



# **TECHNICAL REPORT ON BRENT SUPERMARKET SALES PERFORMANCE ANALYSIS (PROJECT ONE)**

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## **1) INTRODUCTION**

The report presents a detailed analysis of Brent Supermarket's sales performance based on transactional data from 2019. The supermarket has four branches in different regions, each managed by a different salesperson. Each region has two salespersons, except the Southern region, which has one salesperson, and the Western region, which has three.

The supermarket is a grocery store that sells a variety of foodstuffs and household products. It typically offers fresh produce, dairy, meat, packaged goods, beverages, and essential household items. The grocery store ranges from small local shops to supermarkets, providing customers with a convenient shopping experience. In this supermarket, goods are ordered through various methods: online ordering platforms, phone calls, and in-person, which are sent to them through a shipping company.

The analysis covers key performance indicators such as revenue trends, top customers, sales by region, product category performance, and salesperson efficiency. The findings offer insights into business growth, sales distribution, and areas for improvement to enhance profitability and customer satisfaction.

### **Main Objective**

The main objective of this project is to evaluate sales performance, understand customer purchasing patterns, and assess the efficiency of each salesperson in the firm's various regions so that it can prepare for the coming year.

### **Problem being Addressed**

The organization is concerned about generating more revenue, as well as increasing retention and referral among their customer. To solve the problem of the organization, the analysis is designed to uncover key insights about revenue drivers,

- i) High-performing salesperson
- ii) Top products,
- iii) Best contributing customer,

- iv) Top contributing city
- v) Regional sales trends.

## **Key Datasets and Methodologies**

- **Datasets Used:** Sales transaction data for a grocery store in 2019
- **Methodologies:** Data cleaning, descriptive statistics, pivot tables, trend analysis and comparative analysis in Microsoft Excel.

## **2) STORY OF DATA**

### **Data Source**

The sales transaction data used for this analysis was sourced from Kaggle, a reputable online platform for data science and machine learning datasets. It provides reliable and well-structured data, making it suitable for conducting meaningful business and performance analysis.

### **Data Collection Process**

Data was collected from company sales logs, including orders, customer details, ship city salesperson, region, product name, category, quantity, revenue and shipping costs.

### **Data Structure**

- i) **Rows:** Each row represents a sales transaction.
- ii) **Columns:** Variables include Order ID, Order Date, Customer ID, Customer Name, Ship Date and Address, Salesperson, Region, Product Name, Category Quantity, Revenue, and Shipping Fee.

### **Important Features and Their Significance**

- **Revenue:** Key metric for financial performance.
- **Product Category:** Helps identify top-selling product segments.
- **Salesperson Performance:** Determines top performers.
- **Regional Sales:** Helps optimize market targeting.

## **Data Limitations or Biases**

- Missing values in **Discount, Profit, Payment Type, and Product Name** columns could affect data on the top performing product.

### **3) DATA SPLITTING AND PREPROCESSING**

## **Data Cleaning**

Before analyzing the sales transactional data, I conducted a data quality check to ensure accuracy and reliability. This involved identifying missing values, duplicate entries, and inconsistencies using Microsoft Excel's built-in functions.

### **i) Handling Missing Values**

For missing values, I used Excel built in function which is located under the Home Tab (Find & Select ribbon). This function helped me quickly discover the cells with missing values under the following column: payment type, product name, category, unit price, quantity and revenue. Instead of deleting the entire rows with missing data ,since other cells in the same row contained useful information, I applied a filter during comparative analysis using Pivot Tables. This ensured that blank spaces did not distort the final results or visualizations. By addressing these issues systematically, I improved data integrity, leading to more accurate insights during the analysis.

### **ii) Duplicate Values**

When I used the Excel Built In function under Data to remove duplicates, there were no records of duplicates found. In summary, the data was clean from duplicate errors.

### **iii) Data Transformations**

Prior to the analysis, categorical data standardization was performed to ensure consistency in text-based data, reducing variations caused by typographical errors, inconsistent formatting, and multiple representations of the same value. This standardization was applied to product

names and categories to ensure uniformity, as well as to payment types, country and region names, and customer names

## **B) Data Splitting**

In this analysis, data splitting was performed to distinguish between dependent and independent variables. The sales column (revenue) was identified as the dependent variable, as it represents the target outcome. Independent variables, such as order date, customer name, city, salesperson, region and product category were separated to analyse their impact on sales performance. This division allowed for a structured approach to understanding relationships within the dataset and conducting meaningful comparative analysis.

## **Industry Context**

This dataset represents a grocery store sales transaction with insights towards improving sales performance and generating more revenue.

## **Stakeholders**

In this project, the stakeholders were the Chief Executives comprising of :

- **Sales Team:** Understand performance metrics.
- **Marketing Department:** Identify customer trends.
- **Human Resource Department:** Examine Salesperson Performance
- **Senior Management:** Strategic decision-making.

## **Value to the Industry**

For this industry, value is measured through revenue growth, which comes from expanding their customer base and boosting sales. By understanding purchasing patterns and regional trends, one can identify key opportunities to maximize profitability and sustain long-term growth.

#### 4) PRE-ANALYSIS

##### Identify Key Trends

An initial review of the dataset suggests potential trends in sales performance across different months, regions, and product categories. Key areas of interest include identifying the :

- i) Best-performing sales month
- ii) Top regions by revenue
- iii) Top Cities by revenue
- iv) High-performing salesperson
- v) Top performing customers
- vi) Best performing product category
- vii) Most Category of Transaction performed.
- viii) Top Ship Cities by revenue

Further analysis will help validate these trends and uncover deeper insights into revenue distribution and transaction patterns

##### Potential Correlations

Based on the potential trends identified, the following potential correlations may exist in the data:

- i. **Sales Month vs. Revenue Generated** – There may be a seasonal pattern where certain months consistently generate higher revenue due to promotions, holidays, or demand cycles.
- ii. **Region vs. Revenue** – Some regions might contribute more revenue due to higher customer density, economic factors, or local market preferences.
- iii. **Salesperson Performance vs. Revenue** – A correlation may exist between the top-performing salespeople and the total revenue they generate, influenced by their experience, customer network, or sales strategies.
- iv. **Customer Category vs. Revenue** – High-value customers or frequent buyers might be responsible for a significant portion of the revenue.

- v. **Product Category vs. Revenue** – Certain product categories might drive more revenue, possibly due to popularity, seasonal demand, or pricing strategies.
- vi. **City vs. Revenue** – Larger or more urbanized cities might show higher revenue generation due to greater purchasing power and customer base.
- vii. **Transaction Category vs. Sales Volume** – Higher-priced product categories might have fewer transactions but contribute significantly to revenue, while Lower-priced products might have higher transaction volumes due to affordability and frequent purchases.

### **Initial Insights**

- i) Other salespersons can learn from the best performing salesperson measures of improving sales to generate more income in the coming year.
- ii) We can also finetune the least performing regions and implement a similar practice as the best performing regions and ensure the measure are kept in place.
- iii) Implement targeted marketing campaigns to increase demand for low-performing products.
- iv) Offer discount and reward program for top customers to promote patronage and drive sales growth.
- v) Improve the efficiency and accessibility of the most frequently used payment methods to enhance customer experience.
- vi) Maintain adequate stock levels for high-demand products to prevent shortages.

## **5) IN- ANALYSIS**

### **Observations**

#### **Sales Performance by Rep**

Nancy Freehafer was the best performing salesperson with a grossing revenue of \$104,242.34 while Jan Kotas was the least performing salesperson with a revenue of \$16,350.50.

## **Sales Trend Report**

The firm exhibited a fluctuating trend with its peak sales recorded in June (\$55,601.61), October (\$53,033.59) and December (\$66,642.78) and its lowest sales was recorded in February (\$19,955.50)

## **Top 10 Customer**

Company D was the best performing customer contributing a grossing revenue of \$67,189.50 .

## **Sales Performance by Region**

The North branch had the best sales when compared with other regions, generating 32% (\$144,660.34) of the total revenue while the West branch had the least sales with a revenue of \$91,251.98 which is 21% of the total revenue.

## **Sales by Product Category**

Beverages was the most sought product in the store contributing \$110,557. 11 followed by Sauces, Jams Preserve, Dairy Product and Dried Fruits and Nuts.

## **Transaction by Amount**

Products below \$1000 had 218 transactions recorded and those in the range of 7000-8000 had one transaction recorded.

## **Recommendations**

### **Sales Performance by Rep**

Nancy Freehafer the best performing salesperson should be rewarded and recognised for her excellent feat while Jan Kotas, the least performing sales person should be retrenched or send over for training on sales and customer retention.



## **Sales Trend Report**

Targeted marketing campaign should be introduced in months with low sales to improve sales and generate more revenue.

## **Top 10 Customers**

Loyalty program(discounts and gifts) should be implemented for Top 10 customers to increase retention.

## **Sales Performance by Region**

The salesperson in the North region should be transferred to the West region, in order to improve the sales and train the staff.

## **Sales by Product Category**

The top 5 products should always be available.Strategic discounts should be offered on slowing moving products to expand their reach.

## **Transaction by Amount**

Products that are below \$1000 should be available and offer credit or installmental payment for high cost product.

## **Analysis Techniques Used in Excel**

- **Pivot Tables:** To summarize sales by region, category, and salesperson.
- **Pivot Chart:** To visualize the analysis done in the pivot table and also to enhance easy identification of insights and understanding of the data.

## **6) POST ANALYSIS**

### **Key Findings**

#### **Salesperson Performance**

1. Nancy Freehafer is the top-performing salesperson, generating the highest revenue of \$104,242.34. Her consistent sales trend and strong customer relationships contributed to her success. Notably, two of her customers, Company H (second-best) and Company A (fifth-best), rank among the top ten customers.
2. Anne Larson ranks second with a revenue of \$93,848.33, maintaining a strong sales trend from October to December. Two of her three customers, Company BB (third-best) and Company Z (eighth-best), are in the top ten, highlighting her diligence and customer commitment. Additionally, Anne is the sole salesperson in her region, whereas other regions have two, emphasizing her achievement.
3. Andrew Cencini is the third-best performer with a revenue of \$67,180 from a single customer, Company D, which is also the best-performing customer. His city, New York, leads as the top city for sales, showcasing his excellent customer relations and retention skills.
4. Jan Kotas is the least-performing salesperson, with total revenue of \$16,350.50. His sales trend is weaker compared to his regional peers, with no sales recorded in February. His highest sales were in June (\$4,928.00) and December (\$4,049.25), which are average compared to the top performers. This indicates weak sales skills and customer engagement.

#### **Top 10 Customers**

Company D was the top-performing customer, contributing \$67,180.50 in revenue, with peak sales in June (\$11,595). Most of their transactions (15) were below \$1,000, and their preferred products included Jams, Preserves, Dried Fruits and Nuts, Pasta, Grains, and Baked Goods & Mixes. Company D is managed by Andrew Cencini from the Eastern Region.

## **Sales Trend**

A seasonal sales pattern was observed across all salespeople. February (\$19,955.50) and April (\$20,771.79) recorded the lowest sales figures, even for the top-performing salespeople.

- Nancy Freehafer: February (\$1,684.95), April (\$4,872.65)
- Anne Larsen: February (\$4,877.00), April (\$4,972.62)
- Andrew Cencini: February (\$3,648.00), April (\$738.40)
- Jan Kotas: February (No sales), April (\$446.25)

These results indicate a seasonal downturn, suggesting the need for targeted marketing campaigns and promotional offers during these months to boost sales.

## **Sales by Region**

The Northern Region, represented by Nancy Freehafer and Michael Naipper, was the best-performing region, generating 33% (\$141,660.34) of total revenue. The Western Region, with Mariya Sergienko, Robert Zare, and Jan Kotas, was the least-performing region, generating 21% (\$91,251.98) of total revenue.

## **Top Cities by Revenue**

New York was the highest revenue-generating city, contributing \$67,180.50. This revenue came from Company D, whose peak purchase occurred in June (\$11,595.50), while the lowest was in April (\$738.40). Given their strong contribution, establishing a sub-branch in New York could reduce shipping costs and attract more customers.

## **Top Products by Revenue**

Beverages generated the highest revenue of \$110,577.11, showing a seasonal sales trend with peaks in June, April, October, and December. The top five cities in beverage sales were Seattle (\$30,491.99), Memphis, Boise, Las Vegas, and Milwaukee. Nancy Freehafer was the top salesperson in this category, generating \$47,695.99, followed by Anne Larsen and Mariya Sergienko.

## **Transactions by Amount**

- Transactions below \$1,000 had the highest count, contributing 24% of total revenue, with peak sales in December.
- Chicago led this category with \$20,010.01, followed by Milwaukee, Portland, Miami, and Los Angeles.
- Nancy Freehafer processed the highest number of transactions in this category, followed by Anne, Laura, and Mariya.
- Transactions between \$4,000 and \$8,000 had the lowest count, suggesting the need to introduce an installment payment plan for purchases in this range to increase transaction volume.

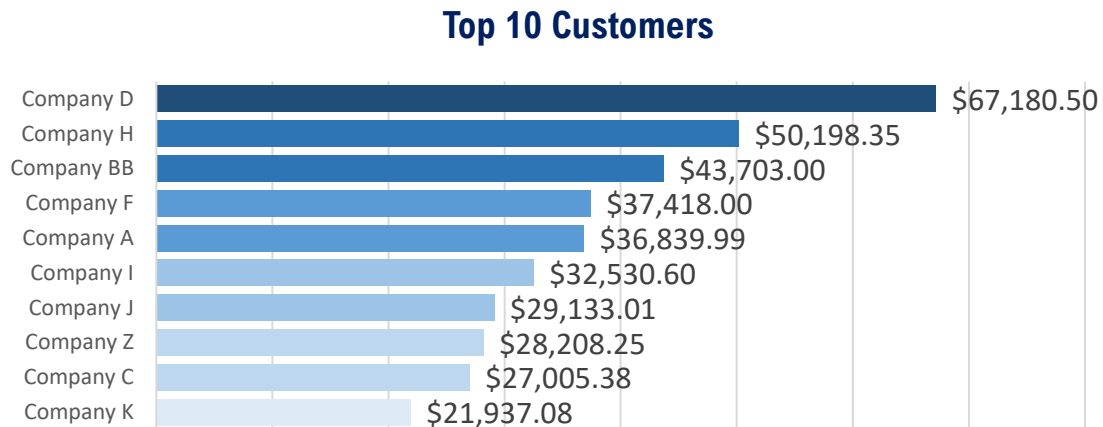
## **Comparison with Initial Findings**

The analysis confirmed several initial expectations, such as the Northern Region's strong performance and Beverages being the highest revenue-generating product. However, the seasonal dip in February and April was more pronounced than expected, affecting even top-performing salespeople. Additionally, New York's dominance in revenue generation was a surprising insight, indicating a strong customer base in that location. The underperformance of Jan Kotas compared to his regional counterparts further highlighted disparities in sales effectiveness, suggesting an opportunity for focused training interventions.

## 7) DATA VISUALISATION & CHARTS

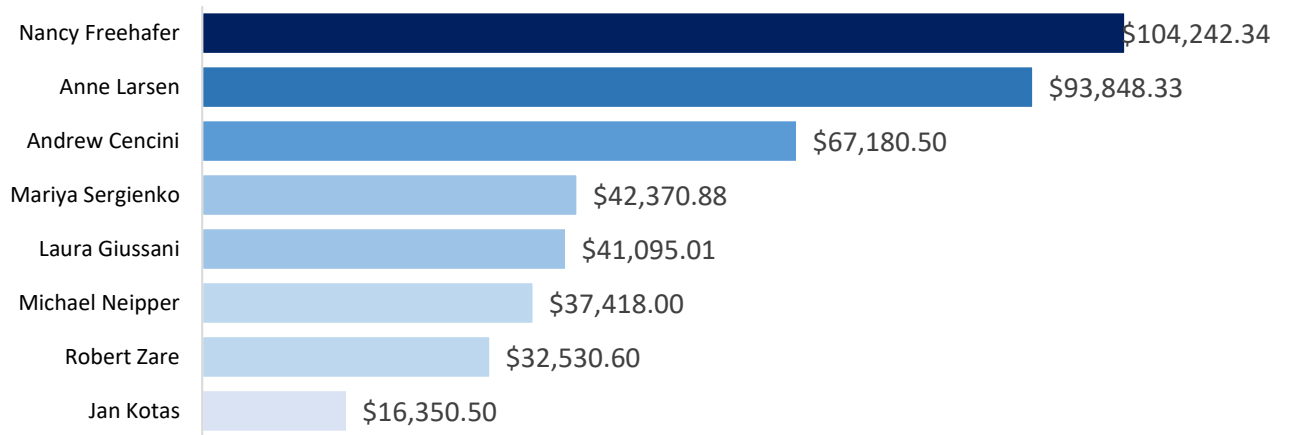


The peak sales were recorded in December (\$66,642.78) indicating a seasonal sales. The lowest sales were recorded in the month of February (\$19,955.50). Overall the sales trend portrays a fluctuating trend.



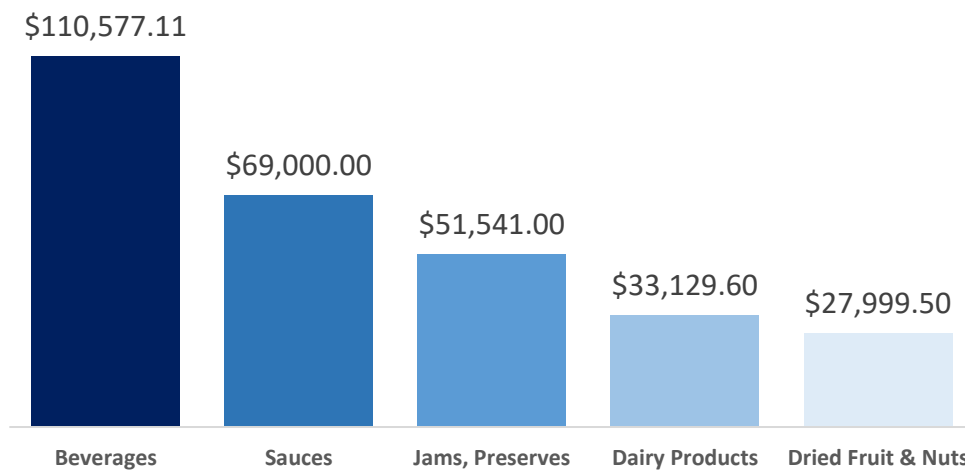
Company D was the best performing customer contributing \$67,180.50 to the supermarket revenue.

### Performance Analysis of Salesperson

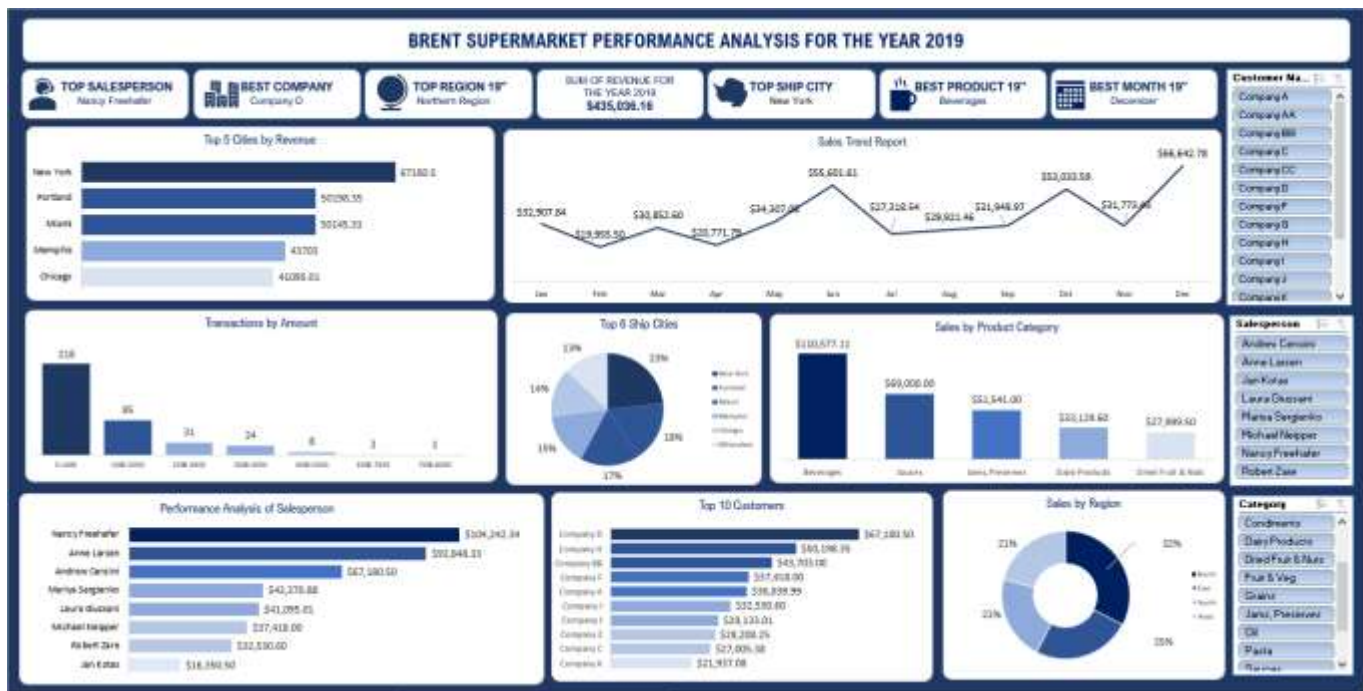


Nancy Freehafer was the best performing salesperson generating the highest revenue (\$104,242.34) while Jan Kotas was the least performing salesperson generating \$16,350.50

### Sales by Product Category



Beverages was the best performing product generating the \$110,577.11 to the supermarket revenue.



This is the dashboard created to gain insights about the sales performance by revenue generated in different cities, region, salespersons, product category, ship cities, top 10 customers, sales trend and the amount of transactions performed.

## RECOMMENDATIONS

Based on the outcome of the analysis, the following recommendations were made:

- 1) **Promotion of Best Salesperson:** I recommend Nancy Freehafer the best salesperson with highest revenue of \$104,242.34, should be promoted to the position of Regional Supervisor for excellent feat and to train and supervise other salesperson in the firm.
- 2) **Transfer of Least Salesperson:** I recommend Jan Kotas with the least revenue of \$16,350.50 to be transferred to the Southern Region to receive training under Anne Larsen the second best performing salesperson.
- 3) **Reward of Second and Third Salesperson:** I recommend Anne Larsen from the Southern Region to be rewarded for her performance, despite being the only salesperson in that region, she was able to perform excellently. Andrew the third best salesperson should be rewarded.
- 4) **Creation of New Branch at New York:** I recommend a delivery and sales outlet to be created in New York. This recommendation is as a result of the revenue generated from that city.

- 5) **Transfer of Andrew to a New Branch in New York:** Based on the excellent revenue generated in New York, I recommend a new branch be opened there to reduce the cost of shipping fee and also attract more customers. Also, Andrew should be transferred to that branch to manage it, since he has experience in sales with that city and its customers.
- 6) **Collaborations among Salespersons:** Since each region has two salespersons, except Southern Region who has one, I recommend salespersons should be encouraged to collaborate and learn from each other. Michael should learn from Nancy, Laura should learn from Andrew, While Mariya and Robert needs to collaborate. Evidence revealed that the least month are not the same for two salesperson in a region. Like Nancy, that had low sales in February (\$1684.95) while Michael in February had \$4,633.25.
- 7) **Recruitment of Two More Salespeople:** I recommend the firm recruit two more salespersons. One would be posted to the New York branch to assist Andrew and the other would learn and assist Laura in the Eastern Region.
- 8) **Introduction of Targeted Marketing Strategy:** I recommend targeted marketing campaign to be introduced in months with notable low sales (February, April, and July) to increase the sales.
- 9) **Implementation of Loyalty Program:** I recommend loyalty program be implemented to appreciate existing customer and attract new customers. This loyalty program can include gifts, discounts, raffle draws, coupons etc.
- 10) **Introduction of Quarterly Monitoring and Evaluation of Sales by Revenue:** I recommend that quarterly sales evaluation of its performance, customer preference, and other key indicators should be implemented, which would help enhance active monitoring and quick response to poor outcomes.
- 11) **Availability of Top 5 Products:** I recommend the top 5 products should always be available. Strategic discounts should be offered on slowing moving products to expand their reach. Also products that are preferred in each region should always be available.
- 12) I recommend installment payment plans should be available for the high price products to increase its demand and sales.

## CONCLUSION

One of the most important lessons from this analysis is that business decisions should not be based on guesswork or the patterns of other firms, but rather on data-driven insights specific to



the company. The pre-analysis phase played a crucial role in guiding the investigation, ensuring a structured and efficient approach to uncovering trends, patterns, and key performance indicators.

From the analysis, the following key insights were identified:

1. **Sales Performance Disparities:** While some salespeople, such as Nancy Freehafer and Anne Larson, showed outstanding sales performance, others, like Jan Kotas, struggled significantly, highlighting the need for targeted sales training.
2. **Seasonal Sales Trends:** There were noticeable dips in sales during February and April, affecting even the best-performing salespeople, suggesting the need for seasonal marketing strategies.
3. **Regional and City Performance:** The Northern Region and New York City emerged as top revenue generators, revealing potential expansion opportunities in these high-performing areas.
4. **Product and Transaction Trends:** Beverages were the highest revenue-generating product, while small-value transactions (below \$1,000) dominated the sales volume. Meanwhile, mid-range transactions between \$4,000 and \$8,000 were limited, suggesting that installment payment plans could increase revenue.
5. **Customer Insights:** Company D was the highest revenue-contributing customer, reinforcing the importance of customer relationship management in business success.

Overall, the findings emphasized the importance of using data analytics to make informed business decisions, ensuring that strategies are tailored to actual performance trends rather than assumptions.

## LIMITATIONS

The data did not provide much details about salesperson years of experience. The performance of Nancy Freehafer could be as a result the long amount of years she has spent with the firm while Jan Kotas could be a new employed staff or even an intern considering the fact that there are three salesperson in the Western regions. The recommendations were based on the data provided and the insights extracted but if such information were provided the insights would have been richer. For the best cities, information about the cities were limited, there were no information whether some cities were located in the rural area or in the urban area, such information can tell give a richer comparison as you cannot expect the rural region to outperform the urban region so the recommendation was also limited by that information.

## **REFERENCES**

The technical report was drafted from the Microsoft Excel Analysis performed on Brent Supermarket sales data for the year 2019-