blinkit

Power BI

Internship Under:

Classroom

Phone:
8981838547
Website:
https://classroomtech.in
LinkedIn:
https://www.linkedin.com/company/classroom-tech/
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PROJECT ON POWER BI

Mehuli Chowdhury
Institute of Engineering and Management (IEM)
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ACKNOWLEDGEMENT

I'd like to extend my sincere appreciation to my mentor for their expert guidance, consistent support, and insightful feedback throughout this project. I'm grateful to Classroomtech for offering the essential tools and a stimulating environment that facilitated my learning and research. My heartfelt thanks to my family for their unwavering encouragement, understanding, and emotional backing. I'm also thankful to my colleagues and everyone who provided valuable suggestions and assistance, contributing to the project's success.

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PROBLEM STATEMENT

The objective of this project is to analyze Blinkit's sales, customer, delivery, product, and marketing data using Power BI. The goal was to transform raw data from 11 tables into meaningful insights through interactive reports and dashboards. This analysis focused on answering key business questions such as customer order patterns, delivery performance, feedback trends, product-wise sales, and marketing effectiveness to support data-driven decisions and operational improvements.

DATASET OVERVIEW

Dataset Source: Kaggle — Blinkit Sales Dataset
www.kaggle.com/datasets/akxiit/blinkit-sales-dataset/data

The dataset for this project is the Blinkit Sales Dataset from Kaggle, containing 11 tables covering customer details, orders, deliveries, products, inventory, marketing, and feedback. Key columns like customer ID, order ID, product details, delivery status, and campaign performance were used to analyze sales trends, customer behavior, delivery efficiency, and marketing effectiveness. This dataset provides a complete view of Blinkit's operations for meaningful analysis in Power BI.

TOOLS USED

- Power BI 
- GitHub for repository management 

METHODOLOGY

- **Data Cleaning Steps :**

During data cleaning, missing values are handled using Power Query. Rows with missing values in key columns such as customer_id, order_id, and product_id are removed to maintain data accuracy. In non-essential columns like email and feedback_category, missing values are replaced with "Not Provided" or "Unknown" to avoid gaps in reports. Outliers in numeric fields such as order_quantity, delivery_time, and spend are identified using boxplots. Unrealistic values, including negative delivery times or unusually large quantities, are either removed or capped to ensure the dataset remains reliable for analysis.

METHODOLOGY

- **Visualization Creation Steps :**

In the visualization stage, Various visualizations are created to extract insights from the dataset. A Bar Chart highlights top customers based on order count, while a Pie Chart shows feedback distribution. Stock trends are tracked using a Column Chart, and key metrics like average order value are displayed with a KPI Card. A Heatmap identifies high-demand regions by pincode, and product-wise sales are compared using a Stacked Bar Chart. Delivery efficiency is analyzed with a Scatter Plot, marketing performance with a Funnel Chart, daily order trends with a Line Chart, and a Map Visualization shows geographic order density.

VISUALIZATION

1. How can you import data from all 11 tables into Power BI?

- Go to **Home > Get Data > Excel/CSV/SQL Server**, then select all 11 data sources or load multiple sheets.
- Click **Transform Data** to preview and clean.
- Then click **Close & Apply**.

VISUALIZATION

3. Create a bar chart showing the number of orders placed per customer.

- Axis: customer_id
- Value: Count of order_id

Purpose: This chart highlights the customers with the highest number of orders. It helps identify the most active and loyal customers based on their order count.

Visual: Bar Chart

VISUALIZATION

4. How do you calculate the total number of orders placed in a given month?

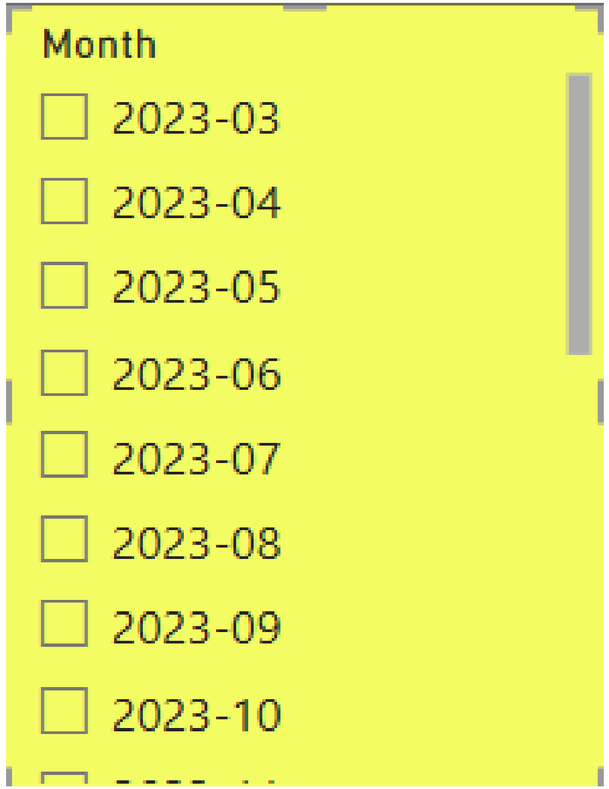
•We've used a **date-based slicer** to filter order_date

•Total Orders are then counted dynamically in visuals

DAX: Total Orders =
COUNTROWS(blinkit_orders)

Purpose: This chart shows the total number of orders placed in June 2024. It provides a quick summary of monthly order volume, helping to track business performance for the selected period.

Visual: Slicer(Months) , Card(Total Orders)

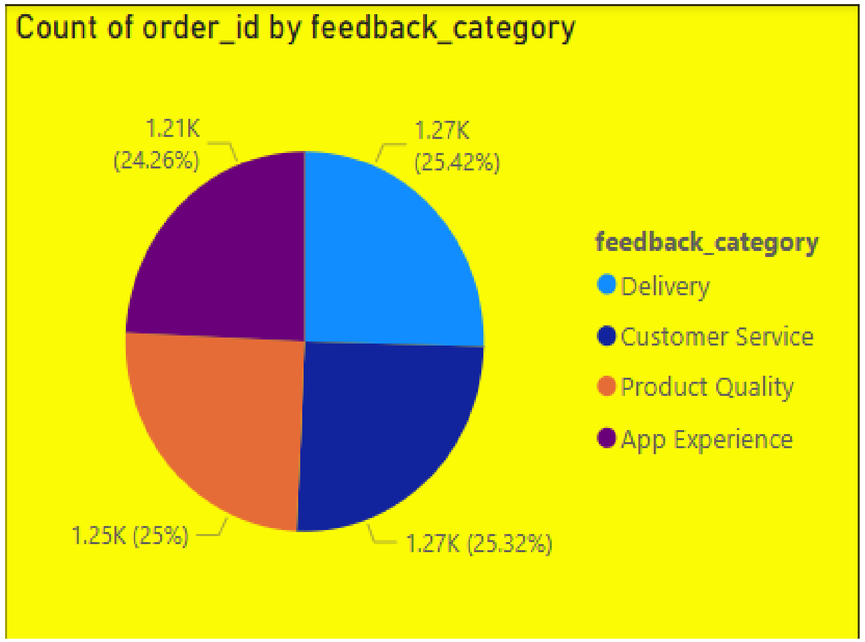


VISUALIZATION

Distribution of Feedback Categories

Purpose: This chart shows how customer feedback is distributed across different categories. It provides a clear overview of which areas — Delivery, Customer Service, Product Quality, and App Experience — receive the most attention from customers. This helps identify focus areas for improvement.

Visual: Pie Chart



VISUALIZATION

Customer Details Table:

Purpose: This table displays the customer IDs, names, and email addresses of all customers. It provides a quick reference to customer details, making it easier to identify, contact, or analyze individual customers.

Visualization: Table

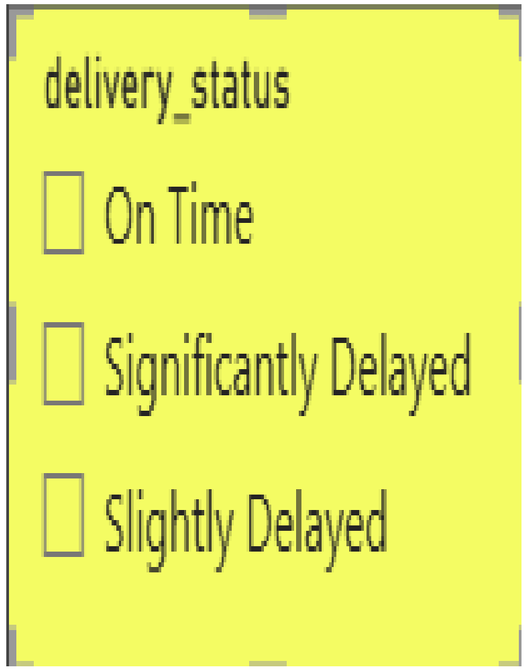
customer_id	customer_name	email
95912198	Bhavna Gara	zwagle@example.com
47577193	Chaaya Wable	zvenkatesh@example.net
73807097	Manbir Manda	zroy@example.org
77661491	Jyoti Srinivas	zramesh@example.org
74761384	Banjeet Gara	zpau@example.net
35049420	Udarsh Mangal	zpatil@example.org
22020776	Manan Banerjee	zpal@example.net
76441843	Neelima Chander	znadkarni@example.org
43243913	Rushil Iyer	zkrishnan@example.net
97492493	Alexander Ray	zkalla@example.com
27038630	Megha Thakkar	zinalsarna@example.com
90246977	Yuvraj Chacko	zinal84@example.org

VISUALIZATION

Order Distribution by Delivery Status

Purpose: This chart shows how orders are distributed based on their delivery status. It provides a quick overview of the percentage of orders delivered on time, slightly delayed, and significantly delayed, helping to assess overall delivery performance.

Visual: Slicer,Bar chart

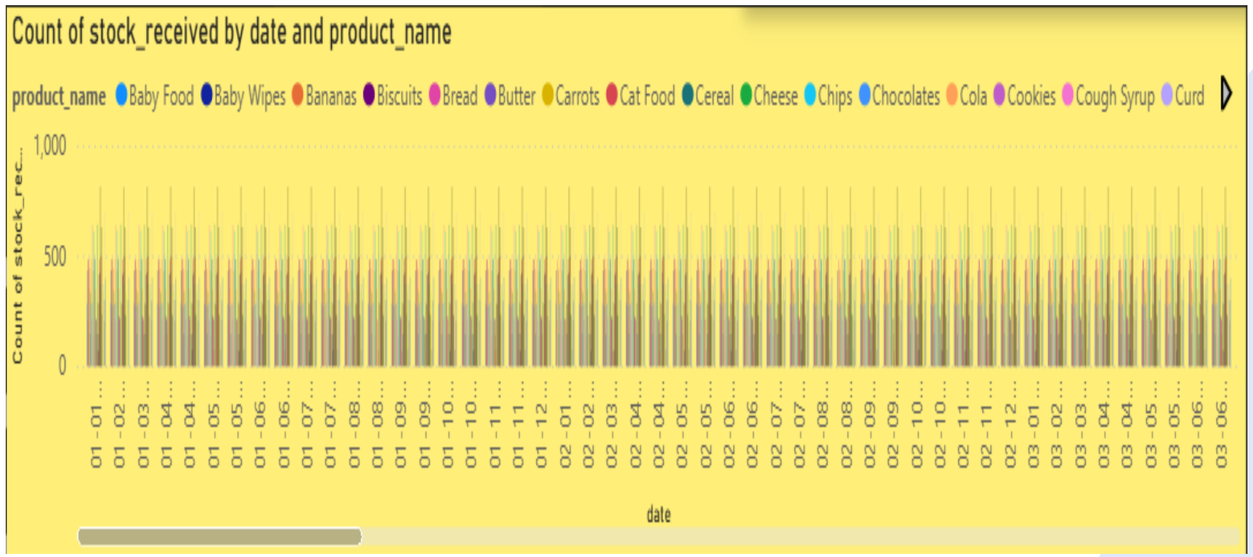


VISUALIZATION

Stock Received Over Time by Product

Purpose: To analyze how much stock was received for different products over time.

Visual: Clustered Column Chart



VISUALIZATION

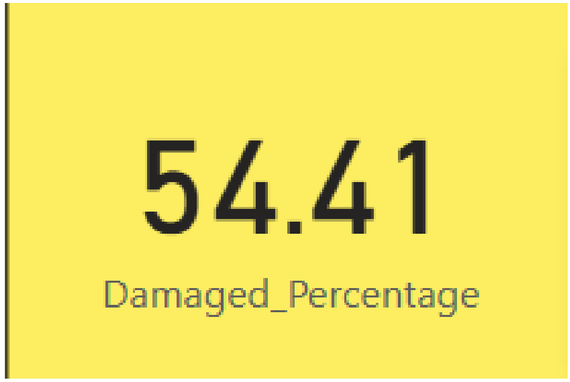
Damaged Stock Percentage Calculation

Purpose: This chart helps identify which products have the highest percentage of damaged stock. It highlights the products that contribute most to stock damage, allowing the company to focus on quality control and investigate potential issues in the supply chain.

Visual: card

DAX Example:

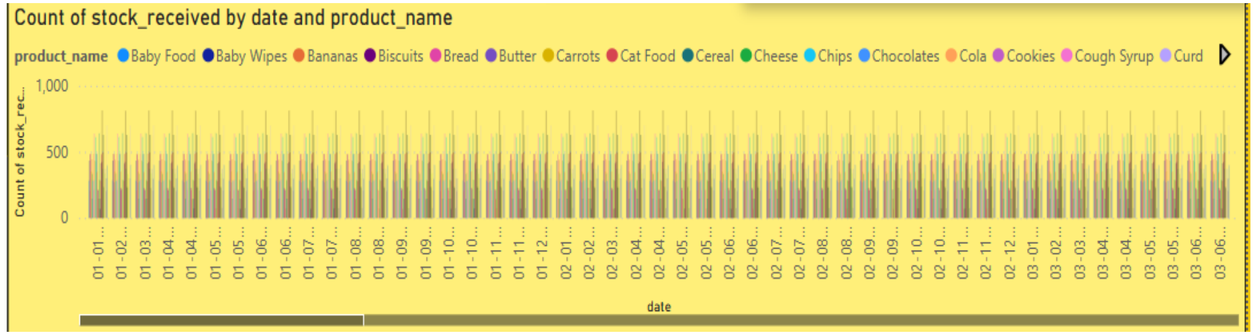
```
Damaged_Percentage =
DIVIDE(SUM(stock[damaged]),SUM(stock[received]), 0) * 100
```



VISUALIZATION

Campaign-Wise Spend and Revenue Calculation

Purpose: This graph visualization provides a clear comparison of different marketing campaigns based on their total spend and the revenue they generated. It helps identify which campaigns are delivering better returns.



Visual: graph

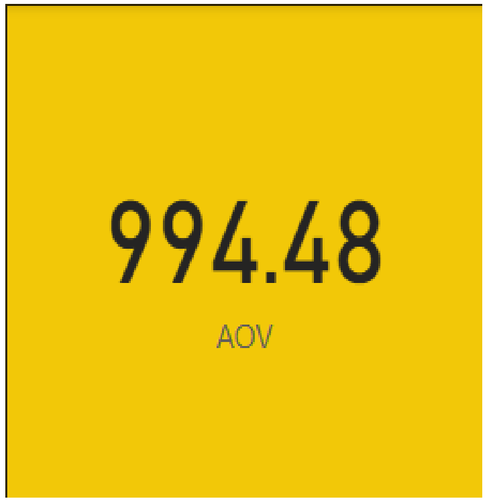
VISUALIZATION

Average Order Value

Purpose: This chart compares actual AOV with a set target (400) to see if customer spending meets expectations.

Visual: Card

DAX: AOV = DIVIDE(SUM(OrderRevenue), COUNT(OrderID), 0)



VISUALIZATION

Total Revenue from All Campaigns

Purpose: This card visualization shows the total revenue generated from all marketing campaigns combined. It provides a quick overview of overall campaign performance and helps assess the effectiveness of marketing efforts.

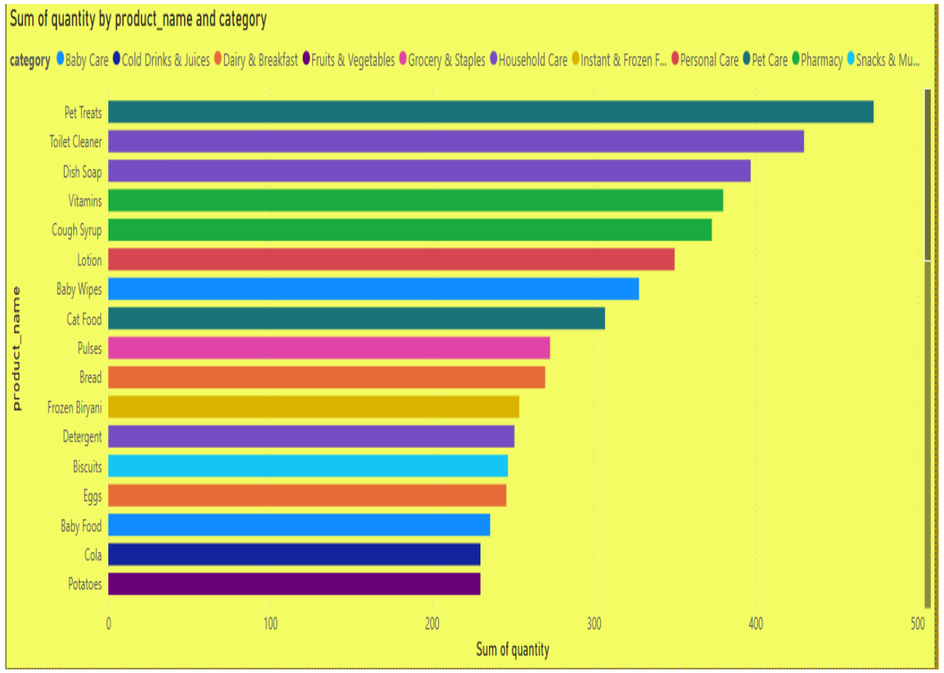
Visual: Card

VISUALIZATION

Order quantity per product

Purpose: The stacked bar chart visualizes order quantity per product, broken down by category, to compare product performance and identify trends. It enables data-driven decisions to optimize product offerings and inventory management.

Visual: Chart



VISUALIZATION

Total Delivery Time Calculation

Purpose: This card visualization shows the total delivery time deviation for all orders combined. It provides a quick overview of delivery performance and helps assess whether deliveries are happening on time.

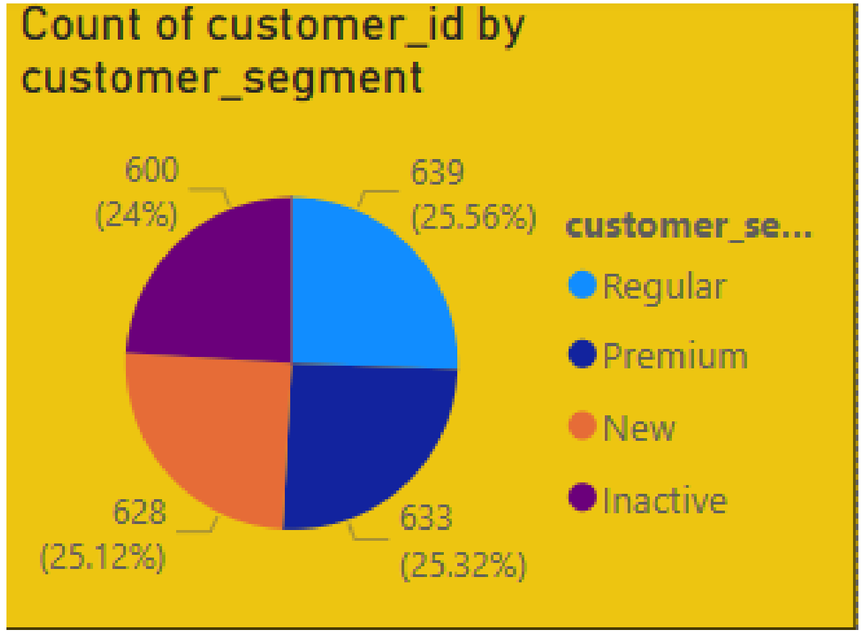
visual: Card

VISUALIZATION

Customer Segment Distribution

Purpose: This pie chart visualizes the distribution of customers by segment, helping to understand the composition of the customer base and identify target groups for marketing.

Visual: Pie Chart



VISUALIZATION

Order Frequency by Pincode

Purpose: To visualize which locations (based on pincode) receive the most customer orders.

Visualization: Table

pincode	Count of order_id
1489	5
2246	2
3787	2
6749	1
6805	2
6864	3
6891	2
7186	1
7202	2
8262	4
8504	3
8953	2
9157	2
9792	2
12225	2
12673	2
13029	3
13574	3
13634	1
14359	1
14378	2
14789	1
14967	4
14994	2
15615	5
15696	1
Total	**5000**

VISUALIZATION

Total Delivery Time and Delay Analysis

Purpose : This table visual shows the actual delivery time compared to the promised delivery time for each order. It helps analyze how long deliveries took and whether they were delayed or delivered early.

DAX: Delivery_Delay = DATEDIFF(promised_time, actual_time, MINUTE)

VISUALIZATION

Total Return on Ad Spend (ROAS)

Purpose: This card visualization displays the total ROAS, providing a quick summary of how effectively marketing spend is converting into revenue.

Visual: Card

VISUALIZATION

Distance vs. Delivery Time

Purpose: This scatter plot aims to analyze the relationship between delivery distance (in km) and total delivery time (in minutes) to evaluate delivery efficiency. It helps identify whether longer distances consistently result in longer delivery times.

Visual: Scatter Plot

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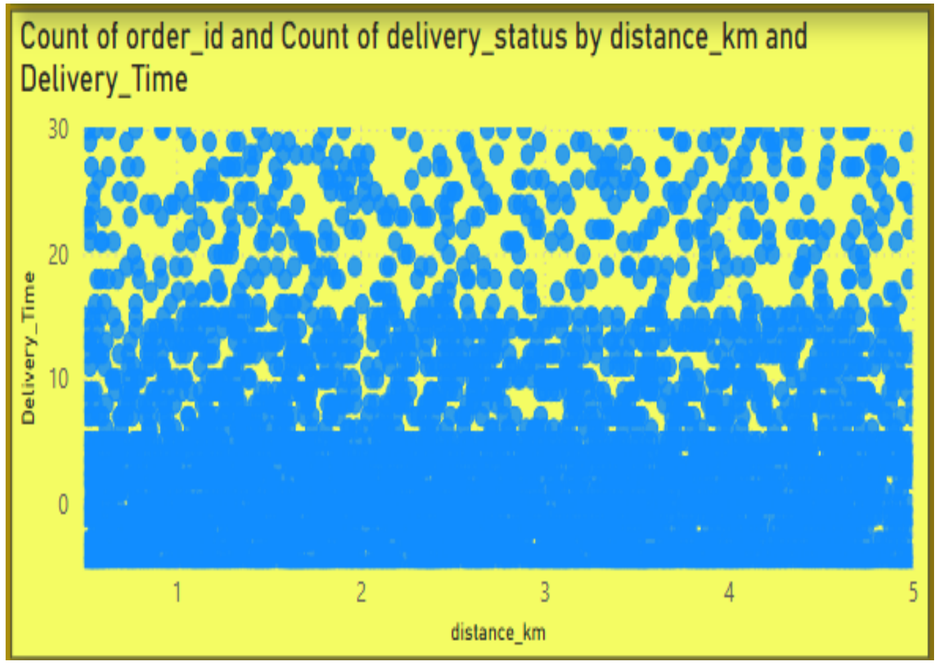


VISUALIZATION

Customer Retention Rate

Purpose: This card visualization shows the overall customer retention rate, helping to assess how effectively the business retains its customers over time.

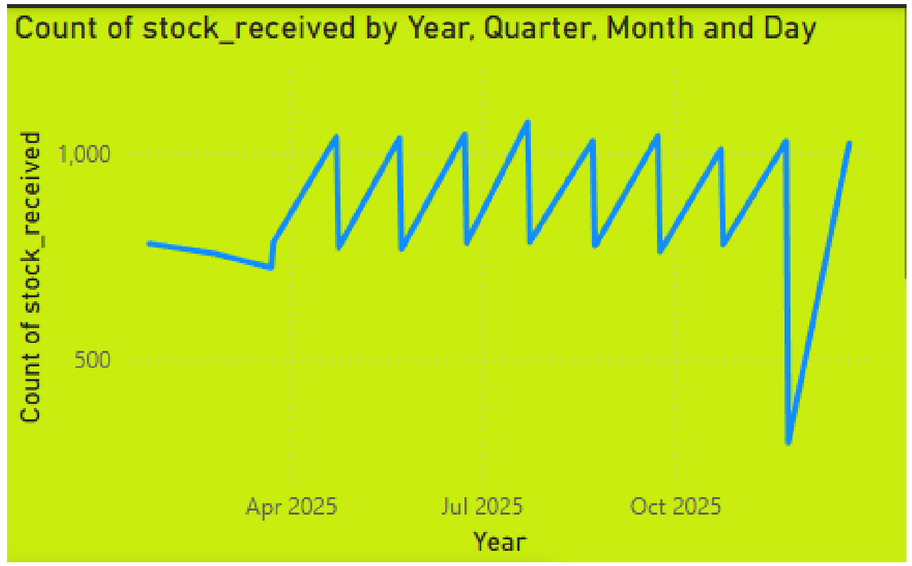
Visual: Card
Retention Rate: 7.46M
DAX :
RetentionRate = RETURNING_CUSTOMERS / TOTAL_CUSTOMERS

VISUALIZATION

Forecast of Stock Received Over Time

Purpose : This line chart visualizes the historical trend and future forecast of stock received over time. It helps understand whether the supply chain is maintaining a steady flow and anticipates how stock levels will trend in the near future.

Visual: Line Chart

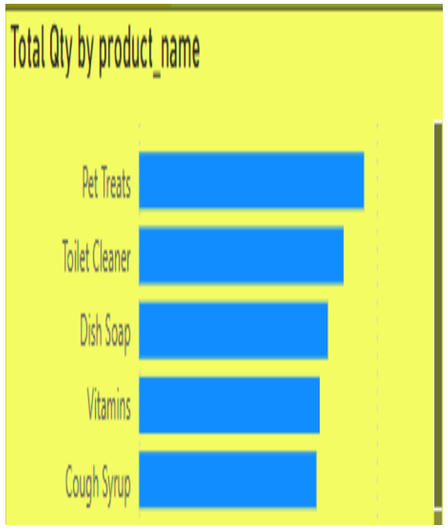


VISUALIZATION

Top 5 Best-Selling Products by Quantity

Purpose: This bar chart highlights the top 5 products with the highest quantity ordered, helping identify which products drive the most sales and demand.

Visual: Clustered Bar Chart



VISUALIZATION

Gross Profit

Purpose: This card visualization shows the total gross profit based on margin percentage, providing a quick snapshot of overall business profitability.

Visual: Card

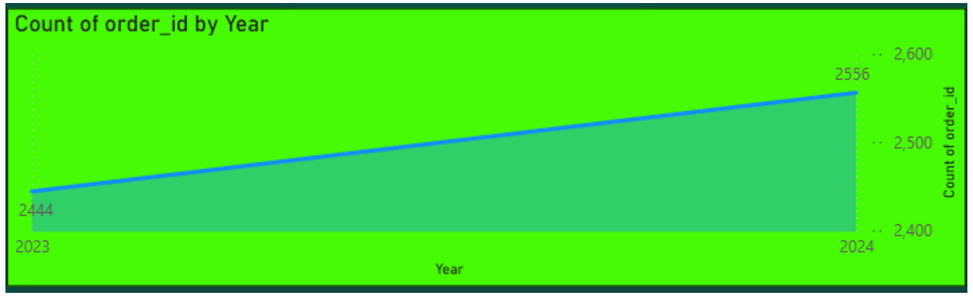
DAX : GrossProfit = SUMX(Sales, Revenue * margin_percentage)

VISUALIZATION

Daily Order Count by Day

Purpose: This chart is used to analyze the trend of daily order counts over a one-month period, based on the order date . It helps us understand how customer demand changes from day to day, and highlights any significant fluctuations in order activity throughout the month.

Visual: Chart



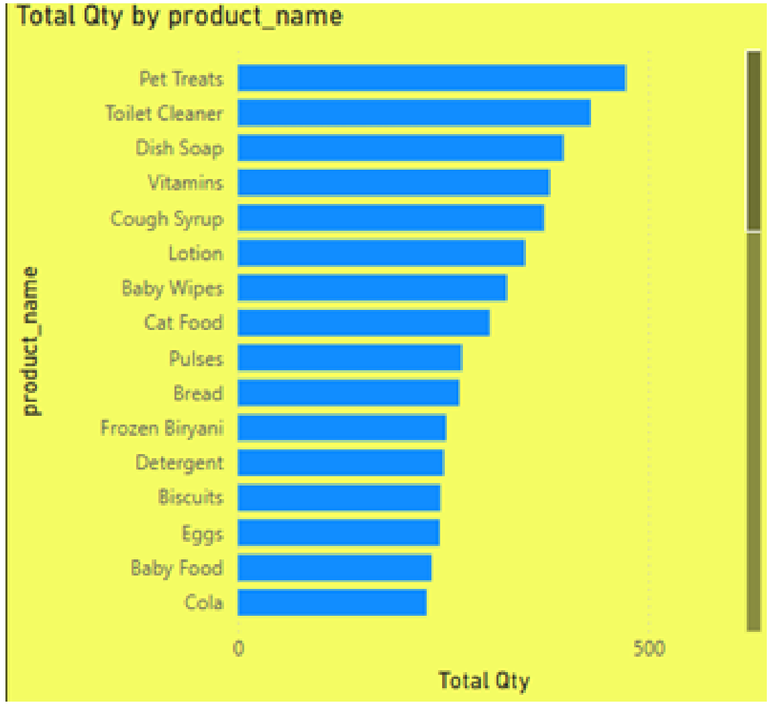
VISUALIZATION

Most Frequently Ordered Product

Purpouse: This visualization identifies the product with the highest number of orders based on historical sales data. It helps stakeholders understand customer purchasing trends and which items are most in demand.

Visual: Card

- Sorted bar chart by Total Qty
- Highest bar = most frequent product



VISUALIZATION

Total Quantity Ordered per Product Category

Purpose: This matrix chart shows the total quantity of items ordered across different product categories, based on data . It helps identify which categories have the highest and lowest demand, giving insight into customer purchasing preferences.

Visual: matrix chart

category	range Juice	Pain Reliever	Pet Treats	Popcorn	Potatoes	Pulses	Rice	Salt	Shampoo	Soap	Spinach	Sugar	Toilet Cleaner	Tomatoes	Toothpaste	Vitamins	Wheat Flour	Total
Baby Care																		655
Cold Drinks & Juices	222																	758
Dairy & Breakfast																		1114
Fruits & Vegetables					230						40			97				966
Grocery & Staples						273	109	116				184					213	895
Household Care													430					1078
Instant & Frozen Food																		742
Personal Care									157	186					194			887
Pet Care			473															1003
Pharmacy		220														380		973
Snacks & Munchies				183														963
Total	**222**	**220**	**473**	**183**	**230**	**273**	**109**	**116**	**157**	**186**	**40**	**184**	**430**	**97**	**194**	**380**	**213**	**10034**

VISUALIZATION

Customer Lifetime Value

Purpose: This chart shows the Customer Lifetime Value (CLV) using data . It shows how much revenue a customer is expected to generate over time. CLV is calculated by multiplying the average order value by the total number of orders.

Visual: Card

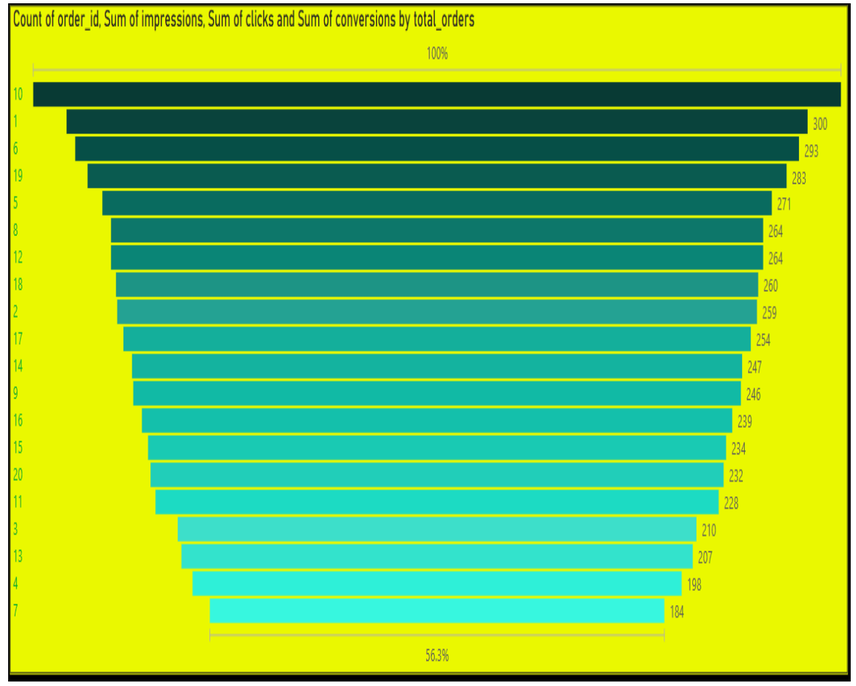
DAX: CLV = avg_order_value * total_orders

VISUALIZATION

Campaign Conversion Funnel

Purpose: This funnel chart shows the campaign conversion flow using data . It tracks drop-offs from impressions to clicks and orders, helping identify where potential customers exit and where marketing can improve.

Visual: Chart



VISUALIZATION

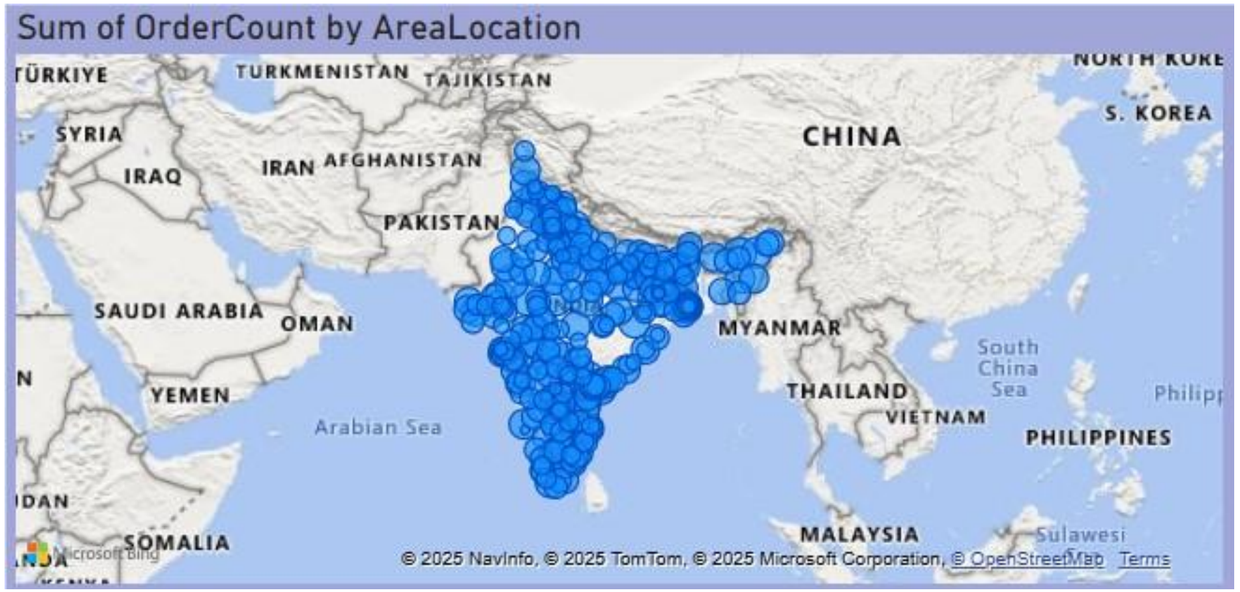
Order Density by Area Location

Purpose: This chart shows which areas in India have higher or lower order volumes, helping identify regional demand patterns.

Visualization: Map

Insights:

- Areas like Orai, Nandyal, and Bathinda have higher order counts.
- Widespread coverage indicates Blinkit operates in diverse regions across India.
- Some cities show clustered high density, useful for targeting marketing or logistics planning.



KEY FINDINGS

- **Volatility in Daily Orders:**

The time-series analysis of daily order counts shows fluctuating demand across the month, with peak orders around Day 10 and a sharp drop on the last day.

- **Campaign Conversion Is Very Low:**

Funnel analysis reveals that only ~10% of impressions convert to clicks, and nearly 0% reach the order stage—highlighting major leakage in the conversion funnel.

- **High Customer Lifetime Value (CLV):**

With a CLV of ₹29.03M, existing customers contribute significantly to revenue, underscoring the value of customer retention strategies.

- **Household & Dairy Lead in Product Demand:**

From the matrix chart, Household Care and Dairy & Breakfast categories show the highest order quantities, indicating top-performing product segments.

- **Delivery Performance Is Strong:**

The delivery status slicer shows that the majority of orders are delivered on time, reflecting efficient logistics operations.

CONCLUSION

This in-depth analysis has provided us with actionable intelligence on customer behavior, product performance, and process efficiency. By identifying key drivers of sales growth, pinpointing areas for improvement in the customer experience, and optimizing operational workflows, we can develop targeted strategies to enhance business outcomes. The findings from this analysis will inform data-driven decision-making, enabling us to refine our product offerings, marketing approaches, and service delivery to better meet customer needs and drive long-term success.

GITHUB REPOSITORY LINK

https://github.com/MehuliChowdhury/Blinkit_dashboard2

REFERENCES

- Kaggle
- YouTube

THANK YOU

Mehuli Chowdhury

chowdhurymehuli05@gmail.com

://www.linkedin.com/in/mehuli-chowdhury-2b3513274