

Marketing and Retail Analytics

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Agenda

- ▶ Objective
- ▶ Background
- ▶ Key Findings
- ▶ Recommendations

Objective

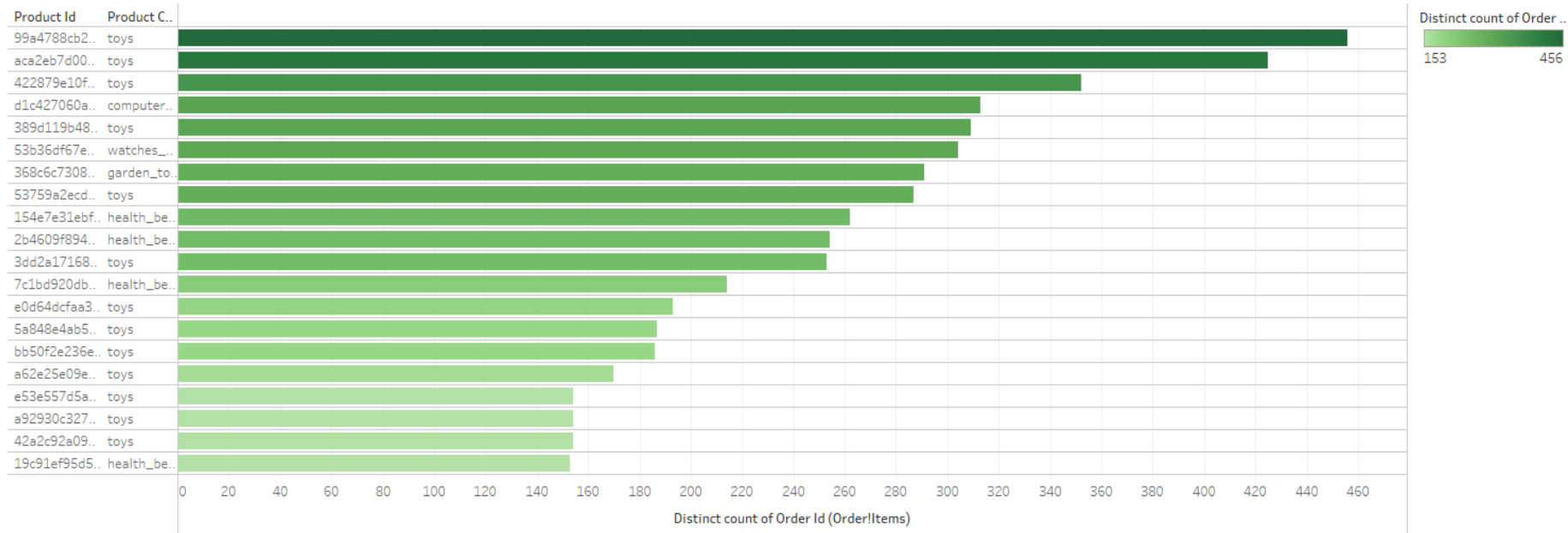
- ▶ To analyse the dataset of OList e-commerce company.
- ▶ To help OList reduce their losses by giving them insights to cut down unnecessary inventory costs.
- ▶ To identify top products that contribute to the revenue and also use market basket analysis to analyze the items that are more likely to be purchased individually or in combination with some other products.
- ▶ Ultimately, we need to help OList to identify the product categories which they can get rid of without significantly impacting business

Background

- ▶ OList is an e-commerce company that has recently faced some losses.
- ▶ They want to manage their inventory very well to reduce unnecessary costs that they might be bearing due to storage space.
- ▶ They want to analyze the items that are more likely to be purchased individually or in combination with some other products so that they can get rid of the products which generates very less revenue and products which are sold very rarely.

Key Findings from Product Dashboard

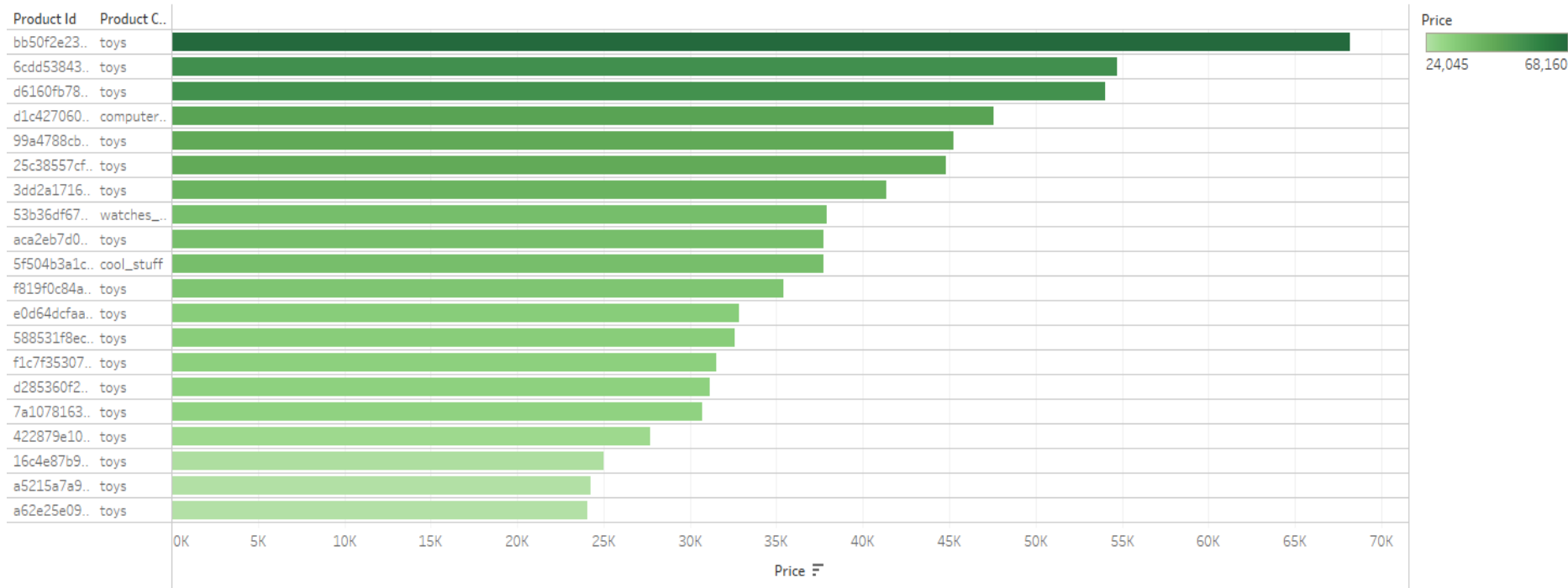
Top 20 products ordered w.r.t quantity



Distinct count of Order Id (OrderItems) for each Product Category Name as an attribute broken down by Product Id. Color shows distinct count of Order Id (OrderItems). The view is filtered on Product Id, which has multiple members selected.

- The highest ordered product is the product with product ID 99a4788cb24856965c36a24e339b6058.
- The highest sold product belongs to the 'Toys' product category.
- The top 3 highest ordered products belongs to the 'Toys' product category.

Top 20 products w.r.t revenue



Sum of Price for each Product Category Name broken down by Product Id. Color shows sum of Price. The view is filtered on Product Id, which has multiple members selected.

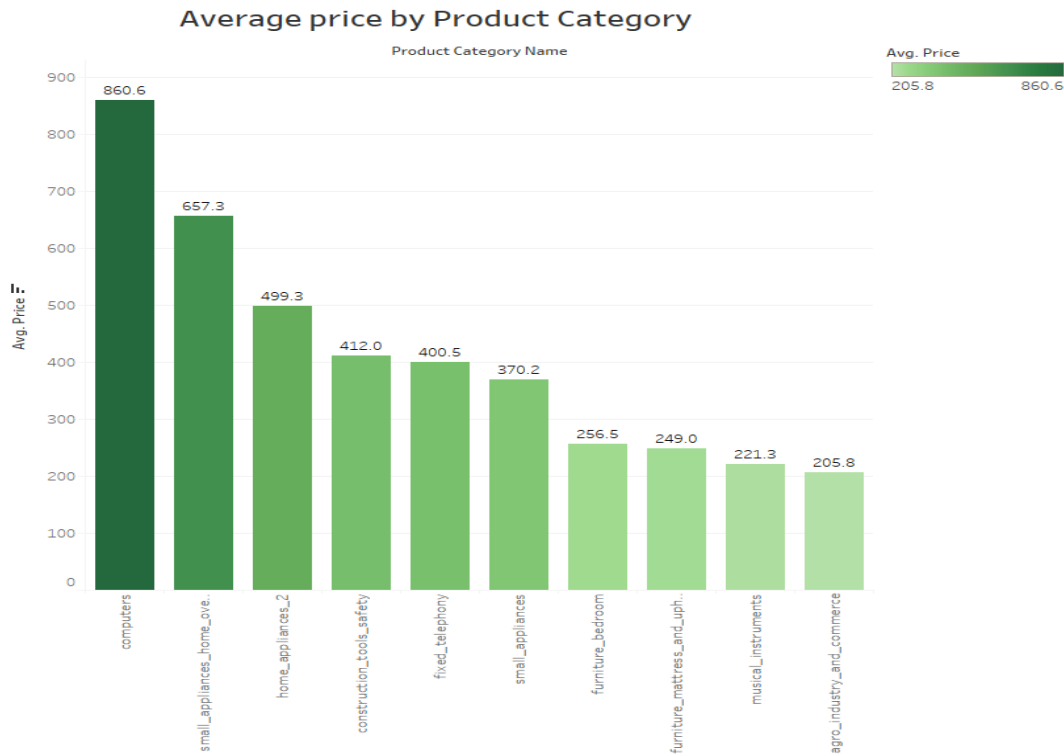
- The top revenue generating product is the product with product ID bb50f2e236e5eea0100680137654686c which belongs to Toys category.
- The top 3 highest revenue generating products also belongs to the 'Toys' product category.
- The 2nd highest revenue generating product category is computer accessories.

Percentage running total by price

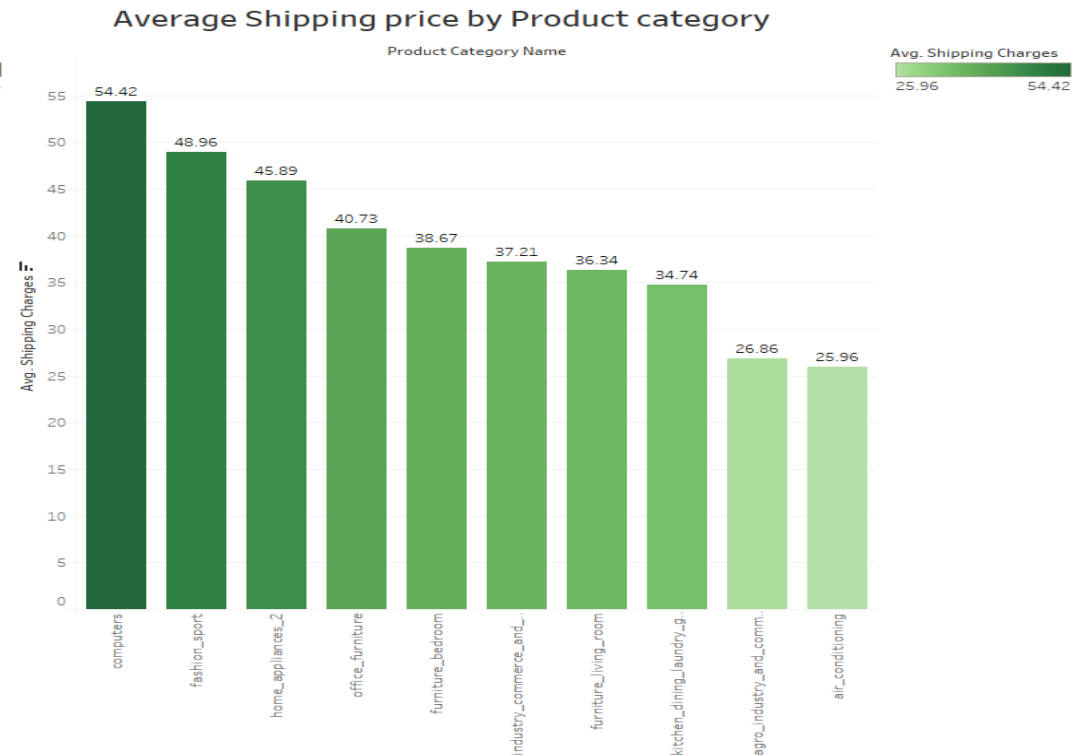
Product Id	Price	Running Su..	% of Total R..
bb50f2e236e5eea010068..	68,160	68,160	0.49%
6cdd53843498f92890544..	54,702	122,862	0.89%
d6160fb7873f184099d9b..	53,999	176,861	1.28%
d1c427060a0f73f6b889a..	47,547	224,408	1.62%
99a4788cb24856965c36a..	45,243	269,651	1.95%
25c38557cf793876c5abd..	44,829	314,481	2.28%
3dd2a17168ec895c781a9..	41,382	355,863	2.58%
53b36df67ebb7c41585e8..	37,929	393,793	2.85%
aca2eb7d00ea1a7b8ebd4..	37,744	431,536	3.12%
5f504b3a1c75b73d6151b..	37,734	469,270	3.40%
f819f0c84a64f02d3a560..	35,397	504,667	3.65%
e0d64dcfaa3b6db5c54ca..	32,836	537,503	3.89%
588531f8ec37e7d5ff5b7..	32,603	570,106	4.13%
f1c7f353075ce59d8a6f3c..	31,520	601,626	4.36%
d285360f29ac7fd97640b..	31,178	632,804	4.58%
7a10781637204d8d1048..	30,683	663,487	4.80%
422879e10f46682990de2..	27,695	691,182	5.00%
16c4e87b98a9370a9cbc3..	25,034	716,216	5.18%
a5215a7a9f46c4185b12f..	24,280	740,496	5.36%
a62e25e09e05e6faf31d9..	24,045	764,541	5.53%
5a848e4ab52fd5445cdc0..	23,368	787,909	5.70%
2b4609f8948be1887449..	22,777	810,686	5.87%
bc4cd4da98dd128c39bf0..	22,700	833,386	6.03%
389d119b48cf3043d3113..	22,027	855,413	6.19%
368c6c730842d78016ad8..	21,427	876,841	6.35%
53759a2ecddad2bb87a07..	21,283	898,123	6.50%
52c80cedd4e90108bf4fa..	21,134	919,257	6.65%
461f43be3bdf8844e65b6..	20,588	939,845	6.80%
fd0065af7f09af4b82a0ca..	20,000	959,845	6.95%
1dec4c88c685d5a07bf01..	19,965	979,810	7.09%
6f3b5b605d91b7439c5e3..	19,485	999,295	7.23%
1a080577618e7fe4d9ddd..	19,363	1,018,658	7.37%
165f86fe8b799a708a20e..	18,657	1,037,315	7.51%
19c91ef95d509ea33eda9..	18,643	1,055,959	7.64%
11250b0d4b709fee92441..	18,175	1,074,134	7.78%
fb01a5fc09b9b9563c2ee..	17,422	1,091,555	7.90%
601a360bd2a916ecef0e8..	17,229	1,108,784	8.03%

- The following table shows the percentage running total w.r.t price.
- The first product whose sum of price is 68,160 contributes to around 0.49% of the total revenue which is the highest for a single product.
- The Top 20 products contributes to around 5.53% of the total revenue.

Key Findings from Product Category Dashboard



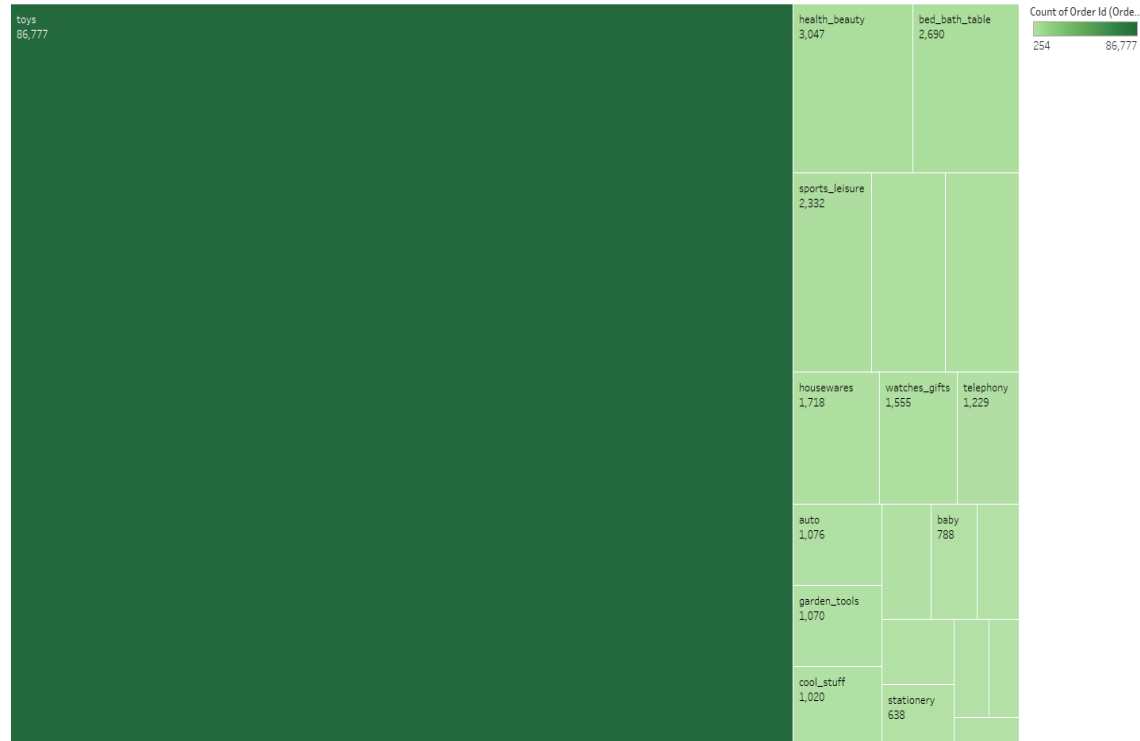
Average of Price for each Product Category Name. Color shows average of Price. The marks are labeled by average of Price. The view is filtered on Product Category Name, which keeps 10 of 70 members.



Average of Shipping Charges for each Product Category Name. Color shows average of Shipping Charges. The marks are labeled by average of Shipping Charges. The view is filtered on Product Category Name, which keeps 10 of 70 members.

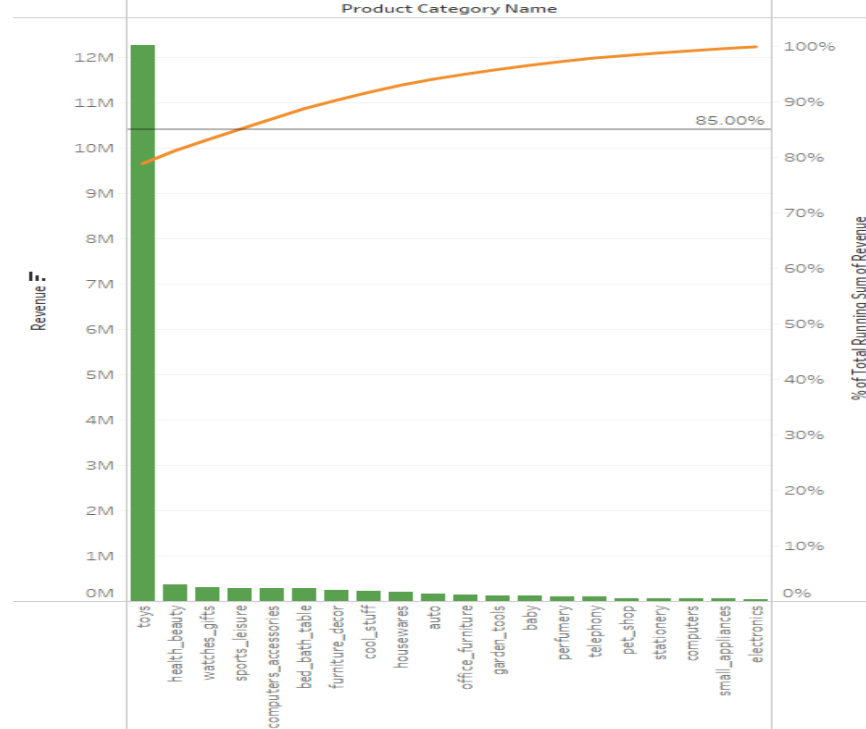
- The Average price and shipping charges associated with 'Computers' are highest but the number of orders are significantly low.
- The average price of the computers is 860 and the average shipping price is 54.
- The 2nd product category with highest average price is 'small home appliances'.

Top 20 highest sold product Category



Product Category Name and count of Order Id (OrderItems). Color shows count of Order Id (OrderItems). Size shows count of Order Id (OrderItems). The marks are labeled by Product Category Name and count of Order Id (OrderItems). The view is filtered on Product Category Name, which keeps 20 of 70 members.

Pareto chart for the products contributing to sales

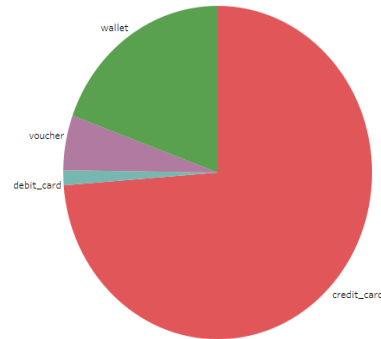


The trends of sum of Revenue and % of Total Running Sum of Revenue for Product Category Name. The view is filtered on Product Category Name, which keeps 20 of 70 members.

- The top 1 highest sold product category is 'Toys'.
- From the Treemap we can say that, the number of toy's product category ordered (86,777) is very much higher than the second product category i.e 'Health beauty' which is ordered 3,047 times.
- From the Pareto analysis we can say that, 85% of the revenue for Olist is generated by the top 4 product categories.

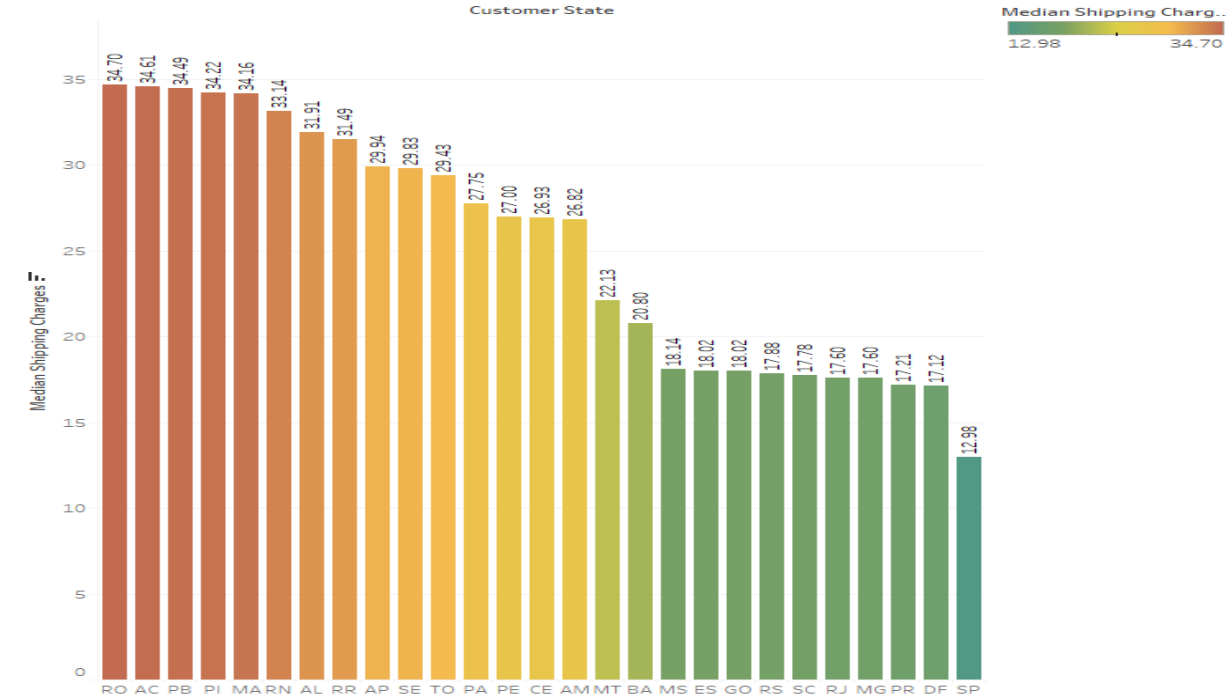
Key Findings from EDA Dashboard

Distribution of Payment types over orders



Payment Type. Color shows details about Payment Type. Size shows count of Order Id (OrderItems). The marks are labeled by Payment Type.

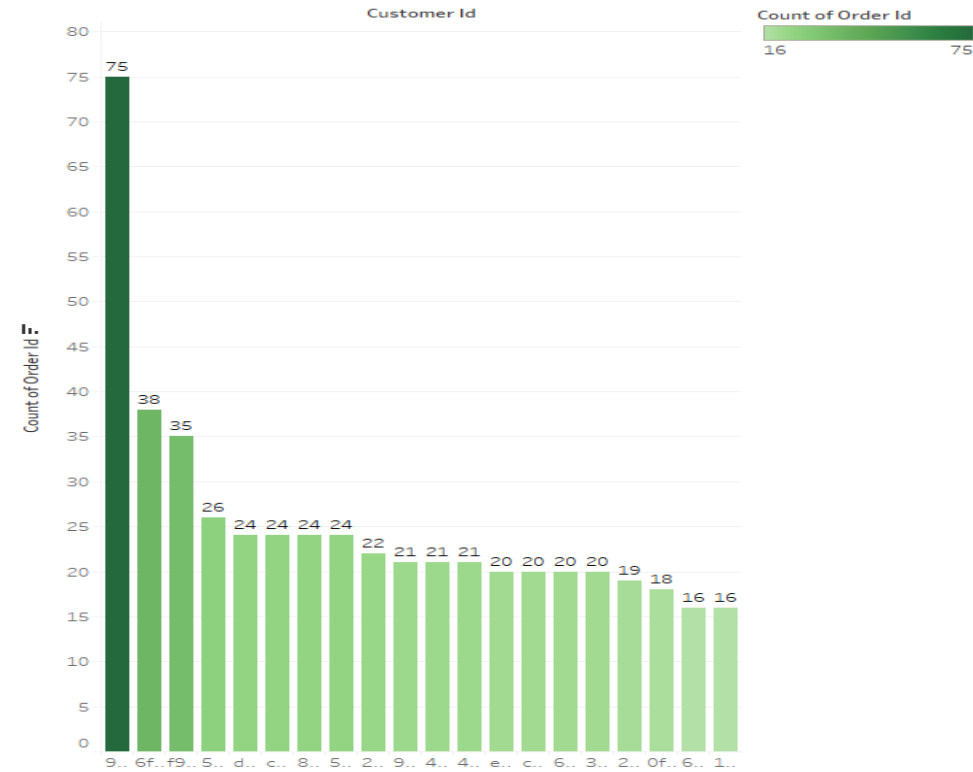
Average shipping charges w.r.t to states



Median of Shipping Charges for each Customer State. Color shows median of Shipping Charges. The marks are labeled by median of Shipping Charges.

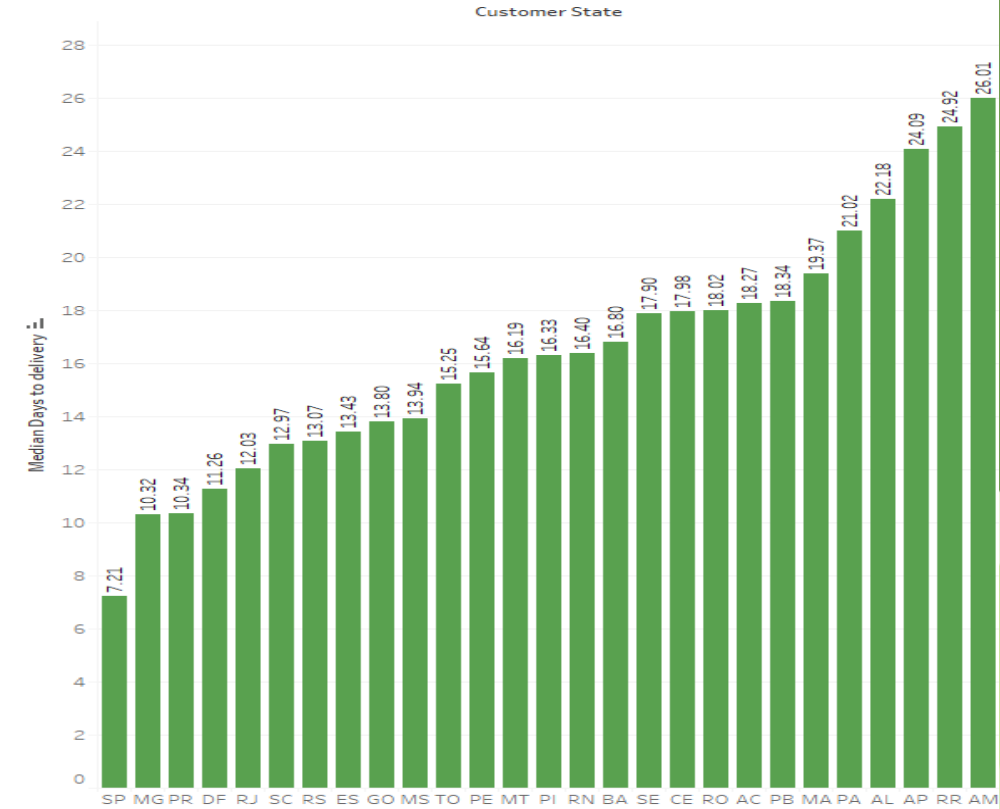
- Most of the payments for the orders is done by 'Credit Card'.
- Almost 73% of the payments received from the customers is done through Credit Cards.
- RO state has the highest average shipping charges with 34.7 and the SP state has the lowest average shipping charges which is almost 13.

Top 20 Customers with highest number of Orders



Count of Order Id for each Customer Id. Color shows count of Order Id. The marks are labeled by count of Order Id. The view is filtered on Customer Id, which has multiple members selected.

Average number of days for delivery w.r.t customer state



Median of Days to delivery for each Customer State. The marks are labeled by median of Days to delivery.

- The top customer in the top 20 with highest number of orders have placed 75 orders.
- AM state has the highest average days taken for delivery with 26 days and the SP state has the lowest average days taken for delivery with around 7 days.

Key Findings from Market Basket Analysis Dashboard

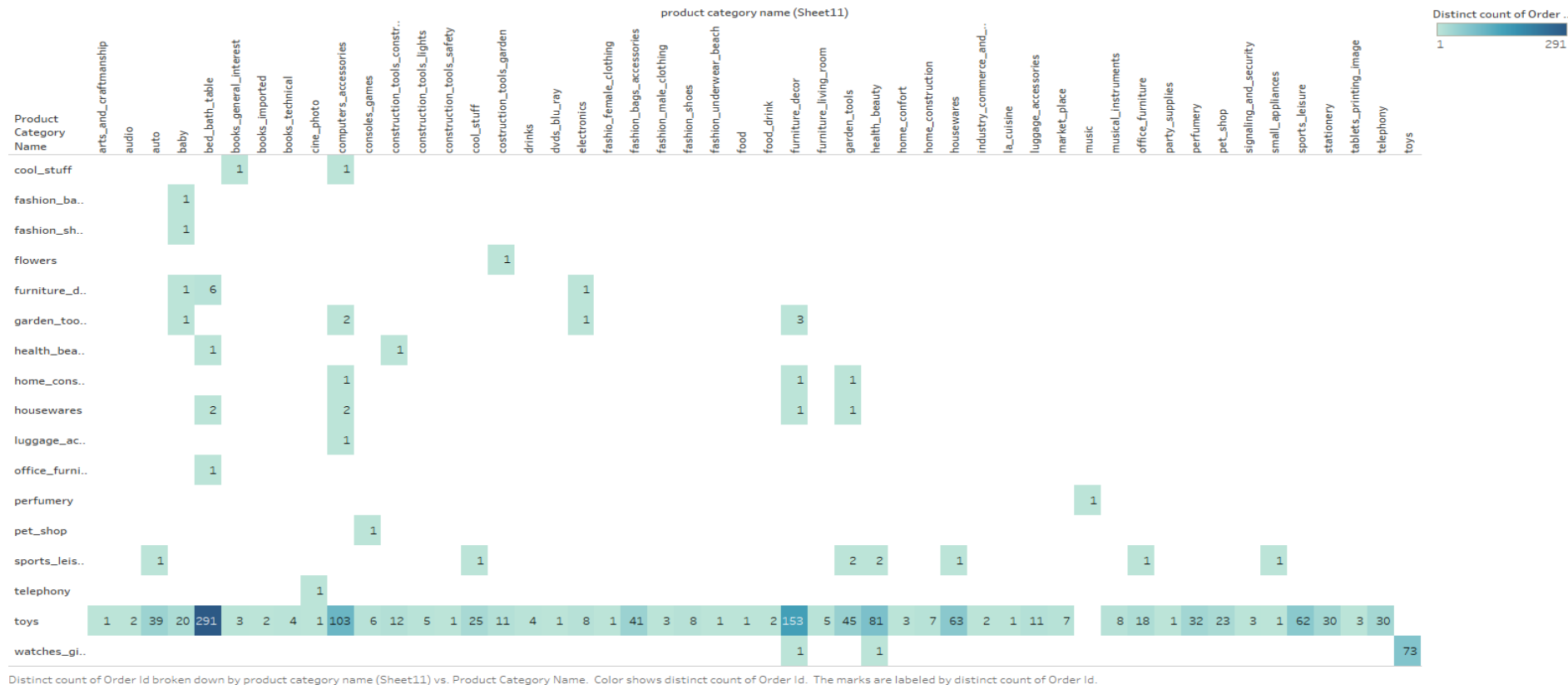
Product categories which are ordered more than 5 times



Product Category Name and distinct count of Order Id. Color shows distinct count of Order Id. Size shows distinct count of Order Id. The marks are labeled by Product Category Name and distinct count of Order Id. The view is filtered on Product Category Name, which keeps 61 of 70 members.

- The top 1 product category which are ordered more than 5 times is the 'Toys'.
- The last product category which are ordered more than 5 times is the 'Cine photo' which has been ordered only 7 times.

Market Basket Analysis (vs Combination of Product Categories)



- ‘Health_beauty’ being the 2nd highest sold product category does not go along that well with ‘toys’.
- ‘Bed_bath_table’ product category goes well along with the ‘toys’.
- ‘Furniture_decor’ and the ‘computer accessories’ are the 2 other product categories which has a fair link with the ‘toys’.

Recommendations

- OList can consider reducing their stocks for 'Computers' product category.
- This is recommended because the computers product category sales are pretty low and the storage space it occupies is quite large.
- The 'toys' product category should be held in stock by a large margin as they contribute to a significantly large amount of revenue.
- Many of the product categories as well as products are not much of a major contributors neither in terms of revenue nor in terms of number of orders such as the cine photo, music and flowers category etc, which are not ordered more than 10 times.
- OList can also get rid of large products in size such as 'furniture bedroom' which are having very less sales as they take up more storage space.
- So, OList can consider removing these products or product categories or both to optimize their inventory without affecting the sales much.

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Thank You