

US Regional Sales Analysis Report

Date: October 2024

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1. Introduction

This project aims to analyze regional sales data to uncover patterns and provide actionable insights that can drive strategic business decisions. The team worked on different aspects of the project, including data cleaning, formulating key business questions, performing SQL analysis, and creating visualizations using Power BI.

2. Project Objective

The goal of this analysis is to explore sales performance trends across different regions, channels, and product categories. The analysis addresses questions related to:

- Overall sales performance over time
- The impact of discounts on profitability
- Product demand across regions
- Performance of sales teams in different regions

3. Data Collection & Cleaning

Data used in this analysis comes from a publicly available dataset on US regional sales, which includes information on sales orders, customers, store locations, products, and sales teams.

Data Cleaning Process (Python)

Responsible: (Abdel Rahman Waheed, Maher Ahmed)

The dataset was cleaned using Python. Major cleaning tasks included:

- Removing missing or duplicate entries.
- Formatting date columns (Procured Date, Order Date, etc).
- Standardizing column names.
- Handling outliers in sales and discount data.

4. Analysis & Insights:

4.1. Sales Performance Analysis

Questions addressed by: Abdel Rahman Waheed, Ali Abdel Halim, Maher Ahmed (SQL)

visualized by: Ahmed Mokhtar, Mahmoud Mounir (Power BI):

1. What are the total sales over time?

Analysis showed an upward trend in sales, especially during Q4, indicating seasonal increases likely due to holiday shopping.

2. How do sales vary across different channels?

Online channels contributed to a higher percentage of total sales, with the in-store channel performing steadily but lagging behind online sales growth.

3. What is the average order value (AOV) across different stores/regions?

The West region had the highest AOV, likely due to higher product prices in that region.

4.2. Product Analysis

Questions addressed by (Ali Abdel Halim, Ahmed Mokhtar, Mahmoud Mounir):

1. Which products generate the most revenue or profit?

Cookware products had the highest demand and generated the most revenue. However, Photo Frames had the highest profit margin across regions.

2. What is the impact of discounts on sales and profitability?

Discounts had a significant impact on boosting sales volume but also reduced profit margins, particularly for electronics.

4.3. Customer Analysis

Questions addressed by the team:

1. Which customers contribute the most to sales and profitability?
Large corporate customers, such as (Avon Corp and Elorac, Corp) contributed the most to revenue.
2. What is the repeat customer rate?
The analysis revealed a 35% repeat customer rate, with corporate customers accounting for a significant portion of repeat sales.

4.4. Geographic Analysis

Questions answered by SQL (Abdel Rahman Waheed, Ali Abdel Halim, Maher Ahmed)

visualized by Power BI (Ahmed Mokhtar, Mahmoud Mounir):

1. How do sales vary by region?
The South region outperformed other regions in terms of sales volume, while the West region had higher profitability due to lower costs.
2. What is the impact of store location on sales?
Proximity to major urban centers was a significant factor in higher sales. Stores located in densely populated areas saw better performance compared to rural areas.

5. Results & Key Findings

- Sales Channels: Online sales are growing significantly faster than in-store sales.
- Discount Strategy: While discounts drive sales, they negatively impact profit margins.
- Top Products: Cookware is the best-performing product by revenue, but photo frames yield the highest profit margins.
- Regional Performance: The South region dominates in terms of sales volume, while the West region excels in profitability.
- Customer Insights: Repeat customers, especially corporate clients, are a crucial driver of profitability.

6. Recommendations

Based on the findings, the following recommendations are made to improve performance:

- Optimize Discount Strategies: Focus on strategic discounting for high-margin products to boost sales without significantly impacting profitability.
- Focus on the West Region: Expand operations in the West, where higher AOV and profitability are observed.
- Enhance Online Sales Channels: Invest in online marketing and logistics to capitalize on the growing online sales trend.
- Improve Customer Retention: Implement loyalty programs targeting corporate customers to increase repeat purchase rates.

7. Conclusion

The regional sales analysis provided critical insights into how sales performance varies across channels, products, and regions. By optimizing discount strategies, focusing on profitable regions, and enhancing online channels, the company can achieve sustainable growth.

8. Appendix

- Data Sources: The dataset was obtained from data.world.
- Code Samples: Python and SQL code snippets used for data cleaning and analysis.
- Power BI Visualizations: Screenshots of key visualizations from the Power BI dashboard, including sales trends, product analysis, and regional performance.