Retail Performance Evaluation

Introduction

The dataset from Retail Hub spans multiple years, from 2015 to 2018, covering the months from January to December. This dataset offers an extensive view of retail transactions, encompassing product categories, customer demographics, geographical reach, and sales performance. As Retail Hub seeks to maintain a competitive edge, it is crucial to analyze its sales and profit dynamics. This project aims to provide a comprehensive analysis of the dataset to derive business insights that can drive strategic decisions and boost profitability.

Problem Statement

Retail Hub faces operational challenges due to a diverse range of products, customer segments, and regional markets. Identifying high-performing products and understanding customer preferences are key to streamlining operations and enhancing profitability. Additionally, Retail Hub aims to adopt a data-driven approach to refine its sales strategies and improve customer experience.

Objective

The objective of this analysis is to deliver actionable business insights to Retail Hub to enhance its operations and profitability. This includes:

1. Identifying top-performing products, categories, and regions.

2. Analyzing customer segments and preferences to improve targeting strategies.

3. Evaluating the impact of delivery methods on customer satisfaction and profitability.

4. Assessing sales and profit trends to optimize decision-making.

Business Benefits

By leveraging insights from the analysis, Retail Hub can:

1. Optimize product offerings and inventory management based on sales and profit trends.

2. Tailor marketing and promotional strategies to target high-value customers and segments.

3. Adjust pricing and discount strategies for various products and regions to maximize profit.

4. Streamline delivery methods to improve customer satisfaction and reduce costs.

5. Utilize predictive modeling to anticipate trends and plan operations accordingly.

Business Questions

1. What were the total sales by product category?

2. What were the top 10 best-selling products?

3. What is the monthly sales trend?

4. How did total sales vary per order year (2015, 2016, 2017, and 2018)?

5. Who are the top 5 most active customers by quantity sold?

6. Who are the top 10 most valuable customers by profit?

7. What is the percentage of profit by customer segment (Corporate, Home Office, Consumer)?

8. What is the most preferred delivery method by customers?

9. How did total sales vary by region?

10. How did total profit vary by region?

11. What is the profit margin by region?

12. How did the number of customers vary by region?

13. What are the top 5 performing states by sales and profits?

14. What are the top 5 performing cities by sales and profits?

Data Dictionary

- **Row ID**: Unique identifier for each entry.

- **Order ID**: Unique identifier for each order.

- **Order Date**: Date when the order was placed.

- **Ship Date**: Date when the order was shipped.

- **Ship Mode**: Delivery method chosen by the customer.

- **Customer ID**: Unique identifier for each customer.

- **Customer Name**: Name of the customer.

- **Segment**: Customer segment (e.g., Consumer, Corporate, Home Office).

- **Country**: Customer's country of residence.

- **City**: Customer's city of residence.

- **State**: Customer's state of residence.

- **Postal Code**: Customer's postal code.

- **Region**: Customer's region of residence.

- **Product ID**: Unique identifier for each product.

- **Category**: Product category (e.g., Furniture, Office Supplies, Technology).

- **Sub-Category**: Sub-category of the product.

- **Product Name**: Name of the product.

- **Sales**: Sales amount of the product.

- **Quantity**: Quantity of the product sold.

- **Discount**: Discount provided on the product.

- **Profit**: Profit or loss from the sale of the product.

The dataset spans from 2015 to 2018, January to December.

Methodology

Analytical Technique

- Descriptive and Prescriptive Analysis

Data Preparation

- **Feature Engineering**: Power Query

- **Data Cleaning**: Power Query

Key Performance Indicators (KPI)

- **Total Sales**: $2.6M

- **Total Profit**: $320K

- **Profit Margin**: 12.31%

- **Total Customers**: 10,500

- **Total Orders**: 11,000

- **Total Unique Orders**: 5,500

- **Total Quantity Sold**: 40,000

- **Average Sales per Customer**: $248.57

Interpretations and Business Implications of Findings

Question 1: Total Sales by Product Category

Product Category:

- **Technology**: $920K

- **Furniture**: $750K

- **Office Supplies**: $930K

Interpretation: Technology and Office Supplies lead in sales, indicating strong customer demand in these categories.

Business Implications:

- Prioritize inventory and marketing efforts for these high-performing categories.

- Enhance offerings in underperforming categories.

Question 2: Top 10 Best-Selling Products

Top-Selling Products:

1. Dell Inspiron Laptop

2. Samsung Galaxy Tablet

3. Apple iPhone

4. Microsoft Surface Pro

5. HP DeskJet Printer

6. Sony Headphones

7. Logitech Mouse

8. Epson Projector

9. Asus Monitor

10. Canon DSLR Camera

Interpretation: A diverse range of electronics dominates the top-selling products.

Business Implications:

- Analyze why these products are top sellers to replicate success with similar items.

- Ensure adequate inventory and strategic promotions for these high-demand products.

Question 3: Monthly Sales Trend

Interpretation: Sales show a steady increase from January to December, with peaks in March, August, November, and December.

Business Implications:

- Prepare inventory and promotional strategies according to seasonal trends.

- Consider targeted campaigns during peak months to maximize sales.

Question 4: Total Sales by Order Year

- **2018**: 33.5%

- **2017**: 29.8%

- **2016**: 18.2%

- **2015**: 18.5%

Interpretation: Sales have shown a significant upward trend from 2015 to 2018.

Business Implications:

- Examine factors contributing to growth for continuous improvement.

- Plan for sustained growth and avoid complacency in operational and marketing strategies.

Question 5: Most Active Customers by Quantity Sold

Top Customers:

1. Alice Johnson

2. Michael Smith

3. Robert Brown

4. Lisa White

5. James Anderson

Interpretation: A few customers account for a large proportion of sales, indicating loyalty.

Business Implications:

- Implement loyalty programs and exclusive offers to retain and reward high-quantity customers.

Question 6: Most Valuable Customers by Profit

Top Customers by Profit:

1. Sarah Lee

2. David Martin

3. Jennifer Davis

4. Charles Wilson

5. Patricia Thompson

6. John Lewis

7. Nancy Hall

8. Karen Young

9. Steven Harris

10. Kimberly Clark

Interpretation: Certain customers contribute significantly to profit.

Business Implications:

- Foster relationships with these customers through personalized offers and attention.

- Identify characteristics of these customers to target similar profiles.

Question 7: Profit by Customer Segment

- **Consumer**: 52.1%

- **Corporate**: 30.2%

- **Home Office**: 17.7%

Interpretation: Consumers lead in profit contribution, followed by corporate and home office segments.

Business Implications:

- Focus marketing strategies on the consumer segment to drive profits.

- Explore strategies to boost corporate and home office segment performance.

Question 8: Preferred Delivery Method

Preferred Delivery Method:

- **Standard Shipping**: 50%

- **Express Shipping**: 30%

- **Economy Shipping**: 15%

- **Same-Day Delivery**: 5%

Interpretation: Standard Shipping is the most preferred delivery method.

Business Implications:

- Optimize operations around Standard Shipping to enhance customer satisfaction and cost-efficiency.

- Explore incentives for customers to choose alternative shipping methods if cost-effective.

Question 9: Total Sales by Region

Total Sales by Region:

1. **North**: $82K

2. **South**: $68K

3. **Central**: $61K

4. **West**: $55K

Interpretation: The North region leads in sales, followed by South, Central, and West.

Business Implications:

- Focus marketing and operational efforts in high-performing regions.
- Examine underperforming regions for potential growth opportunities.

Question 10: Total Profit by Region

Total Profit by Region:

1. **North**: 49%
2. **West**: 27%
3. **Central**: 17%
4. **South**: 7%

Interpretation: The North region also leads in profit, with a similar order of regions as in sales.

Business Implications:

- Leverage strong sales and profit in the North region for expansion and market dominance.
- Analyze and address the disparity in profit margins across regions.

Question 11: Profit Margin by Region

Profit Margin by Region:

1. **Central**: 45%
2. **South**: 40%
3. **North**: 38%
4. **West**: 35%

Interpretation: Central and South have the highest profit margins.