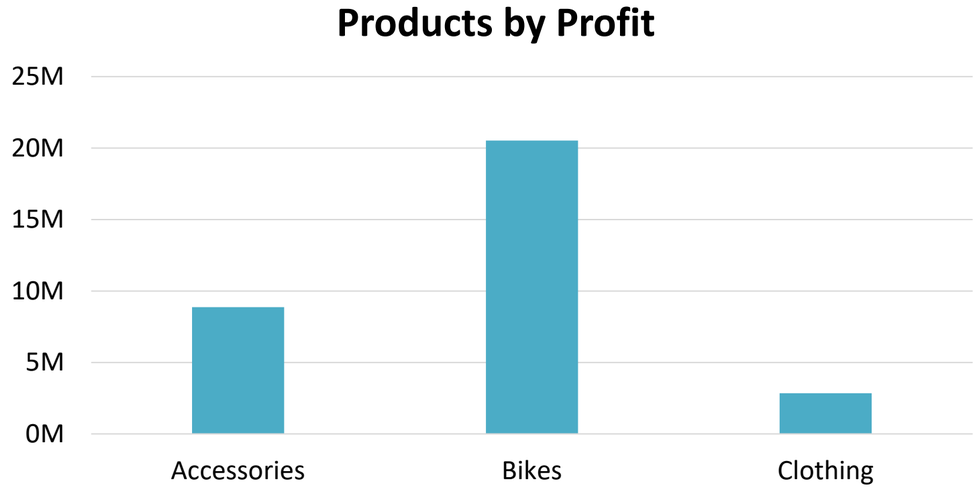


Here M stands for million

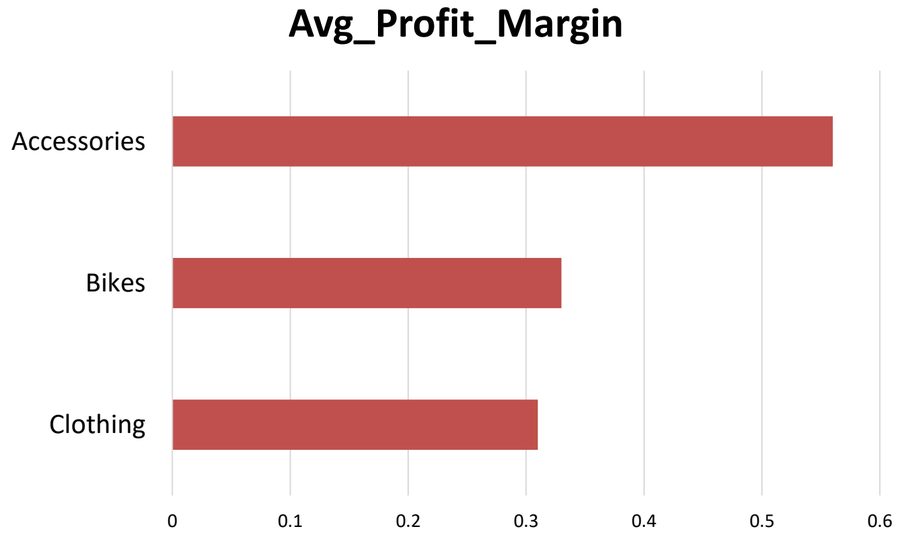
- The business experienced **volatile growth** – sharp ups and downs. The **2013 surge** was exceptional, but sustaining that momentum seems to have been difficult.
- **Seasonal spike:** Sales consistently peak in December, indicating strong demand during holiday season.
- **Long-Term Growth**:
  Over the years, sales have shown **upward trend**, reaching their highest point in **2015 with 20.02M** in revenue.

Products Category

Bikes	Clothing	Accessories
Road Bikes	Shorts	Tires and Tubes
Mountain Bikes	Jerseys	Bottles and Cages
Touring Bikes	Vests	Fenders
	Gloves	Hydration Packs
	Socks	Bike Racks
	Caps	Bike Stands



Here M stands for million



- Bikes contribute the highest share of overall profit, but their average profit margin is significantly lower compared to accessories.
- Accessories, though smaller in total profit contribution, deliver much higher margins, making them highly efficient revenue drivers per unit sold.

Profit vs Order Quantity

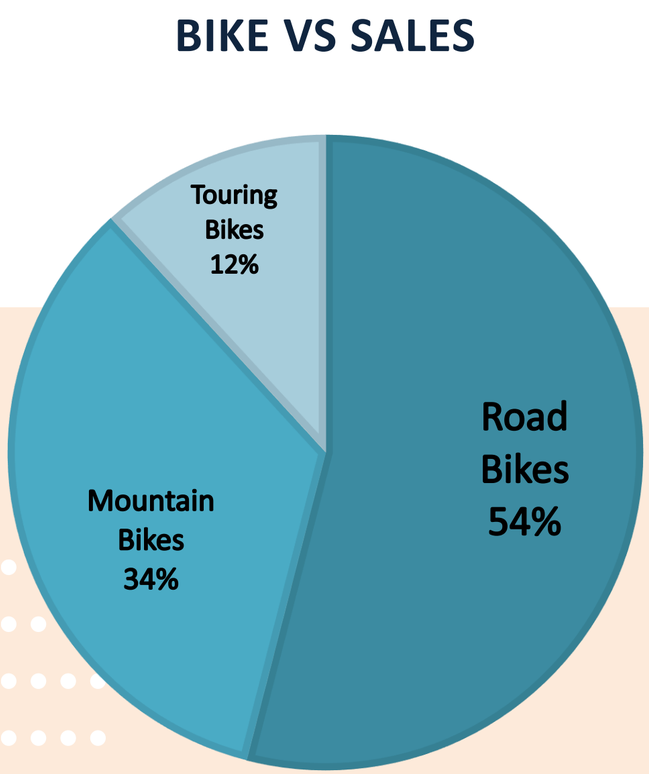
Product	Sum of Profit
Mountain-200 Black, 38	1310464
Road-150 Red, 62	1243755
Mountain-200 Silver, 42	1231452
Sport-100 Helmet, Red	1191402
Mountain-200 Silver, 38	1165560

Top 5 Product by Profit

Product	Order Quantity
Water Bottle - 30 oz.	164086
Patch Kit/8 Patches	157583
Mountain Tire Tube	102792
AWC Logo Cap	67316
Sport-100 Helmet, Red	63663

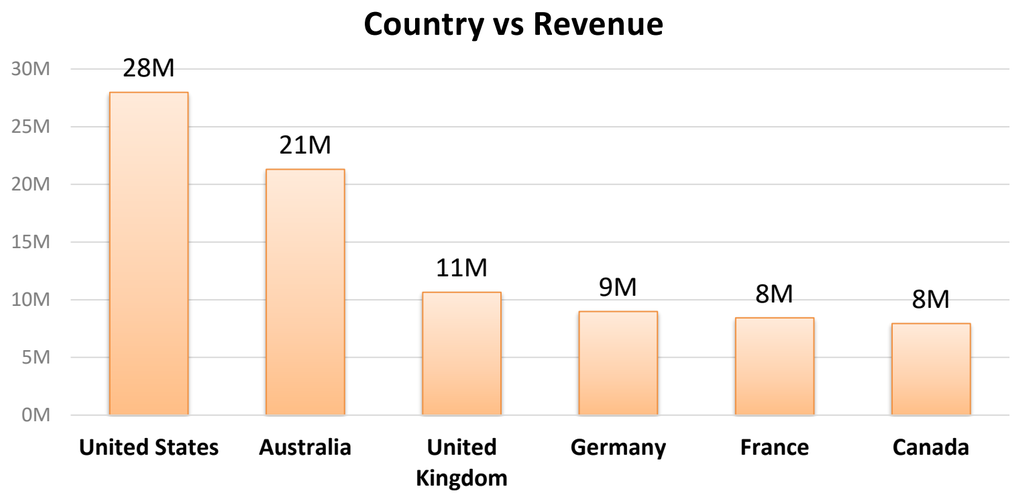
Top 5 Product by Order Quantity

Popular Products



- The dataset includes three primary product categories: Accessories, Clothing and Bikes.
- Mountain-200 Black, 38 stands out as the top profit contributor.
- Water Bottles are ordered in very large quantities, indicating strong demand despite their relatively lower unit profitability.
- Within the Bike segment, which is the core revenue driver: **Road Bikes** dominate, contributing 54% of total bike sales. **Mountain Bikes** account for 34% of bike sales, positioning them as the second-largest contributor.

Geographical Insights



- United States generates the highest revenue (27.9M), followed by Australia (21.3M) and the United Kingdom (10.6M).
- Within the United States, the top 3 revenue-contributing states are : California (17.6M), Washington (6.7M) & Oregon (3.4M).

Here M stands for million

Recommendations

- Launch targeted discounts for Men aged between 35-64.
- Offer discounts in December to attract new customers.
- Prioritize marketing and inventory push for Road and Mountain Bikes, as they are the core revenue drivers.
- Increase Inventory for water bottle to prevent stockouts.
- Increase supply in California, Washington & Oregon to capitalize on regional demand.

Thank You