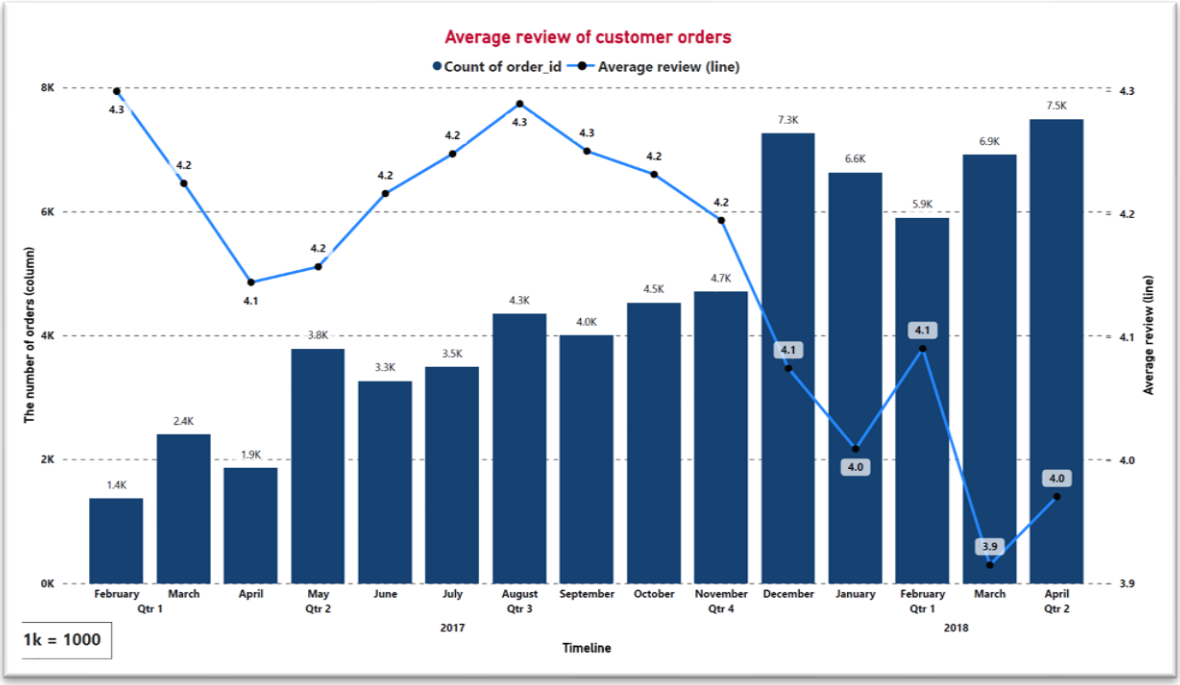
Analyzing Seasonal Trends and Review Score Fluctuations

Goal:

Seasonal order volumes, such as those during end-of-year holiday shopping, can potentially increase, exerting pressure on customer service staff. In this context, analyzing customer reviews of service quality becomes important to determine the effectiveness of service implementation. Therefore, the primary objective of this analysis is to evaluate the indicator of customer satisfaction with the service. Brazil e-commercial market data was obtained for analysis from February 2017 to April 2018.



Insights :

The data does indicate a slight decrease in the average review score during periods of peak order volume. In May 2017, when the order volume reached one of its highest points (4.0K), the average review score dipped to a near low for the year (4.1). Similarly, in March and April of 2018, months that experienced some of the highest volumes (7.1K and 7.7K, respectively), the average review score was lower compared to the yearly average, with scores of 3.9 and 4.0 respectively. This subtle trend suggests that while the company largely maintains customer satisfaction as orders increase, there is a slight negative impact when order volumes are at their highest. This insight could be indicative of strain on the company's resources during peak times, which might slightly affect service or product quality. Addressing this could involve strategies like hiring temporary staff, increasing inventory, or improving efficiency in operations during anticipated high-volume periods to sustain or improve customer satisfaction levels.

Data Abstraction:

During peak times like the end-of-year holidays, customer service faces higher demand, making it crucial to assess service quality through customer reviews. The main goal is to evaluate how well the service satisfies customers. Brazil e-commercial market data was obtained for analysis from February 2017 to April 2018.

Dataset Type: The dataset is a table resulting from the merging of two tables (olist_order_reviews_datasett.csv and olist_orders_datasett.csv).

olist_order_reviews table consists of 7 columns and given explanation only used columns:

review_id: A unique identifier for each review.

order_id: The order ID associated with the review.

review_score: Numeric score given by the customer.

olist_orders table contains 8 columns and given explanation only used columns:

order_id: A unique identifier for each order.

order_delivered_customer_date: The date the order was delivered to the customer.

order_id: to join two tables together (olist_order_reviews and olist_orders).

order_id used to join two tables together (olist_order_reviews and olist_orders).

Items:

Each bar in the graph represents an item, including the order quantity, review score, and timeline.

Data Types of Attributes:

- Review score (Ordinal) .
- Time frame (Ordered, Quantitative, Sequential).
- Order quantity (Quantitative, Sequential).

Task Abstraction:

Identify the reasons for seasonal variations in order volumes, such as a possible surge in year-end holiday shopping, and explore factors contributing to fluctuations in average review scores to uncover potential concerns with product quality or customer service. This data was analyzed to create strategic plans for customer acquisition, aimed at a group of executives and marketers.

***Marks*:**

Bars (Length): The height of the blue bars indicates the quantity of orders for each month, measured on the left y-axis.

Points (Position): The points on the line indicate the average review score for each month, plotted on the right y-axis.

Line (Connection): The line connecting the points shows the trend of the average review scores over time.

***Channel*:**

Quantity Orders (Position: y-axis): The position of the top of each bar along the y-axis indicates the number of orders in (thousands).

Quantity Orders (Text labels): Each bar has a text label indicating the exact number of orders in thousands for that month.

Average Review Score (Position: y-axis): The position of each point along the right y-axis indicates the average review score, with text labels providing the exact score.

Payment Type (Position: x-axis): The x-axis categories the bars and points by month and year, providing a timeline from January 2017 to April 2018.

Timeline and order quantity (Color): Dark Blue color is used for the columns in the graph, representing the number of orders per month. Light Blue Dotted is used for line graph overlays the column graph and represents the average review score per month.

Action and Target:

Level	Action	Target	
High-Level	Discover	Trend	Analysts discover the trend that as people order more products, their average review rating tends to be lower. (It usually occurs during celebrations such as New Year, Christmas, or other traditional festivities).
Mid-Level	Lookup	Many attributes	Consumers lookup the their orders, reviews and timeline.
Low-Level	Compare	Dependency	Marketing analysts have compared the dependency of average review scores on the number of orders from January 2017 to April 2018.

Additional data source :

- In this project, **Power BI** was used for analyzing data.
- **URL** for data: https://www.kaggle.com/datasets/olistbr/brazilian-ecommerce