

Case Study- Food Order Cancellation

Executive Summary:

Managing the tricky equilibrium between client happiness and operational efficiency is essential in food ordering platforms. In order to find useful information, areas for improvement, and potential for lowering order cancellations while maintaining customer satisfaction, this case study analyses cancellation data from a food ordering platform. The food platform on average encounter 100 cancellations out of the 10,000 orders processed daily, this means a cancellation rate of 1% which is moderate.

By analysing the problem statement and the data points in the given tables, we can get the following points:

- Modes of Cancellation: Either by Restaurant or through App
- Reasons of cancellation: 5 reasons of cancellation
 - 1) Customer Refusal
 - 2) Stock Shortage
 - 3) Item Unavailable
 - 4) Closed Premises
 - 5) High Demand at the Restaurant
- Cancellation Policy: Distinguishes between packaged items, buffet items, and non-MRP items. Packaged and buffet items can be cancelled by users. Whereas, non-MRP items can be cancelled till order not accepted.

In this report, goal, methodology, approach, insights and inferences, major issues, areas of improvement, enhancements and modifications in cancellation policy are mentioned for the problem statement.

Understanding Goal:

Goal of this case study is to prepare a strategy to minimise order cancellation and increase user satisfaction. Minimising cancellation will ensure that we have user retention and that they will recommend us to potential customers as well. Through this we can make up for the losses caused due to cancellation of orders and may also get new users, which will help in revenue increase.

Data Insights:

Approach and tools used:

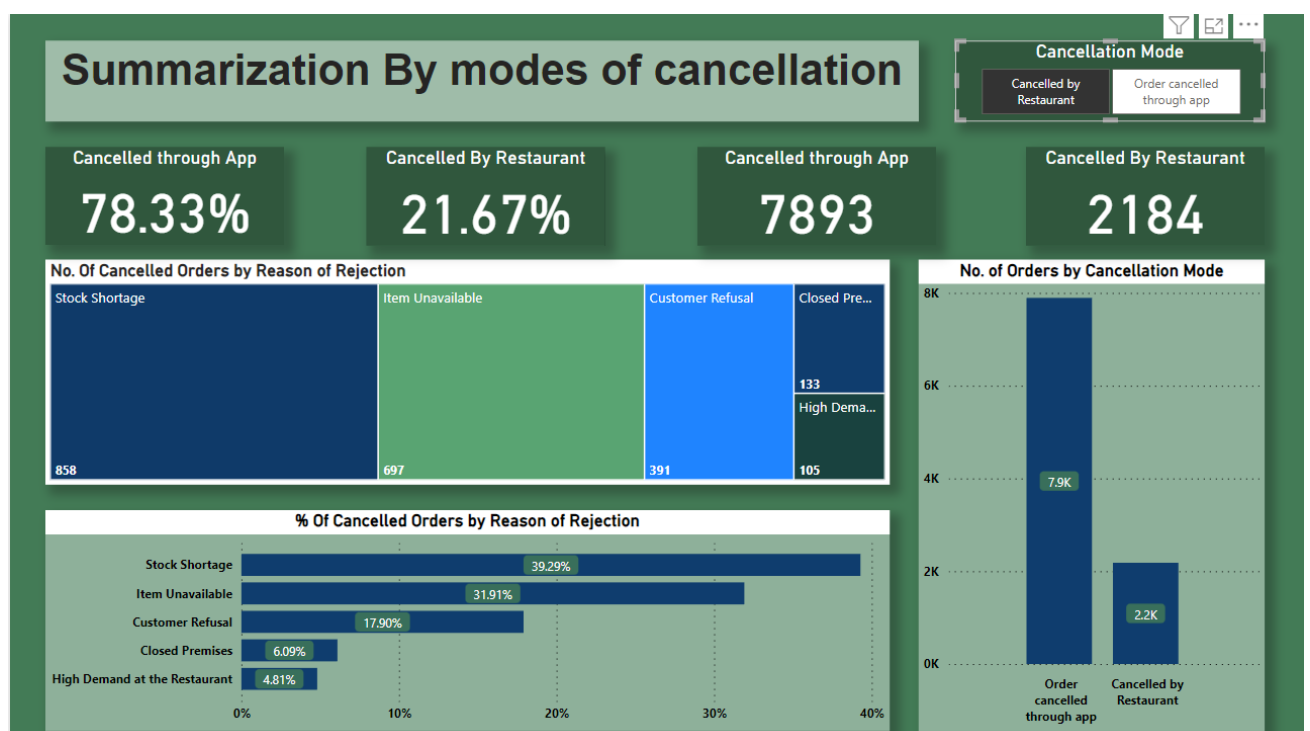
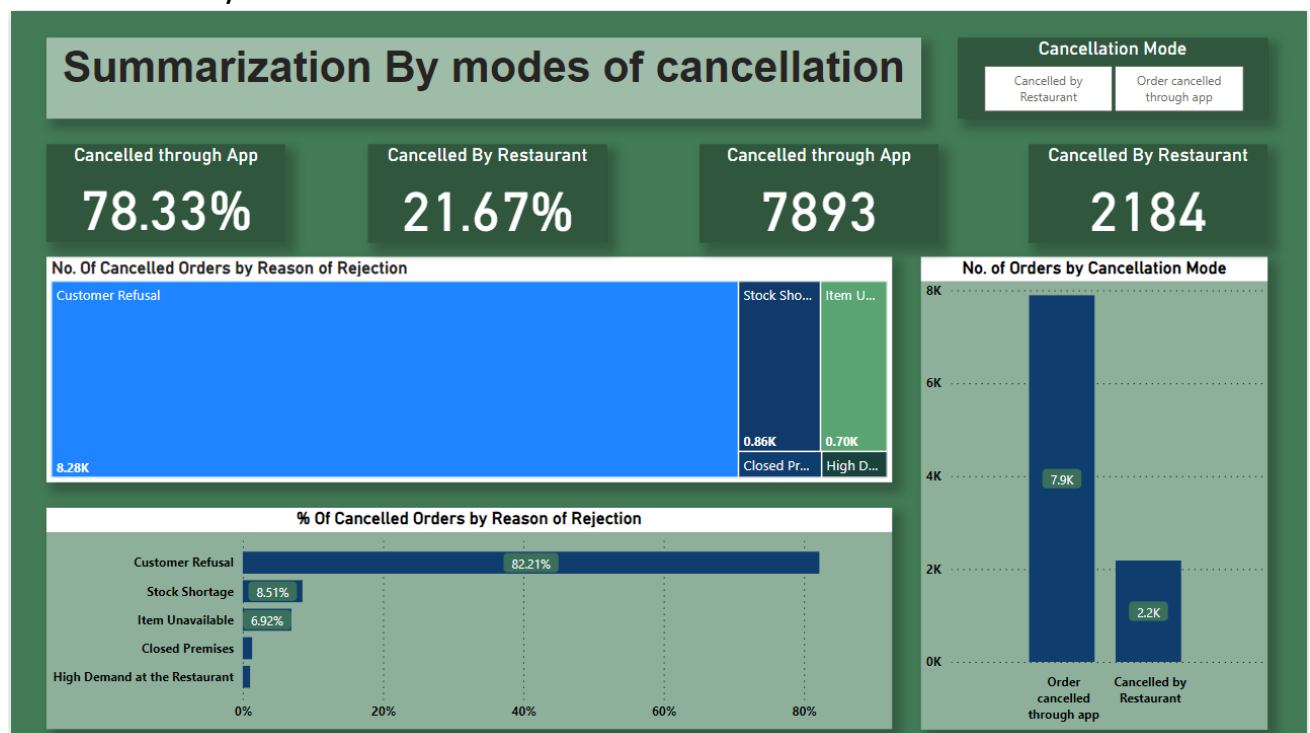
Excel and Power BI are used to better understand the data provided in two given tables Canceled Order and Product Details respectively. Firstly, both the tables were checked for blank entries if any, unit conversion if required and leaking data if any in the excel. **Data cleaning** is performed. Then, grouping of time (according to hours) table was created in excel. Whole excel workbook was then imported in Power BI for better visualization, so that insights can be taken out by understanding the trends. In Power BI **data processing** was performed, one more table named “Restaurant_table” was created, and its columns were created using DAX (Data Analysis Expressions). Some measures were also created and then total of 5 Dashboards were created to study patterns out of these four tables. **Data Visualization** was performed using Power BI.

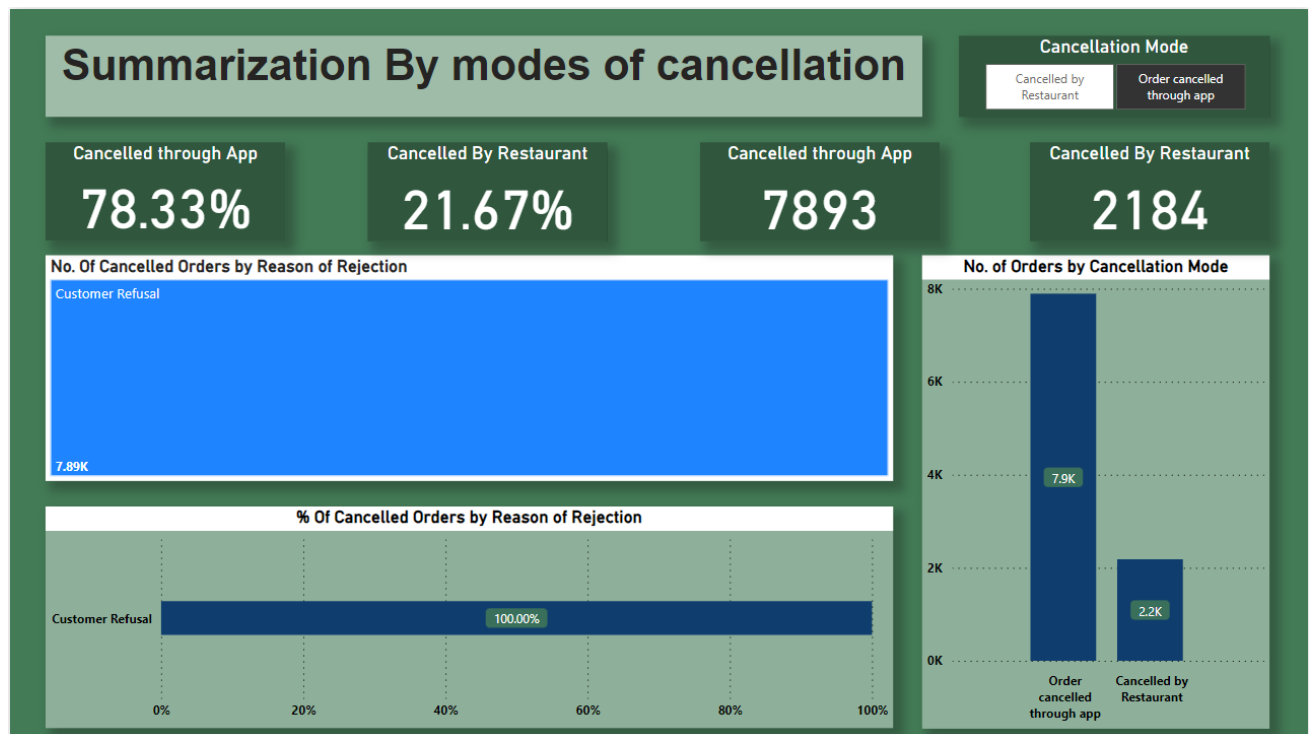
Following Dashboards were created:

- 1) Product and Quantity Relation to Cancellation

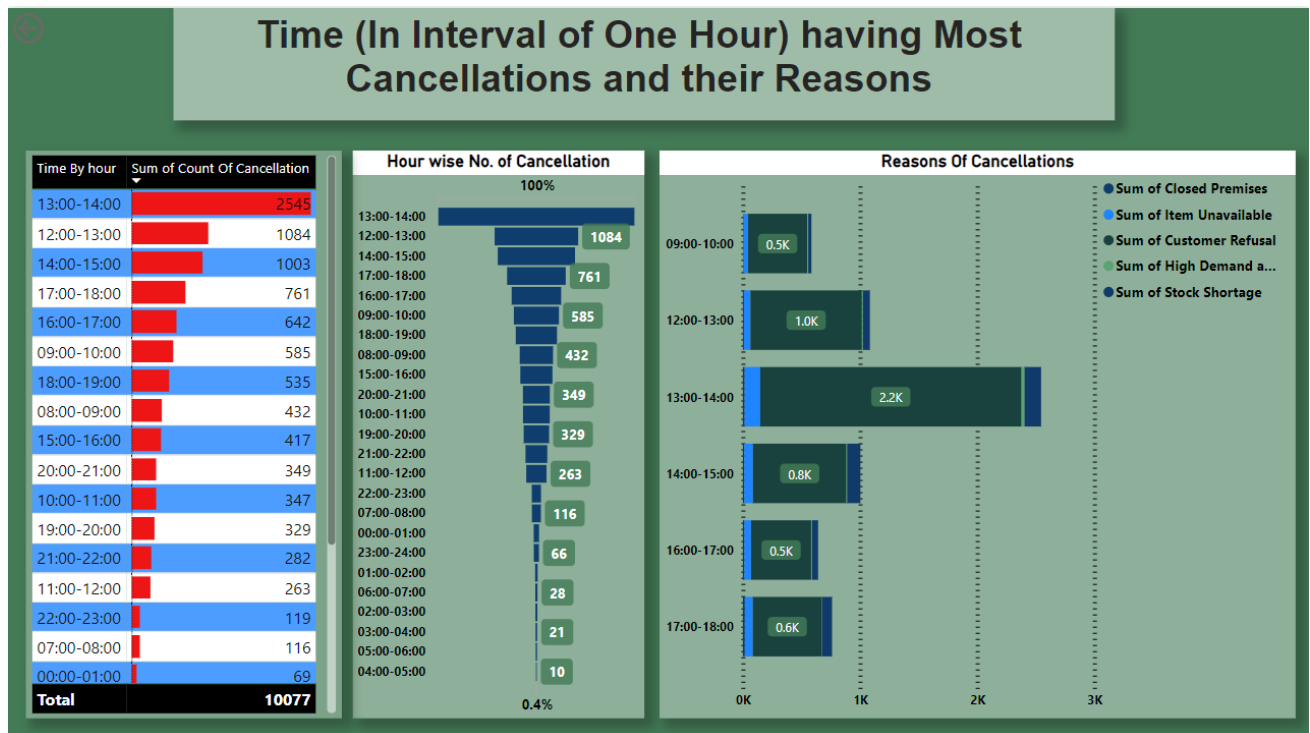
Product and Quantity relation with cancellation											
Products and No. of Orders				Top 202 products by No. of Orders				Relation of quantity and cancellation			
Product ID	Count of Product ID	Count of Product Name	Prod	Product ID	Count of Product ID	Count of Product Name	Prod	Quantities Ordered	Count of Order ID	Sum of Total Value	
501401	1	69 Veg		501401	1	69 Veg		1	7972	4,85,202.65	
732375	1	52 Bre		732375	1	52 Bre		2	2049	91,861.06	
481258	1	49 Nor		481258	1	49 Nor		3	721	29,886.36	
501499	1	41 Nor		501499	1	41 Nor		4	338	16,401.29	
556725	1	41 Bre		556725	1	41 Bre		5	171	5,806.00	
732377	1	40 Lun		732377	1	40 Lun		6	145	7,940.84	
639420	1	39 Nor		639420	1	39 Nor		7	47	3,585.35	
650362	1	39 Foo		650362	1	39 Foo		8	29	1,283.00	
501484	1	38 Veg		501484	1	38 Veg		10	22	991.38	
677221	1	38 Cor		677221	1	38 Cor		12	11	1,156.00	
867589	1	38 Ava		867589	1	38 Ava		11	6	416.00	
677227	1	36 Gin		677227	1	36 Gin		19	5	95.00	
501366	1	35 Bre		501366	1	35 Bre		9	3	81.00	
501406	1	35 Veg		501406	1	35 Veg		27	3	225.00	
715838	1	34 Gin		715838	1	34 Gin		13	2	260.00	
46344	1	32 Bre		46344	1	32 Bre		18	1	90.00	
501380	1	32 Bre		501380	1	32 Bre		75	1	10.00	
Total	4964	11526		Total	202	3447		Total	11526	6,45,290.93	

2) Cancellation by Mode & Reasons

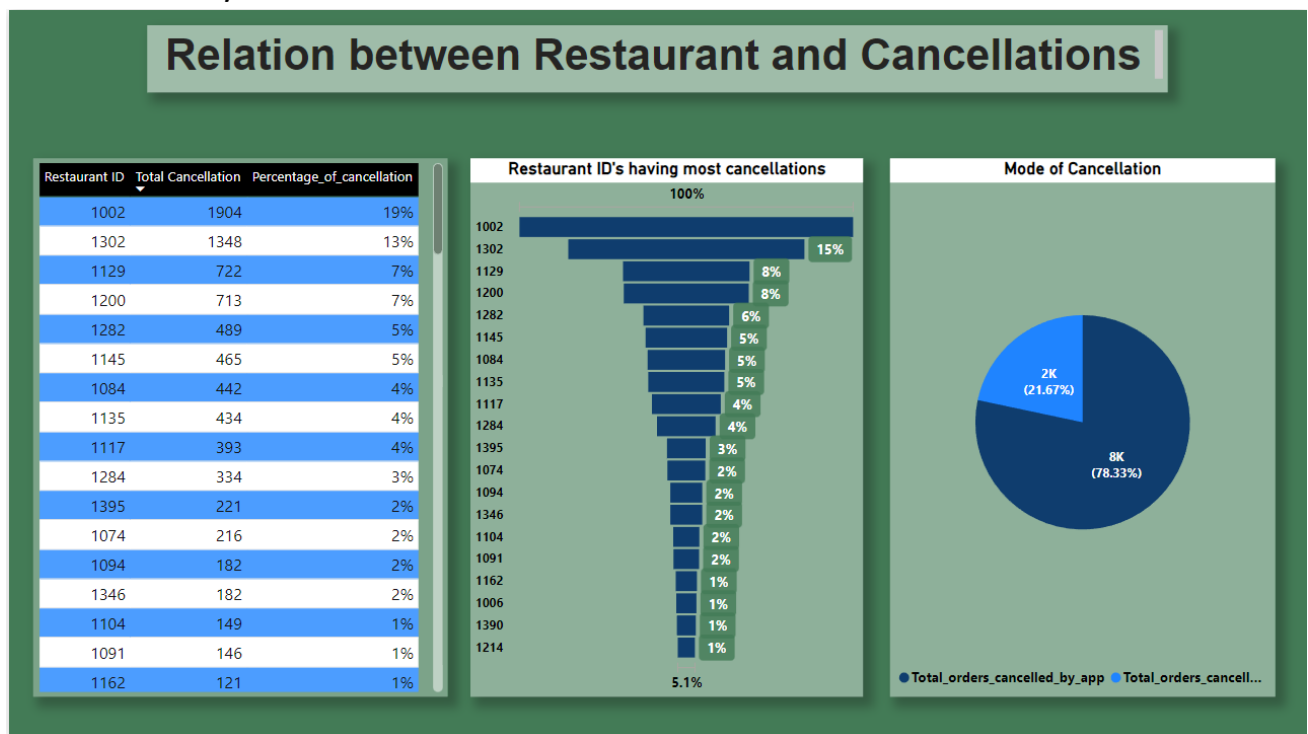




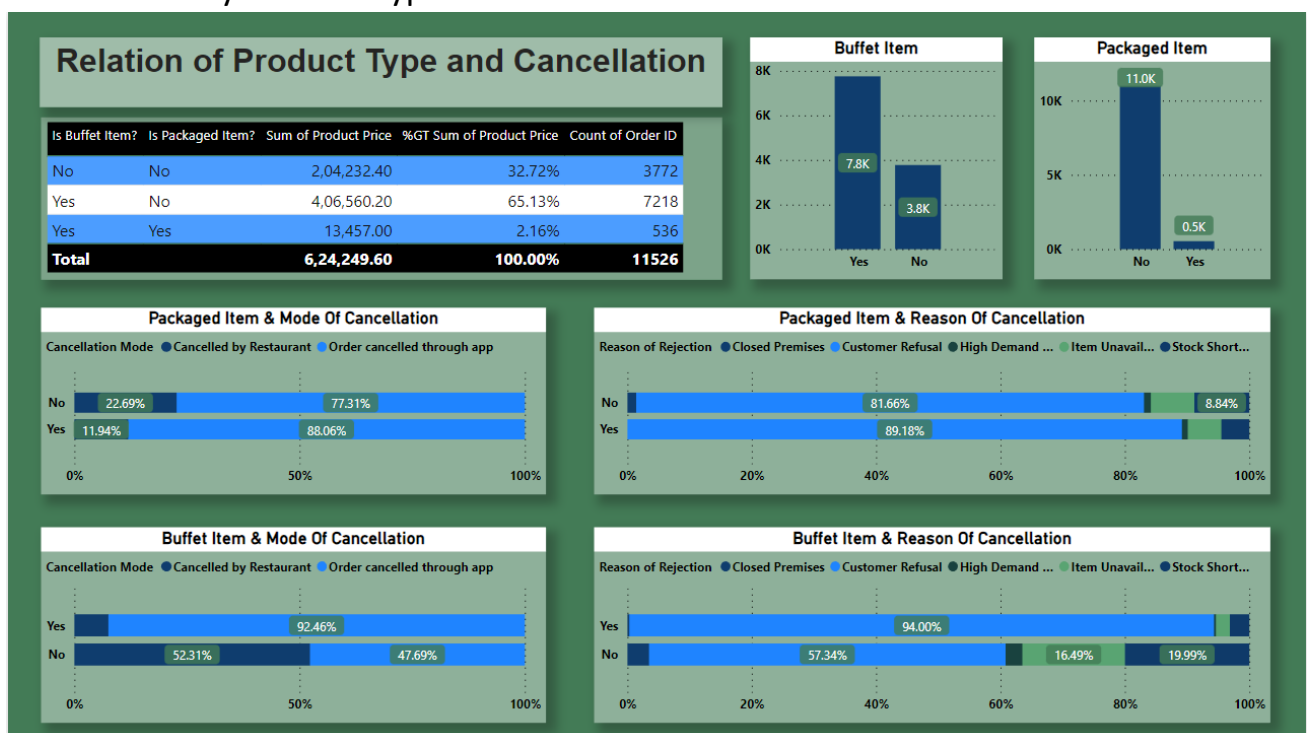
3) Cancellation by Time(hour)



4) Cancellation By Restaurant



5) Cancellation by Product Type



Insights from the above tables and charts are as follows:

1. There are total 4964 different products and they lead to 11526 cancellations by product. There are top 4% of products which lead to almost 30% of cancellations.

Product ID	Count of Product ID	Count of Product Name	Product Name
501401	1	69	Veg Lunch
732375	1	52	Breakfast
481258	1	49	Non-Veg Lunch
501499	1	41	Non Veg Lunch
556725	1	41	Breakfast
732377	1	40	Lunch Combo 1
639420	1	39	North Lunch (Veg)
650362	1	39	Foodie Friday
501484	1	38	Veg Lunch
677221	1	38	Combo (Limited Meals)
867589	1	38	Avakaya Chicken Pulao- 300 Gms
677227	1	36	Ginger Tea
501366	1	35	Breakfast
501406	1	35	Veg Lunch
715838	1	34	Ginger Masala Tea
46344	1	32	Breakfast
501380	1	32	Breakfast
Total	4964	11526	

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501401	1	69	Veg Lunch
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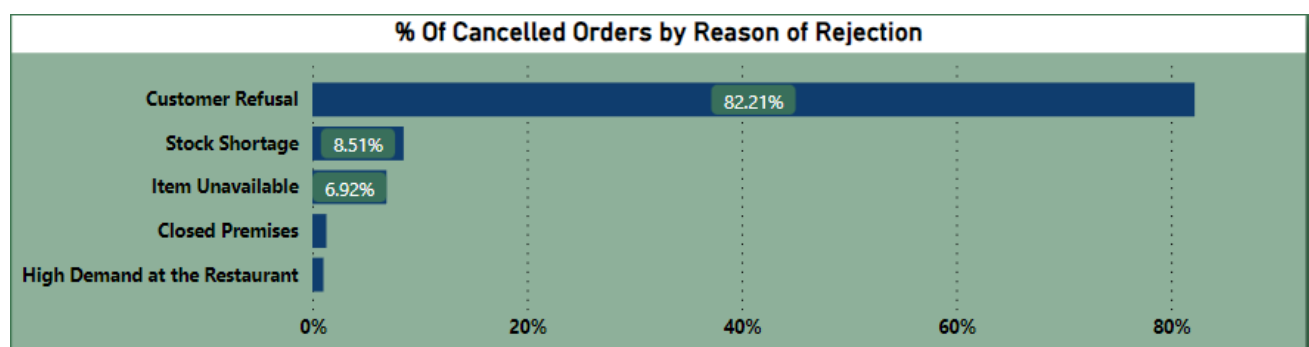
2. Maximum product cancelled was Veg Lunch, then breakfast and Non-Veg Lunch. Followed by more products of breakfast and lunch category.

Product Name	Product Name
69 Veg Lunch	
52 Breakfast	
49 Non-Veg Lunch	
41 Non Veg Lunch	
41 Breakfast	
40 Lunch Combo 1	
39 North Lunch (Veg)	
39 Foodie Friday	
38 Veg Lunch	
38 Combo (Limited Meals)	
38 Avakaya Chicken Pulao- 300 Gms	
36 Ginger Tea	
35 Breakfast	
35 Veg Lunch	
34 Ginger Masala Tea	
32 Breakfast	
32 Breakfast	
3447	

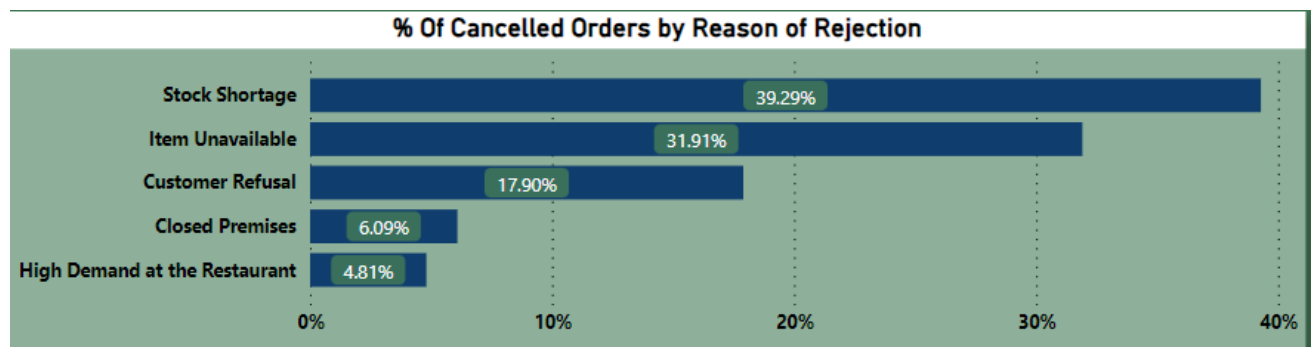
3. There are less changes of more quantity product to get cancelled then that of less quantity order. 98.8% of cancellations were of orders having less than or equal to 6 quantity.

Quantities Ordered	Count of Order ID	Sum of Total Value
1	7972	4,85,202.65
2	2049	91,861.06
3	721	29,886.36
4	338	16,401.29
5	171	5,806.00
6	145	7,940.84
7	47	3,585.35
8	29	1,283.00
10	22	991.38
12	11	1,156.00
11	6	416.00
19	5	95.00
9	3	81.00
27	3	225.00
13	2	260.00
18	1	90.00
75	1	10.00
Total	11526	6,45,290.93

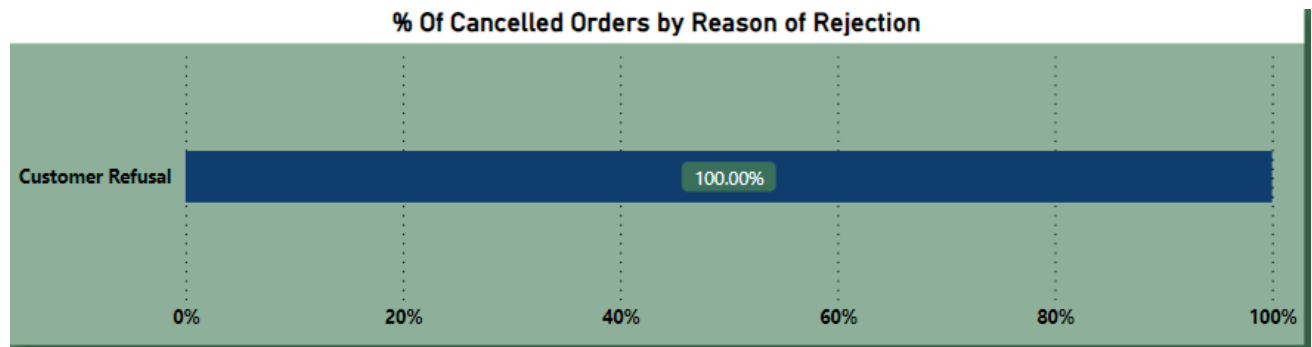
4. Top three reasons of cancellations are: Customer Refusal, Stock Shortage and Item Unavailable. Total they make for 97.6% of cancellations.



5. Top reasons of cancellation by Restaurants are: Stock Shortage, Item Unavailable and customer refusal. Restaurant having most cancellation is also visible in the dashboard.



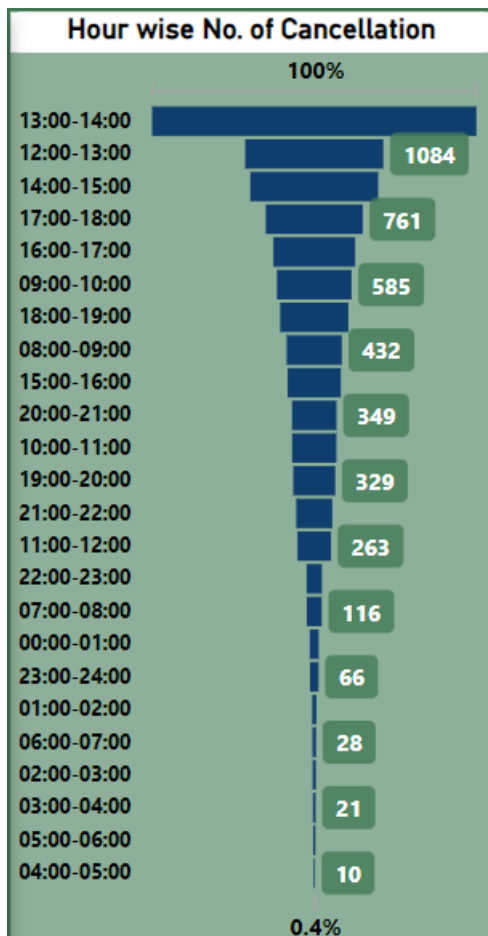
6. Only reason of cancellation through app is the customer refusal.



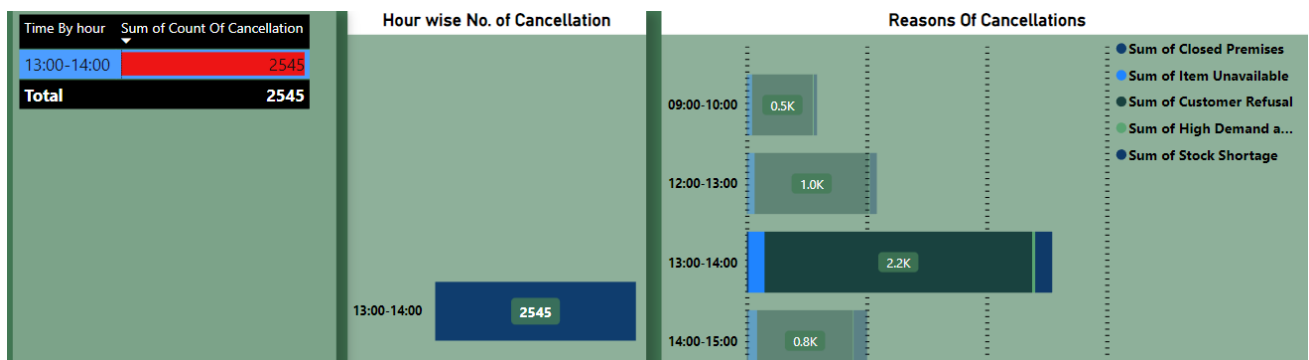
7. Maximum no. of cancellations are of orders at 1:00-2:00 PM, then 12:00-1:00PM.

Time By hour	Sum of Count Of Cancellation
13:00-14:00	2545
12:00-13:00	1084
14:00-15:00	1003
17:00-18:00	761
16:00-17:00	642
09:00-10:00	585
18:00-19:00	535
08:00-09:00	432
15:00-16:00	417
20:00-21:00	349
10:00-11:00	347
19:00-20:00	329
21:00-22:00	282
11:00-12:00	263
22:00-23:00	119
07:00-08:00	116
00:00-01:00	69
Total	10077

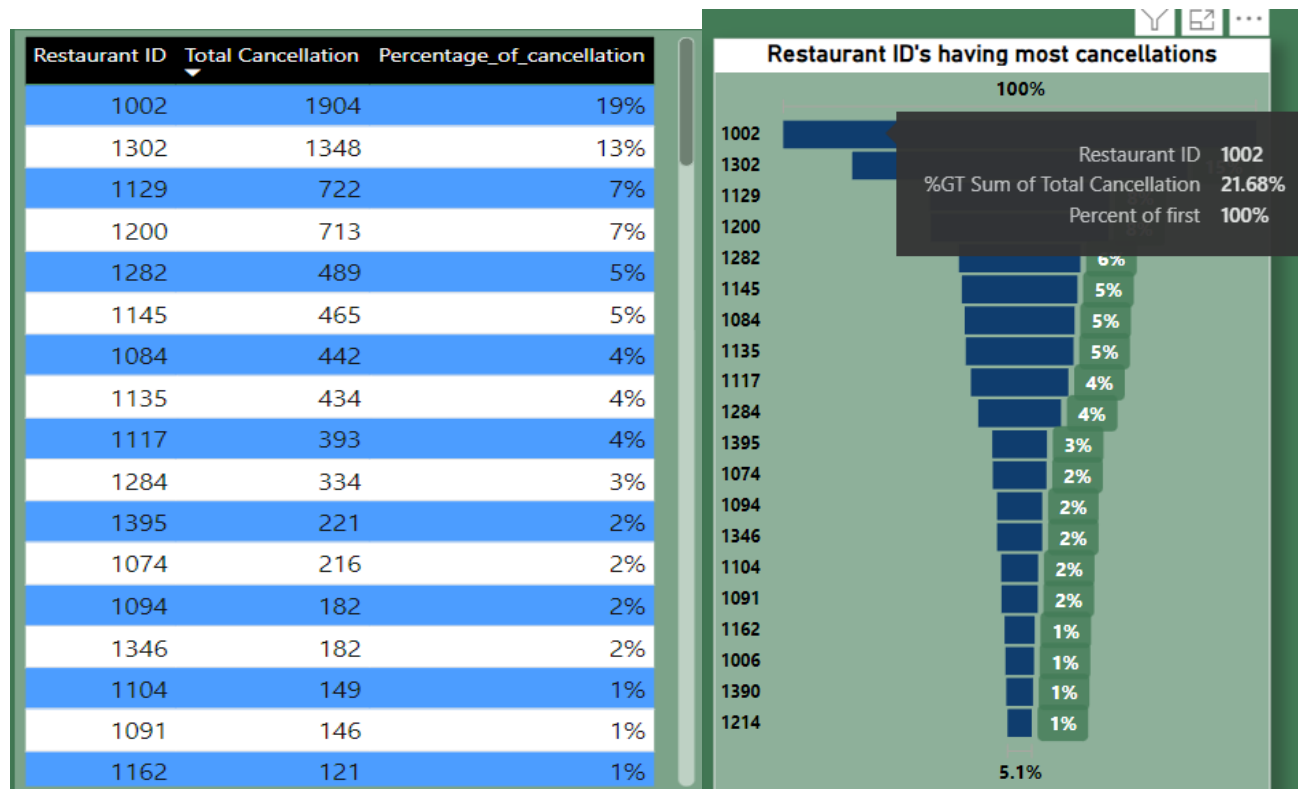
8. Through this funnel chart it is visible that maximum cancellation is in lunch, breakfast and snacks hours. Possible reason for this may be because customers may have break time and go out.



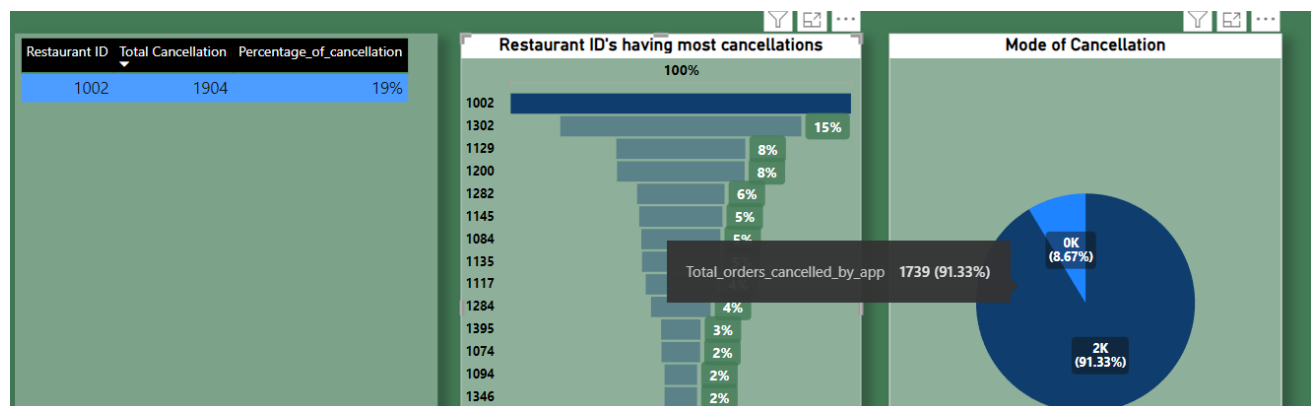
9. Maximum cancellations in peak hour of cancellation is due to customer refusal and very few due to high demand or closed premises.



10. Around, 87% of cancellations comes from top 20 restaurants. 19% of orders were cancelled by restaurants rest were customer refusal.



11. For Restaurant ID 1002, max. cancellations recorded that is 19%, out of these 91% were customer refusal and only around 9% were cancelled by the restaurant.

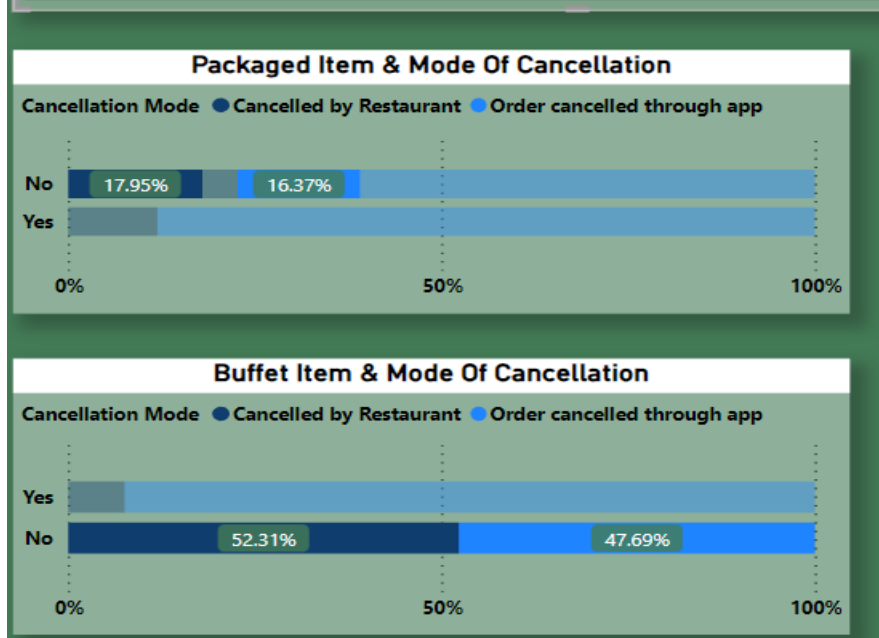


12. Buffet Items which are not packaged items are the most cancelled items. After which comes the Non-MRP items which are cancelled most. Least cancelled among item type are packaged buffet food.

Is Buffet Item?	Is Packaged Item?	Sum of Product Price	%GT Sum of Product Price	Count of Order ID
No	No	2,04,232.40	32.72%	3208
Yes	No	4,06,560.20	65.13%	6531
Yes	Yes	13,457.00	2.16%	435
Total		6,24,249.60	100.00%	10077

13. For Non buffet and Non packaged items fair contribution in cancellation comes from the restaurant side.

Is Buffet Item?	Is Packaged Item?	Sum of Product Price	%GT Sum of Product Price
No	No	2,04,232.40	32.72%
Yes	No	4,06,560.20	65.13%
Yes	Yes	13,457.00	2.16%
Total		6,24,249.60	100.00%



Main Problems:

- High Cancellation rate of some restaurants
- Some customers have habit of cancelling orders
- Customer refusal is major reason for cancellation
- Specific time(hours) have more cancellation
- Stock Shortage and Item Unavailable major issues by restaurant side

Areas of Improvement:

- Review products having maximum cancellation by customers. There may be issue with the product quality or product price for such items. Conduct customer survey to know the reason.
- Products not working at all or leading to most cancellations should be made on order so that they do not stock up and lead too losses due to cancellation.
- Restaurant having most percentage of cancellation should be identified (visible on dashboard) and reviewed. If behaviour such as more self-refusal or customer refusal due to quality is repeated then brake ties with them.
- Ask restaurants to specify waiting time for order to be prepared if not buffet food so that users know the wait time during order placing.
- No. of non-packaged, buffet items may be reduced from the menu as they are leading maximum cancellation.
- Problem of stock shortage has to be tackled on restaurant level.

Enhancement or Modification to existing cancellation policy:

- Food ordering platform may apply cancellation charge on the cancellation of orders having less quantity of products.
- Identify users performing most cancellation on orders, charge extra delivery fee on their next orders to compensate earlier cancellation.
- Items which are mostly in ready to deliver state may be made non-cancellable once ordered.
- Offers on orders may be given in peak cancellation hours, this may help in getting more orders as well as less cancellations because of offers.