

Olist Case

Q1. How do customer review comments and review scores influence transactions, considering unique customer behavior across different product categories from 2016 to 2018 and their payment types, comparing Brazilian customers in different cities?

Link:https://public.tableau.com/views/TableauBrazillionGraph/Sheet10?:language=en-US&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

Report 1.

This project explores how customer reviews—including scores and comments—affect purchasing behaviors across various product categories from 2016 to 2018, with a specific focus on Brazilian cities visualized through a geographic heat map. By creating calculated fields in Tableau, we classified each transaction as either a first-time or repeat purchase, analyzed review sentiments, and segmented review scores into high, medium, and low categories.

To differentiate purchase types, we identified transactions as initial or repeat purchases. Sentiment analysis of review comments categorized feedback into positive, neutral, and negative groups based on language associated with satisfaction levels. Review scores were further segmented: scores of 4 and above indicate high satisfaction, scores between 3 and 4 reflect moderate satisfaction, and scores below 3 suggest dissatisfaction.

Using a heat map of Brazil, we highlighted cities with varying intensities based on transaction volume, allowing for a regional comparison of purchasing behaviors. This geographic segmentation provided deeper insights into customer preferences by location. Additionally, we examined payment types by category, finding that Brazilian customers frequently preferred installment payments, which correlated with a higher rate of repeat purchases.

Through these fields and visualizations, we found that positive reviews and high scores foster customer loyalty, especially in certain Brazilian cities where repeat purchases were more common for high-rated products. In contrast, negative sentiments and low scores often correlated with one-time purchases, highlighting opportunities for improvement in specific product areas. This analysis provides actionable insights for boosting customer retention by leveraging review feedback, regional preferences, and payment strategies tailored to local market trends.

Q2. Which regions in Brazil have the highest delivery performance issues, based on average delivery time and percentage of late deliveries, and how can Olist prioritize logistical improvements in these areas?

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Report 2.

This analysis focuses on identifying Brazilian regions with the highest unmet demand for timely deliveries, highlighted by two key metrics: Average Delivery Time and Percentage of Late Deliveries. Analyzing these metrics geographically helps Olist prioritize operational improvements in areas where customers are most impacted by delivery delays.

Visualization Overview

The geospatial map visualization uses a color gradient and circle sizes to convey delivery performance across the various Brazilian regions:

1. **Average Delivery Time** (in days): Represented by color intensity, where darker shades indicate longer delivery times. Regions with high average delivery times reveal potential logistical issues.
2. **Percentage of Late Deliveries**: Represented by circle size, with larger circles indicating a higher percentage of late deliveries in that region. This metric highlights areas where customers frequently experience delays beyond the estimated delivery date.

Regions with the Highest Late Deliveries:

- **Alagoas (AL)** stands out with both a high average delivery time of **24.53 days** and a high percentage of late deliveries at **20.63%**. Customers in this region face significant delays, suggesting that faster shipping options could be beneficial.
- **Pernambuco (PE)** with **16.55%** and **Paraíba (PB)** with **14.61%** are other regions with notably higher average late delivery times too. Addressing delivery delays in these regions could improve customer satisfaction.

Regions with Longest Delivery Times:

- **Ceará (CE)** and **Alagoas (AL)** have the longest average delivery times at **24.53 days** and **24.30 days** respectively. These prolonged delivery times suggest potential logistical issues, such as extended transit routes or processing delays, that could be addressed by optimizing supply chain processes.
- **Piauí (PI)** also has a high average delivery time of **23.14 days**.

Conclusions:

- By focusing on regions that exhibit both high late delivery percentages and extended delivery times, Olist can maximize the impact of operational improvements. For example, **Pernambuco (PE)** has a **16.55%** late delivery rate and an average delivery time of **22.91 days**. Targeting such areas with optimized shipping routes or faster carrier options could yield significant improvements in customer satisfaction.
- Setting a target, such as reducing delivery times to below 20 days or late delivery percentages to under 10%, can provide clear performance benchmarks for Olist's logistics team.

Q3. Which cities demonstrate higher-than-average order values, and how do specific product categories influence these values in the top-performing cities?

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Report 3.

This question aims to identify cities with exceptional performance in terms of average order value (AOV) and determine if any product categories have a significant impact on boosting these values. By focusing on the "top-performing cities," the goal is to uncover actionable insights for targeted marketing, inventory, or operational adjustments to capitalize on high AOV areas. This question aligns with the organization's needs to allocate resources effectively, optimize the product mix per location, and enhance profitability by understanding localized consumer preferences.

Detailed Explanation of the Business Question

1. **Context and Purpose of the Analysis:** The visualization provides a focused look at the average order value across different cities, with a selective cut-off that highlights only cities meeting specific criteria. This configuration allows the organization to analyze AOV by location and filter for cities where order values are substantial. Integrating product categories into this analysis adds an additional layer, helping to pinpoint whether certain product lines, such as electronics or furniture, contribute significantly to the higher values observed in these top cities. Identifying these trends has potential applications for refining regional sales strategies and improving product offerings per city.
2. **Relevance to Business Objectives:** Knowing which product categories have high AOV in a certain city can help direct focused marketing and enhance cross-selling strategies, which will ultimately increase returns on investment.

Analysis Explanation: Insights on Average Order Value Cutoffs by Product Category in Brazil

The analysis provides a progressive picture of the performance of several product categories at descending average order value (AOV) cutoffs in different Brazilian cities. We can gain a better understanding of regional product preferences and consumer purchasing habits by tracking trends as the cutoff falls. Here is a more thorough explanation of your findings, set against the backdrop of Brazil's varied geography and market features:

1. Highest AOV Products and Cities (Cutoff at 2000):

- At an AOV cutoff of 2000, Sports, Outdoors, and Luxury products stand out as top performers, particularly in Pianco. These categories often attract higher-value purchases, suggesting a strong demand for premium or specialized products in Pianco. High-value purchases in these categories indicate either a concentration of affluent customers or a demand for specialized goods like sporting and luxury items.
- Books, Music, and Art products show high AOV in Engheiro, suggesting a niche market for cultural products here. Such demand might be due to local consumer preferences or higher-than-average disposable income in this area.
- Fashion and Accessories products show high AOV in Nova. The visibility of Fashion and Accessories in Nova at high AOV levels suggests a strong market for high-value fashion products in this city. This pattern could indicate that consumers in Nova prioritize luxury or designer fashion items, making it a focal point for premium retail investments in the fashion sector.
- Others/Miscellaneous category in Agrestina also shows high AOV. This broad category may include diverse high-value items with the categories of security services, baby products and pet items. appealing to different consumer needs, possibly due to limited access to specific types of goods, which can drive up order values.

2. Expanded Product Visibility at Lower Cutoff (AOV 1500):

- Lowering the cutoff to 1500 brings Ibitidai into the Sports and Leisure category view, indicating that sports-related spending is consistent across various high tiers. This trend might point to the importance of physical activity and outdoor lifestyles in Brazilian culture, with consumers willing to make mid-to-high-value purchases in this category. As we lower the AOV cutoff, we see sports-related products remaining in demand, which could be a marketing opportunity for targeting fitness and outdoor leisure in different urban centers.

3. Diverse Product Spread at AOV 1000:

- At an AOV cutoff of 1000, additional categories and cities emerge, such as Electronics and Computers in four cities and Home and Furniture products in 3 cities. This distribution suggests a mid-range market demand for electronics and home goods—categories that cater to essential household needs and digital devices that are becoming standard across regions. Electronics and home-related products represent a broad appeal and consistent consumer demand, possibly driven by rising digitalization and home improvement trends.
- The Others and Sports categories continue to have a widespread, indicating sustained interest in diverse product types and activities. Conversely, Books maintain a high-value niche presence, with only one city showing AOV above 2000, reflecting a specific but limited consumer base for cultural items.
- Emerging visibility of Health and Beauty products in Parantagia and Coari at this AOV range suggests localized demand for personal care and wellness items. This pattern could indicate either a higher income bracket or a specific focus on wellness in these cities regarding some specific beauty items.

4. Broader Distribution at AOV 500:

- At this level, the Sports and Others categories show substantial distribution, with Sports products particularly diverse across Brazil. This indicates a broader consumer base willing to make moderate-value purchases for these products, highlighting the popularity of sports, fitness, and leisure across social classes.
- New entries from the Office and Stationery category and some cities in Fashion and Accessories (russais and quaria) emerge, likely aligning with educational and professional needs as well as consumer spending on apparel. These categories, appearing more widely in this AOV range, may be popular across various demographics, suggesting that consumers prioritize accessible, moderately priced goods.
- Spatially, a concentration of product demand across many product categories in the northeast and southeast regions of Brazil at this cutoff shows market density in economically active areas, with perhaps metropolitan hubs like São Paulo and Rio de Janeiro driving much of the consumption.

5. Dense Product Distribution at AOV 100-500:

- In this range, we observe increased density in the central and southwestern regions as well. This trend shows that consumer demand for moderate-value goods spans widely across the country, though it lacks the distinct product or regional insights seen at higher cutoffs.
- The analysis notes an unexpectedly low demand for Food and Drinks in central and northwest Brazil at this range and even down to the lowest range (0-100). This could indicate limited access or a lower preference for ordering these items, potentially due to market competition, regional dietary habits, traditional purchasing methods or socioeconomic factors.

Summary Insights and Strategic Implications

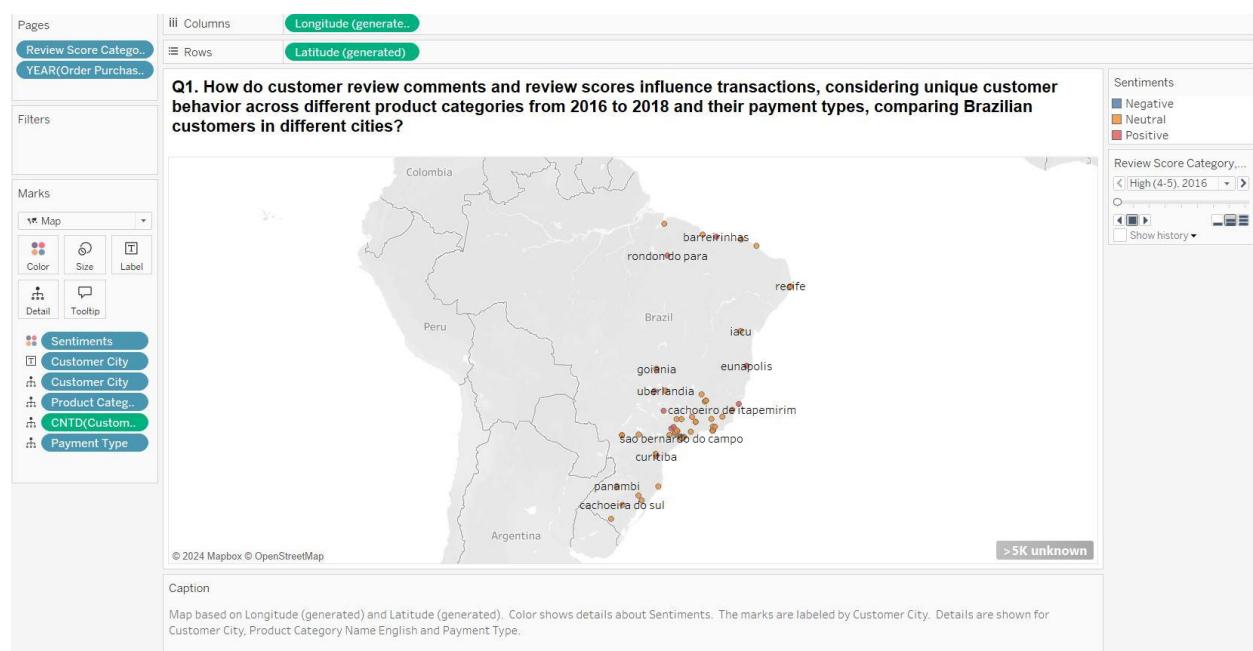
The layered cutoff approach provides a valuable breakdown of where different product categories resonate across cities, offering strategic insights into regional marketing and inventory management:

- High-Cutoff Products (Above 2000): Cities like Pianco and Engheiro show a high demand for premium categories such as Sports, Outdoors, and cultural items. Targeted promotions or localized inventory for high-value products in these areas can drive incremental revenue.
- Mid-Cutoff Range (1000-1500): A broader demand for household and electronics categories, spanning multiple cities, suggests a resilient market for these products. This range might be ideal for promotions or inventory expansions for mid-priced goods that appeal to households across income brackets.
- Low-Cutoff Range (Below 500): High distribution of categories like Sports, Others, and Office supplies across wider regions, especially in educational or work-centric areas, indicates these categories' appeal. Marketers could focus on affordable product offerings or bundle discounts to capture more of this consumer base.

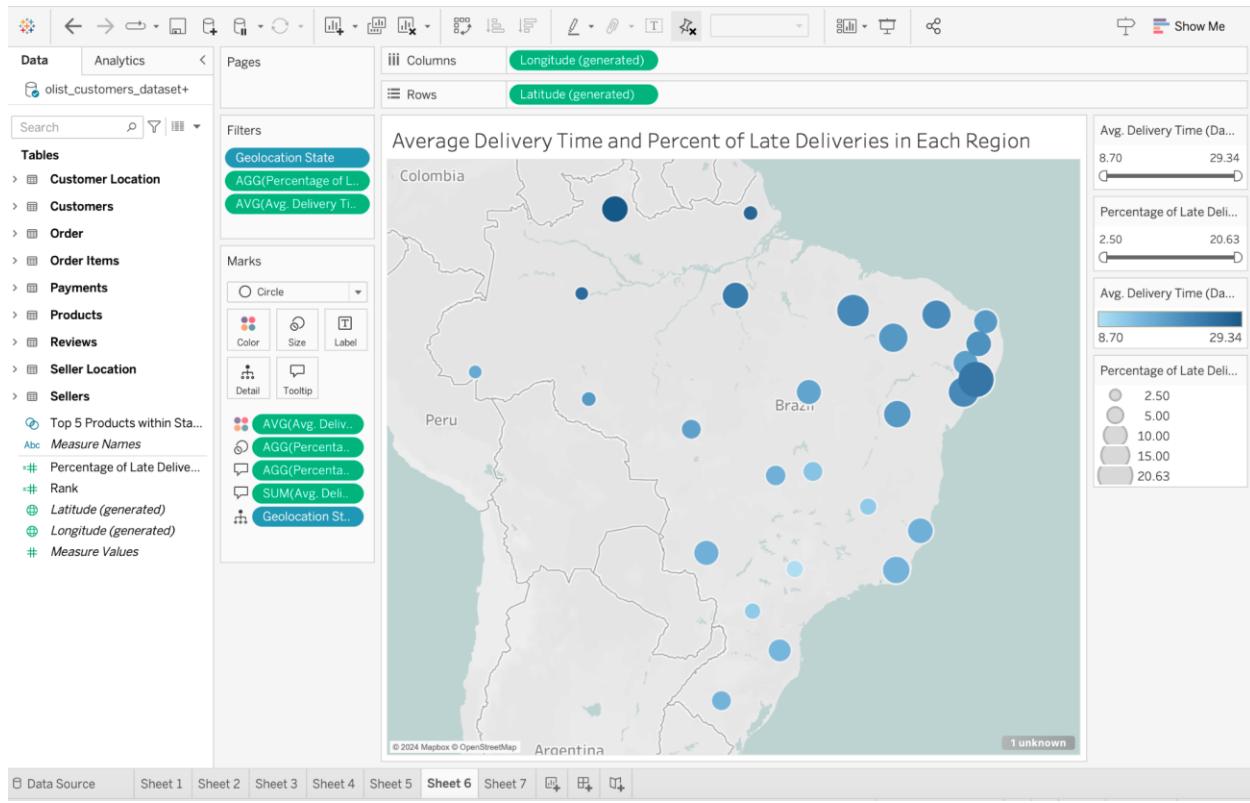
In summary, the regional demand across different AOV cutoffs reveals how certain Brazilian cities show unique spending patterns, with diverse product interests reflecting economic and cultural influences. This data-driven segmentation supports more tailored strategies to maximize profitability across Brazil's vast consumer landscape.

Appendix

Q1: Visualization



Q2: Visualization



Q3: Visualization

