Project Title: Blinkit Sales Data Analysis

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Duration: 3 months (1st April 2025 – 30th June 2025)

Acknowledgement

I would like to express my heartfelt gratitude to all those who supported me throughout the successful completion of this project.

First and foremost, I extend my sincere thanks to Mr. Satyaki Das for their invaluable guidance, timely feedback, and constant encouragement that helped shape this project from beginning to end.

I am also thankful to **Classroom Tech** for providing me with this internship opportunity for me to apply my analytical skills in a real-world scenario.

Lastly, I express my deepest gratitude to my family and well-wishers for their unwavering support, patience, and belief in me throughout this journey.

This project would not have been possible without the collective support of each of them.

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Objective / Problem Statement

To analyze Blinkit's customer, order, delivery, inventory, and marketing data using Power BI to uncover insights and improve decision-making.

Dataset Overview

- This project uses real-world e-commerce datasets simulating operations at Blinkit, sourced from **Kaggle**. The data was provided in 11 CSV files covering customers, orders, products, delivery performance, stock levels, and marketing campaign performance.

Datasets Used

- **Blinkit_Customers**: containing customer details(ID, name, email, etc.)
- **Blinkit_Orders**: contains order details and timestamps
- **Blinkit_Order_Items**: has details of ordered items
- **Products**: contains product details (name, category, MRP, price, etc.)
- **Blinkit_Inventory and Blinkit_Inventory_New** : contains stock details
- **Blinkit_Delivery_Performance**: shows delivery statistics (promised time,actual time, delivery status, distance in km,etc.)
- **Marketing Campaigns**: shows statistics of different marketing campaigns (spend, clicks, conversions)
- **Blinkit_customer_Feedback**: contained details of customer reviews
- **Emoji Ratings**: represented emoji-based product satisfaction

TOOLS USED

Power BI for data modeling, DAX calculations, and dashboarding

**GitHub** for version control and project hosting

METHODOLOGY

Data Cleaning Steps:

- Removed missing values from delivery time fields
- Converted date/time columns to appropriate formats
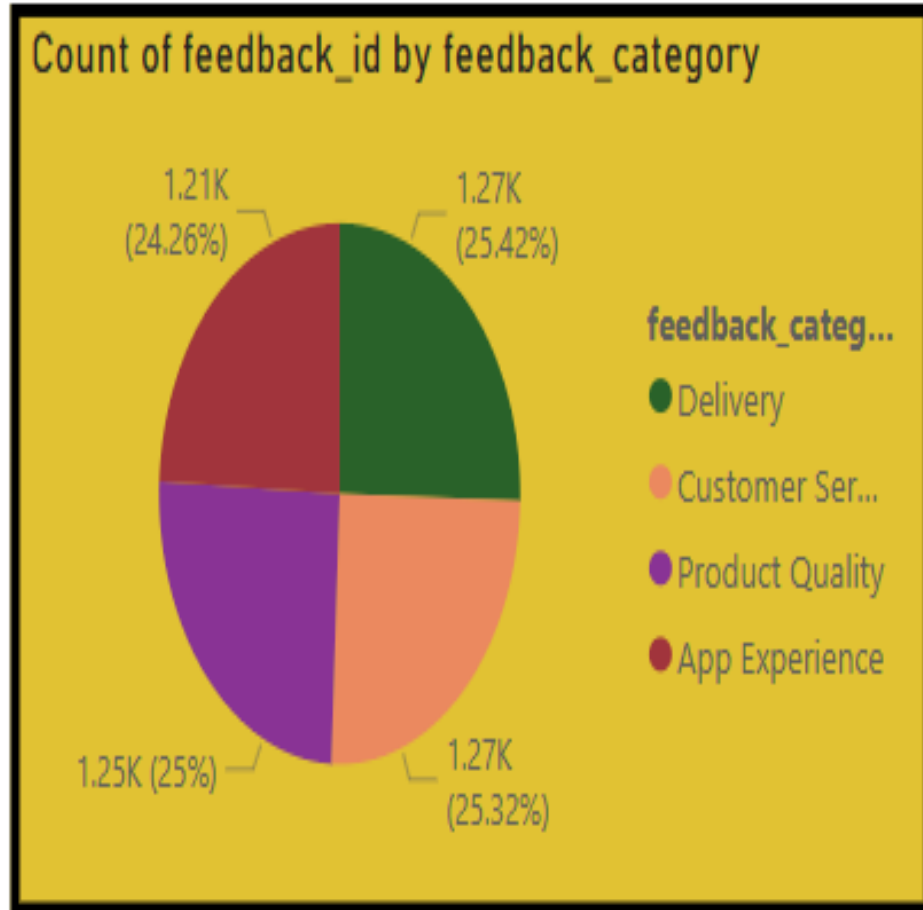- Merged related tables (orders, customers, products)

Visualization Strategy:

- Used column & bar charts for time-based trends
- Pie and funnel charts for conversion and feedback analysis
- Heatmaps and matrix views for geographical and categorical analysis
- Line charts for time-series analysis

Count of order_id by customer_name
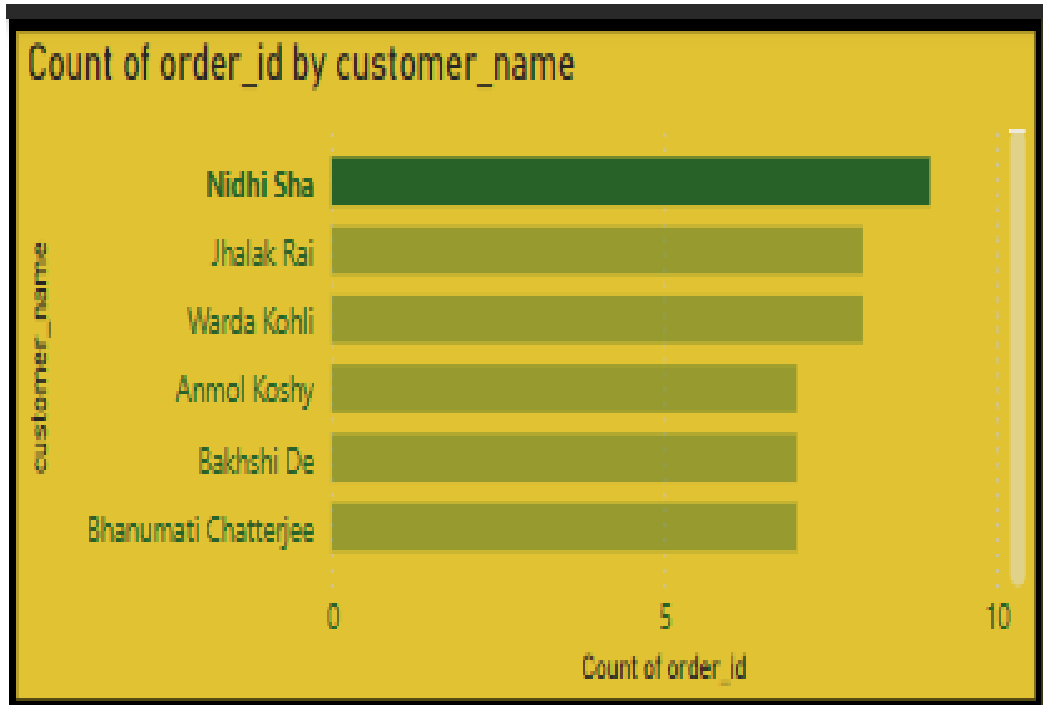
- Used a Stack Bar chart to determine the top customers based on their orders
- Nidhi Sha topped the list , having placed a total of 9 orders.
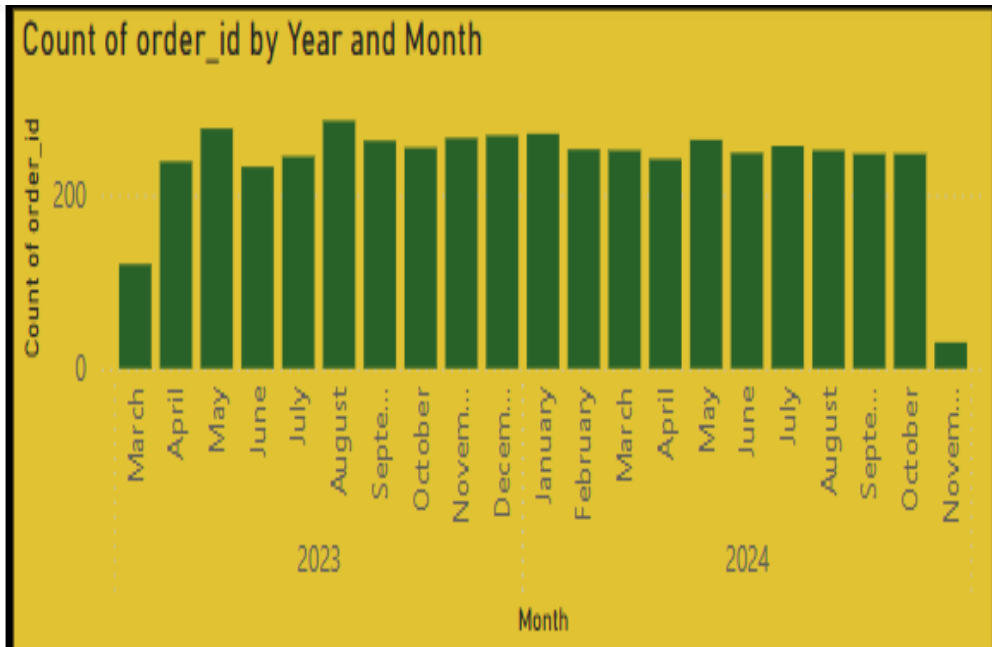
- Used stacked column chart to see which month had the highest and lowest number of orders
- August had the highest number of order. It had 285 orders.
- November had the lowest number of orders – 30 orders

Count of feedback_id by feedback_category

1.21K (24.26%)   1.27K (25.42%)

feedback_categ...
- Delivery
- Customer Ser...
- Product Quality
- App Experience

1.25K (25%)   1.27K (25.32%)

- Created a pie chart to see the number of feedback in each criteria
- Users had to say the most regarding deliveries.

product_name	DamagedStock% ▼
Dish Soap	0.64
Detergent	0.60
Toothpaste	0.57
Bananas	0.53
Shampoo	0.52
Lemonade	0.52
Total	0.46

- Created a table to sort Product names based on the percentage of damaged stock.

- Dish Soap had the highest damaged stock with 64 percent

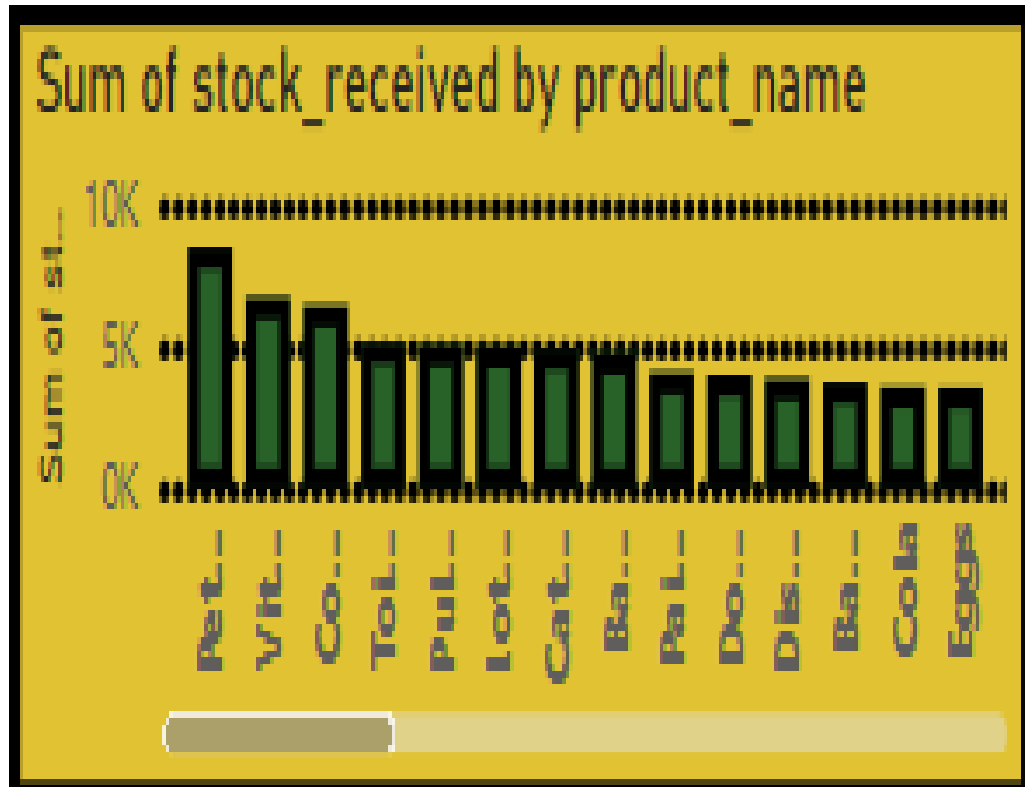- Cough Syrup had the lowest with 0.35 percent

- Used a slicer to check delivery statuses
- Mostly orders were delivered on time
- However from the charts we could deduce that Noevember 2023 saw significant delay of deliveries

- Created a stacked column chart to see which product had the maximum and minimum stock in inventory
- Pet Products had the highest stock at 8,532 units, while Lemonade had the lowest at 498 units.

Average of avg_order_value by order_date

1.10K

- Used KPI Visualization
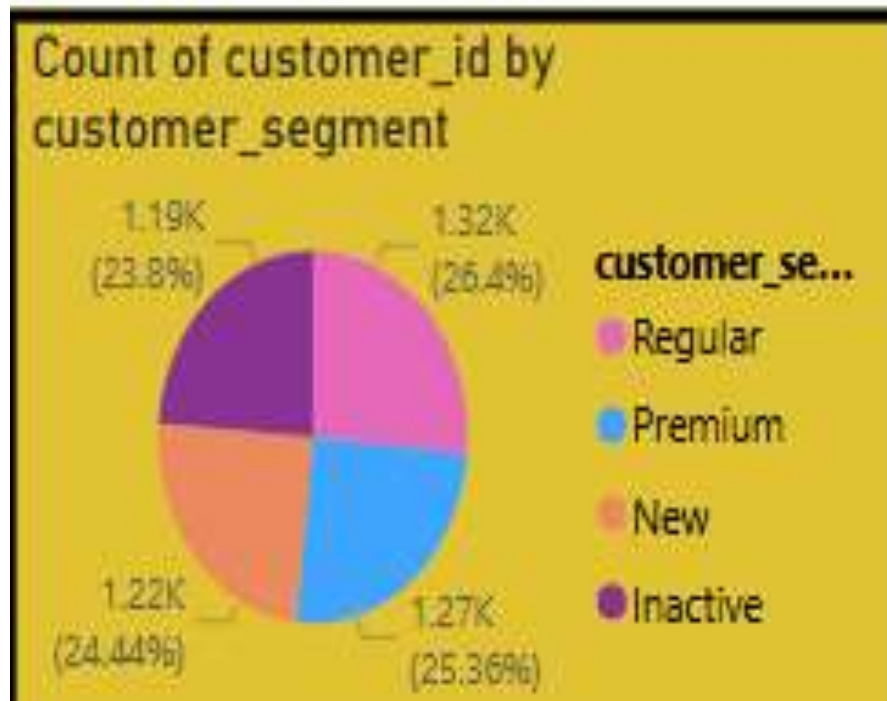- On an average 1.10K orders were placed per day

- Used a KPI Visualization
- The total revenue generated throughout 2023 and 2024 stood at INR 32.19 Million

- Created a clustered column chart categorizing product names by their quantities
- Pet treats had the highest quantity (473)
- Spinach had the lowest quantity (40)

| RevenuePerProduct	category
6,39,222.19	Dairy & Breakfast
5,92,368.57	Pharmacy
5,59,053.08	Fruits & Vegetables
5,39,888.75	Pet Care
4,44,244.25	Household Care
3,94,894.61	Personal Care
3,94,648.71	Snacks & Munchies
49,72,415.43	

- The table shows revenue generated by each category of product as well as the total reveneue..
- Dairy and breakfast generated the highest revenue.
- Instant Food and frozen food generated the lowest reveneue

Count of customer_id by customer_segment

1.19K (23.8%)
1.32K (26.4%)
1.22K (24.44%)
1.27K (25.36%)

customer_se...
- Regular
- Premium
- New
- Inactive

- Created a pie chart to clearly distinguish customer segments.
- Mostly there are regular customers followed by new and premium ones.
- This indicates strong repeat business.

- Created a Card Visual
- It shows a return of 1.97 on advertisement spend.
- Indicates that each INR 1 spent on ads generated INR 1.97 in revenue.

05:00:00
Total Delivery Time Duration
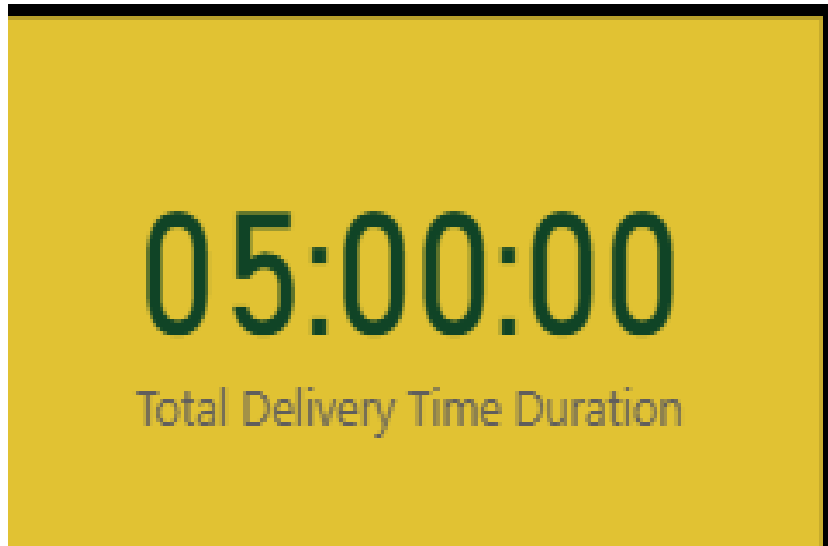
- Created a card visual
- It shows the sum of total delivery time required to deliver all ordered products throughout 2023 and 2024.

- Created a card visual to check the overall delivery delay hours calculated using the columns promised time and actual time.
- The cumulative delivery delay highlights gaps between promised and actual delivery times, which need optimization.

pincode	Sum of total_orders
666	9
758	17
1281	6
1489	11
Total	26229

- Used a table to check total number of orders against each pincode.

Sum of distance_km by delivery_status and DeliveryDelay

- **On-time deliveries** occurred at both short and long distances.

- **Slightly delayed** orders were mostly mid-range.

- **Significantly delayed** deliveries even occurred at short distances — indicating internal or local operational issues.
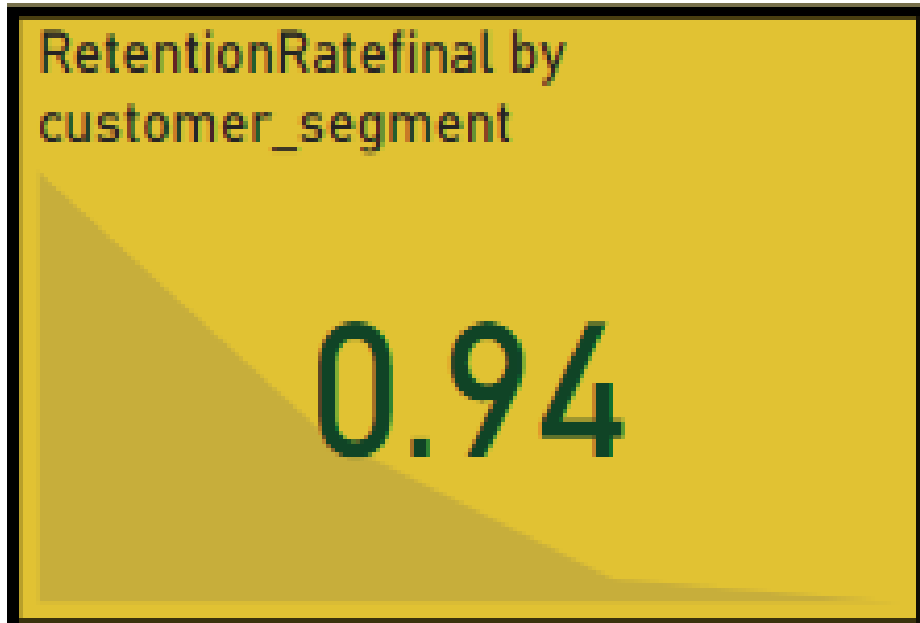
- The customer retention rate is 0.94 .
- Used a KPI visual to show it.
- Shows excellent customer loyalty, with most customers placing more than one order.

Sum of quantity by product_name

- Created a clustered column chart.
- Showed Top 5 products according to quantity.
- Pet names topped the list.

- Used a card visual.
- Depicts the gross profit throughout the year 2023 and 2024.

29.03M
Customer Lifetime Value
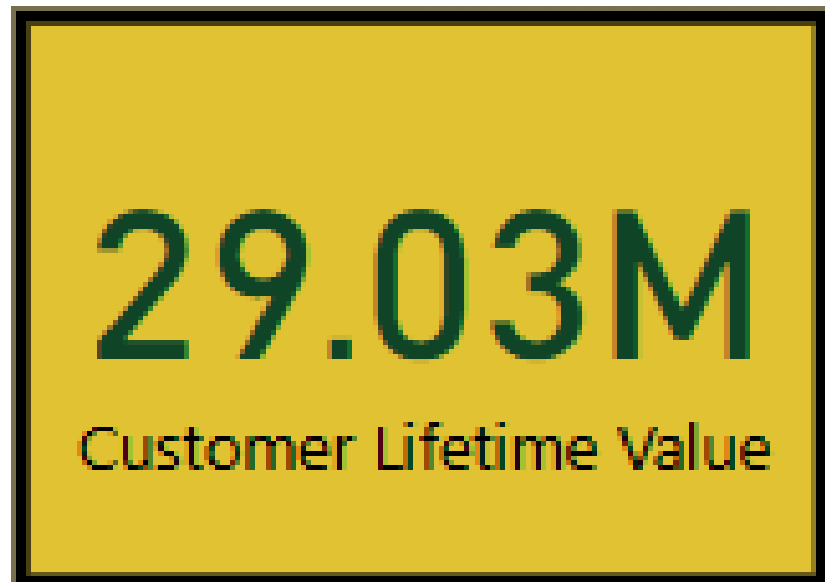
- Customer Lifetime Value of ₹29.03 Million indicates strong revenue potential from repeated customers.

- This also indicates consistent ordering behavior and moderate to high average order values across customer segments.

Pet Treats

Most Frequent Product

- Pet Care products topped the sales charts in terms of volume, showing strong demand in that segment.

Sum of Value by Stage
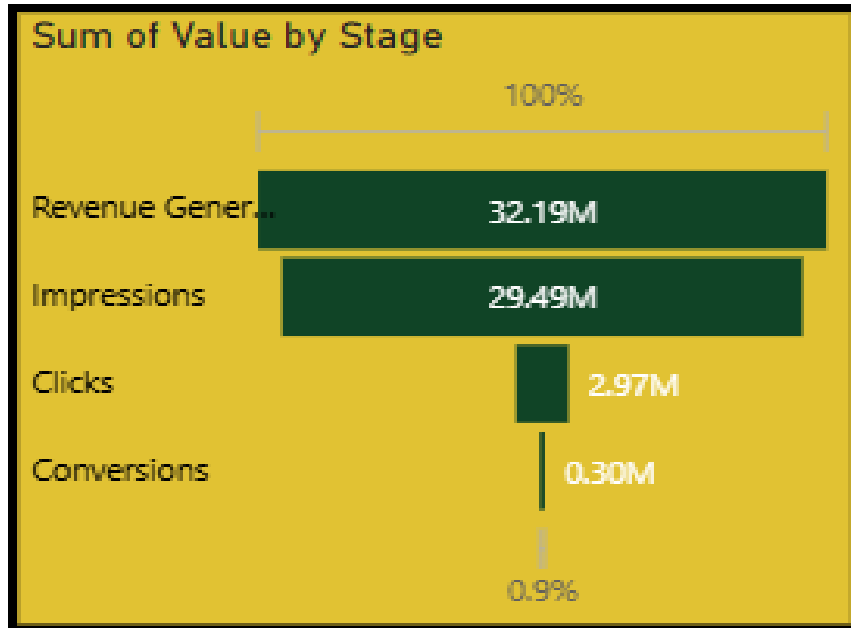
- High impressions (29.49M) led to strong revenue generation (₹32.19M)

- However ,only 10% of impressions resulted in clicks (2.97M).

- Just ~1% of clicks converted into actual conversions (0.30M).

category	2023	2024	Total
Baby Care	323	332	655
Cold Drinks & Juices	378	380	758
Dairy & Breakfast	556	558	1114
Fruits & Vegetables	512	454	966
Grocery & Staples	423	472	895
Household Care	462	616	1078
Instant & Frozen Food	400	342	742
Personal Care	440	447	887
Pet Care	459	544	1003
Total	4918	5116	10034

- Table shows the number of orders placed for each category.
- Comparatively more orders were placed in 2024 for every category.
- Indicates improvement.
- Household care products had the highest surge in orders.

Sum of quantity by Year and category
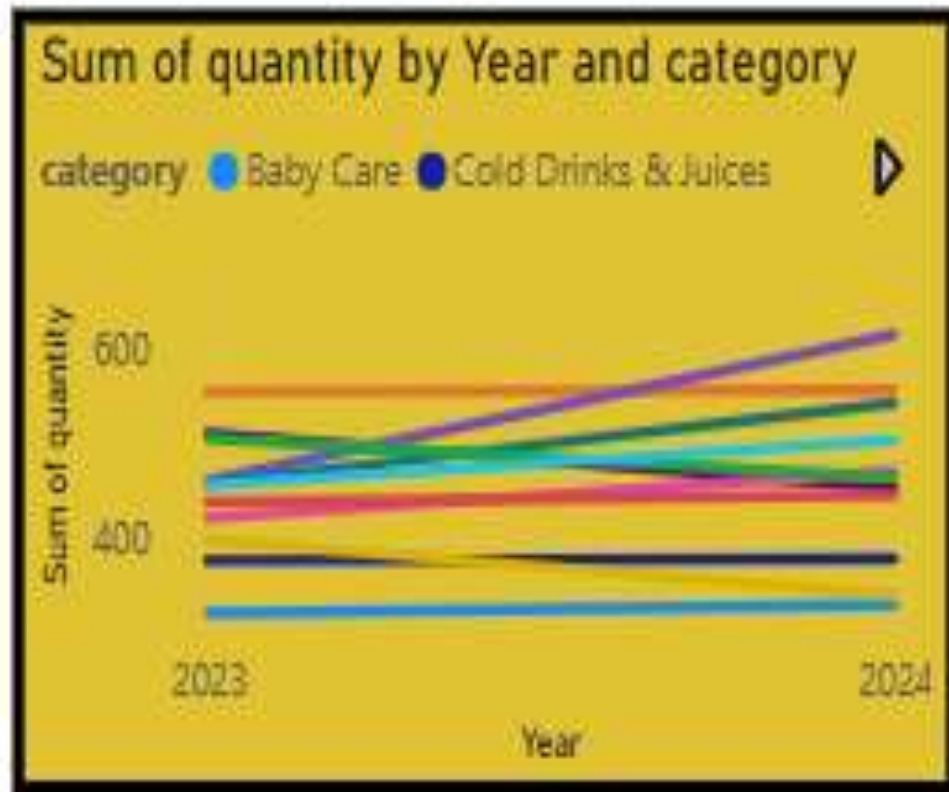
- Household Care had the highest surge in orders from 2023 and 2024.

- Frozen and Instant Foods saw a decline in orders.

- Pharmacy also showed a decline in terms of orders

Daily Order Count by Month
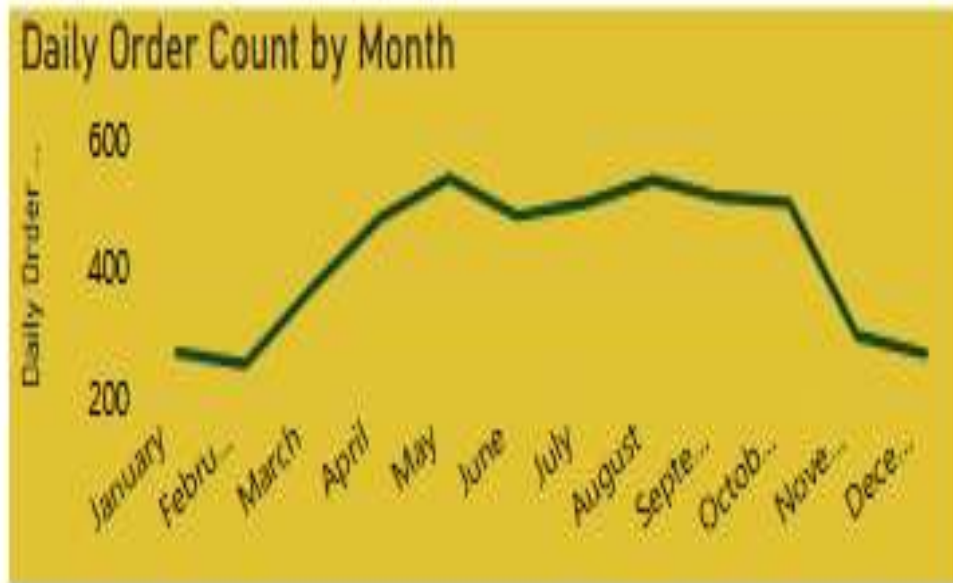
- Steady growth in daily orders is seen from February to May, peaking around May–August.
- A **sharp decline** is observed from October to December, with December having the lowest daily order count.

Count of feedback_category by feedback_category
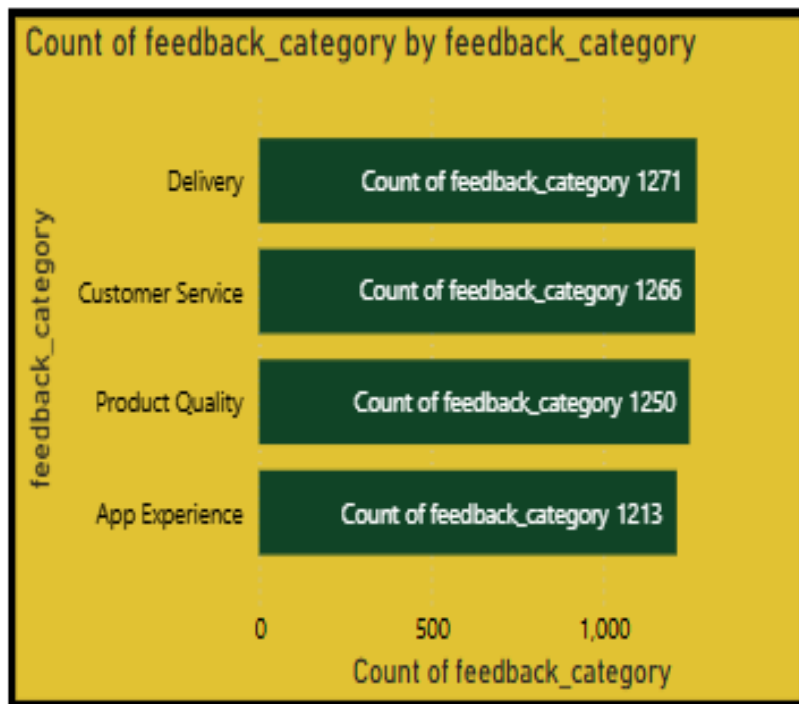
- Most customer feedback was about **Delivery**, suggesting this area needs the most attention, followed by Product Quality and App Experience.

Year	Month	feedback_category	feedback_text	Sum of rating
2023	March	App Experience	Average experience, could improve.	4
2023	March	App Experience	Customer service was not helpful.	3
2023	March	App Experience	Items were missing from my order.	1
2023	March	App Experience	Nothing to complain about, but nothing exceptional.	4
2023	March	App Experience	Taste was not as expected.	1
2023	March	Customer Service	Delivery was late and I was unhappy.	2
2023	March	Customer Service	Good selection of products.	4
2023	March	Customer Service	The product met my expectations.	3
2023	March	Delivery	The packaging was poor.	1
2023	March	Delivery	The product met my expectations.	4
2023	March	Product Quality	Excellent quality, will buy again!	9
Total				1842

- Performance was **poor** for the dairy category during specific time frames

Sum of quantity by category
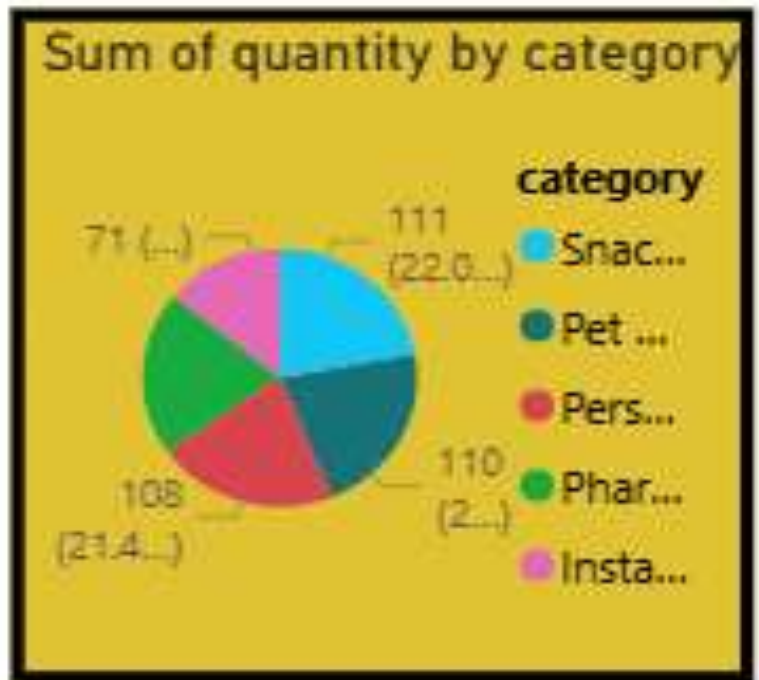
- Delivery of Snacks and munchies was significantly delayed.
- Happened probably due to high demand.

Sum of quantity by category
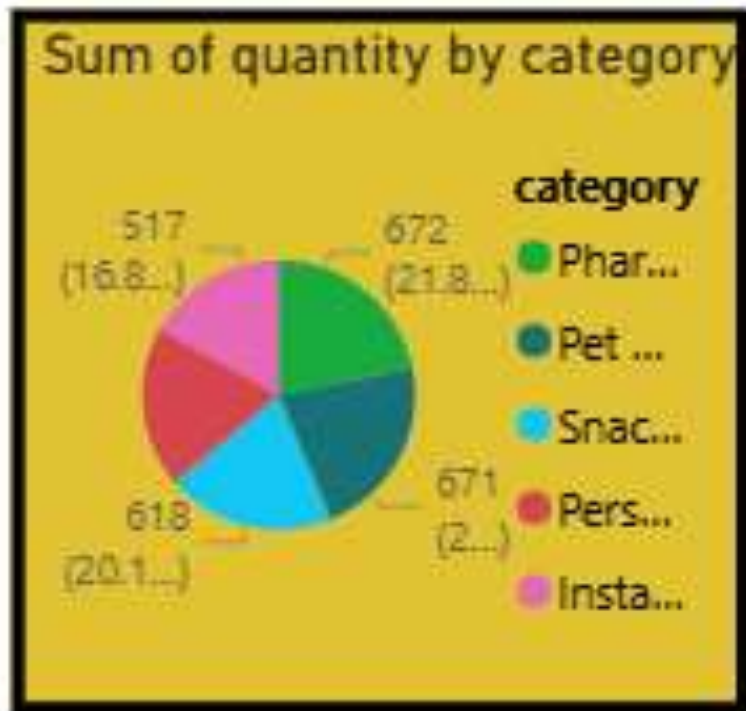
- Pharma products were mostly on time
- Indicates better priority handling and stable inventory.

Sum of total_orders by area
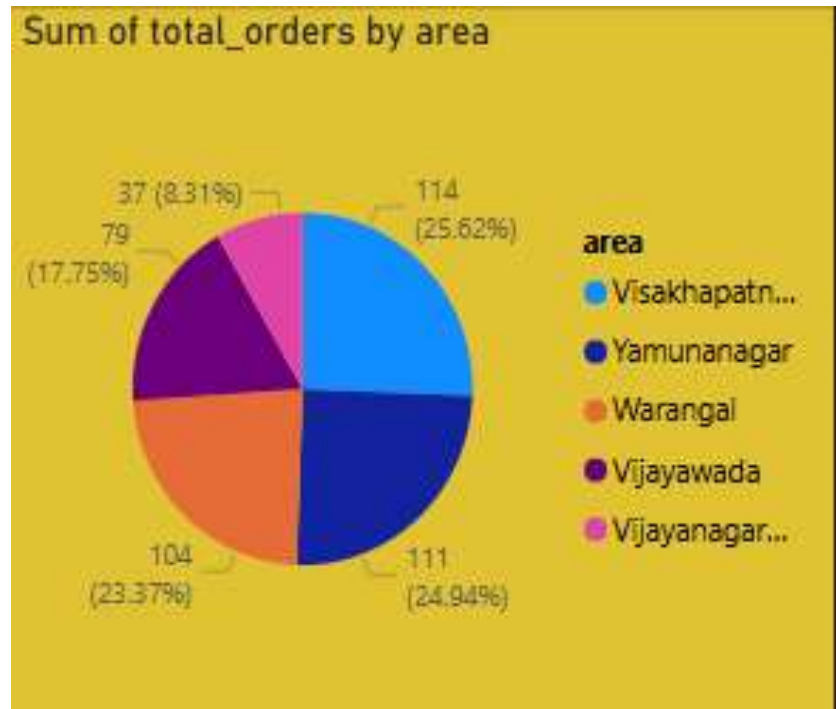
- The pie chart shows the top 5 areas based on order quantity.
- Vishakhapatnam topped the list with 25.62%.

product name	customer name	Sum of quantity	email	order_id	store_id	Year	Month	Day
Biscuits	Vrinda Khurana	2	vsekhon@example.com	60465	3943	2024	October	23
Baby Wipes	Vrinda Khurana	1	vsekhon@example.com	2177211652	4254	2023	June	29
Cat Food	Vrinda Khurana	2	vsekhon@example.com	7565647347	2523	2024	October	24
Shampoo	Vrinda Khurana	2	vsekhon@example.com	9144790321	4377	2023	April	17
Total		7						

customer_name, order_...

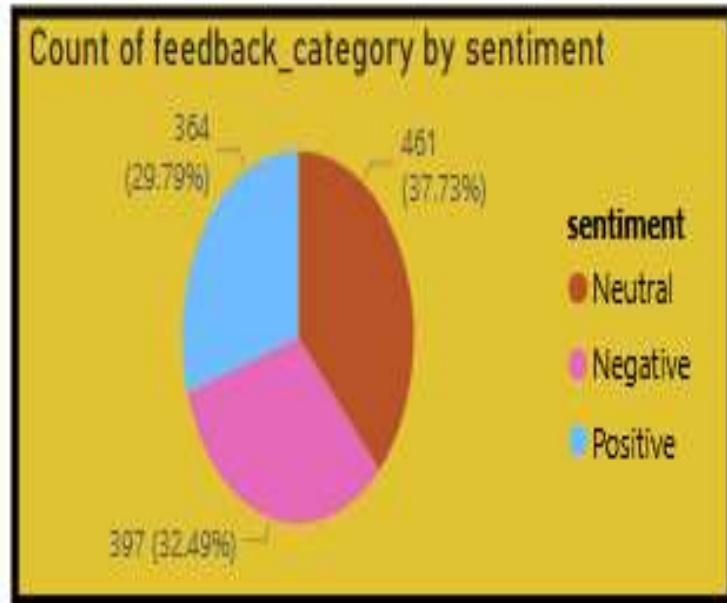- [ ] Vrinda Bassi
- [x] Vrinda Khurana
- [ ] Vrinda Lalla
- [ ] Vrinda Mutti
- [ ] Vrishti Bana
- [ ] Vrishti Basak

- Added a slicer of names to check the order statistics of any customer.

- Created a pie chart to categorize number of feedback by their sentiments.
- Mostly there were neutral feedbacks followed by negative and positive ones

product_name	Sum of mrp	DiscountPercentage	Sum of price
Bananas	290.00	25.0%	217.50
Biscuits	210.15	35.0%	136.60
Biscuits	743.15	35.0%	483.05
Biscuits	1,279.12	35.0%	831.43
Biscuits	1,271.09	35.0%	826.21
Biscuits	1,061.66	35.0%	690.08
Biscuits	431.31	35.0%	280.35
Biscuits	643.82	35.0%	418.48
Bread	923.42	20.0%	738.74
Bread	983.56	20.0%	786.85
Bread	760.00	20.0%	608.00
Total	1,82,356.51		1,30,879.63

- Created a table showing the mrp of each product , the discount applied as well as the final price.
- The discount percentage varies, ranging from 25% to 35% , with variation across products.
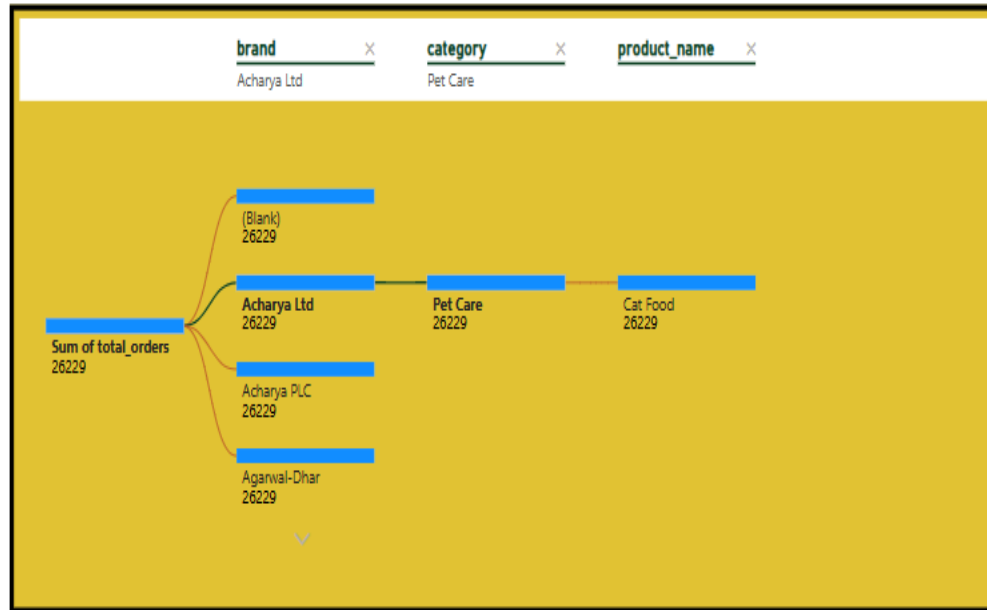
- Created a decomposition tree
- Archarya Ltd were the biggest suppliers for pet care (cat Food) and personal care(Lotion).
- Agarwal-Dhar were the biggest suppliers for Fruits and vegetables (onions)

Key Findings

- **Strong Customer Retention**
  - Customer retention rate is **0.94**, showing that most customers placed repeat orders, indicating high satisfaction and trust in the platform.

- **Delivery Issues Identified**
  - A noticeable spike in **delivery delays during November 2023**, including short-distance deliveries, points to internal logistic inefficiencies unrelated to route length.

- **Top Products and Categories Driving Sales**
  - Pet Care products topped both in quantity sold and stock received.
  - Dairy and Breakfast generated the highest revenue across all categories.

- **Marketing Funnel Drop-Off**
  - Out of 29.49M impressions, only **0.3M converted**, revealing a **major drop-off** between clicks and conversions. This highlights a need for better targeting and landing page optimization.

- **Inventory and Damage Issues**
  - Dish Soap had the highest damage rate (64%) despite high stock, while **Cough Syrup** had the lowest (0.35%) .

Conclusion

During this project, I learned how to analyze real-world business data using Power BI by integrating multiple datasets, creating meaningful visualizations, and applying advanced DAX calculations.

This analysis provides actionable insights that can help Blinkit:

- Optimize marketing budgets by focusing on campaigns with higher ROAS
- Improve delivery efficiency by analyzing delays across geography and product types
- Manage inventory smarter by reducing damaged stock and forecasting demand
- Enhance customer experience by addressing feedback and promoting high-CLV users

Github Repository Link

Blinkit Sales Data Analysis Repository -
https://github.com/Ishita0807/Blinkit-Data-Analysis

References

- Dataset Source: Blinkit Sales and Marketing Data – Kaggle (https://www.kaggle.com/datasets/akxiit/blinkit-sales-dataset)

- Tools and Platforms Used: Power BI Desktop, GitHub, Microsoft Excel, Power Query, DAX

- Internship Support: Classroom Tech – Internship platform and project guidance (https://classroomtech.in)

- Additional Resources: Microsoft Learn (docs.microsoft.com) for DAX and Power BI documentation

THANK YOU