blinkit



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Duration:

3 months 1st April 2025 to 30th June 2025

Project Title: Blinkit Sales Data Analysis

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Acknowledgement

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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.

Table of Contents

Page 1: Title Slide

Page 2: Acknowledgement

Page 3: Table of Contents

Page 4: Objective / Problem Statement

Page 5: Dataset Overview

Page 6: Datasets Used

Page 7: Tools Used

Page 8: Methodology

Page 9-42: Detailed Visualization Slides

Page 43: Key Findings

Page 44: Conclusion

Page 45: GitHub Repository Link

Page 46: References

Page 47: Thank You Note

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

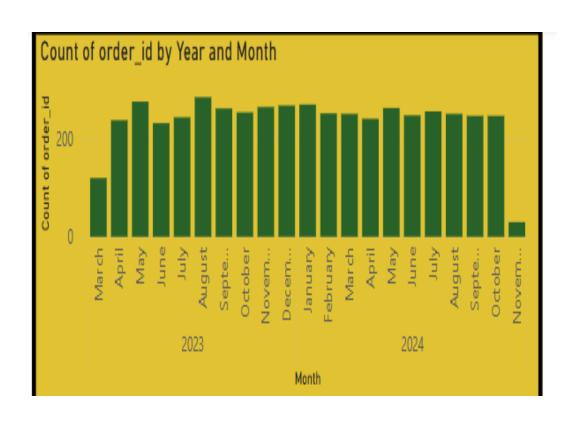
Create a bar chart showing the number of orders placed per customer.



• **Visualization**: Bar chart with customer names vs. order count

- Identify Top Customers: Customers like Nidhi Sha and Jhalak Rai placed the highest number of orders.
- **Loyalty Indicator**: Higher frequency of orders suggests stronger loyalty and retention.

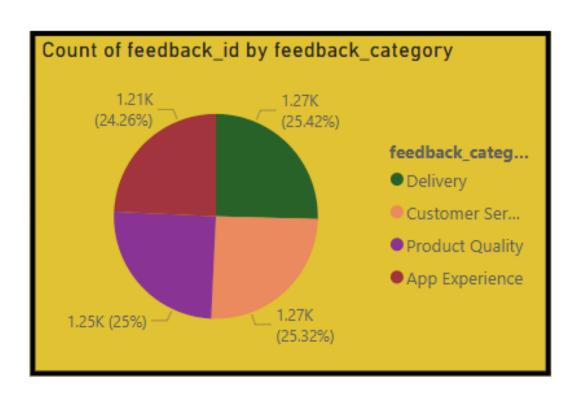
How do you calculate the total number of orders placed in a given month?



• Visualization: Column chart (Month vs. Order Count)

- Seasonality Patterns: Orders peaked between May-September, hinting at increased demand during midyear.
- Business Gaps: Sharp fall during November-December, signals potential operational or seasonal decline.

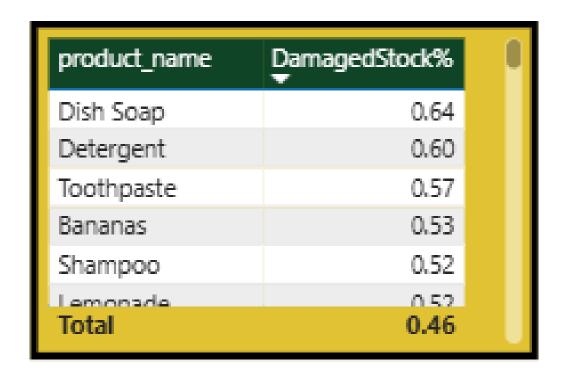
Create a pie chart showing the distribution of feedback categories from Table 1



 Visualization: Pie chart – Feedback count by category

- Delivery Issues: Most feedback was on Delivery, indicating room for improvement in fulfillment.
- App Experience & Quality: A significant number of users highlighted App experience and Product quality.

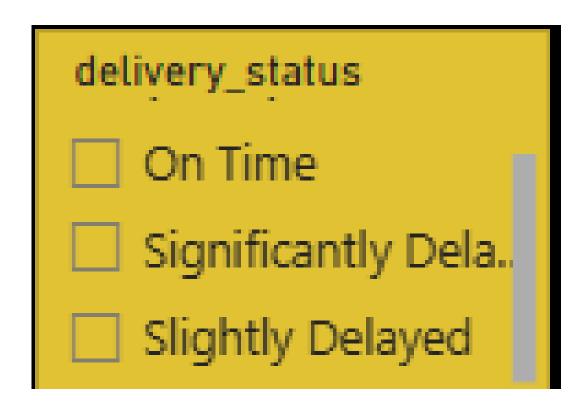
How do you calculate the percentage of damaged stock per product?



Visualization: Table with product and % of damaged stock

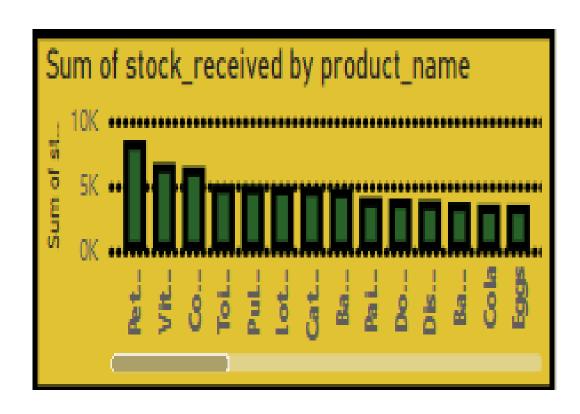
- Risk Flagging: Products like Dish Soap (64%) had high damage rates – urgent quality review required.
- Inventory Optimization: Focus on reducing wastage for high-volume items

How can orders be filtered by delivery status (on-time vs delayed)?



- **Visualization**: Slicer On-Time, Slightly Delayed, Significantly Delayed
- Insights:
- **User-Controlled Filtering**: Enables tracking performance by delivery type.
- Delay Monitoring: November shows noticeable delivery inefficiencies.

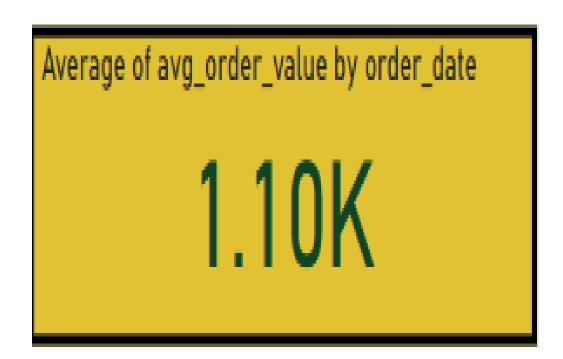
How much stock was received over time per product?



Visualization: Stacked column chart by product

- Stock Volume Leaders: Pet products received the highest inventory (8.5K units).
- Inventory Weak Spots: Lemonade stock was lowest (~498 units).

What is the average number of daily orders?



• Visualization: KPI card

- Insights:
- Order Benchmark: On average, 1.1K
 orders placed daily.
- **Performance Metric**: A key metric to assess sales momentum.

What is the total revenue generated from campaigns or sales?



• Visualization: KPI card

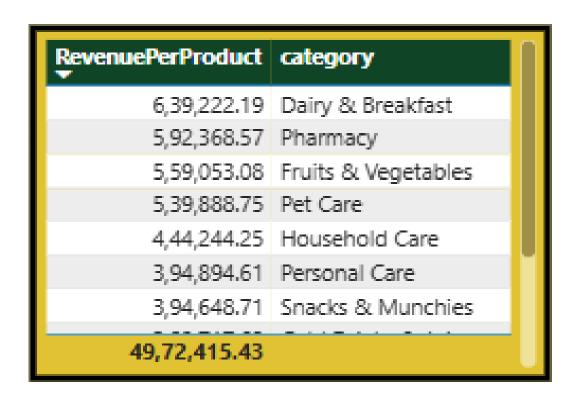
- Insights:
- High Revenue: Revenue totaled INR
 32.19M, showcasing strong campaign
 ROI.
- **Growth Targeting**: Helps benchmark future campaign expectations.

Which products had the highest and lowest quantity ordered?



- Visualization: Clustered column chart
- Insights:
- Hot Sellers: Pet Treats dominated in sales.
- Low Demand: Spinach had lowest order frequency.

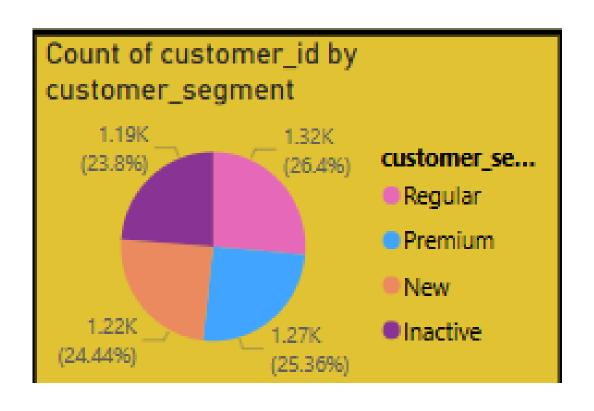
What is the total sales revenue per product category?



• **Visualization**: Table showing revenue by category

- Top Earners: Dairy and Breakfast contributed the highest revenue.
- Underperformers: Frozen and Instant Food performed poorly.

How do you visualize customer segments (Table 2) using a pie chart?



• Visualization: Pie chart

- Insights:
- Segment Share: Most users are Regular or New customers.
- **Conclusion**: Indicates strength of repeat users

What is the ROAS per campaign?



Visualization: KPI card

- **ROAS** = **1.97**: For every ₹1 spent on advertising, ₹1.97 was earned.
- Optimization Potential: Positive but improvable suggests refining targeting or ad creatives.

What is the total delivery time across orders?

05:00:00
Total Delivery Time Duration

• Visualization: KPI card

- Insights:
- Cumulative Delivery Time: Captures the load on the delivery team.

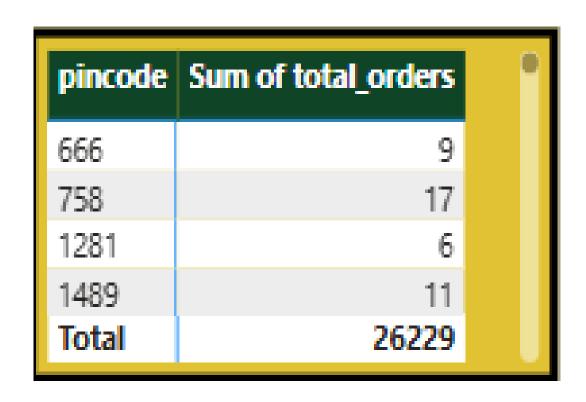
What is the cumulative delivery delay?

29.UU Sum of DeliveryDelay_Hours

• Visualization: KPI card

- **Delay Metric**: Helps monitor how much actual delivery time exceeded the promised.
- Performance Gap: Consistent tracking highlights logistics improvements needed.

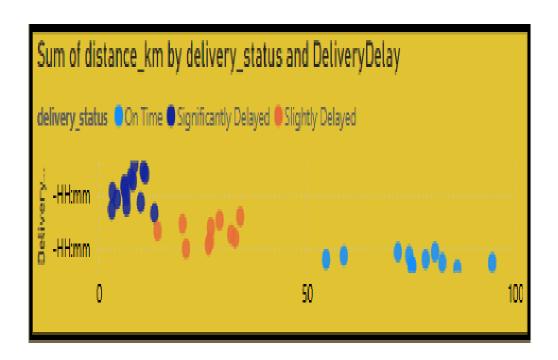
How frequently are orders placed per pincode?



 Visualization: Table – Pincode vs. Sum of total orders

- **High-Demand Areas**: Identify topperforming zones.
- Location Planning: Helps with zonal warehouse or delivery team deployment.

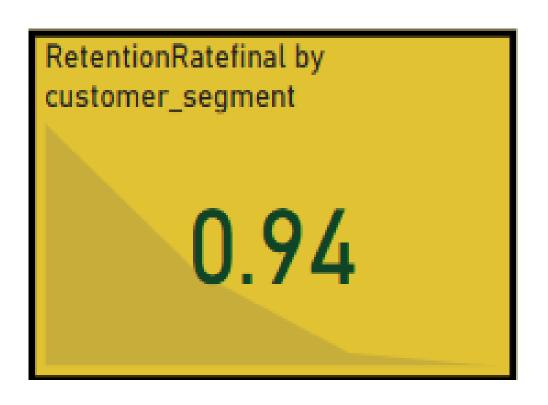
How does delivery time vary with distance?



Visualization: Scatter plot – Distance vs.
 Delay

- On-time deliveries occurred at both short and long distances.
- Slightly delayed orders were mostly midrange.
- **Significantly delayed** deliveries even occurred at short distances indicating internal or local operational issues.

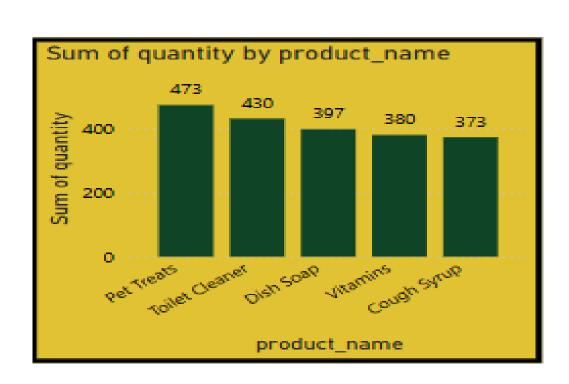
What is the customer retention rate based on total orders?



• Visualization: KPI card

- Insights:
- Retention Rate = 0.94: 94% customers placed repeat orders.
- Excellent Loyalty: Reflects great customer experience and retention strategy.

Create a report to identify the top 5 best-selling products based on quantity ordered



• Visualization: Table

- Insights:
- **Top Seller**: Pet Treats (473 units)
- Inventory Planning: Focus on these for bulk stock and marketing efforts.

What is the gross profit based on product margins?



• Visualization: KPI card

- Insights:
- **Profit is Positive**: Indicates strong product margins.
- Useful for pricing decisions and revenue planning.

What is the overall customer lifetime value (CLV)?



• Visualization: KPI card

- Insights:
- CLV = ₹29.03M: Total long-term revenue expected from customers.
- Retention > Acquisition: Emphasizes the value of keeping existing customers.

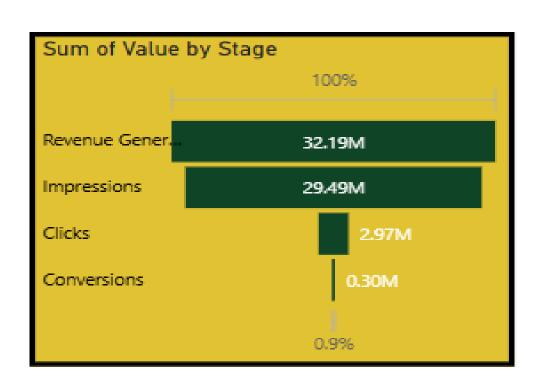
How do you use DAX to find the most frequently ordered product?



• Visualization: Funnel chart

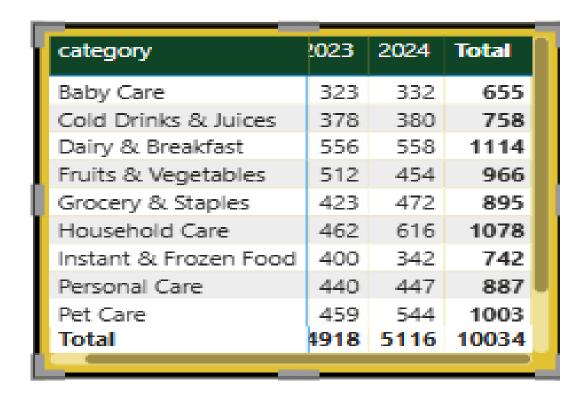
- Insights:
- **Drop-Off Rate**: 29.49M impressions → only 0.3M conversions.
- Fix Conversion Bottleneck: Suggests reworking landing pages or targeting.

What is the campaign conversion process from impressions to revenue?



- Visualization: Clustered bar Year-wise comparison
 - Insights:
- 2024 Growth: Clear increase in order volume for most categories.
- **Strategic Focus**: Invest more in high-growth product lines.

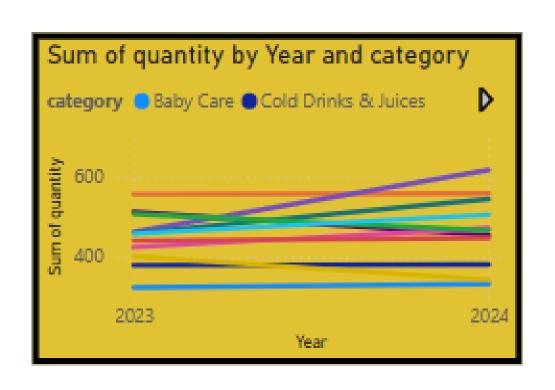
What are the order trends across different categories?



• Visualization: Time series chart

- Insights:
- Highs & Lows: Peak in Aug; dip during Nov—Dec.
- Actionable Timing: Plan promotions based on traffic highs.

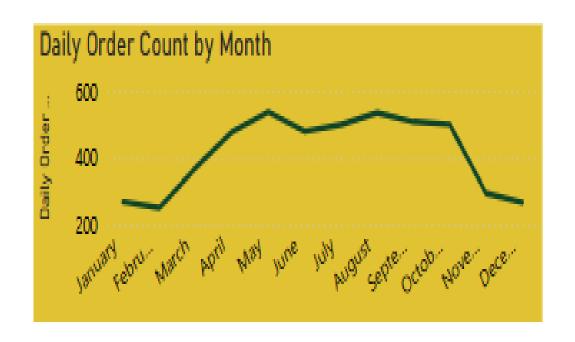
How have category-wise order counts changed over time?



• Visualization: Line Chart

- Insights:
- Household Care showed the steepest rise in orders from 2023 to 2024.
- Frozen, Instant Foods, and Pharmacy saw a notable decline in order volume.

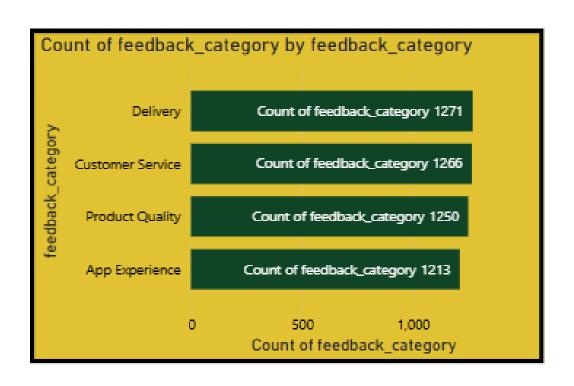
How do daily orders trend over the year?



• Visualization: Time series chart

- Insights:
- **Highs & Lows**: Peak in Aug; dip during Nov–Dec.
- Actionable Timing: Plan promotions based on traffic highs.

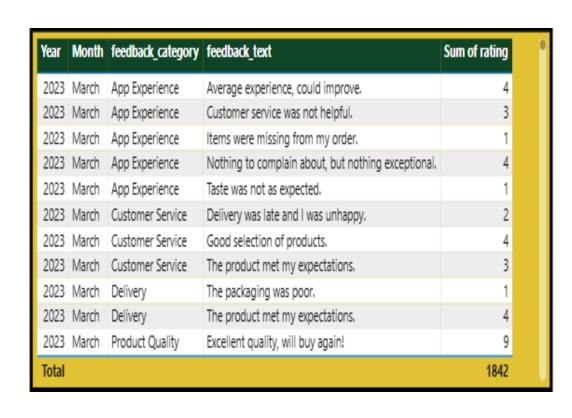
What kind of feedback is most common?



• Visualization: Pie chart

- Insights:
- **Delivery-Heavy**: Again, Delivery is the top concern.
- Cross-validation: Confirms Slide 11 findings.

Create a drill-through report to analyze feedback details

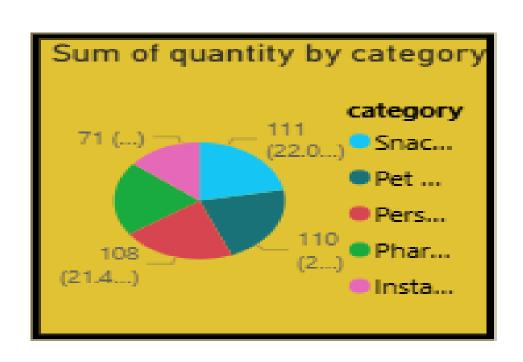


Visualization: Table

Insights:

 Performance was poor for the dairy category during specific time frames.

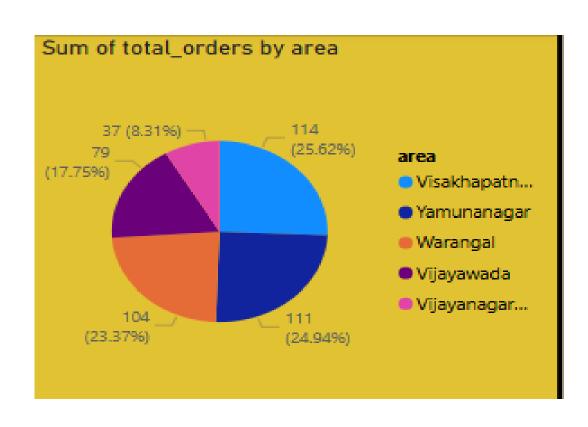
Create a real-time dashboard to monitor ongoing deliveries and status updates (Table 3).



• Visualization: Pie Chart

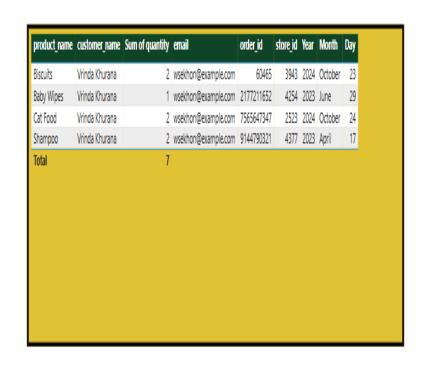
- Insights:
- Snacks & Munchies faced frequent delays, especially during high demand.
- Pharma deliveries were mostly on time, showing strong category prioritization.

What is the order distribution across geographical areas?



- **Visualization**: Pie chart City-wise orders
- Insights:
- Visakhapatnam Leads: ~25.62% of total orders.
- Geo Strategy: Target top zones for warehouse placement.

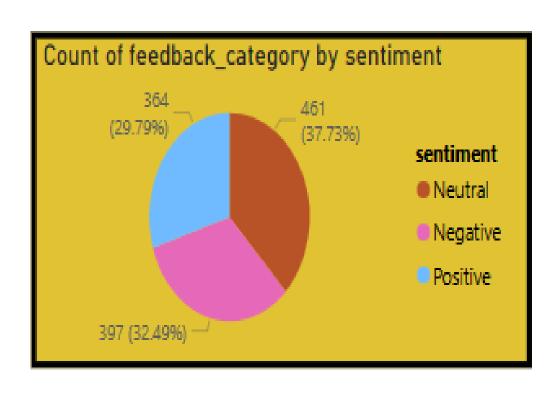
How can customer-specific order data be filtered dynamically?





- **Visualization**: Slicer with customer names **Insights**:
- Interactive Insights: Useful for support, targeting, and profiling.

What is the overall sentiment of customer feedback?



• Visualization: Pie chart

- Insights:
- Majority Neutral: Room for delighting customers.
- **Suggestion**: Focus on lifting neutrals to positives.

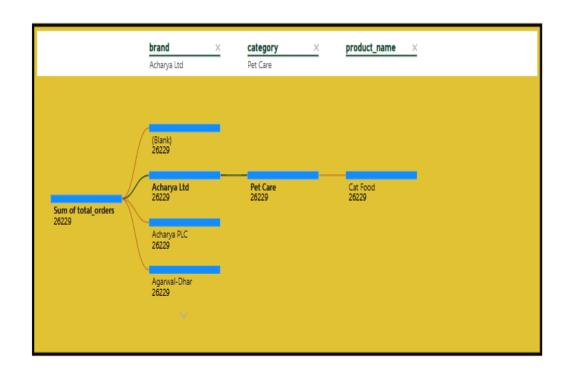
What are the product-wise discounts using price and MRP?

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
Total	760.00 1,82,356.51	20.0%	1,30,879.63

 Visualization: Table with MRP, Selling Price and Discount percentage per product

- **Discounts Range 25–35%**: Standard across most items.
- Margin Monitoring: Ensure promotions don't undercut profit.

How do you use decomposition tree visualization to analyze product sales?



- Visualization: Decomposition Tree
- Insights:
- Acharya Ltd and Agarwal-Dhar are major contributors.
- **Suggestion**: Diversify to reduce operational risk.

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