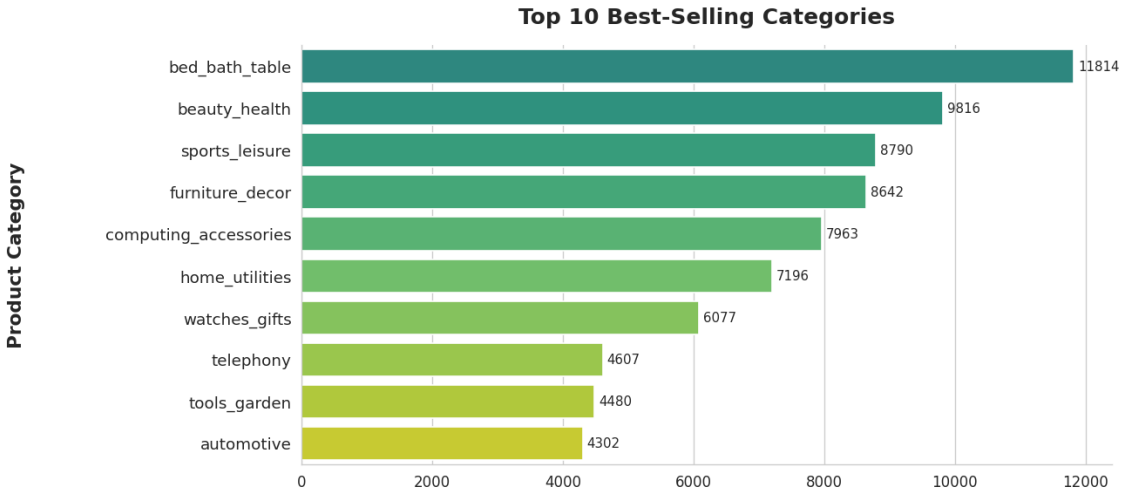
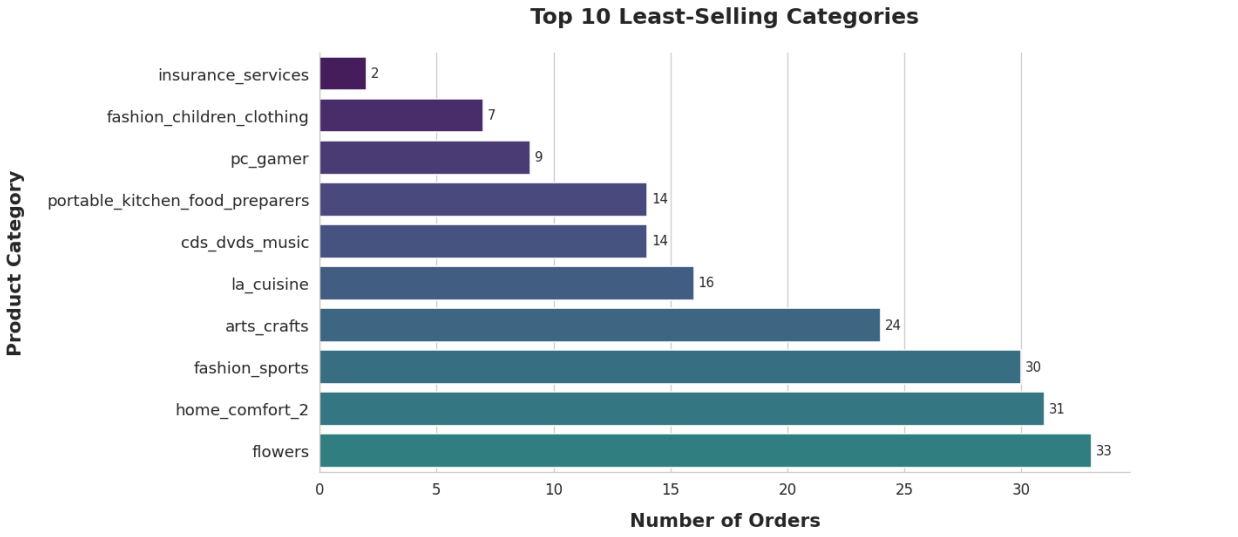
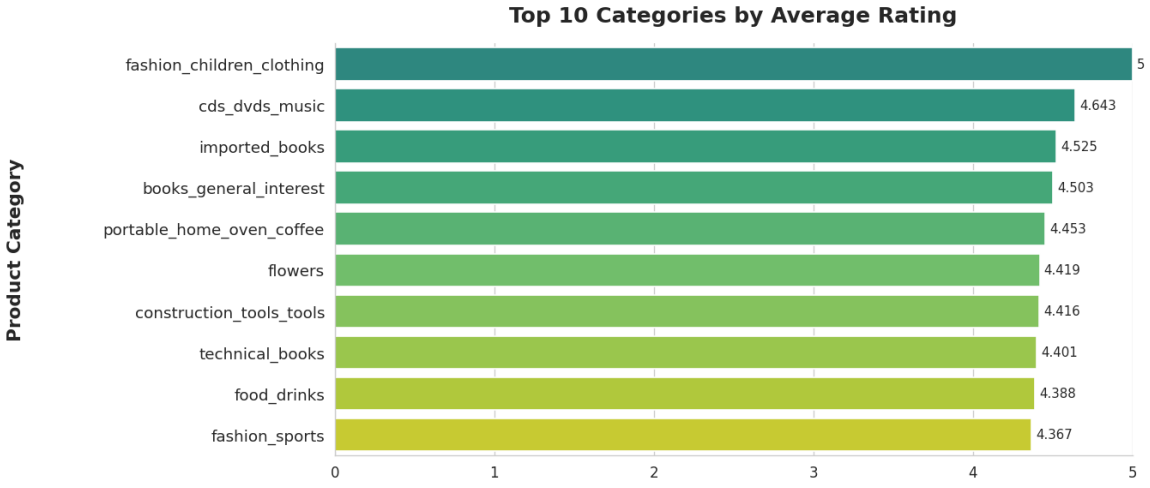
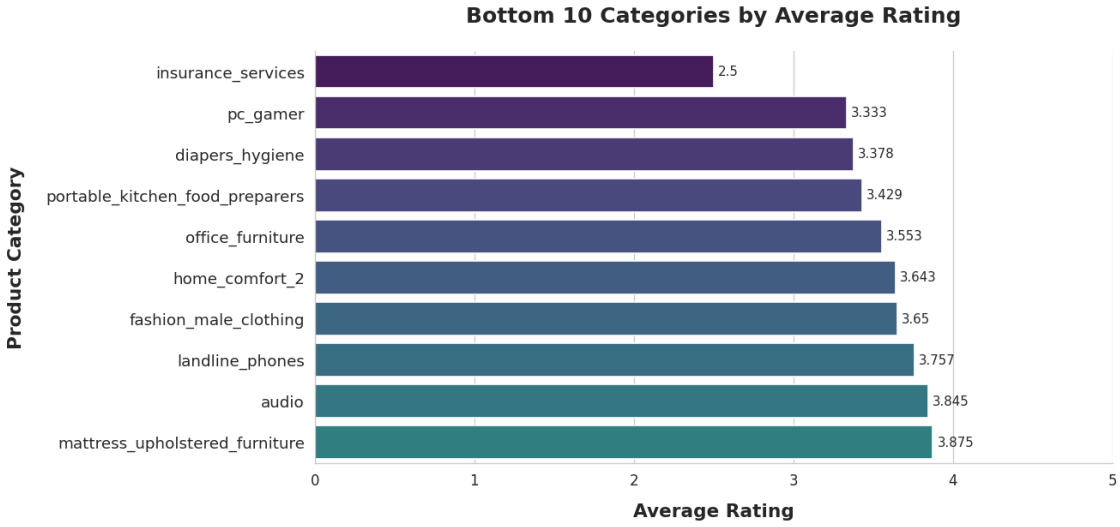
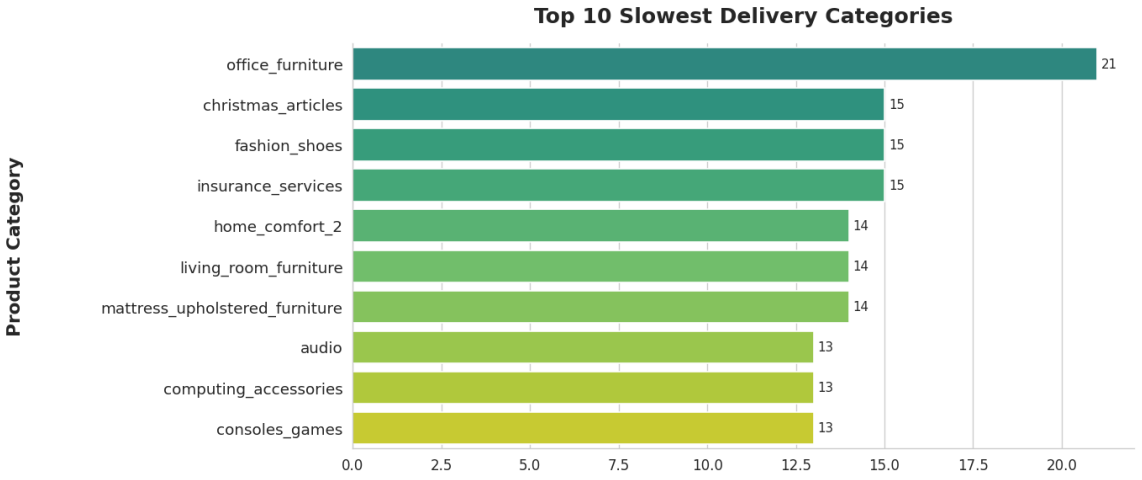
PRODUCTS-RELATED INSIGHTS

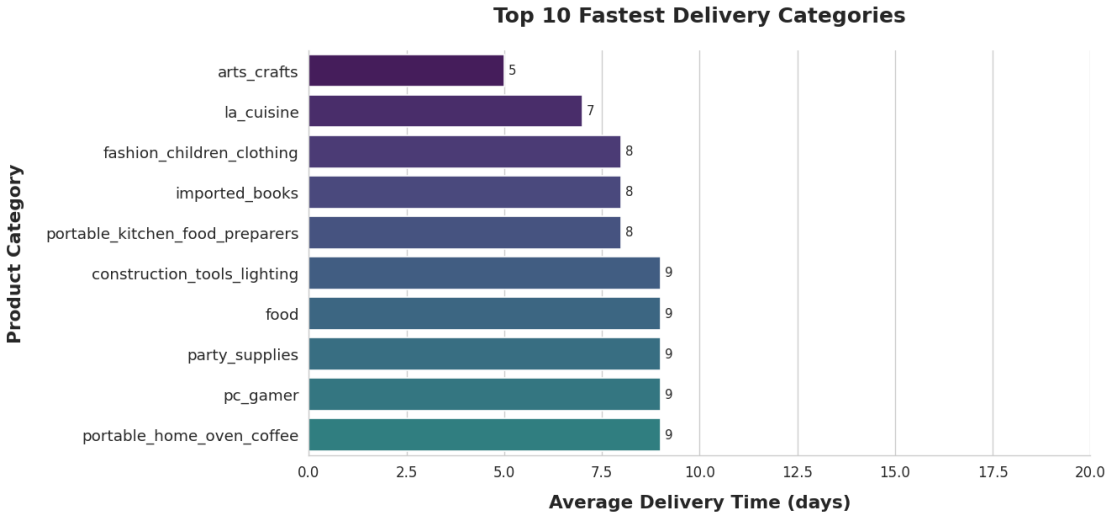

Top 10 Best-Selling Categories
Product Category
bed_bath_table
beauty_health
sports_leisure
furniture_decor
computing_accessories
home_utilities
watches_gifts
telephony
tools_garden
automotive
11814
9816
8790
8642
7963
7196
6077
4607
4480
4302
0
2000
4000
6000
8000
10000
12000

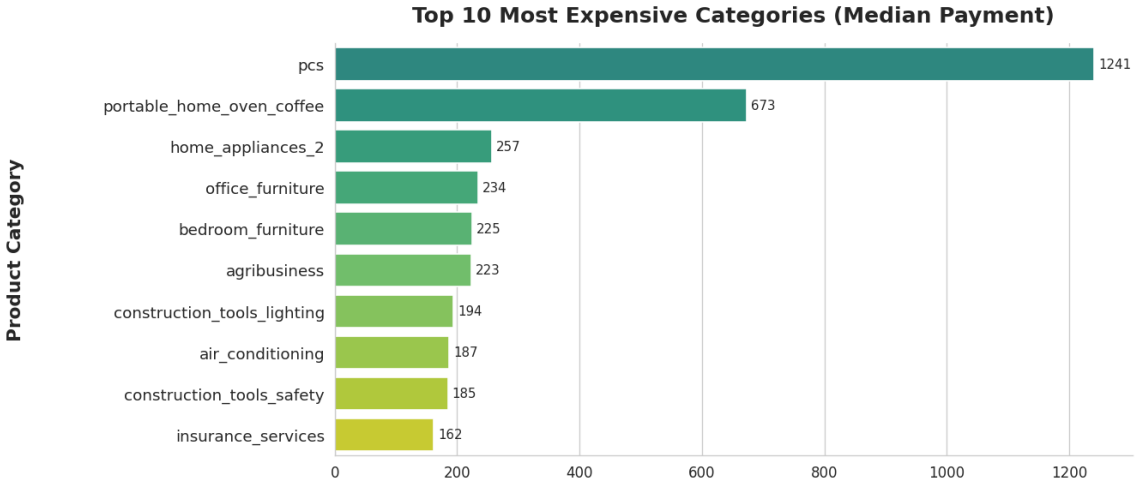

Top 10 Least-Selling Categories
Product Category
insurance_services
fashion_children_clothing
pc_gamer
portable_kitchen_food_preparers
cds_dvds_music
la_cuisine
arts_crafts
fashion_sports
home_comfort_2
flowers
2
7
9
14
14
16
24
30
31
33
0
5
10
15
20
25
30
Number of Orders

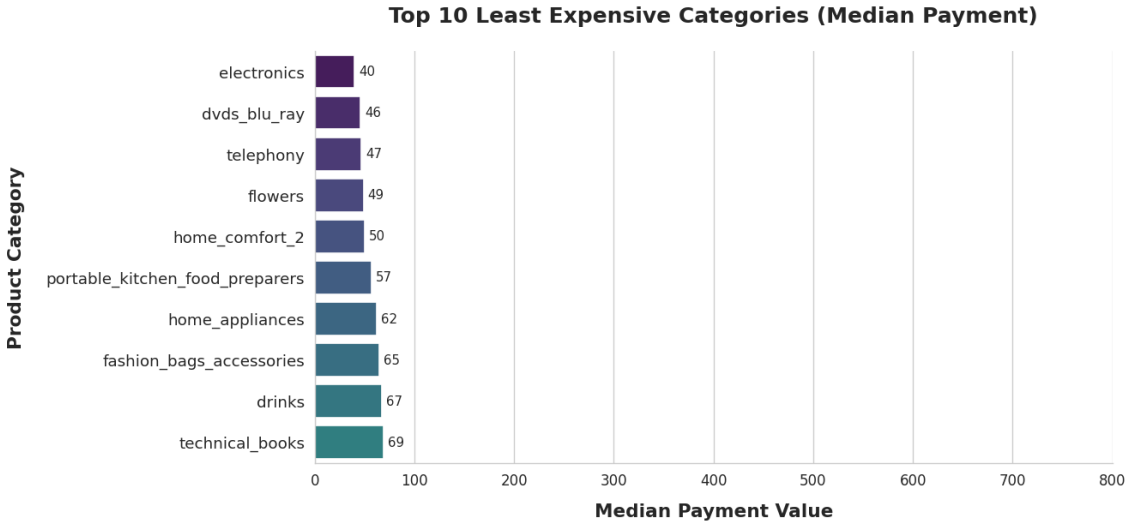

Top 10 Categories by Average Rating
Product Category
fashion_children_clothing
cds_dvds_music
imported_books
books_general_interest
portable_home_oven_coffee
flowers
construction_tools_tools
technical_books
food_drinks
fashion_sports
5
4.643
4.525
4.503
4.453
4.419
4.416
4.401
4.388
4.367
0
1
2
3
4
5


Bottom 10 Categories by Average Rating
Product Category
insurance_services
pc_gamer
diapers_hygiene
portable_kitchen_food_preparers
office_furniture
home_comfort_2
fashion_male_clothing
landline_phones
audio
mattress_upholstered_furniture
2.5
3.333
3.378
3.429
3.553
3.643
3.65
3.757
3.845
3.875
0
1
2
3
4
5
Average Rating

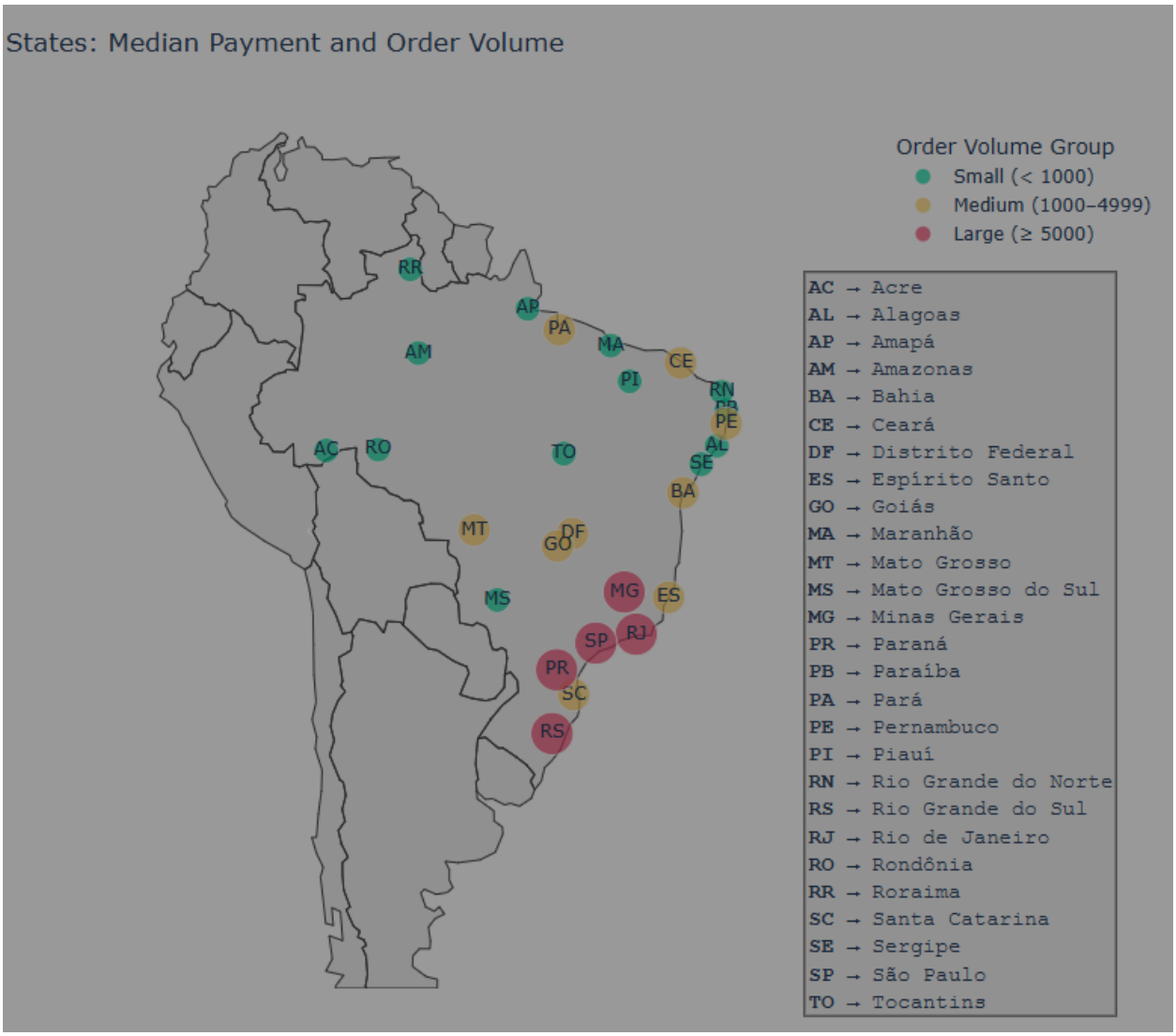

Top 10 Slowest Delivery Categories
Product Category
office_furniture
christmas_articles
fashion_shoes
insurance_services
home_comfort_2
living_room_furniture
mattress_upholstered_furniture
audio
computing_accessories
consoles_games
21
15
15
15
14
14
14
13
13
13
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0


Top 10 Fastest Delivery Categories
Product Category
arts_crafts
la_cuisine
fashion_children_clothing
imported_books
portable_kitchen_food_preparers
construction_tools_lighting
food
party_supplies
pc_gamer
portable_home_oven_coffee
5
7
8
8
8
9
9
9
9
9
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
Average Delivery Time (days)


Top 10 Most Expensive Categories (Median Payment)
Product Category
pcs
portable_home_oven_coffee
home_appliances_2
office_furniture
bedroom_furniture
agribusiness
construction_tools_lighting
air_conditioning
construction_tools_safety
insurance_services
1241
673
257
234
225
223
194
187
185
162
0
200
400
600
800
1000
1200


Top 10 Least Expensive Categories (Median Payment)
Product Category
electronics
dvds_blu_ray
telephony
flowers
home_comfort_2
portable_kitchen_food_preparers
home_appliances
fashion_bags_accessories
drinks
technical_books
40
46
47
49
50
57
62
65
67
69
0
100
200
300
400
500
600
700
800
Median Payment Value

PAYMENTS



State-Level Insights

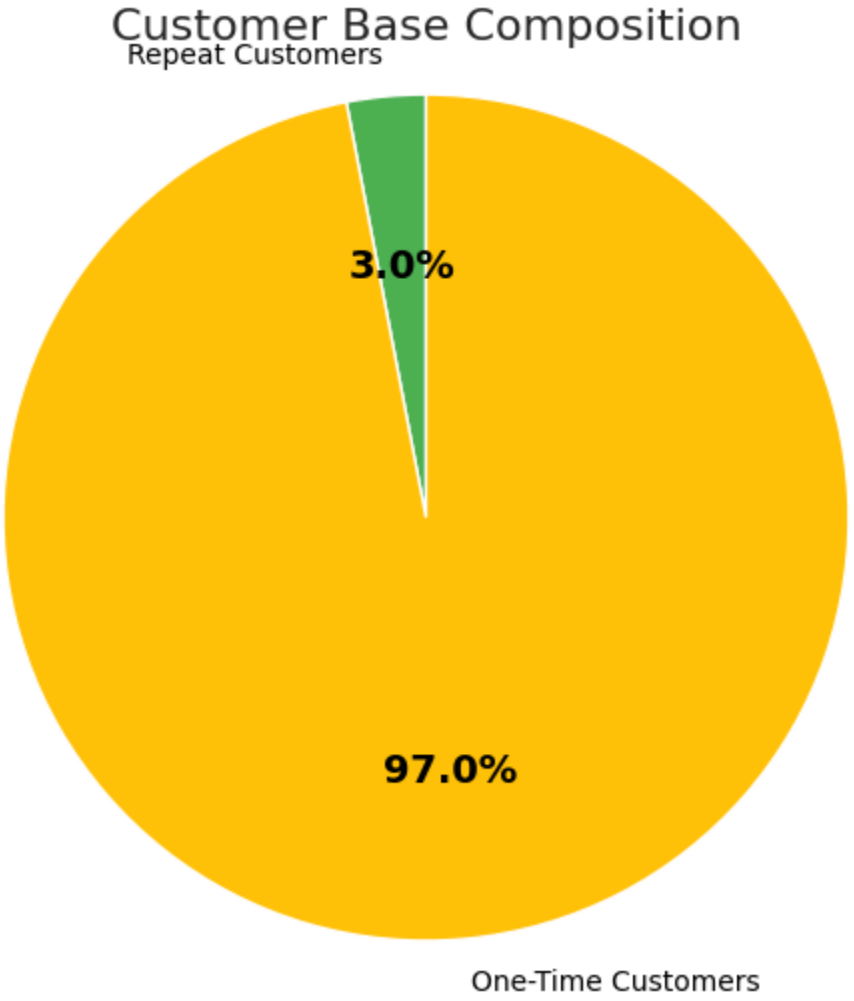
As expected, the largest number of orders come from Brazil's most populous and economically active states — São Paulo (50,264), Rio de Janeiro (15,518), and Minas Gerais (13,819) lead by a wide margin. These urban hubs dominate in sheer volume, reflecting both high demand and logistical capacity.

However, when it comes to median payment values, the picture becomes more nuanced. Several smaller or mid-sized states, such as Acre (171 Brazilian reais), Roraima (157 Brazilian reais), and Rondônia (160 Brazilian reais), show surprisingly high spending levels. Meanwhile, São Paulo — the undisputed volume leader — reports the lowest median payment at ₽98, hinting at more price-sensitive or utility-driven shopping behavior.

These discrepancies suggest that while big states move the bulk of Brazil's e-commerce, smaller regions may represent pockets of higher-value transactions, possibly driven by product mix, logistics costs, or customer demographics.

In cities, a similar pattern holds: high-order cities often cluster around large state capitals, but median payments vary dramatically, requiring more granular analysis to understand local preferences and profitability.

CUSTOMERS



Repeat Customers:

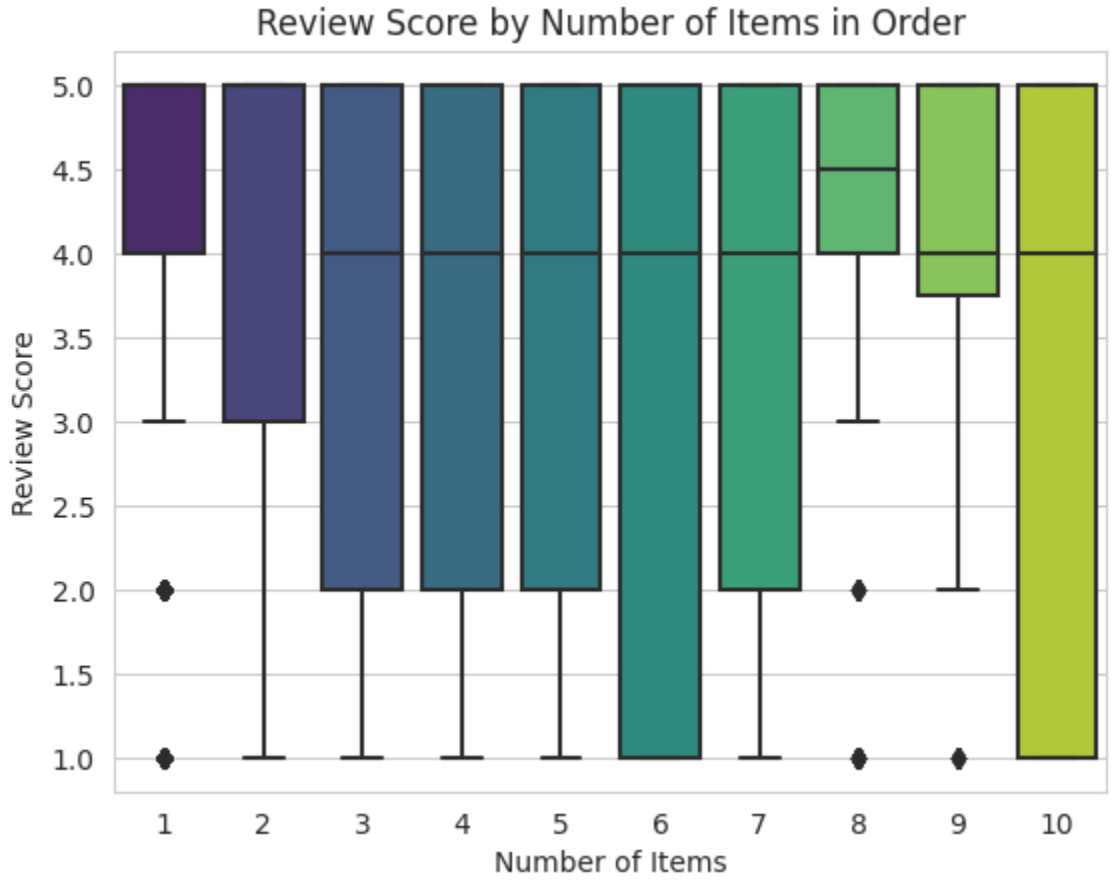
Rare, but Worth Watching¶
Out of 93,078 unique customers, only 2,810 placed more than one order — that's just 3% of the entire base.

97% of customers order only once. This may suggest the market behaves like a one-shot purchase environment — a key consideration for both retention efforts and product strategy.

While rare, repeat customers likely represent a more loyal segment worth deeper investigation. Their behavior may differ significantly in terms of product selection, satisfaction, and lifetime value.

Further segmentation could explore whether these customers:

Leave more positive reviews.
Spend more per order.
Experience fewer delivery issues.
Understanding and nurturing this small, loyal group could have a disproportionately large impact on long-term business performance.



n_items
1 83684
2 9558
3 1532
4 811
6 270
5 234
7 46
Name: count, dtype: int64

OTHER BUSINESS METRICS

3. Average Order Value (AOV)

```
AOV = delivered['payment_value'].mean()
Q1_AOV = delivered['payment_value'].quantile(0.25)
Q3_AOV = delivered['payment_value'].quantile(0.75)
IQR_AOV = delivered[(delivered['payment_value']>Q1_AOV) & (delivered['payment_value']<Q3_AOV)]['payment_value'].mean()
STD = delivered['payment_value'].std()
IQR_STD = delivered[(delivered['payment_value']>Q1_AOV) & (delivered['payment_value']<Q3_AOV)]['payment_value'].std()

print(f'AOV = {AOV:.1f} R$\nSTD = {STD:.1f} R$\n\nIQR_AOV = {IQR_AOV:.1f} R$\nIQR_STD = {IQR_STD:.1f} R$')
```

```
AOV = 171.8 R$
STD = 265.6 R$

IQR_AOV = 113.3 R$
IQR_STD = 35.8 R$
```

4. ARPU

```
ARPU = delivered['payment_value'].sum() / len(np.unique(delivered['customer_unique_id']))
IQR_ARPU = delivered[(delivered['payment_value']>Q1_AOV) & (delivered['payment_value']<Q3_AOV)]['payment_value'].sum() / len(np.unique(delivered['customer_unique_id']))
print(f'ARPU = {ARPU:.1f} R$\n\nIQR_ARPU = {IQR_ARPU:.1f} R$')
```

Python

```
ARPU = 213.0 R$

IQR_ARPU = 70.2 R$
```

5. LTV — Lifetime Value

```
ltv_per_customer = delivered.groupby('customer_unique_id')['payment_value'].sum().reset_index(name='ltv')
ltv_mean = ltv_per_customer['ltv'].mean()
ltv_median = ltv_per_customer['ltv'].median()
high_value_customer = ltv_per_customer[ltv_per_customer['ltv'] > ltv_per_customer['ltv'].quantile(0.75)]

print(f'Lifetime Mean Value = {ltv_mean:.1f} R$\nLifetime Median Value = {ltv_median:.1f} R$\n\nTop 5 highest value customers in R$: \n{high_value_customer["ltv"].nlargest(5)}')
```

Pytho

```
Lifetime Mean Value = 213.0 R$
Lifetime Median Value = 113.1 R$

Top 5 highest value customers in R$:
3724     109312.64
38579     45256.00
71565     44048.00
23411     36489.24
87446     30186.00
Name: ltv, dtype: float64
```

On a 5-point scale:
Average review score = 4.08
Standard deviation of review score = 1.35

Share of bad reviews (≤3) = 26666 which is out of the total is 23.04%

It is also worth recalling that section 4.4 clearly shows that the delay affects the rating. In 54% of cases, when the delivery was late, customers gave a 1-star rating. In contrast, with early deliveries, only 8.5% of customers gave a 1-star rating.

```
Category Revenue top 10 in R$: product_category_english
bed_bath_table           1723932.0
beauty_health            1625924.0
computing_accessories    1563316.0
furniture_decor          1407916.0
watches_gifts            1388699.0
sports_leisure           1357055.0
home_utilities           1072821.0
automotive                835783.0
tools_garden              813056.0
cool_stuff                746763.0
Name: payment_value, dtype: float64
```