Capstone-marketing-and-retail-analytics

olist store

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AGENDA

- Objective

- Background

- Key findings

- Recommendations

- Appendix:
  - Data sources
 - Data methodology

OBJECTIVE

- Analyze e-commerce company dataset.

- Extract key insights from the dataset to understand the demands of the customers.

- Figure out fast-moving products and slow-moving products from the inventory which contribute to the revenue.

- Find out what items are more likely to be purchased individually or in combination with some other products

- Provide recommendations of products to manage OList e-commerce company inventory.

BACKGROUND

- OList is one such e-commerce company that has faced some losses recently and they want to manage their inventory very well so as to reduce any unnecessary costs that they might be bearing.

- To meet the demands of the customers, any e-commerce company would obviously need to store tons and tons of products in warehouses.

- The products being stored incurs a cost to the company in terms of space and maintenance.

- We must have to manage the inventory cost of Olist Store here.

# Top 20 products ordered by quantity

- The product from 'Toy' category are on top three position in the list .
- Next product from category are Computer_accessories and Watches_gifts.

Top 20 products ordered by quantity
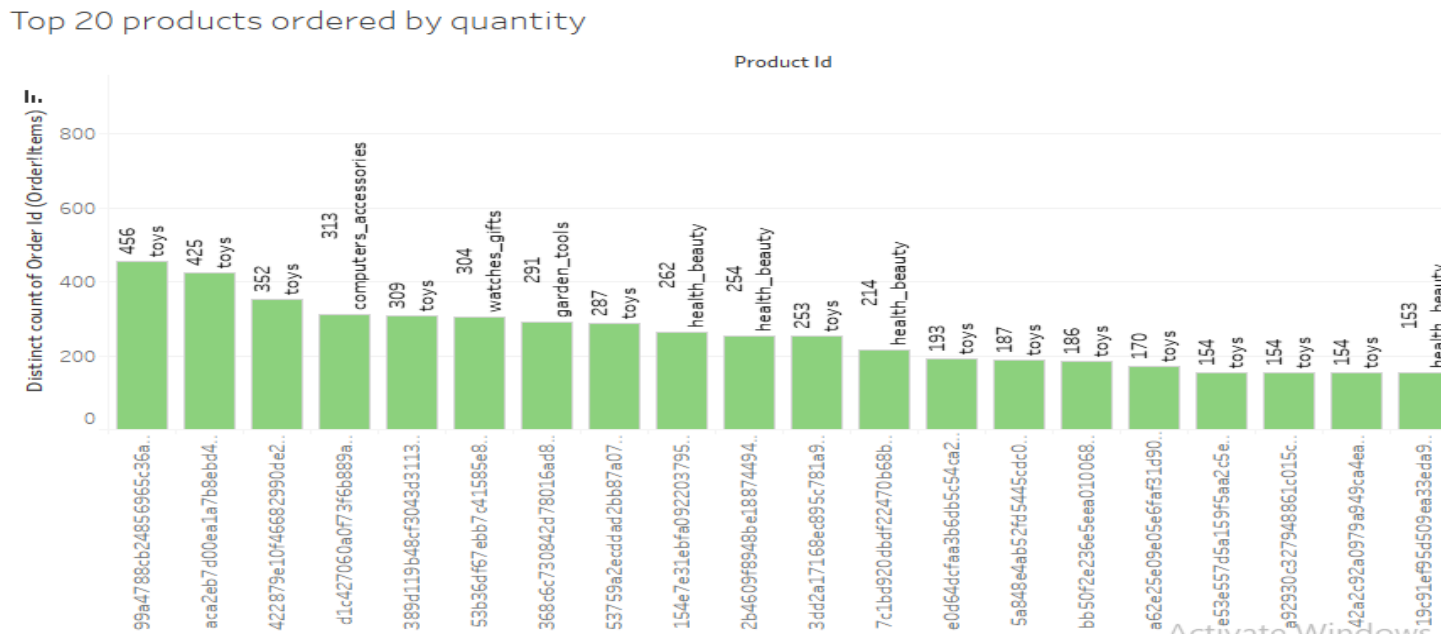
Top 20 products ordered by revenue

- The product from 'Toy' category are on top six position in the list .
- Computer_accessories product category is only on 2nd position.
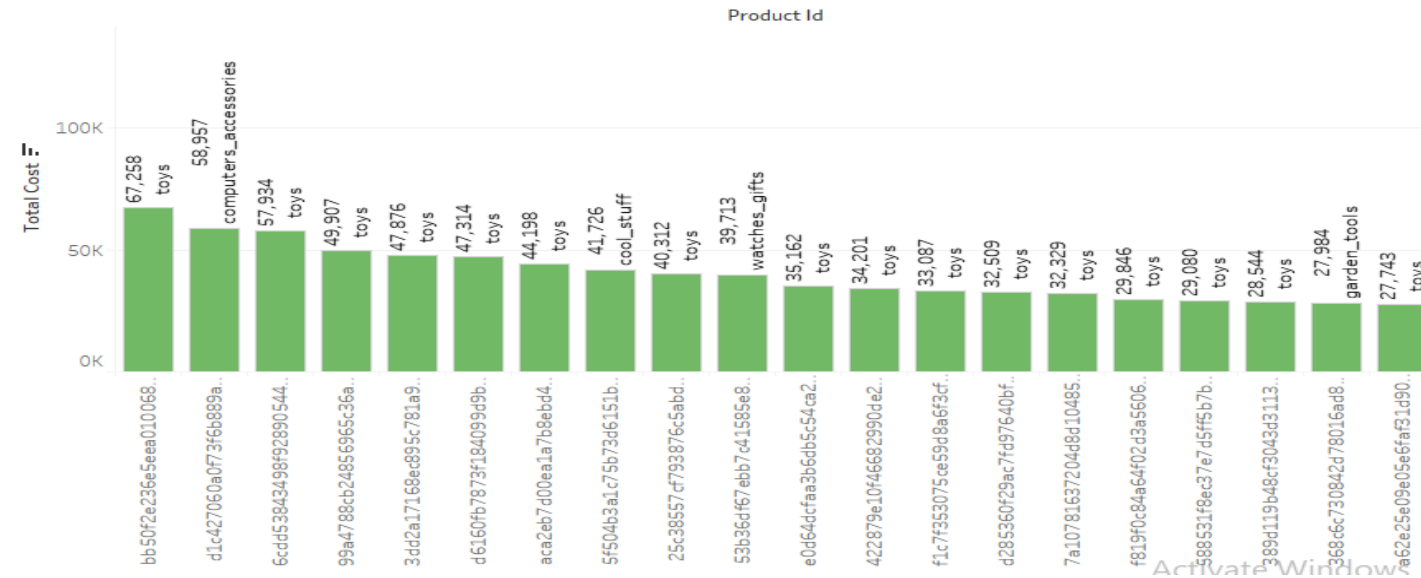
Percentage running totals by revenue

- The percentage running totals by revenue and number of orders are depicted.
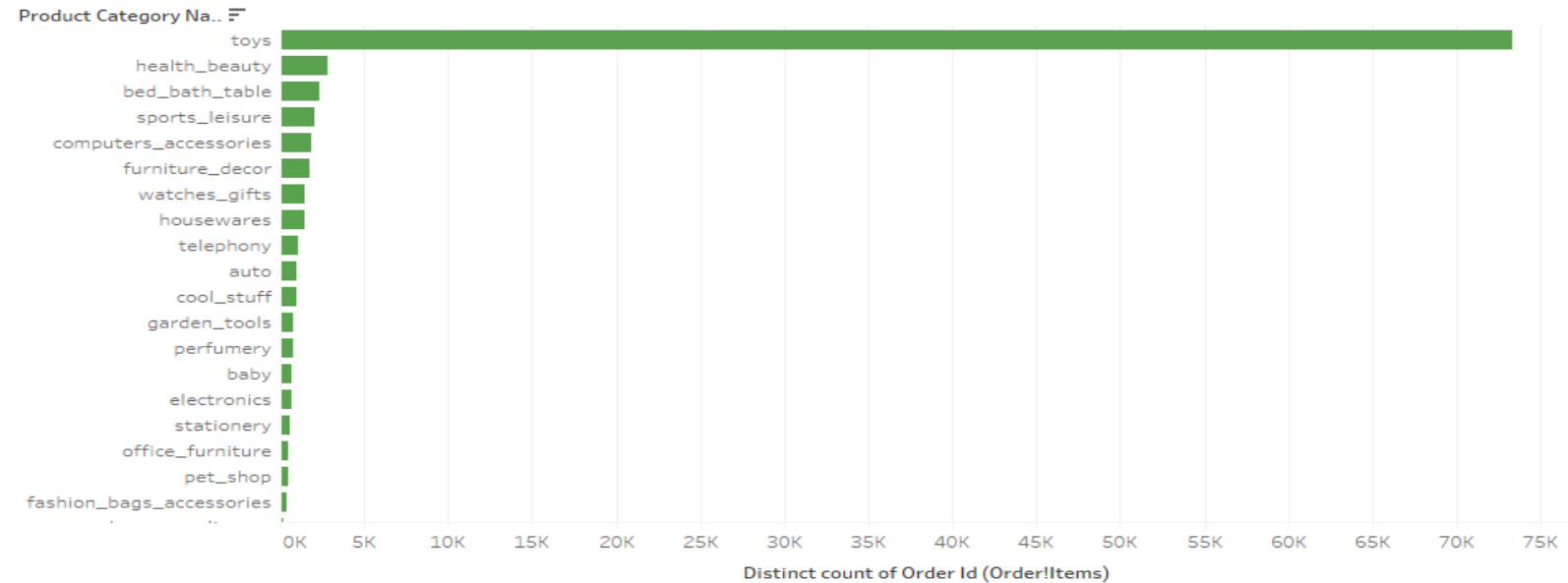
Revenue and Order chart

Product Id	% of Total Distinct count of Order Id..	Count of orders_delivered	% of Total Running Sum of Total Co..	Total Cost
bb50f2e23..	0.19%	194	0.44%	67,258
d1c427060..	0.32%	332	0.82%	58,957
6cdd53843..	0.15%	153	1.19%	57,934
99a4788cb..	0.47%	477	1.52%	49,908
3dd2a1716..	0.26%	272	1.83%	47,876
d6160fb78..	0.03%	33	2.14%	47,314
aca2eb7d0..	0.44%	520	2.42%	44,198
5f504b3a1c..	0.07%	63	2.69%	41,726
25c38557cf..	0.04%	38	2.95%	40,312
53b36df67..	0.32%	321	3.21%	39,713
e0d64dcfaa..	0.20%	193	3.44%	35,162
422879e10..	0.36%	484	3.66%	34,201
f1c7f35307..	0.15%	153	3.88%	33,087
d285360f2..	0.12%	119	4.09%	32,509
7a1078163..	0.15%	141	4.30%	32,329
f819f0c84a..	0.05%	44	4.49%	29,846
588531f8ec..	0.02%	20	4.68%	29,080
389d119b4..	0.32%	390	4.86%	28,544
368c6c730..	0.30%	388	5.05%	27,984
a62e25e09..	0.18%	224	5.22%	27,743
53759a2ec..	0.30%	373	5.40%	27,268
16c4e87b9..	0.01%	13	5.57%	26,630

Market Basket Analysis - product categories

- The product categories which are ordered more than 5 times are identified in ascending order. Top 3 are listed below :-

- Toys

- Health_beauty

- Bed_bath_table

Category wise orders

Product Category Na.. ⇥

	Distinct count of Order Id (Order!Items)
toys	
health_beauty	
bed_bath_table	
sports_leisure	
computers_accessories	
furniture_decor	
watches_gifts	
housewares	
telephony	
auto	
cool_stuff	
garden_tools	
perfumery	
baby	
electronics	
stationery	
office_furniture	
pet_shop	
fashion_bags_accessories	

0K 5K 10K 15K 20K 25K 30K 35K 40K 45K 50K 55K 60K 65K 70K 75K

Distinct count of Order Id (Order!Items)

Activate Windows

Market Basket Analysis - product categories

- The product categories which are ordered more than 5 times are identified in descending order. Top 3 are listed below :-

- Art_and_craftsmanship

- Fashion_female_cloathing

- Cine_photo

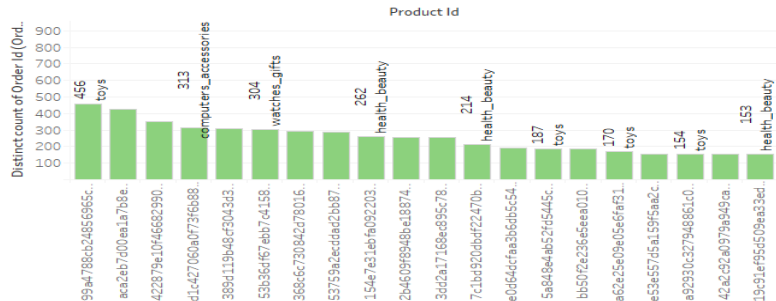Category wise orders
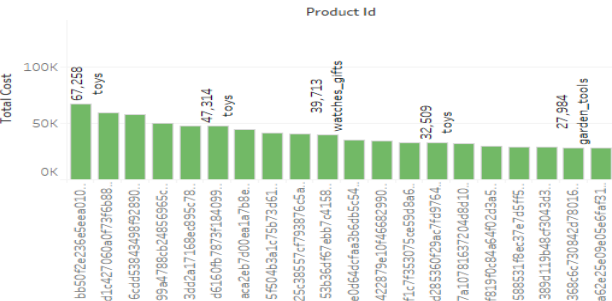
Product Category Name: arts_and_craftmanship
Distinct count of Order Id (Order!Items): 5
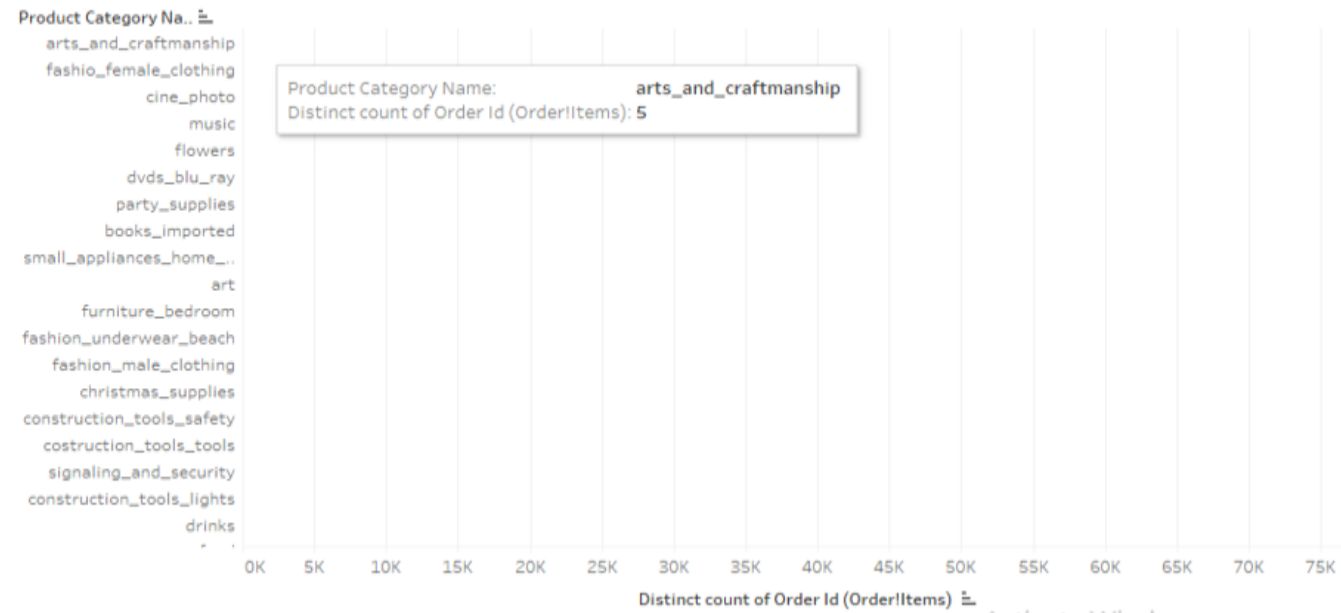
Dashboard

- Below dashboard show all the analysis together.

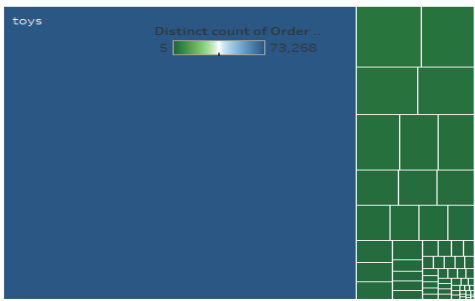- Note- Just we change 'category wise orders' graph in treemaps to represent.

Market Basket Analysis : Combinations of product categories which are frequently ordered together

Combinations of product categories

Product Category Name

Product Cat..	arts_an..	audio	auto	baby	bed_ba..	books_..	books_i..	books_..	cine_ph..	comput..	console..	constru..	constru..	constru..	cool_st..	costruc..	drinks	dvds_bl..	electro..	fashio..	fashion..	fashion..	fashion..	fashion..	flowers	food	food_dr..	furnitur..	furnitur..	garden..	health_..	home_c..	home_c..	housew..	industr..	la_cuisi..	luggage..	market..	music	musical..	office_f..	party_s..	perfum..	pet_sh..	signalin..	small_a..	sports_..	station..	tablets..	telepho..	toys	watche..
toys	1	2	51	27	527	3	2	4	2	164	6	51	7	1	42	15	6	2	11	1	58	6	12	1	1	7	293	8	117	217	4	11	166	2	1	12	8				12	35	1	42	27	10	2	85	42	3	37		91
bed_bath_t..																											6		8		1		3													1					527	
furniture_d..			2	6											1													5		2	3																				293	1
health_bea..				1			2																					3		1															2					217	1
housewares			3				2																							2		3	2		1										2					166	
computers..									1																	2	2	3	2		1												164	
garden_too..			3				2						1													5		1	1										3			117	
sports_leis..		2						1														3	2		2				12		2						85	
watches_gi..																	1	1				91	
fashion_ba..			1																	58	
constructio..												2					51	
auto																	2			51	
office_furni..			1													12			35	
cool_stuff			1			1								1		42	
perfumery											1			42	
stationery										42	
telephony			1					37	
baby			1		1			2	3			27	
pet_shop		1						27	
home_cons..		3				2	1			11	
costruction..				1			15	
luggage_ac..		1				12	
fashion_sh..	1				12	
electronics		1	1		11	
musical_ins..			12	
signaling_a..			10	
market_pla..			8	
furniture_li..			8	
food_drink		7	
constructio..		7	
consoles_g..	1		6	
fashion_ma..		6	
drinks		6	
small_appli..	2		2	
home_conf..		4	
books_tech..		4	
books_gen..	1		3	
tablets_pri..		3	
cine_photo	1	2	
industry_c..		2	
dvds_blu_r..		2	
books_imp..		2	
audio		2	
party_supp..		1	
music	1		
la_cuisine		1	
food		1	
flowers	1		
fashion_un..		1	
fashio_fem..		1	
constructio..		1	
arts_and_c..		1	

Count of Order Id (Order!Items1) broken down by Product Category Name vs. Product Category Name (Order!Items1).

Market Basket Analysis : Combinations of product categories which are frequently ordered together

- *Finding from the market basket analysis is as follow :-*

    1) Bed_bath_table, Furniture_decore and Health_beauty are the category of product which are frequent bought together with Toy category.

    2) Sports_leisure and office_furniture are the product which frequent bought together.

    3) Furniture_decore and garden_tools are the product which frequent bought together.

    4) Bed_bath_table and Furniture_decore are the product which frequent bought together.

Recommendations

- We will maintain our inventory in such a manner that we will always have lot many product from Toy category because this is the most selling item.

- Toy,Bed_bath_table, Furniture_decore, Health_beauty, garden_tools, Sports_leisure and office_furniture are the category of product which are frequent bought together with each other. So, we will have to store the product from these category in our inventory .

- After toy category most selling product category is Computer_accessories and Watches_gifts that contribute to the revenue. So, we will store the product from these category more in our inventory.

- By using all the above recommendation, we will able to place fast-moving products and remove slow-moving products from the inventory; which will directly contribute toward the revenue of bussiness.

APPENDIX - DATA SOURCES:

• Here is a snapshot of our data dictionary.

• The cleaned up data source

which is used for creating

visualizations and drawing

insights are having

 order_status = 'delivered '

only.

Dataset name	Column Name	Description
orders	order_id	Unique identifier for an order, acts as the primary key of this table
orders	customer_id	Unique identifier for a customer, however, this table wont be unique at this level
orders	order_status	Indicates the status of an order, for example: delivered, cancelled, processing etc.
orders	order_purchase_timestamp	Timestamp when the order was made from the customer
orders	order_approved_at	Timestamp when the order was approved from the sellers' side
orders	order_delivered_timestamp	Timestamp when the order was delivered at customer's location
orders	order_estimated_delivery_da	Estimated date of delivery shared with the customer while placing the order
order_items	order_id	Unique identifier for an order
order_items	order_item_id	Item number in each order. Order_id along with this column acts as the primary key of this table
order_items	product_id	Unique identifier for a product
order_items	seller_id	Unique identifier for the seller
order_items	price	selling price of the product
order_items	shipping_charges	charges associated with the shipping of the product
customers	customer_id	Unique identifier for a customer, acts as the primary key of this table
customers	customer_zip_code_prefix	Customer's Zip code
customers	customer_city	Customer's Zip city
customers	customer_state	Customer's Zip state
payments	order_id	Unique identifier for an order, this table can have duplicates in this column
payments	payment_sequential	Povides the info of the sequence of payments for the given order
payments	payment_type	Type of payment like credit_card, debit_card etc.
payments	payment_installments	Payment installement number in case of credit cards
payments	payment_value	Trasaction value
products	product_id	Unique identifier for each product, acts as the primary key of this table
products	product_category_name	Name of the category the product belongs to
products	product_weight_g	Product weight in grams
products	product_length_cm	Product length in centimeters
products	product_height_cm	Product height in centimeters
products	product_width_cm	Product width in centimeters

APPENDIX - DATA METHODOLOGY

- We conducted a thorough analysis of the OList dataset with respect to Inventory product availability. The process included:
  - ● Cleaning the data set and treat missing values in data.
  - ● Data types of the different columns were checked for any anomalies .
  - ● Tableau was used for plotting the different visualizations post cleaning the data using Python .

  The Python file used to clean the data, analyze the data and visualize the data is attached below:

  C:\Users\Amit\
  op\Amit\Upgrad\F

Thank You