

Analysis of E-Commerce in Brazil

——Evidence from Olist

Team: longview

Team Member: Jieling Ren, Xin Wen, Yanjun Dai, Xuan Xiu, Ruifeng Liu

Catalog

Context/Domain/Market of Consultancy	1
Olist Background.....	1
Transaction process	2
Market Background	2
Competitors.....	2
Brazil Shopping Festival.....	3
Focus of Consultancy	4
Mission	4
Approach.....	4
Result.....	4
Data Quality Assurance	5
Data overview	5
Data Cleaning.....	6
Data Visualization and Interpretations.....	7
Analysis framework.....	7
Services.....	8
Review Scores.....	8
Days to Ship.....	9
Customers	10
Geographical Distribution.....	10
Shopping Time Preference.....	11
Payment Method Preference	12
Products	13
Top 10 Sales Products.....	13
Top 10 Sales Volume Products	14
Sales	15

City Purchasing Power Ranking.....	15
State Purchasing Power Ranking.....	16
Special Event with Sales	18
Additional Data Sources	19
Summary.....	20
References.....	21

Context/Domain/Market of Consultancy

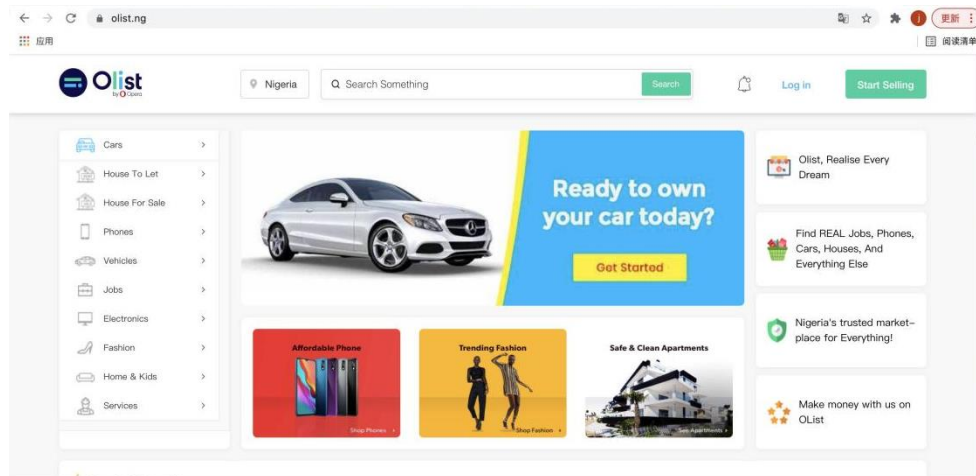


Figure 1. Official website of Olist

Olist Background

Olist was founded in 2015 with the mission of helping small merchants gain market share across the country through a SaaS licensing model to small brick and mortar businesses. The primary industry for Olist is Media and Information Services (B2B). Olist connects small businesses to larger product marketplaces to help entrepreneurs sell their products to a larger customer base.

As of October 2019, Olist had more than 200,000 customers and used a drop-shipping model to send products directly from stores to clients around the country, allowing them to grow with a capital-light model. Today, Olist says its platform provides tools that support “all the stages of an e-commerce operation” with the goal of helping merchants see “rapid increases in sales volume.” It currently has about 25,000 merchants on its platform.

The startup is no doubt benefiting from the pandemic-fueled e-commerce boom taking place all over the world as more people have turned to online shopping. Latin America, in general, has been home to increased e-commerce adoption. The region’s \$85 billion e-commerce market is growing rapidly, with projections of it reaching \$116.2 billion in 2023^[1].

Olist was launched by Opera the owners of OPay and enables users to deal in a variety of different goods and services be it old or new. It included categories like jobs, real estate, agriculture, maintenance, automobile, and constructions. The platform simply bridges the gap between people that need certain items or services and people that have the goods or services to offer, it then connects them together hereby satisfying both the buyer and the seller free of charge. On Olist advertising, buying and selling on the platform has been made very easy to use, and it is free of

charge. The prices you get on it are always reasonable and there is no limit to the number of ads you can post online.

Transaction process

After a customer purchases the product from Olist Store, a seller gets notified to fulfill that order. Once the customer receives the product, or the estimated delivery date is due, the customer gets a satisfaction survey by email where he can give a note for the purchase experience and write down some comments.

Market Background

Different from American and Chinese merchants, who were able to nearly saturate their digital penetration with a single integration, Brazilian merchants faced the operational burden of manually integrating with the numerous existing marketplaces. In order to fully grasp the benefits of selling online, the typical mom-and-pop shop had to use 7 different systems to access the more than 5 dominant marketplaces, all while needing to understand taxation in 27 states in order to comply with government requirements^[2].

Brazil is the world's population ranked sixth. The penetration rate of e-commerce users reached 49.4%. Electricity users in the Brazilian electricity growth potential are huge. In addition, the Amazon in Brazil average revenue per user (total income/users) is \$201.75. In terms of electricity, the Brazilians prefer to use the smartphone to buy products. mobile electricity accounts for one-third of total trading; However, 48% of respondents said that the most important feature of mobile e-commerce is the option to place orders online and pick up goods offline. Credit cards are the most popular method of payment, although Brazilians prefer Boleto Bancario.

According to Statista's 2019 assessment, the top 3 hot categories in terms of sales share in line with other national markets are:

- Fashion Apparel and Accessories (21%)
- Entertainment (14.9%)
- Beauty perfume and Health (12.5%)

Competitors

Ranking of Shopping websites in Brazil (Top 10)

(1) Mercadolive.com.br

- (2) Aliexpress.com
- (3) americanas.com.br
- (4) olx.com.br
- (5) bomnegocio.com
- (6) submarino.com.br
- (7) buscape.com.br
- (8) netshoes.com.br
- (9) admngroonline.com
- (10) walmart.com.br

Brazil Shopping Festival

(1) Black Friday

The big discount retail event was first held in Brazil in 2010, and since then, Black Friday has become the most anticipated sales day of the year. Historical data shows that Black Friday has become more popular in online retail, even stealing the spotlight from Christmas, and breaking new records every year. In Brazil, Black Friday lasts about a week, with specials on the days before and after the official holiday. The items most likely to be purchased on Black Friday are smartphones, computers, home appliances, clothing, sneakers, and perfume.

(2) Christmas

Christmas is still very strong, accounting for 5% of annual sales, second only to Black Friday.

(3) Special Days

Some other shopping holidays are statistically very prominent, such as Mother's Day, Father's Day, and Children's Day. In many countries, Father's Day is in March, but in Brazil, Father's Day is in August and accounts for 4% of annual online sales. Rarely celebrate children's day all over the world, but in Brazil, children's day is on October 12, is an important festival, the fifth people's attention to toy games and electronic products is very high. Valentine's day is held in February from all over the world, but Brazil is celebrated on June 12 and people focus more on clothing, perfume, and drinks. Also, there is strong interest in tourism and other areas.

Focus of Consultancy

Mission

In this case, our company aimed to help Olist to fix the operation problems they've faced. There are two objects that we are going to focus on. One of them is to raise awareness of this e-commerce platform. We need to find more high-quality users consist of sellers and customers for Olist, build a high-end brand image, changing it into a well-known brand. The other part is to raise profits through the ads and VAS(value-added services). There are some improvements we can make to boost advertising revenue and VAS margins.

Approach

Our specific approach concludes competitive analysis, operation strategy analysis, selling strategy analysis, and marketing analysis. First of all, what we will identify are the market share and competitive features. With a good understanding of competition, we are able to help the client to figure out the problems in their current operating model and selling strategy. Besides, what types of items are the most popular, what domain and products that should concentrate on will be told. While we also need to point out the weakness of push-based ads and the model of VAS to find a better way.

Result

After the analysis, we will give our professional advice on how to increase market share and decrease the users lost. The specific way to follow the dynamic of competitors will be listed as well. We will also help our client ensure a fine user-scale growth pattern, like how to attract users, convert potential customers into buyers, develop loyal users, optimize the user experience, elevate the repurchase rate, and improve the average conversion rate combined with multiple marketing manipulations. An annual marketing plan with different categories of products and a whole operation strategy will be shown as a final solution.

Data Quality Assurance

Data overview

This is a Brazilian ecommerce public dataset^[3] of orders made at Olist Store. The dataset has information of 100k orders from 2016 to 2018 made at multiple marketplaces in Brazil. Its features allows viewing an order from multiple dimensions: from order status, price, payment and freight performance to customer location, product attributes and finally reviews written by customers.

Table Name	Explanation
olist_customers_dataset.csv	Information about customers and their locations
olist_geolocation_dataset.csv	Brazil postal code and its latitude/longitude information
olist_order_items_dataset.csv	Data of the items purchased in each order
olist_order_payments_dataset.csv	Order payment data
olist_order_reviews_dataset.csv	Data on reviews made by customers
olist_orders_dataset.csv	Order transaction data
olist_products_dataset.csv	Data on products sold by Olist
olist_sellers_dataset.csv	Olist data of sellers who completed orders
olist_caategory_name_translation.csv	Translate product names from Portuguese to English

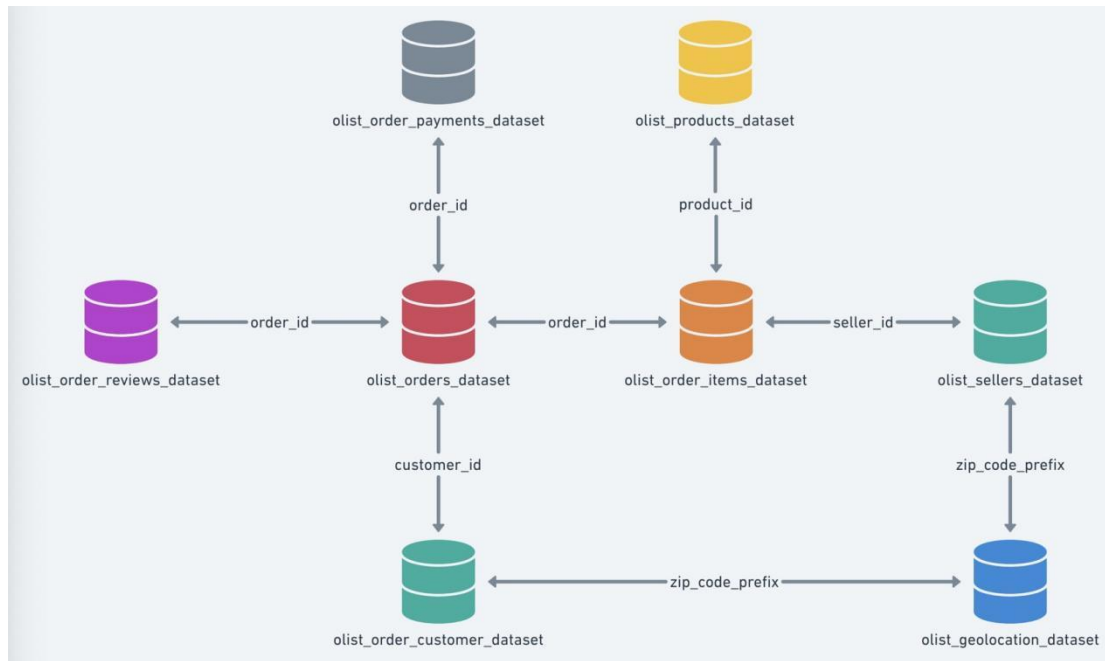


Figure 2. Data Schema

Data Cleaning

1. Download the data from the website completely and double check the completeness, continuity, and correctness of the data against the links with the data given on the website.
2. Join the data together with Tableau Prep and check if there are duplicate items in the inner join data.
3. Complete the data calculation for the later analysis in Tableau Prep, like Ship Days, Price value, and so on.
4. Excluding the data for 2016, because the company was established in 2015, the data for 2016 only contains the first three months. Also, 2016 is in the early stage for the marketing circle, so the comparison with subsequent years is not reliable.
5. For the missing data, our missing value are very few and they are in a very long continuous data, so we replace the missing values with the mean of near point.

Data Visualization and Interpretations

Analysis framework

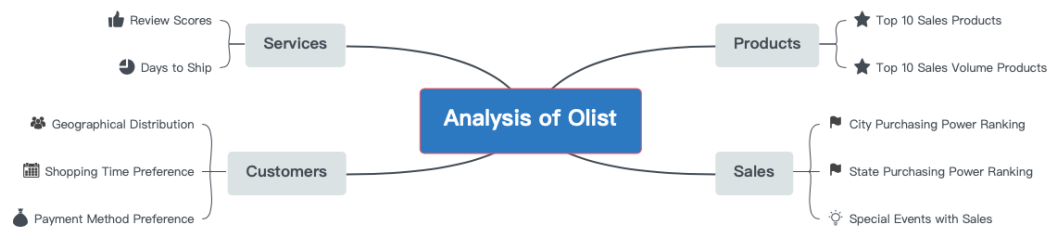


Figure 3. Analysis Framework

Services

Review Scores

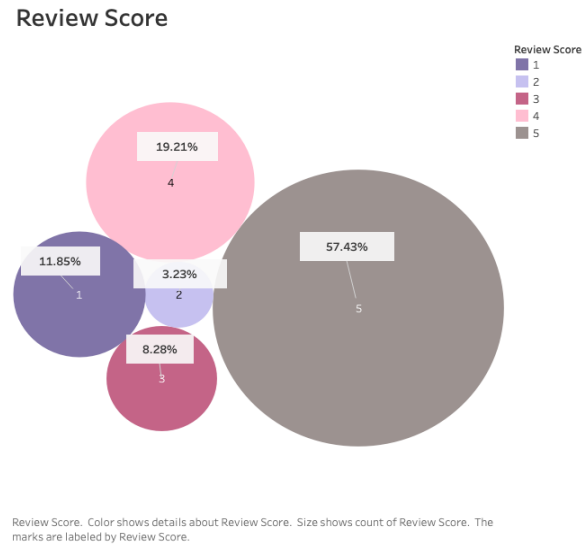


Figure 4. Review Score

We used the circle chart to analyze the review score. It was found that 57.43% of the orders were scored 5 points, 19.21% were scored 4 points, 8.28% were scored 3 points, 3.23% were scored 2 points, and 11.85% were scored 1 point. Assuming that three points and below are bad reviews, then 23.36% of the orders will become bad reviews. We believe that the high rate of negative reviews of Olist Store is one of the reasons why it has not been able to expand more users. Olist Store urgently needs to improve customer satisfaction and save repeat customers. A good brand reputation will make it has more customers.

Days to Ship

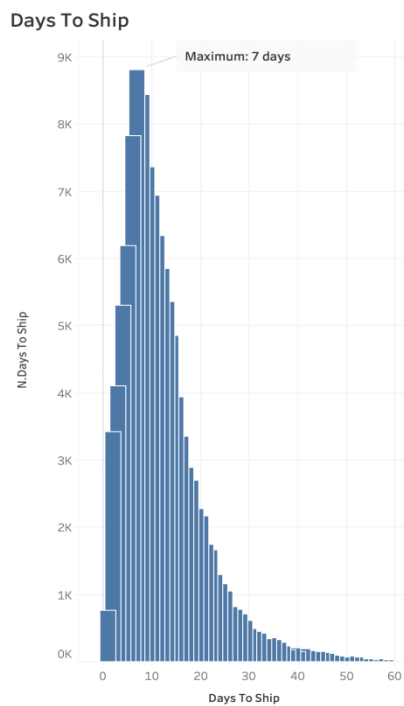


Figure 5. Days to ship

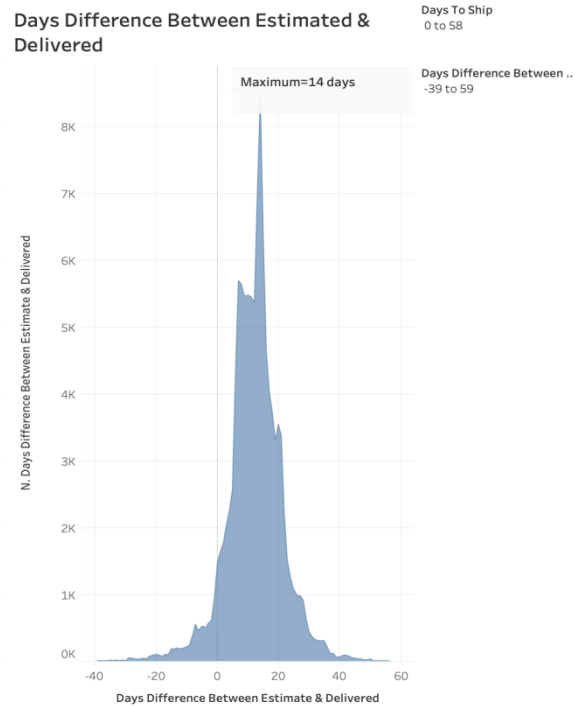


Figure 6. Days difference between estimated & delivered

The delivery time of most Olist products is about 7 days, which is much shorter than the estimated delivery days. It is helpful for Olist to win the goodwill and trust of customers. In addition to the quality of the goods, the customer's online shopping is followed by the delivery time. If it can be delivered as soon as possible, customers will be more satisfied with the service.

Customers

Geographical Distribution

Customer distribution

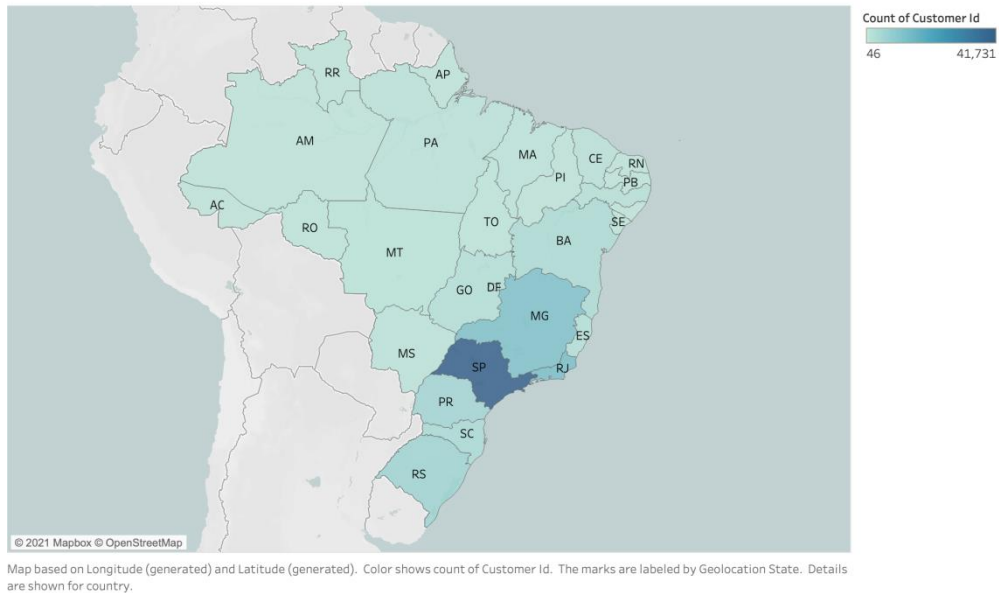


Figure 7. Customer Distribution

Olist customers are mainly concentrated in 4 states. The number of customers in Sao Paulo (SP), Rio de Janeiro (RJ), Minas Gerais, Brazil (MG) is at the forefront. Among them, Sao Paulo (SP) is the state with the largest number of customers, accounting for 42.18% of the number of customers.

Shopping Time Preference

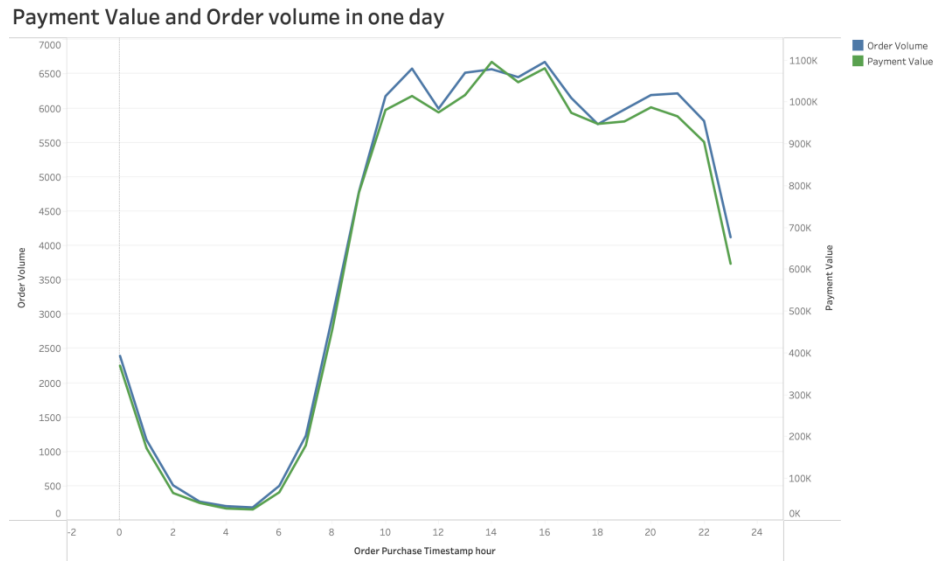


Figure 8. Payment value and order volume in one day

This graph shows the Payment Value and Order Volume of each hour in one day. The payment value reaches the maximum at 2:00 p.m. Payment value reaches the minimum at 5:00 a.m. and has a rapid growth after 6 a.m. It goes down fast after 10 p.m. The order volume is similar to the payment value, but it reaches the maximum at 4:00 p.m.

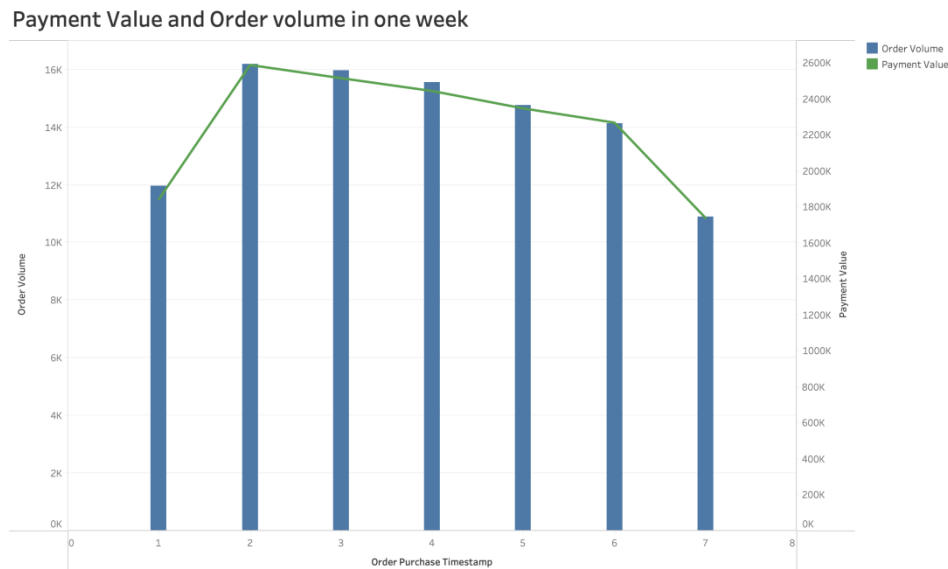


Figure 9. Payment value and order volume in one week

This graph shows Payment value and order volume in one week. The payment value is higher on

workdays and is lower on weekends. It reaches the maximum on Tuesday. The order volume is similar to the payment value.

Payment Method Preference

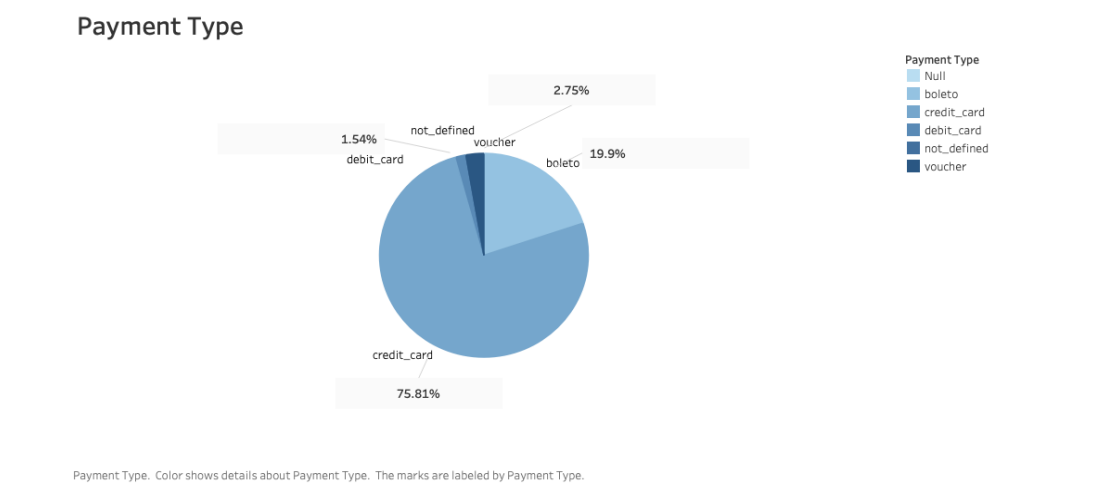


Figure 10. Payment Type

We used a pie chart to analyze the customer's payment type. It was found that up to 75.81% of the orders were paid by credit card, and 19.9% were paid by Boleto (the most popular cash payment method in Brazil, similar to the invoice). Voucher accounted for 2.75%, and debit card accounted for 1.54%. From the results, a vast of customers choose credit card payment. We recommend that Olist create more incentive policies to encourage customers to pay through Boleto and debit card. Reduce the income delay in collection due to the time of settlement with the bank. And publicize more credit card installment policies for expensive products.

Products

Top 10 Sales Products



Figure 12. Top 10 sales products

According to the text table, the top 10 sales products are bed, bath, table, health, beauty, computers accessories, furniture, decorations, watches, sports, housewares, auto, garden tools, and telephony.

Product Category

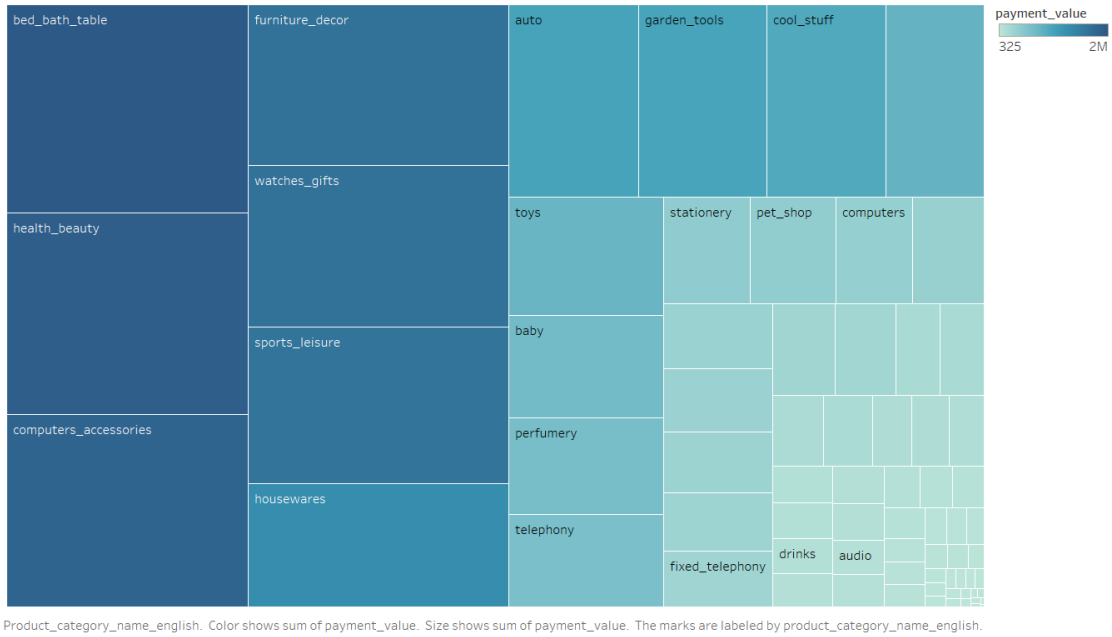


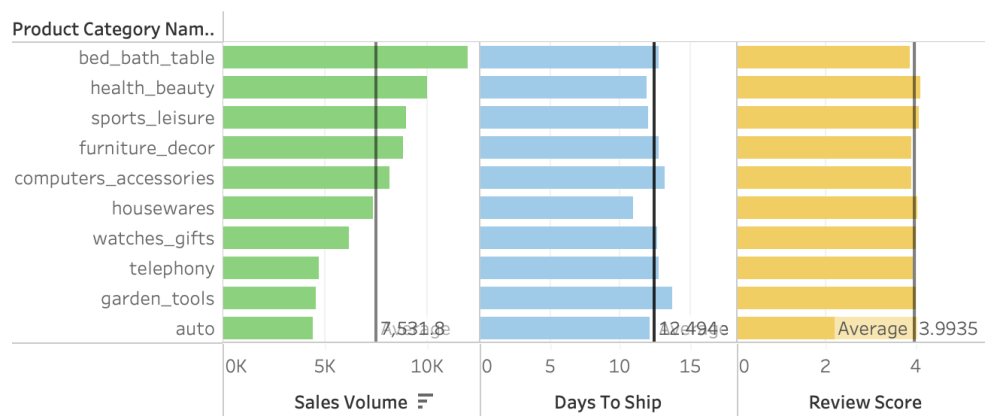
Figure 13. Product Categories

Furthermore, the treemap illustrates Gross Merchandise Volume (GMV) across different product categories sold by Olist. From this treemap, the higher the total GMV of the product category is, the darker and larger the rectangle is. The top 3 product categories are large-sized furniture, health and beauty products, sports and outdoor products. As a consultancy, we suggest Olist can find and cooperate with more clients to help launch products from different brands. Also, Olist should consider a new business model to attract more customers and improve revenues. Due to Olist's relatively low reputation compared with other popular E-commerce platforms, Olist should promote products and attract more consumers from other social media platforms.

Apart from the top 3 categories, there are also some high-volume product categories, such as computer accessories, small-sized furniture and decorations, housewares, and so on. For those categories for small-sized products, Olist should concentrate more on product quality and product abundance. Therefore, Olist should build connections with more sellers, especially for high-quality brand companies, to raise awareness for Olist platform.

Top 10 Sales Volume Products

Brief Summay of Different Products



Count of Order Id, average of Days To Ship and average of Review Score for each Product Category Name English. The view is filtered on Product Category Name English, average of Days To Ship and count of Order Id. The Product Category Name English filter keeps 71 of 71 members. The average of Days To Ship filter includes everything. The count of Order Id filter ranges from 4,283 to 11,990.

Figure 14. Brief summary of different products

The top 10 sales volume products are bed, bath, table, health, beauty, sports, furniture, decorations, computers accessories, housewares, watches, telephony, garden tools, and auto.

Regardless of whether it is the top 10 sales or the top 10 sales volume, the categories are the same. This shows that the top 10 products are the main categories of Olist. As you can see, the Days to Ship of top 10 products are mostly shorter than the average time, and the Review Scores are

almost all around 4 points. Therefore, the days to ship and quality of products are very critical for customer satisfaction.

Sales

City Purchasing Power Ranking

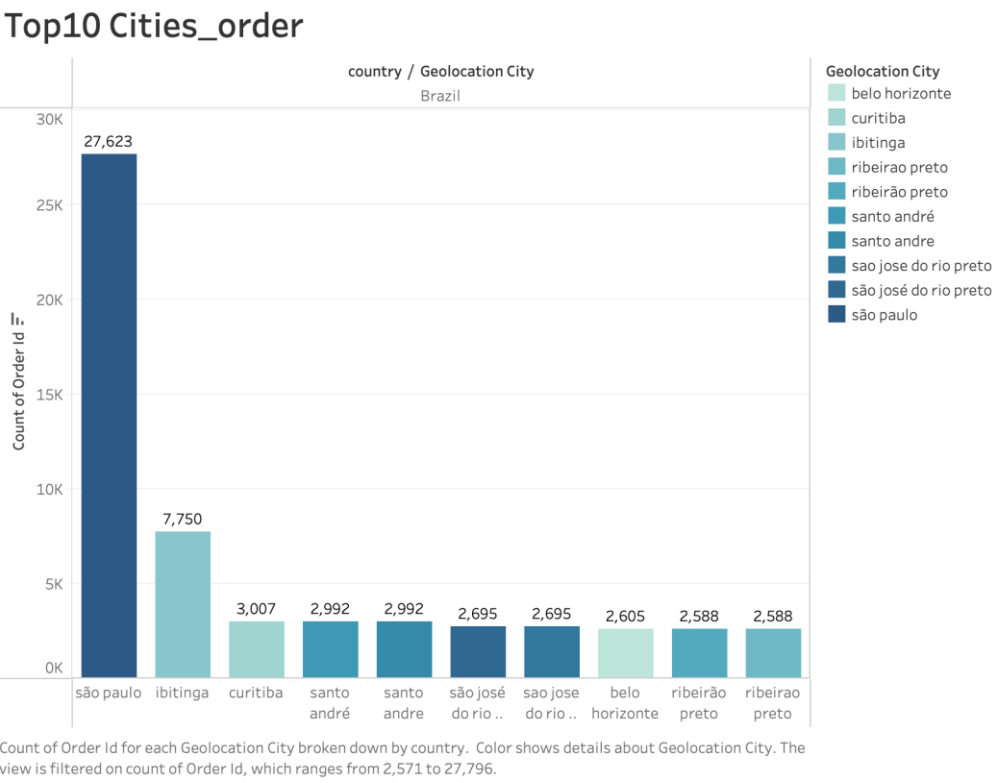


Figure 15. Top 10 cities order

From the histogram, the city with the largest number of customers is sao paulo (Sao Paulo) in Sao Paulo (SP), Brazil. And also, the city of sao paulo (Sao Paulo)’s sales far exceed other cities.

State Purchasing Power Ranking

(1) Sales Volume

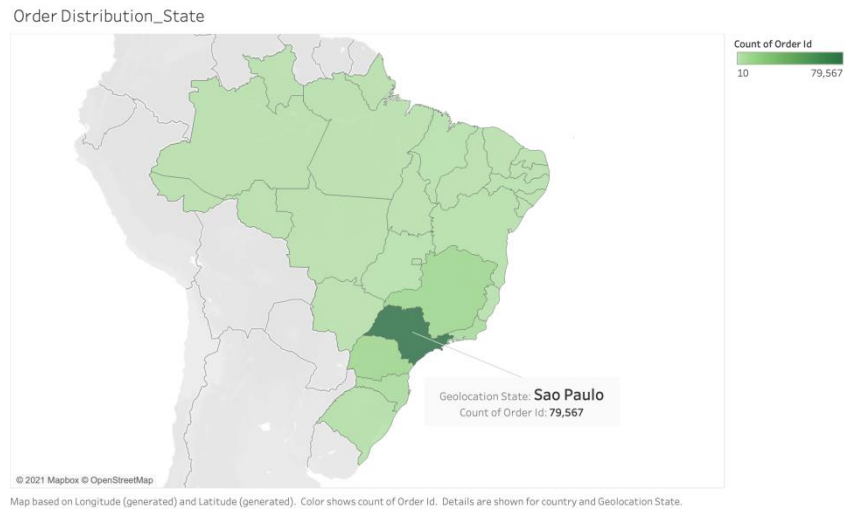


Figure 16. Order distribution of state

In this map we can see the quantity of orders in each state in Brazil. From light to dark green, the number of orders increases. Apparently, Sao Paulo owns the most orders and the absolute advantage, after all it's the capital.

TOP 5 Orders States

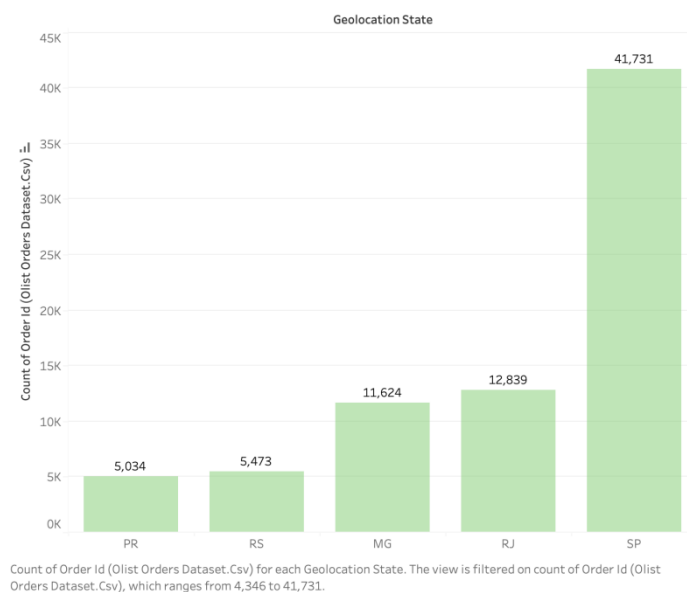


Figure 17. Top 5 order distribution of state

Since the other states are all low in orders, we can concentrate the top 5 states with the most orders in this bar chart. RJ and MG are about at the same level, PR and RS are approximate. And SP, extremely high, probably due to a lot of economic index like GDP.

Order Distribution without SP

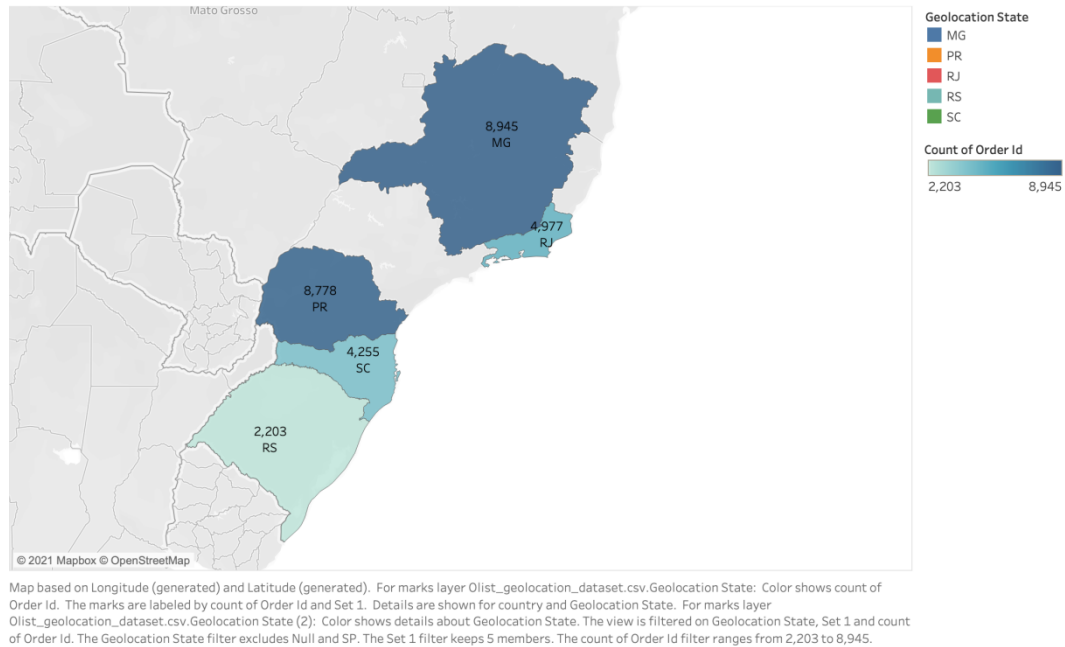


Figure 18. Order distribution without SP

When we look at this map except for SP, we can get it more clearly, these five states surrounding Sao Paulo within the southeast coast have a great advantage of orders, we can make a speculation that this is related to the development and prosperous degree of coastal states.

(2) Sales Revenue

Payment Value distribution

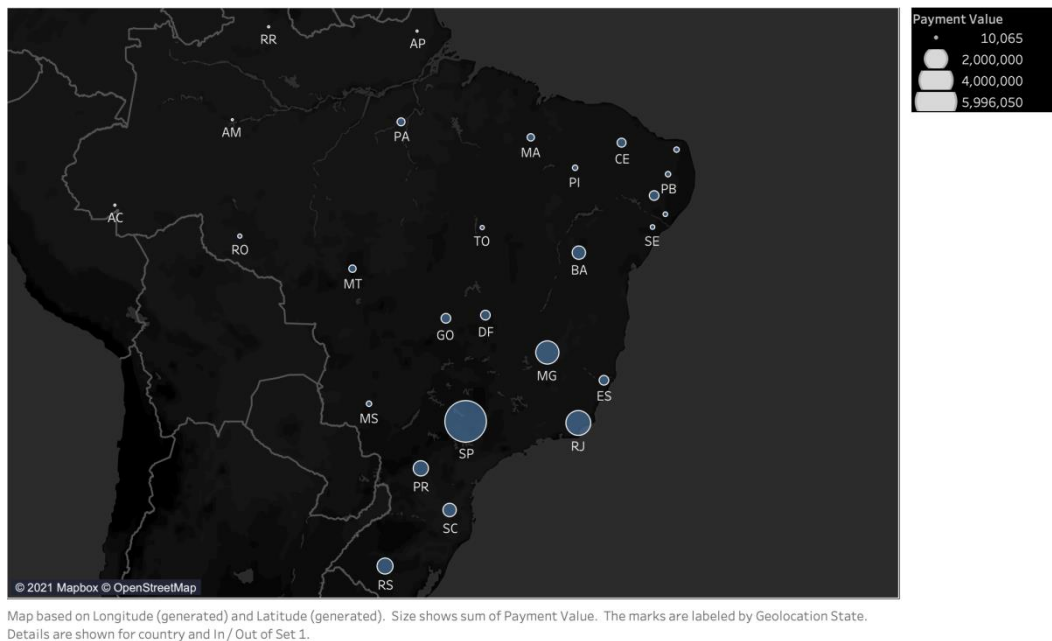


Figure 19. Payment value distribution

For this symbol map, it shows the payment value distribution of states, even in a different version, we can still catch that this payment value distribution is so close to the distribution of orders. MG,RJ,BA,PR,SC,RS, these states in terms of high payment value in Sudeste are all radiated by SP, and are influenced by the natural advantage of port. We can speculate that there are two reasons, one is that people in developed states have higher income, so the order payment value can be positively associated with earning. The other possible reason is that Olist didn't put much on the other states, and the speed of information spreading towards e-commerce limited the usage rate. When we look at this map except for SP, we can get it more clearly, these five states surrounding Sao Paulo within the southeast coast have a great advantage of orders, we can make a speculation that this is related to the development and prosperous degree of coastal states.

Special Event with Sales

GMV of 12 months

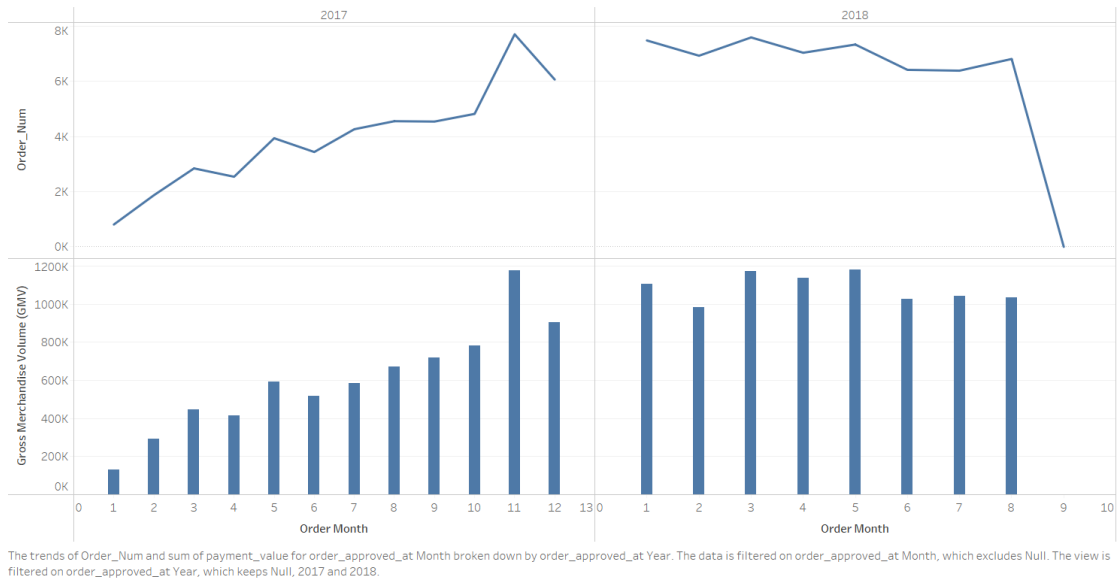


Figure 20. GMV of 12 months

The diagram above shows GMV across different months in both 2017 and 2018. From the bar chart of 2017, it can be seen that sales volume and sales value of November reach the top among the year due to Black Friday. Also, when comparing the sales volumes and sales value across the same month in both 2017 and 2018, Olist almost doubles the sales for the first half of the year. The order data demonstrates that the scale of Olist is enlarging gradually.

Additional Data Sources

For the services, E-commerce is also a service industry, and customers always have many requirements for the dimensions of service. In the data obtained in this article, only evaluation and shipping days as data support are actually not enough. There are many dimensions of service. In addition to the analysis of additional data, brainstorming is needed to obtain more personalized solutions.

For the customers, the data given to us on the web is about the customers themselves. In addition to the data of Olist customers, it is also necessary to analyze the population distribution and consumption levels of the entire Brazil. This will help us give more targeted and professional opinions on Olist's market planning.

For the products, competitive product analysis is very necessary. After understanding the overall market background, the next step is to analyze other competing products in the market. It is easier to find the shortcomings of Olist and give powerful and effective suggestions in the process of analyzing competing products with peers.

For the sales, in this part, we analyze the influence of geographical location and special festivals on sales. Cities and states in Brazil also need to do certain macro analysis, such as the population distribution, consumption level, and policy impact of this city/state.

Summary

1. Maintain and further enrich the categories that are in high demand. At the same time, analyze the best-selling top products, explore the characteristics of user needs, and optimize the structure of the mall's products.
2. In the busy months of purchase and during the time of the day, discount coupons, free shipping and other preferential forms can be adopted to attract users to consume.
3. Increase the customer unit price through measures such as product mix and full reduction.
4. The top core cities and states in terms of transaction volume need to be maintained. At the same time, key cities and states will be explored, and different marketing strategies will be adopted for cities and states of different importance.
5. Accelerate the construction of logistics in the cities and states where sellers are the core, and build the core area of e-commerce. At the same time, further improve the supply chain construction in the areas where sellers are concentrated, reduce product costs, and increase the price advantage of e-commerce.

References

- [1]<https://techcrunch.com/2021/04/15/goldman-sachs-leads-23m-in-funding-for-brazilian-e-commerce-startup-olist/>
- [2]https://www.kaggle.com/olistbr/brazilian-ecommerce?select=olist_order_payments_dataset.csv
- [3]<https://valorcapitalgroup.com/case-studies/olist-redesigned-the-marketplace-business-model-to-fit-the-realities-of-ecommerce-in-brazil/>