US Regional Sales Report

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Contents

Introduction:

Regional Sales refers to the total sales performance within specific geographic areas of a country, this report centers its attention on the United States region. The analysis of regional sales data plays a vital role in understanding market dynamics, consumer preferences, and economic trends. Regional Sales allows businesses to tailor their marketing and sales strategies to meet the unique demands of each region.

Variations in consumer behavior and purchasing power often exist between different areas, making it important to plan your approach accordingly. Additionally, regional sales analysis helps in identifying growth opportunities and potential challenges within specific markets, enabling companies to allocate resources effectively, improve inventory management, and maximize revenue. Moreover, this dataset is useful for providing insights into regional economic health and aiding in the formulation of targeted policies to promote economic growth and stability.

In essence, the analysis of United States Regional Sales data is a pivotal step in achieving a deeper understanding of the diverse and ever-evolving American marketplace.

Executive Summary:

Project Objective:

The objective of this project is to perform a detailed analysis on sales data to draw out key insights and recommendations which could result in enhancing customer satisfaction, boosting organizational productivity and driving regional sales growth.

Key Insights:

- Customer Retention increase in late 2018 and has remained consistent ever since.
- Profit increased by 66% between 2018 and 2019, remaining same in 2019 and 2020.
- St-284 store, S-26 sales team, and NMK1003 Warehouse lead in profit. Store St-122 and Product P-8 have high profit despite low cost.
- Customers C-12, C-29 and C-3 are best customers due to high profit and number of orders. High discounts negatively affect the profit.
- In store sales are the most profitable and delivery time should not exceed 30 days.

Immediate Future Actions:

- Offer higher discounts to customers with greater profits and higher order volumes.
- Promote stores, warehouses, and cost-effective products that yield high profits.
- Adhere to the optimal delivery duration to maximize profits while minimizing costs.
- Plan strategically based on both high and low-profit months.
- Reward sales teams that have delivered high profits while managing costs efficiently, and closely monitor underperforming teams to enhance their productivity.

About the Dataset:

The open-source dataset is taken from **Kaggle**:

https://www.kaggle.com/datasets/talhabu/us-regional-sales-data

This dataset offers a thorough understanding of sales in various regions of the United States through different sales channels, such as In-Store, Online, Distributor, and Wholesale. Comprising 17,992 rows and 15 columns, it contains a vast array of information, covering everything from specific order and product details to key sales performance metrics. It provides a comprehensive view of sales transactions and customer interactions, facilitating in-depth analysis of sales patterns, trends, and possible opportunities.

Data Wrangling:

The csv data file was extracted using **Microsoft Excel**. The Data Wrangling operations were performed using **Power Query** in Microsoft Excel. Some of the performed operations were:

- Header Promotion
- Removal of Duplicates
- Filtering Columns
- Correcting Data Types
- Adding Prefixes

Data Transformation:

Data Transformation was done by using **Power Query** and Pivot tables were made using **Power Pivot** in **Microsoft Excel**. Some of the performed operations were:

- Removal of Irrelevant Columns
- Addition of calculated columns for further comparisons
- Addition of calculated measures for in-depth study.
- Creation of specific pivot tables for analysis and visualizations

In-depth Data Examination:

Data was further explored at much deeper level using **SQL Server**. Some of the operations performed for a deeper analysis were:

- Creation of a Database
- Construction of complex pivot table
- Generation of specific data views

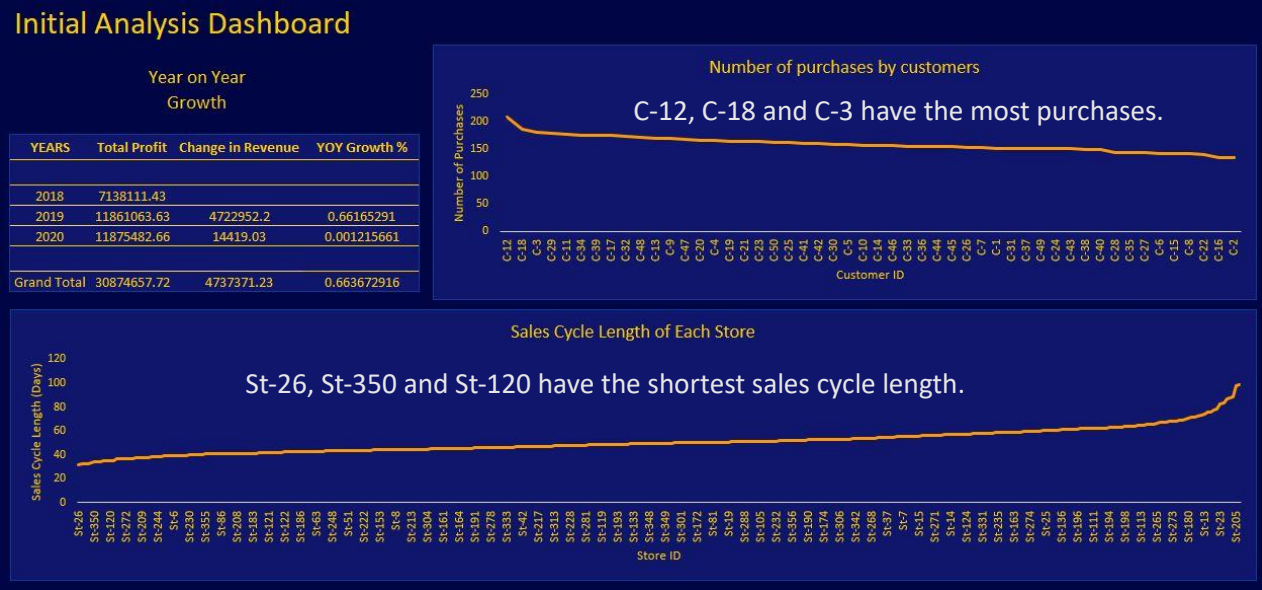
Data Visualizations and Insights:

A simple initial Dashboard was created using **Microsoft Excel**. To conduct a more comprehensive analysis, an initial data analysis dashboard consisting of five pages was developed. Additionally, another dashboard was crafted using **Microsoft Power BI**, showcasing eight specific data views extracted from **SQL Server**. These dashboards incorporate diverse visualizations to enhance the analytical representation of the data. These interactive dashboards were designed to allow users to personalize their experience. Each visualization was made with a specific objective in mind. The most useful visualizations and dashboards containing the obtained insights are detailed below.

Dashboards:

1. The first dashboard visualizes Year on Year Growth in Revenue, Customer Purchases and Sales Cycle Length of Stores.

Dashboard 1



2019 had the greatest growth in revenue.

2. The second dashboard provides an overview of the regional sales.

Dashboard 2

P-23, P-37 and P-8 have the most orders.

Delivery Duration of greater than 31 days significantly decreases orders.

3. The third dashboard presents profit over time and profitable stores, warehouses and sales teams.

Dashboard 3

St-284, St-122 and St-26 are the most profitable stores.

NMK-1003, PUJ-1005 and UHY1004 are the most profitable warehouses.

S-26, S-13 and S-1 sales teams have made the most profit.

4. This dashboard shows information about total cost over time and costly store, warehouses and sales teams.

Dashboard 4

Stores St-284, St-26 and St-238 are the costliest stores.

NMK-1003, PUJ1005 and UHY1004 are the costliest warehouses.

Sales Teams S-26, S-1 and S-13 have the highest cost.

5. The fifth dashboard displays the important information about products.

Dashboard 5

P-23, P-40 and P-4 are the costliest products.

P-23, P-37 and P-8 have the most orders. Highest discount is on P-8, P-4 and P-42.

6. The final dashboard illustrates different timeseries charts to understand the relation of profit and orders by different timeseries factors.

Dashboard 6

C-12, C-18 and C-11 have the highest average late deliveries.

Customers C-12, C-3 and C-29 have the most orders.

C-34, C-32 and C-38 have been given the highest discount on average.

7. The fifth dashboard analyzes Orders wither some specific statistics.

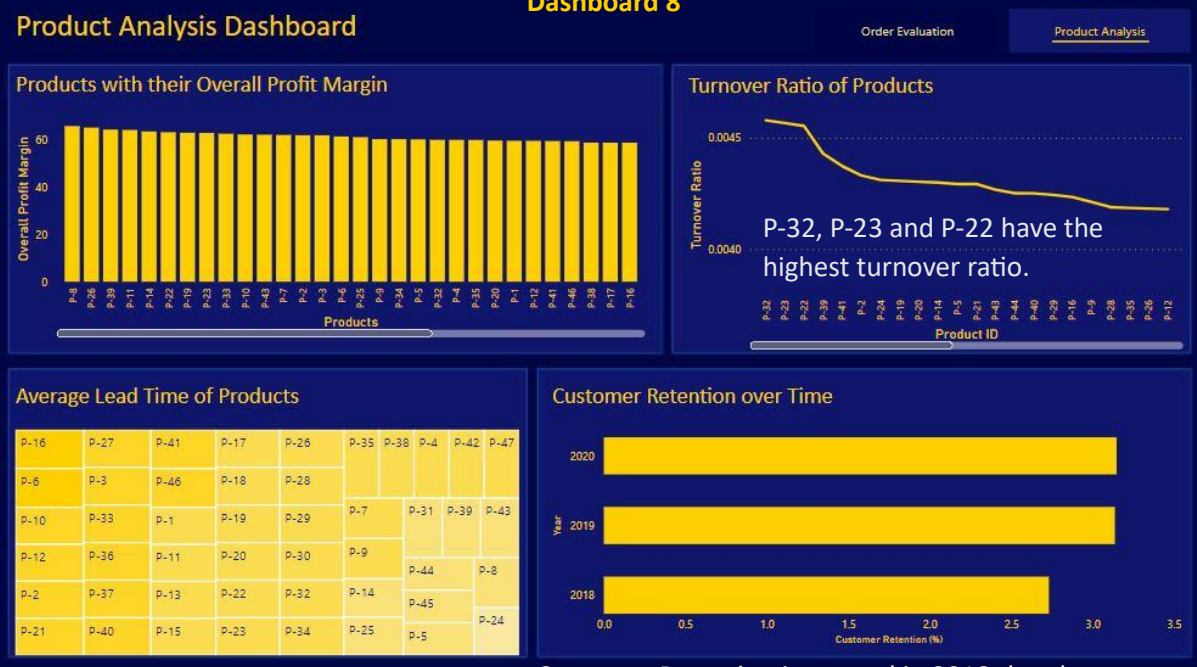
Dashboard 7

Quarter-4 and Quarter-3 have most orders.

21st, 4th and 23rd of each month have the highest average order.

8. The final dashboard illustrates overall profit margin, turnover ratio, lead time of products as well as the customer retention over time on these products.

Dashboard 8



P-8, P-26 and P-39 have the highest profit margin.

P-16, P-6 and P-10 have the highest average lead time.

Customer Retention increased in 2018 then has remained constant over 2019 and 2020.

Analysis Conclusions:

1. In 2019, the most substantial revenue growth occurred. The customers with the highest purchase frequency are C-12, C-18, and C-3, while Stores St-26, St-350, and St-120 exhibit the briefest sales cycle duration. **(Dashboard 1)**
2. A discount exceeding 20% significantly diminishes profitability. Cost and profit maintain a direct proportionality. Products P-23, P-37, and P-8 witness the highest volume of orders, whereas products markedly decrease with a delivery duration exceeding 31 days. **(Dashboard 2)**
3. Profitability remains generally consistent over time. The most lucrative stores include St-284, St-122, and St-26, and the most profitable warehouses are NMK-1003, PUJ-1005, and UHY1004. Sales teams S-26, S-13, and S-1 contribute the most to overall profit. **(Dashboard 3)**
4. The cost has exhibited relative consistency throughout the years. The stores with the highest costs are St-284, St-26, and St-238, and the costliest warehouses are NMK-1003, PUJ-1005, and UHY1004. Sales Teams S-26, S-1, and S-13 incur the highest costs. **(Dashboard 4)**
5. In-Store and Online Products prove to be the most profitable. The costliest products are P-23, P-40, and P-4, with P-23, P-37, and P-8 garnering the most orders. Notably, the highest discounts are applied to P-8, P-4, and P-42. **(Dashboard 5**)
6. Both In-Store and Online Customers contribute significantly to profitability. C-12, C-18, and C-11 experience the highest average late deliveries. Leading in order frequency are customers C-12, C-3, and C-29, with C-34, C-32, and C-38 receiving the highest average discounts. **(Dashboard 6)**
7. Sales teams S-13, S-18, and S-8 exhibit the highest instances of late deliveries. Peak order months are December, January, and November, with Quarter-4 and Quarter-3 witnessing the most orders. The 21st, 4th, and 23rd of each month boast the highest average order frequency. **(Dashboard 7)**
8. Products P-8, P-26, and P-39 display the highest profit margins and P-32, P-23, and P-22 have the highest turnover ratios, while P-16, P-6, and P-10 boast the lengthiest average lead times. Customer retention experienced an increase at the end of 2018, maintaining consistency throughout 2019 and 2020. **(Dashboard 8)**

Considerations to keep in mind:

1. The dataset is not inclusive of all the details regarding all the sales in United States. As a result, the accuracy of this information is confined to the scope of the provided dataset.
2. Apart from the discussed metrics there are many other metrics like state of the economy that effect the regional sales.

Recommendations:

1. Focus on customer segments C-12, C-18, and C-3 to capitalize on their high purchase frequency and consider refining sales strategies for stores St-26, St-350, and St-120 to leverage their shorter sales cycle duration.

2. Exercise caution with discounts exceeding 20% to avoid a significant impact on profitability. Evaluate and potentially adjust pricing strategies for products P-23, P-37, and P-8, which generate the highest volume of orders. Implement measures to reduce delivery durations exceeding 31 days for improved product performance.
3. Allocate resources strategically towards stores St-284, St-122, and St-26, along with warehouses NMK-1003, PUJ-1005, and UHY1004, which consistently demonstrate high profitability. Enhance sales team efforts, particularly for S-26, S-13, and S-1, to maximize their contribution to overall profit.
4. Monitor and manage costs effectively, especially for stores St-284, St-26, and St-238, along with warehouses NMK-1003, PUJ-1005, and UHY1004. Implement cost-control measures for sales teams S-26, S-1, and S-13, which incur the highest costs.
5. Prioritize the promotion and marketing of In-Store and Online Products, considering their proven profitability. Evaluate pricing strategies for costliest products P-23, P-40, and P-4, and streamline discounts for products with high order volumes, such as P-8, P-37, and P-23.
6. Address and improve average late deliveries for customers C-12, C-18, and C-11 to enhance overall customer satisfaction. Tailor promotional strategies for customers C-34, C-32, and C-38, who receive the highest average discounts.
7. Implement measures to reduce late deliveries for sales teams S-13, S-18, and S-8. Align sales strategies with peak order months (December, January, and November) and prioritize efforts during Quarter-4 and Quarter-3.
8. Maximize the potential of high-profit margin products P-8, P-26, and P-39. Optimize turnover ratios for products P-32, P-23, and P-22, and streamline lead times for products P-16, P-6, and P-10. Continue customer retention efforts initiated in 2018 to maintain consistent levels throughout 2019 and 2020.