**Executive Summary**

The given executive summary focuses on the retail company to provide a concise overview of a comprehensive analysis conducted on sales and profitability data. Through an in-depth analysis and inspection of the sales and profitability data, the retail company’s data was examined across three primary dimensions shipping mode, geographical performance, and sales and profits across several dimensions. A number of key insights and recommendations are presented spread across the three primary dimensions, which will guide strategic decision-making going forward. These recommendations include diversifying shipping modes based on historical customer preference to minimize the risk of upsetting customers, directing the sales department to target the regions with the highest sales levels, continuously evaluating promotional incentives, collaborating in determining if there are profitable new products available to carry, as well as on-going engagement and monitoring of high-end customers for continuous enhancement of customer satisfaction and retention. The future competitiveness of a retail company is largely determined by its ability to navigate the complexities of a rapidly evolving industry and create a level of success that is sustainable over the long term.

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# Introduction

In a rapidly evolving and highly competitive retail industry like it is today, the need to understand the various factors that influence customer behaviours and drive operational and strategic decisions has never been more important. This complete analysis will serve as a great resource for any retail company looking to improve its performance and profitability. The company dataset is rich and contains a dozen different dimensions that, if utilized correctly, will help drive significant commercial value for the company. The data delves into a number of key areas including shipping mode optimization, geographical performance review, sales trend over the course of four years, segmentation of customers into meaningful categories, categorization of the most profitable categories and sub-categories, location-based analysis and a study to determine whether customer loyalty has an impact on profitability and sales, a correlation between profit and discount as well as many other areas. This study will not only utilize tabular methods of descriptive statistics but also a number of graphical methods to observe patterns, trends and relationships within the data that are being reviewed.

# Optimizing Shipping Modes

Analyzing the profitability of different shipping modes is worth considering based on varying average profits per shipment. Based on the graph, First Class shipping has the highest average profit at $31.84, indicating that this shipping type may carry the potential to bring higher returns per transaction. The Second Class shipping average profit is $29.54, representing a similarity in profitability. Same Day shipping and Standard Class shipping have average profits of $29.27 and $27.62, respectively. The slightly lower profit margin of Same Day shipping compared to First and Second Class does not make it an expedited delivery mode that lacks merit. Standard Class shipping with the lowest average profit may show that there is a trade-off between lower costs for customers and that the shipping mode is a less profitable venture for UPS.

# Geographical Performance

Reviewing the top-performing regions and states in terms of total sales and average profit details different trends. When it comes to the regions, the West is the top performing region, with the highest total sales of $725,459.82 and coming in first in the averages of profit with $33.85, which indicates a strong presence and great profitability within this region. The East region is next in a close second of the highest total sales of $678,781.24 and a solid average profit of $32.14; it ranks slightly lower in total sales than the West region, but solid profitability puts it as a key market area. The last region to note is the South, in that it comes with total sales of $391,721.91, marking an average profit of $29.33 and showing its overall significance.

Unsurprisingly, delving further into the top-performing states also reveals key contributors to SPY profits overall. With $457,687.63, California was by far the top-performing state when it came to SPY. The state’s average profit was equally impressive at $38.17, suggesting a major market hub with significant profitability. New York followed with total sales of $310,876.27 and an average profit of $65.64, which indicated a supremely lucrative market with a high profit margin. One state stands out when looking at the top-performing states. Although Texas placed among the top in terms of sales with $170,188.05, it had an average sale of -$26.12.

# Sales Trends Over Four Years

Across four years of sales data, several patterns and fluctuations emerge. The total sales for the early months indicate lower sales with January at $94,924.84 and February at $59,751.25. March then shows a spike in sales to $205,005.49, reflecting a more than three-fold increase. This could be attributed to any number of factors including end-of-quarter promotions, tax refunds, or the beginning of seasonal demand for certain goods. April, May and June descend slightly with total sales ranging from $137,762.13 to $155,028.81, indicating a pretty significant drop following year peak in March. With these periods standing out for heightened sales activity, it is unsurprising that September witnessed the highest total sales ($307,649.95). But it wasn’t far behind in November ($352,461.07) or December ($325,295.50) with regard to these spikes, and these can be attributed to back-to-school shopping, holiday promotions, and end-of-year clearance sales that typically drive increased consumer spending during these months.

# Average Profit Trends Over Four Years

Notable variations in the average profit by month offer insights to potential causes linked to seasonal trends, consumer behaviour, and promotional activities. March displays a marked increase in the average profit at $41.08 suggesting that demand is likely driven by seasonal sales, increased consumer spending around holidays, or through any promotional campaigns. April however demonstrates a noticeable drop in the average profit at $17.35 meaning that there is likely reduced consumer activity following a peak in March, or that there were just far fewer promotional campaigns. Understanding these variations can assist in adjusting marketing strategies and inventory management to maximize profitability throughout the year.

# Customer Segments Analysis

Strategic insights derived from analyzing total profit and total sales of customer segments reveal how the segments’ contributions to overall profit differ. While the Consumer customer segment yields the highest total sales at $1,161,401.34, its total profit of $134,885.27 suggests a relatively lower profit margin compared to other segments. In contrast, the Corporate customer segment has total sales of $706,148.37 but nearly equal total profit of $91,986.13, hinting at a higher profit margin per sale. With total sales of $429,653.15, the Home Office customer segment generates a smaller amount of total sales, but its total profit is still important at $60,298.68, showing the potential of increasing profitability by customizing marketing or products. Leveraging these insights, strategic initiatives can be devised to optimize profitability across customer segments, whether through refining marketing strategies, enhancing product offerings, or improving operational efficiency to capitalize on high-profit segments while addressing areas for growth.

# Categorizing Profitable Categories and Sub-Categories

There are different levels of profitability within each product category and sub-category. Furniture has sold the most products in the SuperStore but only gathers $19,217.33 in total profit, which is significantly lower than the $741,999.80 worth of sales. On the other hand, Office Supplies have slightly less in sales ($719,047.03) but generate a total profit of $122,490.80, which tells us that this product category has a greater profit margin than Furniture. The most profitable category overall is Technology as a whole, which gathered a total profit of $145,461.95 from $836,156.03 worth of sales. All within that category, Copiers have the highest total profit value of $55,617.82 from $149,528.03 worth of sales, which could be a potentially lucrative market segment. Phones also contribute to the net profit significantly ($44,522.73 from $330,009.05 in sales) and so it is also a very important sub-category within the broader Technology category.

# Location-based Analysis

Total sales of New York City stood at $256,368.16 and its total profit at $62,036.98, denoting a high market penetration and profitability City of Los Angeles had total sales of $175,128.20 and total profit stood at $32,384.85, again marking a good market presence, as per total sales. City of Seattle noted its total sales at $119,540.74, and ranked in at second position based on total profit, at $29,156.10 (presuming a higher profit margin), even when it was third in terms of total sales Three cities at the top end of total sales spectrum Largely accepted rule of thumb says: One needs to look at profitability in conjunction with sales volume, to evaluate a market's performance and to strategically allocate resources.

## Cities with negative profit

|  |  |
| --- | --- |
| Cities | Average profit |
| Bethlehem | -200.62 |
| Champaign | -182.35 |
| Oswego | -178.71 |
| Round Rock | -169.06 |
| Lancaster | -157.37 |
| Clarksville | -150.76 |
| Medina | -149.23 |
| Burlington | -144.92 |

To address the problem of negative profit in the listed cities, several strategies for improvement can be recommended. Firstly, conducting an in-depth analysis of cost structures to identify areas where operations can be streamlined and expenses reduced. For example, implementing cost-saving measures including renegotiating supplier contracts, optimizing inventory management, or reducing unnecessary overhead can help to improve profitability. Secondly, refocusing sales and revenue generation through targeted marketing, customer relationship management (CRM), and additional product offerings custom to the local preference can also help to increase growth and reduce losses. Furthermore, partnering with local businesses or community organizations to increase brand visibility and customer engagement can foster loyalty and drive sales.

# Loyalty and Total Sales Impact

**Top-3 Customers with the most purchase.**

|  |  |
| --- | --- |
| Customer Name | Frequency of purchase |
| John Lee | 34 |
| Matt Abelman | 34 |
| Paul Prost | 34 |
| William Brown | 37 |

**Top-3 Customer with Total Order Sales.**

|  |  |
| --- | --- |
| Customer Name | Total Sales |
| Sean Miller | 25043.05 |
| Tamara Chand | 19052.22 |
| Raymond Buch | 15117.34 |

Insights from data show some interesting patterns around customer buying behaviour. John Lee, Matt Abelman, and Paul Prost have the same Frequency of Purchase at 34, but William Brown has a higher Frequency of Purchase at 37. This tells me that he has a consistent Buying Pattern, which might mean that he has some more Loyalty than the other purchasers. However, the top customer by Total Order Purchases is Sean Miller with a total of $25,093.05, followed by Tamara Chand and Raymond Buch, with totals of $19,062.22 and $15,117.34, respectively. So, while customers like John Lee, Matt Abelman, and Paul Prost have the same Frequency of Purchase, focusing on high-value customers might lead to greater Revenue generation and profitability. The contribution of these loyal customers to the company's overall sales in percentage is 2.57%.

# Discount and Sales Correlation

The relationship between average discounts and total sales for the top 10 states reveal a differential pattern. States such as California and New York with moderate average discounts of 7.28% and 5.53% demonstrate higher total sales figures. This may suggest that a positive correlation exists between discounts and sales. However, outliers such as Texas, Illinois, and Ohio exhibit much higher average discounts of 37.02%, 39.00%, and 32.49% respectively, yet lower total sales. This may suggest that though discounts may draw customers, excessively high discount rates may impact profitability and not necessarily lead to a higher sales volume. Additionally, states like Michigan and Virginia, with minimal or no average discounts, still manage to achieve significant total sales, highlighting the importance of other factors such as product quality, brand reputation, and customer service in driving sales.

# Conclusion

In conclusion, this complete analysis of the retail company's sales and profitably data has revealed many interesting insights about how the company runs. By looking at shipping modes, geographical performance, seasonal impacts, sales trends, customer segments, and product categories, some actionable recommendations have been providing that can drive strategic investments and overall performance improvements. The regression model developed to predict profit, while significant, also underscores the importance of additional factors beyond just sales, quantity, and discount in understanding and optimizing for profitability.

# Recommendations

**Diversify Shipping Options:** Although shipping costs can quickly erode profits, failing to provide diverse shipping options will cause you to leave money on the table. Focus on competition and balance cost versus speed to maximize the service level reached and your profitability from each order.

**High-Performing Regions:** This requires a bit of foresight and analysis of both sales numbers and profitability to determine where your resources are best spent and the true potential penetration you achieve by doing so. How much of that extra demand turns into revenue and builds your brand for 2019?

**Enhanced Promotional Strategies:** The worst thing you can do is simply offer a discount on the advertisements that your brand releases. Examine the sales trends, and the segments you sell into, and then personalize a commercial or ad that you know will drive the top- and bottom line.

**Mix of Product:** The profits from the holiday season should be used to increase the sales and profit of the least profitable product categories and sub-categories. They will both increase the profit and determine if the secondary incentive of ordering them (increased traffic or penetration) was reached. Then, move to the least – or worst-performing – category or sub-category, and begin to alter the product line in an attempt to improve its performance.

**Emotional Customer Engagement:** Marketing personalization increases loyalty, which will increase the price at which your products and services can be sold through service level improvements and customer satisfaction. Every more satisfied customer of your brand tends to add someone from their circle of family, friends, and acquaintances.