# blinkit



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**Duration**:

3 months 1st April 2025 to 30th June 2025

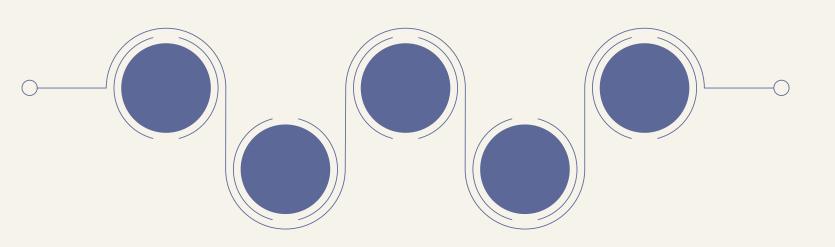
# PROJECT ON POWER BI

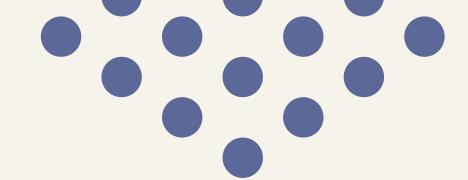
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Semester - 5<sup>th</sup>





### ACKNOWLEDGEMENT

I would like to express my sincere gratitude to Kaggle for providing the dataset used in this analysis. I am also thankful to the Power BI community for their valuable resources and tutorials that helped in creating insightful dashboards. This project would not have been possible without the support and encouragement from my mentors, peers, and all those who directly or indirectly contributed to the completion of this work. I also appreciate the continuous guidance and constructive feedback received during the development phase, which significantly enhanced the quality of this project. Lastly, I am grateful for the opportunity to apply my knowledge and gain practical experience through this analysis.

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### PROBLEM STATEMENT

In the highly competitive quick-commerce industry, companies like Blinkit must manage multiple aspects of their operations efficiently to ensure customer satisfaction, profitability, and sustainable growth. Challenges such as delayed deliveries, damaged stock, low customer retention, and ineffective marketing campaigns can significantly impact overall business performance. The objective of this project is to analyze Blinkit's sales, customer behavior, delivery performance, inventory management, and marketing campaigns using available datasets. The analysis aims to identify patterns, detect operational inefficiencies, and provide actionable insights to improve revenue generation, reduce delays, enhance customer experience, and optimize marketing ROI.



### DATASET OVERVIEW

Dataset Source : kaggle - Blinkit Sales Dataset

https://www.kaggle.com/datasets/akxiit/blinkit-sales-dataset/data

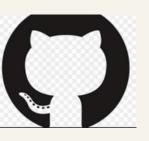
The dataset used in this project was sourced from Kaggle and contains multiple tables related to Blinkit operations, including Orders, Customers, Products, Inventory, Feedback, and Marketing Campaigns. It consists of several thousand rows with key attributes such as order details (order ID, delivery status, distance, delivery time), customer information (segment, name, email), product details (name, category), inventory status (stock received, damaged quantity), marketing spend, and revenue. These datasets were integrated and cleaned to ensure accuracy, enabling comprehensive analysis of sales performance, customer behavior, operational efficiency, and marketing effectiveness.

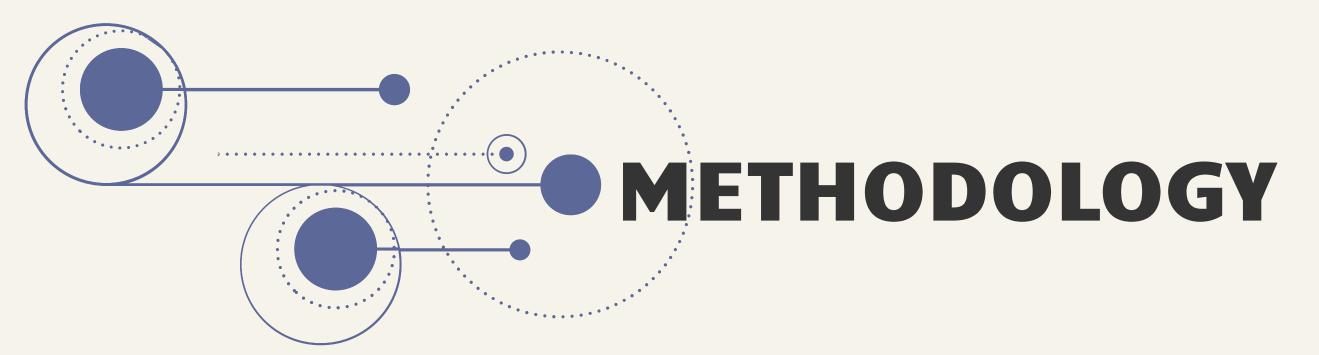
# TOOLS USED

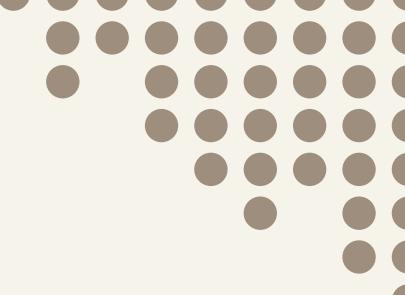
• Power Bi



• GitHub for repository management

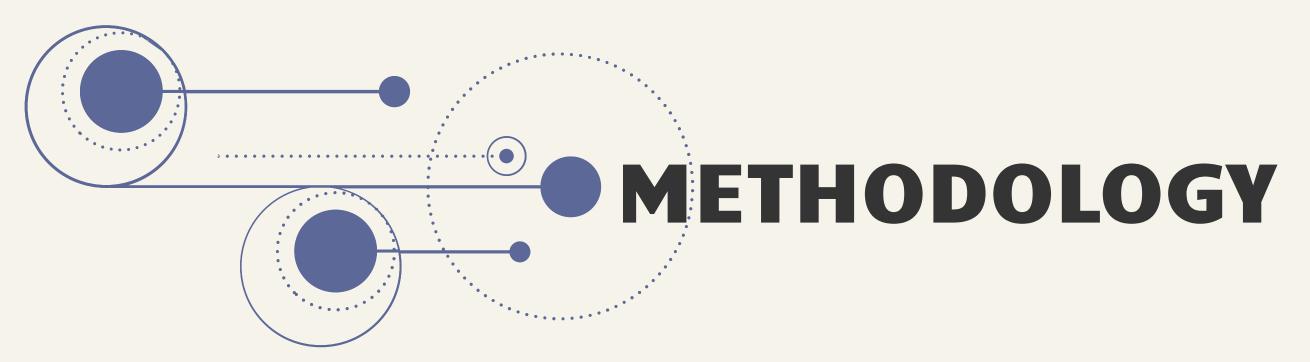






### Data Cleaning Steps:

The data cleaning process involved several steps to ensure accuracy and consistency. First, duplicate records were removed from the Orders, Customers, and Inventory tables. Missing values in feedback\_text were replaced with No Feedback, while null numeric values such as spend, revenue, and stock were filled with zero. All date columns, including order\_date and stock\_received\_date, were standardized into proper date formats for time-based analysis. Outliers, such as unrealistic delivery times (greater than 50 hours) and extreme stock quantities, were removed to maintain reliability. Additionally, calculated columns were created, including Order Value (Quantity × Price) and Delivery Delay (Actual Delivery Time – Expected Delivery Time), to facilitate deeper insights during analysis.



### Visualization Creation Steps:

The visualization process involved creating interactive dashboards in Power BI to present key insights effectively. KPI cards were designed to display core metrics such as Total Revenue, Average Order Value (AOV), Gross Profit, and Customer Lifetime Value (CLV) for a quick business performance overview. Pie charts illustrated customer segmentation and feedback categories, helping to identify major customer concerns and segment contributions. Bar charts highlighted top-selling products and compared marketing spend against revenue to assess campaign effectiveness. A line chart was used to track inventory trends over time, while a scatter plot analyzed the relationship between delivery time and distance. Additionally, tables with filters provided detailed customer information and feedback sentiment analysis for deeper insights.

### Count of Order\_ID by Customer\_ID

**Purpose:** To identify how many orders have been placed by each customer, helping to understand customer engagement and repeat purchase behavior.

Visual: Bar Chart

- Most customers placed between 1 to 5 orders, indicating a moderate engagement level.
- A few customers placed 7–10 orders, highlighting potential loyal or high-value customers.
- There is no extreme outlier, suggesting consistent ordering patterns across the customer base.

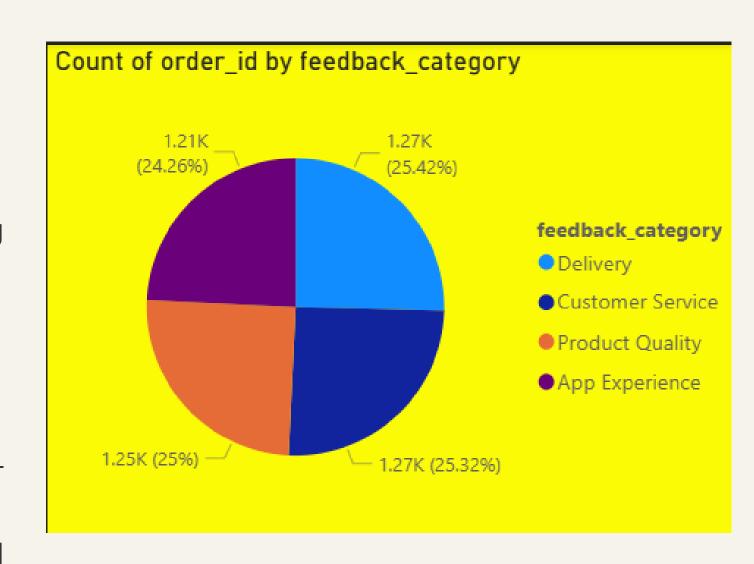


### Count of Order\_ID by Feedback Category

**Purpose:** To understand the distribution of feedback categories, helping identify key areas affecting customer satisfaction.

Visual: Pie Chart

- Delivery and Customer Service lead with about 25% each.
- Product Quality and App Experience follow closely at around 24–25%.
- Feedback is evenly spread, showing improvements are needed across all areas.



### **Customer Directory with Email Information**

**Purpose:** To provide a detailed view of customer records—including IDs, names, and emails—for identification, communication, and CRM data management.

Visual: Table

- The email domains used by customers are mostly from example.com, example.org, and example.net, indicating a controlled dataset or anonymized email data.
- Several customer names share the same last name (e.g., "Gara", "Banerjee"), suggesting possible family members or duplicate entries.
- The data is already clean and structured, with no visible null values or format inconsistencies in the customer\_id or email columns. short

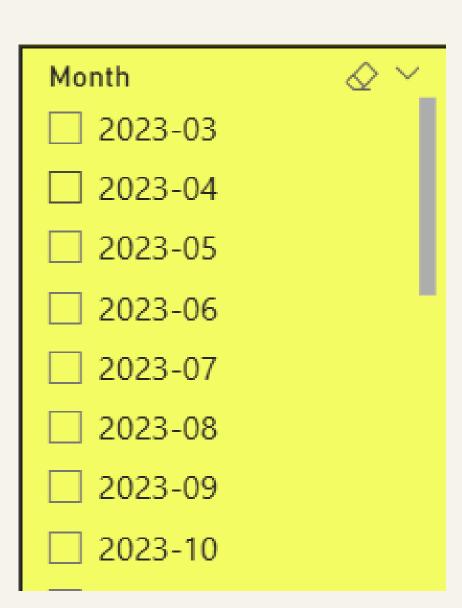
customer_id	customer_name	er_name email	
95912198	Bhavna Gara	zwagle@example.com	
47577193	Chaaya Wable	zvenkatesh@example.net	
73807097	Manbir Manda	zroy@example.org	
77661491	Jyoti Srinivas	zramesh@example.org	
74761384	Banjeet Gara	zpau@example.net	
35049420	Udarsh Mangal	zpatil@example.org	
22020776	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	zinal 84@ example.org	
40152070	Datrick Candbu	zoboonmobojon@ovemple.org	

### **Month Selection List**

**Purpose:** This list appears to be designed for selecting specific months, possibly for filtering or reporting purposes.

Visual: Table

- The list includes months from March 2023 to October 2023, suggesting a focus on a specific period or range.
- The checkboxes allow for multiple selections, indicating that users can choose more than one month at a time.
- The design is simple and straightforward, making it easy for users to understand and interact with.



### **Delivery Status Filter**

**Purpose:** The purpose of this visualization is to provide a filter for delivery status, allowing users to select specific status categories for analysis or reporting.

Visual: Table

- The filter includes three delivery status categories: "On Time", "Significantly Delayed", and "Slightly Delayed", indicating a nuanced approach to tracking delivery performance.
- The use of checkboxes allows users to select multiple status categories simultaneously, enabling flexible filtering and analysis.
- The simple and straightforward design of the filter suggests that it is intended for ease of use and understanding, likely for users who need to quickly analyze or report on delivery performance.

delivery_status 🔷 🗡		
On Time		
Significantly Delayed		
Slightly Delayed		

### **Delivery Status Filter**

**Purpose:** The purpose of this visualization is to display a key financial metric, specifically the total revenue, in a clear and concise manner.

Visual: Card

### Insights:

- The total revenue is displayed prominently as 4.97 million, indicating a significant financial figure.
- The use of a large, bold font for the revenue figure draws attention to its importance.
- The simple design and bright yellow background make the information easy to read and understand at a glance.

4.97M
Total Revenue

### **Damaged Percentage Display**

**Purpose:** The purpose of this visualization is to display the percentage of items or assets that are damaged.

Visual: Card

### Insights:

- The damaged percentage is 54.41%, indicating that more than half of the items or assets are damaged.
- The use of a simple and straightforward design makes the information easy to understand at a glance.
- The label "Damaged\_Percentage" clearly indicates what the displayed percentage represents.

54.41

Damaged\_Percentage

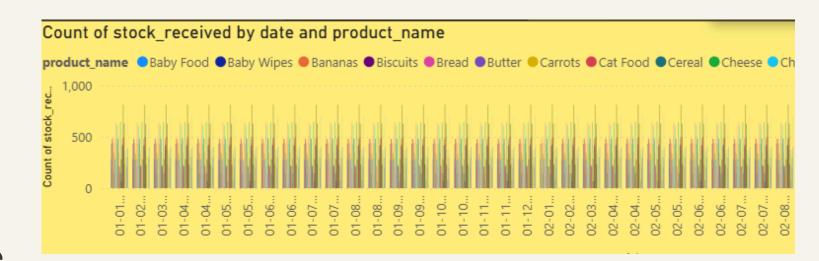
### Campaign Performance Table

**Purpose:** The purpose of this visualization is to display campaign data, including spend and revenue, for analysis and comparison

Visual: Table

- The table displays four columns: campaign\_id, campaign\_name, Sum of spend, and Sum of revenue, providing a clear overview of campaign performance.
- The campaigns listed include Referral Program, Flash Sale, and Email Campaign, each with different spend and revenue values.
- The total sum of spend and revenue is shown at the bottom of the table, allowing for easy calculation of overall campaign performance.

campaign_id ▲	campaign_name	Sum of spend
243	Referral Program	3,641.18
342	Flash Sale	2,900.46
417	Email Campaign	2,704.17
470	Facility Office	4 E 4 2 C E
Total		1,63,19,838.24



### Count of stock\_received by dateand product\_name

**Purpose:** The purpose of this visualization is to display the count of stock received over time for various products.

Visual: Bar Graph

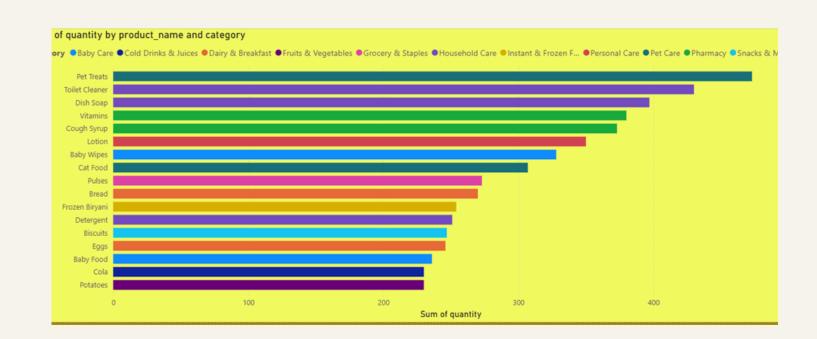
- The chart is a bar graph showing the count of stock received on the y-axis and the date on the x-axis.
- The data spans from January 1 to March 9, with multiple products represented by different colors.
- The products include Baby Food, Baby Wipes, Bananas, Biscuits, Bread, Butter, Carrots, Cat Food, Cereal, Cheese, Chips, Chocolates, Cola, Cookies, Cough Syrup, and Curd.

### Sum of Quantity by Product Name and Category

**Purpose:** The purpose of this visualization is to display the sum of quantity for different products across various categories.

Visual: Bar Graph

- The chart shows 15 categories, including Baby Care, Cold Drinks & Juices, Dairy & Breakfast, and more.
- Each category has a corresponding bar representing the sum of quantity.
- The graph is color-coded, with each category represented by a different color.
- The chart allows for easy comparison of quantity across different product categories.



### **AOV Display**

**Purpose:** The purpose of this visualization is to display the Average Order Value (AOV) in a clear and concise manner.

Visual: Card

### Insights:

- The AOV is displayed prominently as 994.48.
- The use of a large font size for the AOV value draws attention to its importance.
- The simple design and bright yellow background make the information easy to read and understand at a glance.

994.48 AOV

### **Total Revenue Display**

**Purpose:** The purpose of this visualization is to display the total revenue generated from marketing efforts

Visual: Card

### Insights:

- The total revenue is displayed prominently as 32.19 million.
- The use of a large font size for the revenue value draws attention to its importance.
- The simple design and green background make the information easy to read and understand at a glance.
- The label "Total Revenue\_marketing" provides context to the displayed value.

32.19M
Total Revenue\_marketing

### **Total Revenue Display**

**Purpose:** The purpose of this visualization is to display the total revenue generated from orders.

Visual: Card

### Insights:

- The total revenue is displayed prominently as 11.69 million.
- The use of a large font size for the revenue value draws attention to its importance.
- The simple design and yellow background make the information easy to read and understand at a glance.
- The label "Total Revenue Order" provides context to the displayed value.

11.69M

Total Revenue Order

### **Average Delivery Time Display**

**Purpose:** The purpose of this visualization is to display the average delivery time.

Visual: Card

- The average delivery time is displayed prominently as 4.44.
- The use of a large font size for the delivery time value draws attention to its importance.
- The simple design and green background make the information easy to read and understand at a glance.
- The label "Average of Delivery\_Time" provides context to the displayed value.

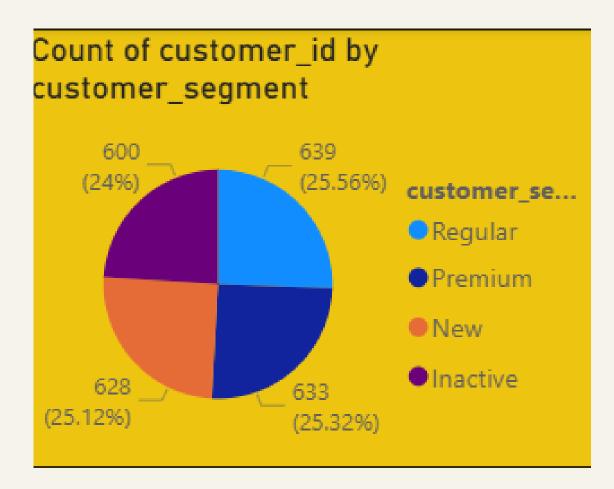


### Count of Customer ID by Customer Segment

**Purpose:** The purpose of this visualization is to display the distribution of customer IDs across different customer segments

Visual: Pie Chart

- The pie chart is divided into four sections, representing the Regular, Premium, New, and Inactive customer segments.
- The distribution of customer IDs is relatively even across the four segments, with each segment accounting for approximately 24–25.5% of the total.
- The Regular segment has the highest count of customer IDs at 639 (25.56%), followed closely by Premium at 633 (25.32%) and New at 628 (25.12%).
- The Inactive segment has the lowest count at 600 (24%).

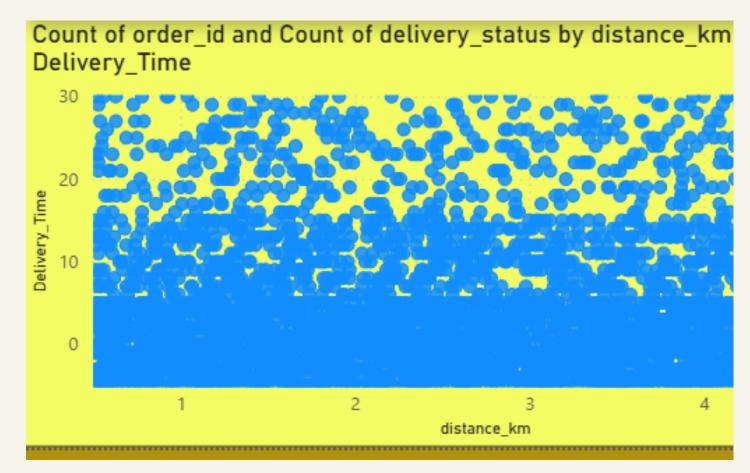


# Count of order\_id and Count of delivery\_status by distance\_km and Delivery\_Time

**Purpose:** The purpose of this visualization is to display the relationship between the distance (in kilometers) and delivery time, along with the count of order IDs and delivery status

Visual: Chart

- - The scatter plot shows a large number of data points concentrated between 0-4 km on the x-axis (distance\_km) and 0-30 on the y-axis (Delivery\_Time).
- - The density of data points is highest between 0-3 km and delivery times of 0-20.
- - There is no clear correlation between distance and delivery time, as the data points are scattered across the plot without a distinct pattern.

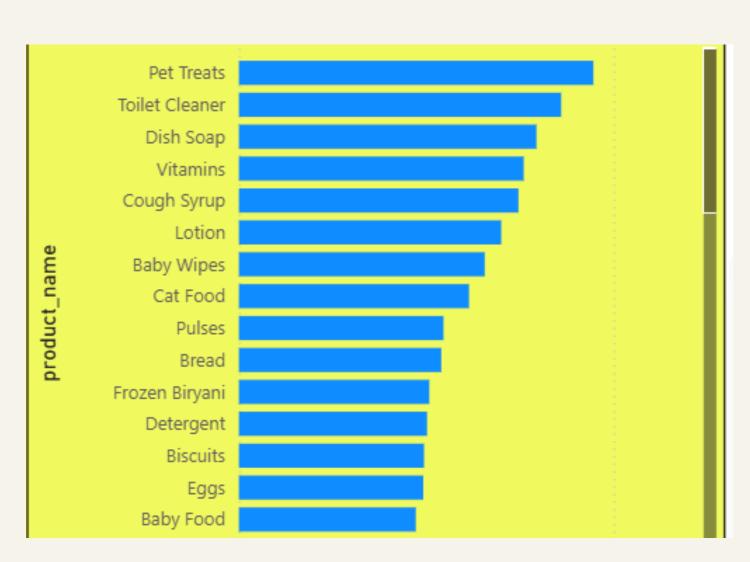


### Total Qty by product\_name

**Purpose:** The purpose of this visualization is to display the total quantity of various products sold or stored.

Visual: Bar Chart

- The bar chart lists 16 products on the y-axis, with their corresponding total quantities on the x-axis.
- The product "Pet Treats" has the highest total quantity, followed closely by "Toilet Cleaner" and "Dish Soap".
- The top three products ("Pet Treats", "Toilet Cleaner", and "Dish Soap") have significantly higher total quantities compared to the rest.
- The quantities range from approximately 350 to over 450.



### Count of order\_id by Pincode

**Purpose:** The purpose of this visualization is to display the distribution of orders across different pincodes.

Visual: Table

- The table lists 25 unique pincodes with their corresponding order counts, ranging from 1 to 5 orders.
- The pincodes 1489, 8262, 14967, and 15615 have the highest order counts, with 5, 4, 4, and 5 orders, respectively.
- The total count of orders across all pincodes is 5000, indicating a substantial number of orders are being processed.

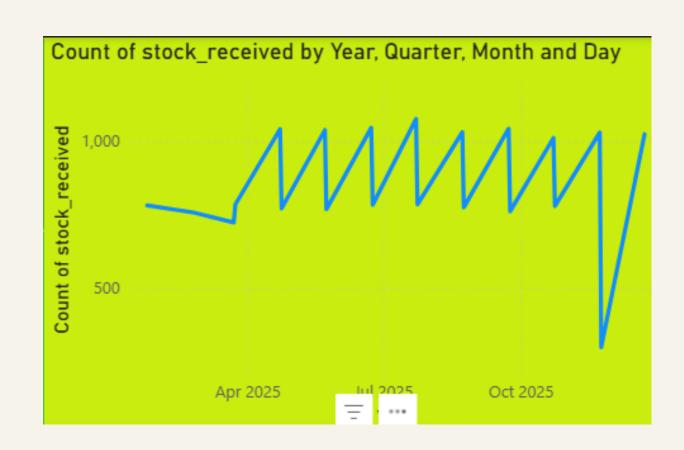
5
2
2
1
2
3
2
1
2
4
3
2
2
2
2
2
3
3

### Count of stock\_received by Year, Quarter, Month and Day

**Purpose:** The purpose of this visualization is to display the count of stock received across different time granularities.

Visual: Line Graph

- The graph shows a fluctuating trend in the count of stock received, ranging between approximately 500 and 1,000.
- The count of stock received appears to be cyclical, with peaks and troughs occurring at regular intervals.
- The most recent data point (October 2025) shows a significant drop in the count of stock received.



### **Gross Profit Metric**

**Purpose:** The purpose of this visualization is to display the gross profit metric.

Visual: Card

### Insights:

- The gross profit is 35.99K, which translates to 35,990 in standard numerical format.
- The use of "K" denotes that the value is in thousands, making it easier to read and understand large numbers.
- The metric is presented on a lime green background, which is often used to indicate positive or noteworthy information.

35.99K Gross Profit

### **Gross Profit Metric**

Purpose: Sum of Returning Customers Metric

Visual: Card

- The sum of returning customers is 7 million.
- The use of "M" denotes that the value is in millions, making it easier to read and understand large numbers.
- The metric is presented on a green background, which is often used to indicate positive or noteworthy information.



### **Sum of Retention Rate Metric**

**Purpose:** The purpose of this visualization is to display a specific metric related to the retention rate. However, the label "Sum of Retention Rate" seems misleading because retention rate is typically expressed as a percentage, not a sum.

Visual: Card

### Insights:

- The value displayed is 7.46 million, indicating a significant quantity related to the retention rate.
- The use of "M" denotes that the value is in millions, making it easier to read and understand large numbers.
- The metric is presented on a green background, which is often used to indicate positive or noteworthy information.

7.46M

Sum of Retention Rate

### **Sum of ROAS Metric**

**Purpose:** The purpose of this visualization is to display a specific metric related to the Return on Ad Spend (ROAS).

Visual: Card

### Insights:

- The value displayed is 12.85 thousand, indicating a significant ROAS.
- The use of "K" denotes that the value is in thousands, making it easier to read and understand large numbers.
- The metric is presented on a green background, which is often used to indicate positive or noteworthy information.

12.85K
Sum of ROAS

### **Count of Delay Delivery**

**Purpose:** The purpose of this chart is to display the total count of delayed deliveries, which is 5000.

Visual: Card

- Total delayed deliveries: 5000
- No context on time period or total deliveries
- Potential area for improvement in delivery process



### **Sum of Total Customers**

**Purpose:** The purpose of this chart is to display the total number of customers, which is 5000.

Visual: Card

- The total number of customers is 5000.
- The visualization is straightforward and clearly communicates the total count of customers.
- The use of a simple numeric display effectively conveys the information without unnecessary complexity.



### **Total Quantity Count**

**Purpose:** The purpose of this chart is to display the total quantity, which is 10,000 units, in a clear and concise manner.

Visual: Card

### Insights:

- The total quantity is 10,000 units.
- The chart is straightforward and does not provide any additional context or breakdown of the quantity.
- The use of "10K" instead of "10,000" suggests a shorthand or abbreviated form, which is commonly used in digital or informal contexts.

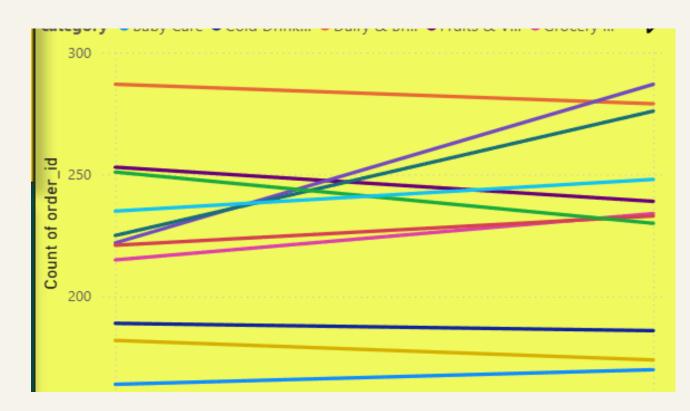
10K Total Quantity

### Count of order\_id by Year and category

**Purpose:** The purpose of this chart is to analyze the change in the count of order\_id across different categories between 2023 and 2024. It helps to identify which categories have seen an increase or decrease in orders, providing insights into consumer behavior and demand trends.

Visual: Line Graph

- The count of order\_id has increased for most categories from 2023 to 2024, indicating a general rise in orders across these categories.
- The categories "Fruits & V..." and "Grocery ..." show a significant increase in the count of order\_id, suggesting a growing demand in these areas.
- The category "Baby Care" remains relatively stable with minimal change, indicating consistent but not growing demand.



#### **Product Quantity Summary**

Purpose: The purpose of this chart is to summarize the total quantity of various

products

Visual: Table

- The product with the highest total quantity is Bananas, with 85 units.
- Instant Noodles have a total quantity of 73 units, which is more than Milk (56 units), Lemonade (45 units), and Spinach (40 units).
- The total quantity across all products is 10034 units, indicating a substantial overall inventory or sales volume.

product_name	Total Quantity
Spinach	40
Lemonade	45
Milk	56
Instant Noodles	73
Bananas	85
Total	10034



Count of order id by Year

**Purpose:** The purpose of this chart is to illustrate the change in the count of order\_id over a one-year period, specifically from 2023 to 2024. It aims to provide a visual representation of the trend in order volume, allowing viewers to quickly understand whether the count of order\_id has increased, decreased, or remained stable during this timeframe.

Visual: Line Graph

- - The count of order\_id has increased from 2444 in 2023 to 2556 in 2024.
- - The overall trend indicates a positive growth in the number of orders over the one-year period.
- - The increase is approximately 112 orders, representing a growth rate of about 4.58% ((2556 2444) / 2444 \* 100).

category	Baby Food	Baby Wipes	Bananas	Biscuits	Bread	Butter	Carrots	Cat Food	Cereal	Cheese	Chips	Chocolates	Cola	Cookies	Cough Syrup	Curd	Detergent	I
Baby Care	236	328																Ī
Cold Drinks & Juices													230					
Dairy & Breakfast					270	148			86	182						126		
Fruits & Vegetables			85				191											
Grocery & Staples																		
Household Care																	251	
Instant & Frozen Food																		
Personal Care																		
Pet Care								307										
Pharmacy															373			
Snacks & Munchies				247							171	131		97				
Total	236	328	85	247	270	148	191	307	86	182	171	131	230	97	373	126	251	

#### **Count of Products by Category**

Purpose: The purpose of this table is to display the count of products across various categories

Visual: LTable

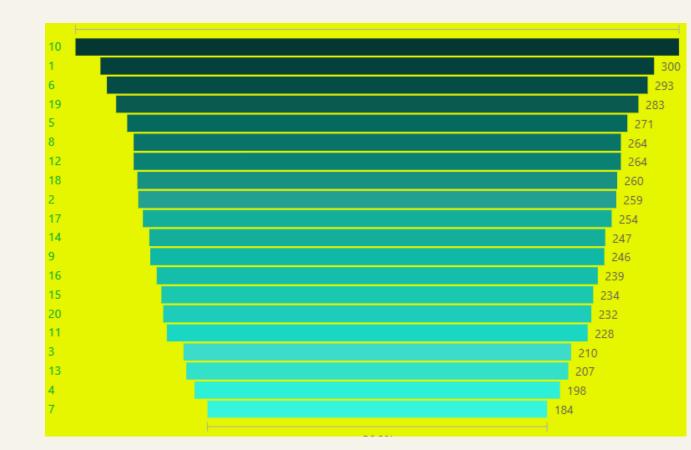
- The "Snacks & Munchies" category has the highest count across multiple products, with notable counts for Chips (171), Chocolates (131), and Cola (230).
- The "Fruits & Vegetables" category has a significant count for Carrots (191) and Bananas (85).
- The "Household Care" category has a notable count for Detergent (251).

# Count of order\_id, Sum of impressions, Sum of clicks and Sum of conversions by total\_orders

**Purpose:** - The purpose of this chart is to illustrate the distribution of total orders across different geographical areas or categories, providing insights into the variation in order volume and related metrics such as impressions, clicks, and conversions.

Visual: Chart

- The table contains 15 different customer feedback statements, ranging from very positive to very negative.
- The feedback statements cover various aspects of the customer experience, including product quality, delivery, customer service, and overall satisfaction.
- By analyzing these statements, businesses can identify patterns and trends in customer feedback to inform their improvement strategies.

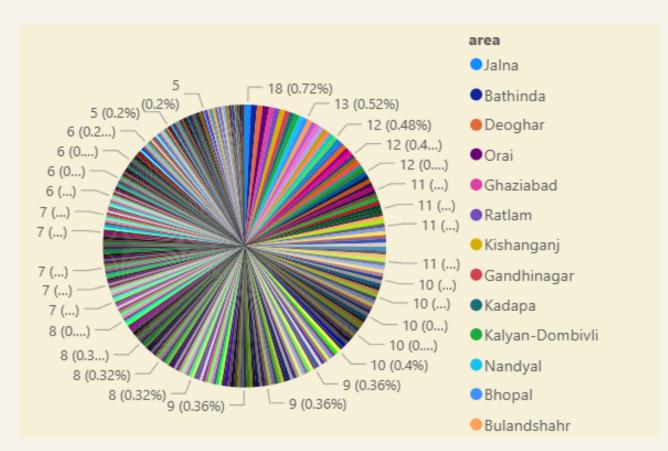


#### Count of total\_orders by area

**Purpose:** - The table aims to categorize customer feedback into negative, neutral, and positive sentiments, helping businesses understand their customers' experiences and identify areas for improvement.

Visual: Pie Chart

- The chart displays a diverse range of areas with varying counts of total orders, indicating a broad geographical spread of orders.
- The area with the highest count of total orders is not explicitly labeled but has 18 orders, representing 0.72% of the total.
- Multiple areas have relatively low counts, with several having 5 or 6 orders, suggesting a long tail in the distribution of orders across areas.



#### Sum of Customer Lifetime Value (CLV)

**Purpose:** The simplicity of the visualization suggests that it is intended to provide a quick overview or key performance indicator (KPI) for the business or organization, highlighting the overall value of their customers.

Visual: Card

#### Insights:

- The total Customer Lifetime Value (CLV) is 29.03 million, indicating a substantial overall value of the customer base.
- The simplicity of the visualization suggests that it is intended to provide a quick overview or key performance indicator (KPI) rather than detailed insights.
- The use of a large, bold font for the value emphasizes its importance, likely indicating that CLV is a critical metric for the business or organization.

29.03M

Sum of CLV

#### **Sum of ROAS**

**Purpose:** The simplicity of the visualization suggests that it is intended to provide a quick overview or key performance indicator (KPI) for the advertising campaigns, highlighting the overall effectiveness of the ad spend.

Visual: Card

#### Insights:

- The total ROAS is 12.85K, showing a significant return on ad spend.
- The simple visualization serves as a KPI for ad campaigns.
- A ROAS of 12.85K indicates a substantial return for every unit spent on ads.

12.85K

Sum of ROAS

#### **Total Revenue Order**

**Purpose:** The purpose of this visualization is to display the total revenue generated from orders, which is 11.69 million.

Visual: Card

#### Insights:

- The total revenue from orders is 11.69 million, indicating a significant amount of sales or transactions.
- The simplicity of the visualization suggests that it is intended to provide a quick overview or key performance indicator (KPI) for the business or organization.
- The large revenue figure could imply a successful sales strategy or a popular product/service.

11.69M

Total Revenue Order

#### **Customer Feedback Sentiment Analysis**

**Purpose:** - This chart aims to categorize customer feedback into negative, neutral, and positive sentiments, helping businesses understand their customers' experiences and identify areas for improvement.

Visual: Table

- The table contains 15 different customer feedback statements, ranging from very positive to very negative.
- The feedback statements cover various aspects of the customer experience, including product quality, delivery, customer service, and overall satisfaction.
- By analyzing these statements, businesses can identify patterns and trends in customer feedback, such as common complaints or praises, to inform their improvement strategies.

feedback_text	Negative	Neutral	Pos
Average experience, could improve.			
Customer service was not helpful.			_
Customer service was very helpful			
Customer service was very helpful.			
Delivery was fine, but the product could be better.			
Delivery was late and I was unhappy.			
Excellent quality, will buy again!			
Good selection of products.			
Great prices and fast delivery!			
Highly recommended!			
I had a bad experience.			
It was okay, nothing special.			
Items were in perfect condition.			
Items were missing from my order.			
Not worth the price I paid.			
Nothing to complain about, but nothing exceptional			

### KEY FINDINGS

- Customer Engagement: Most customers place 1–5 orders, while a small segment places up to 10 orders, indicating potential for loyalty programs.
- Feedback Distribution: Customer feedback is evenly spread across Delivery, Customer Service, Product Quality, and App Experience, showing the need for holistic improvements.
- Revenue Insights: Marketing campaigns like Referral and Flash Sales generate high ROI, contributing significantly to total revenue of ₹4.97M.
- **Product Demand:** Pet Treats, Toilet Cleaners, and Dish Soap are the top-selling items, with Baby Care and Household Care leading categories.
- Operational Performance: Average delivery time is 4.44 hours, but 5000 delayed deliveries indicate a need for better logistics.



The analysis of Blinkit's operational and marketing data reveals key opportunities for business growth. Customer engagement is moderate, with most customers placing only a few orders, suggesting the need for stronger loyalty strategies. Feedback distribution shows balanced concerns across delivery, service, product quality, and app experience, indicating the importance of overall service improvements. Marketing campaigns, especially Referral and Flash Sales, demonstrate strong ROI and should be further optimized. While popular products like Pet Treats and Household Care items drive sales, operational challenges such as delayed deliveries highlight the need for enhanced logistics. Overall, addressing these areas will improve customer satisfaction, boost retention, and increase profitability.



## REFERENCES

- Kaggle
- Youtube

# THANK YOU

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