zomato

SQL ANALYTICS

Zomato Analytics Project:

User Behaviour, Revenue, Segmentation & Retention Analysis

DATA ANALYTICS PORTFOLIO PROJECT | TEJAS BHAVSAR

PROJECT OBJECTIVES

UX Funnel Analysis

Understand how users of Zomato convert from sessions to completed orders, and finding touchpoints that need improvement.

Revenue Attribution

Identify which cities, channels, and customer segments drive the most significant revenue.

Retention Strategies

Build segment-specific strategies using RFM analysis: Champions, Loyal, and Growth users.

Business Impact

Translate raw transactional data into actionable marketing and product recommendations.

THE DATA

OVERVIEW OF DATASETS

9
TABLES

1 YR
TRANSACTIONS

6
TIER-1 CITIES

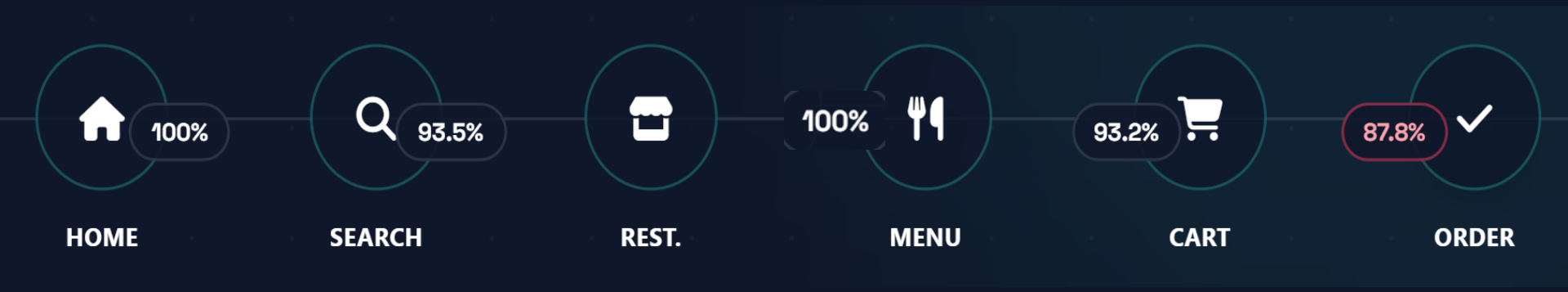
User & Sessions Tables	Order Tables	Food & Delivery Tables
users	orders	restaurants
app_sessions	order_items	menu
app_pageviews	order_items_cancelled	delivery_agents

FINAL DATASET
CLEANED & PROCESSED

14,933
COMPLETED ORDERS

₹ 1.2 CR +
GMV

UX FUNNEL ANALYSIS



THE INSIGHT

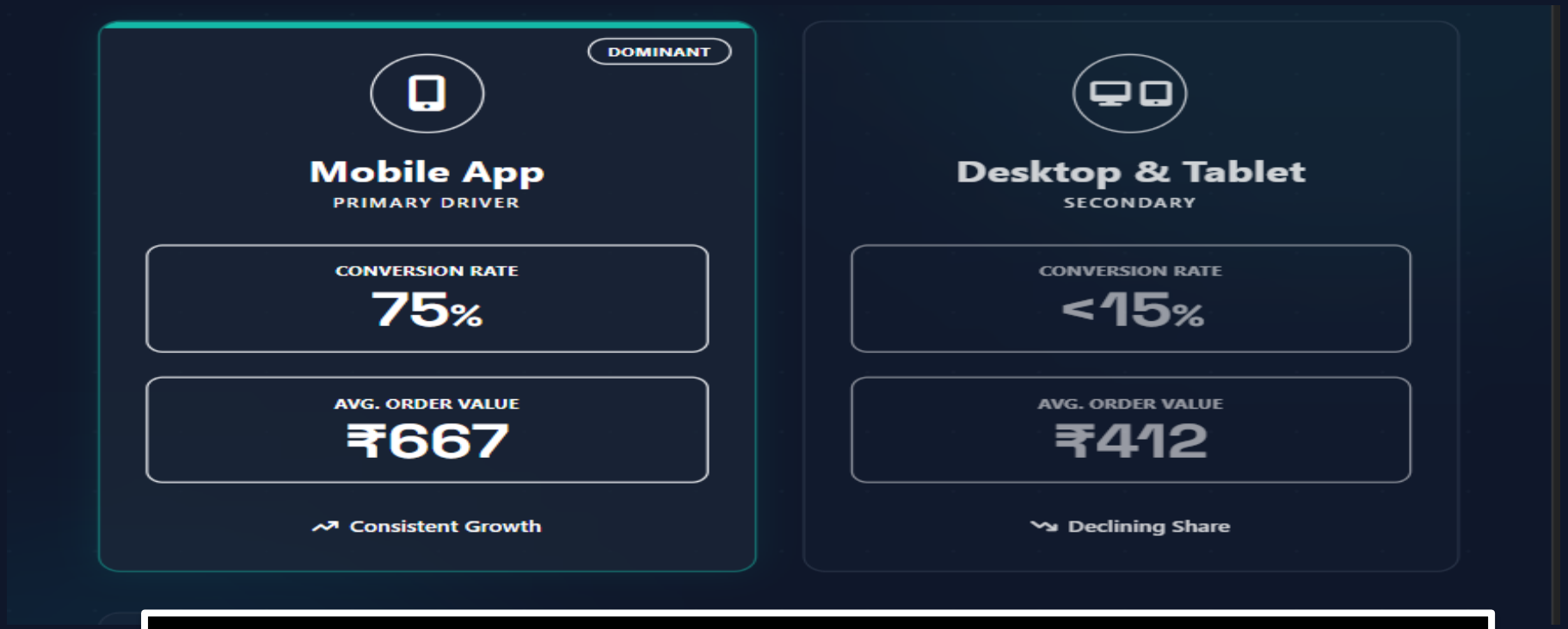
The UX flow is technically sound with high funnel integrity. **12.2% Cart Abandonment Rate** is not functional but **commercial** in nature, due to:

- Unexpected delivery fees
- Lack of applicable discounts
- Price comparison with Swiggy

RECOMMENDATIONS

- Show potential savings ("You saved **₹50**") prominently.
- Simplify payment steps (Default to last method).
- Implement "abandoned cart" push notifications within **15** mins.

DEVICE-WISE ANALYSIS



RECOMMENDATIONS: MOBILE-FIRST

Redirect 80% of developer resources to mobile optimization. Implement specific mobile-only features like "Shake to Feedback“ and Gamified Tier Rewards only on App, via Zomato Wallet. Keep App UX polished, filters for food hunting and menu simple.

ACQUISITION CHANNEL ANALYSIS

Direct App
ORGANIC

BRAND STRENGTH

TOTAL GMV
₹30.2L

CONVERSION
75.2%

Google
PAID SEARCH

HIGH INTENT

TOTAL GMV
₹15.1L

CONVERSION
74.8%

Social
FB / IG / ADS

VOLUME + ACQ.

TOTAL GMV
₹15.6L

CONVERSION
75.0%

Email / Push
CRM

RETENTION

TOTAL GMV
₹14.8L

CONVERSION
74.9%

MARKETING RECOMMENDATION

Zomato should focus on Social channels (FB/IG) , which bring the volume of new customers. Direct App has plateaued, **Paid Social Ads** and **activation campaigns** targeting new user segments are required.

CITY-WISE ANALYSIS

Analysing Performance and Growth Profiles of Metro/Tier 1 Cities

HYDERABAD

High Growth Potential. Largest "Loyal Customer" base with 554 active users. Stable above average AOV among Tier 1s. Also, the Potential Loyalists segment is 2nd highest. City to invest in for future growth.

BANGALORE

Volume Leader. Strong overall GMV contribution with mature spending habits and stable AOV and revenue performance.

DELHI

Premium Market. Highest Average Order Value (AOV) ranging between **₹669 - ₹748** across segments. Largest revenue contributor (**17.36%** of Zomato National GMV) Key target for testing premium services , more bundling offers and new Gold Membership tiers.

CHENNAI

Mature Market. Currently approaching plateau; focus on retention over acquisition. Average in AOV, and revenue contribution is 3rd Highest but growth stagnant.

KOLKATA

Star Among Cities: 2nd Largest Revenue Contributor (**17.35%** of Zomato National GMV), with largest number of largest number of Champions. Same as Delhi, focus on Premiumization and Retention of Loyal customers to keep revenue flowing as it's the Star alongside Delhi.

MUMBAI

Needs Attention: Least number of Loyal and Champions, low AOV and revenue contribution. Switching behaviour is high and order volume captured lower than the Potential of this market

RFM SEGMENTATION SCORING PATTERN

RFM Scoring Pattern and RFM Logic is Explained Via SQL Query

```sql
CREATE view customer_rfm_analysis AS
SELECT
u.user_id,
u.city,
u.age,
u.gender,
u.gold_member,
datediff(CURDATE(), MAX(STR_TO_DATE(o.order_time, '%Y-%m-%d %H:%i:%s'))) as recency,
COUNT(o.order_id) as frequency,
SUM(o.total_price) AS monetary,
AVG(o.total_price) as avg_order_value
FROM users u
JOIN app_sessions a
ON u.user_id = a.user_id
JOIN orders o
ON o.app_session_id = a.app_session_id
GROUP BY u.user_id, u.city, u.age,u.gender,u.gold_member;
```

```sql
# --- RFM Scoring Scale:
CREATE VIEW rfm_analysis_score AS
SELECT *,
CASE
    WHEN recency BETWEEN 155 AND 228 THEN 5
    WHEN recency BETWEEN 229 AND 302 THEN 4
    WHEN recency BETWEEN 303 AND 376 THEN 3
    WHEN recency BETWEEN 377 AND 450 THEN 2
    ELSE 1
END AS recency_score,
CASE
    WHEN frequency <= 10 THEN 5
    WHEN frequency <= 7 THEN 4
    WHEN frequency <= 5 THEN 3
    WHEN frequency <= 3 THEN 2
    ELSE 1
END AS frequency_score,
CASE
    WHEN monetary BETWEEN 104 AND 1590 THEN 1
    WHEN monetary BETWEEN 1591 AND 3076 THEN 2
    WHEN monetary BETWEEN 3077 AND 4562 THEN 3
    WHEN monetary BETWEEN 4563 AND 6048 THEN 4
    ELSE 5
END AS monetary_score
FROM customer_rfm_analysis;

select *
from rfm_analysis_score;
```

RFM SEGMENTATION SCORING PATTERN

```
38  CREATE VIEW rfm_scores AS
39  Select *,
40  (recency_score + frequency_score + monetary_score) AS rfm_total
41  from rfm_analysis_score2;
42
```

```
CREATE VIEW RFM_Analysis AS
SELECT *,
CASE
    WHEN rfm_total >= 13 THEN 'Champions'
    WHEN rfm_total BETWEEN 10 AND 12 THEN 'Loyal Customers'
    WHEN rfm_total BETWEEN 7 AND 9 THEN 'Potential Loyalists'
    WHEN rfm_total BETWEEN 4 AND 6 THEN 'At Risk'
    ELSE 'Lost Customers'
END AS rfm_segment
FROM rfm_scores
ORDER BY rfm_total DESC;
```

EXPLANATION

The dataset being synthetic, contained only buyers who were active in past year, hence no Lost Customers segment and At Risk exists.

RFM Score = Recency Score + Frequency Score + Monetary Score (Out of 15) for each customer.

Champions = 5/4 on Recency, 5/4 on Frequency, 5 on Monetary
Loyal Customers = 3/4/5 on Recency, 3 / 4 on Frequency, 4 on Monetary
Potential Loyalists = 2 / 3 on Recency, 2 / 3 / 4 on Frequency , 4 / 3 on Monetary

RFM SEGMENTATION & PROFILING

Champions

HIGH VALUE

Users	Revenue
15.5% →	30.6%

High revenue per user density

AVG. ORDER VALUE	₹762
TOTAL SPEND	₹4,185

STRATEGY

Premium Retention. Offer exclusive perks, early access, and "Elite" status to lock in loyalty.

Loyal Base

CORE VOLUME

Users	Revenue
65.4% →	60.3%

Consistent revenue driver

AVG. ORDER VALUE	₹664
TOTAL SPEND	₹1,958

STRATEGY

Value Extraction. Increase frequency via repeat-order nudges and wallet-based incentives.

Potential

GROWTH OPPORTUNITY

Users	Revenue
19.0% →	9.0%

High acquisition, low yield

AVG. ORDER VALUE	₹630
TOTAL SPEND	₹1,008

STRATEGY

Habit Building. Use gamification and "streak" rewards to convert occasional users to regulars.

RFM ANALYSIS: CHAMPIONS

Champions are characterized as customers who are Active on Zomato (Recently ordered < 30 days), Frequently Order (>5 times a month) and contribute High Revenue Per Order (AOV) and Total Spend over their Lifetime.

TARGET SEGMENT

Key Metros

Kolkata (138 Users) **Delhi** (130 Users)

PRIMARY OBJECTIVE

Retain & Upscale

Lock-in high value users and increase share of wallet through exclusive benefits.

Tactical Implementation

Elite Tier Trial

Offer 30-day free trial of Gold Plus/Elite membership to demonstrate value.

Basket Incentives

Trigger tier benefits only when monthly spend > ₹5,000 to encourage upsell.

Experiential Dining

Partner with premium restaurants for exclusive tasting menus and priority booking.

Gamified Retention

Set clear annual spend thresholds to maintain status, driving frequency.

EXPECTED OUTCOME

Improved LTV & Retention Rate

+5-10%
AOV GROWTH

High
STICKINESS

RFM ANALYSIS: LOYAL CUSTOMERS

Loyal Customers are characterized as customers who are Active on Zomato (Recently ordered < 90 days), Regular Consistent Users (order 3-4 times a month) and Moderate Revenue Per Order (AOV) and Total Spend over their Lifetime.

TARGET SEGMENT

Entire User Base

- Largest Revenue Source
- Core Recurring Users

PRIMARY OBJECTIVE

Maximise Extraction

Increase frequency and wallet share without heavy acquisition costs.

Tactical Implementation

Wallet Cashback

Drive adoption of wallet payment mode (currently lowest) to lock-in funds.

AOV Incentives

Unlock 5% extra cashback only on orders > ₹500 to push basket size.

Smart Nudges

Personalised push notifications timed to user's usual order hours.

Margin Focus

Avoid deep discounts used for acquisition; focus on retention margin.

EXPECTED OUTCOME

Increased Frequency & Stickiness

+8-12%
REPEAT FREQ

+15%
WALLET ADOPTION

ZOMATO GOLD: LOYALTY PROGRAM ANALYSIS

Current State

PENETRATION

User Base

Gold

20% of total users

19% revenue contribution

SPENDING POWER

AOV Comparison

Avg Order Value

₹763
GOLD USERS

₹755
STANDARD

THE UPSELL OPPORTUNITY

81% of total revenue comes from **Non-Gold Users**

Targeting high-spend Non-Gold users (Champions & Loyal segments) yields maximum ROI.

Recommendations

Savings Messaging

"You could have saved ₹X this month." Show personalized loss aversion metrics at checkout.

Tiered Benefits

Move beyond free delivery. Add exclusive events and priority support to justify the subscription.

Targeted Trials

Identify high-spend Non-Gold users (Champions) and offer 14-day trials to build the habit.

DEMAND PATTERN ANALYSIS

Hourly Order Volume

Untapped Opportunity

Breakfast slot currently underutilized compared to lunch/dinner peaks.

MORNING VOLUME
<200 Orders/Hr

Hero Categories

Consistent top performers across all metro cities driving dinner volume.

#1 CATEGORY
Biryani

#2 CATEGORY
Mughlai

FOOD ANALYSIS: ORDER COMBINATIONS

HIGHEST ORDERED COMBINATIONS

1. Butter Chicken + Mutton Rogan Josh – 549 orders
2. Chicken Biryani + Masala Dosa – 537 orders
3. Chicken Biryani + Mutton Rogan Josh – 531 orders
4. Butter Chicken + Chicken Biryani – 521 orders
5. Aloo Paratha + Chicken Biryani – 521 orders

PRIMARY INSIGHT

Users show a high lendency for bundled meals –› Higher AOV & shared consumption occasions (family, offices).

TACTICAL IMPLEMENTATION

Combo-Based Pricing

Offer discounted multi-item meal boxes to push upsell across cuisines.

Smart Add-Ons

Auto-suggest breads, beverages, and sides

Group Order Boosters

Trigger group-order prompts when > 2 mains are added to cart.

EXPECTED OUTCOME

Improved AOV & Conversion Rate +8 % Growth in Meal-Combo Revenue

PROJECT LEARNINGS

SQL

DATA CLEANING: Complex SQL Queries for deduplication, null handling, and Date Time Conversion.

Window Functions: For 3 Months Revenue Rolling Totals, Ranking of Most Ordered Combinations, Best Rated Restaurants, and Complex Window Function For Revenue Calculations.

CASE: SUM CASE WHEN for aggregated conditional revenue calculations

CTEs & Views: Views and CTES used for Funnel Metrics, RFM metrics, and handling complex revenue calculations and Order Pair Analysis for Food.

JOINS: Multi Table LEFT & INNER JOINS for view creation and complex revenue calculations across 9 tables. Learned about identifying primary and foreign keys better.

MARKETING: RFM ANALYSIS & SEGMENTATION

1. Developing RFM Scoring Pattern based on Statistical Quality of Data.
2. Calculating RFM scores with industry standard formulae.
3. Learning how to profiling customer based on spending patterns and past buying behaviour.
4. Applying Theory of Segmentation & Targeting from Marketing in real-life problem-solving cases using data.

BUSINESS PROBLEM SOLVING

1. Applying Marketing and Strategic Management concepts for solving issues like High LTV Customer Retention, Segmentation and Targeted Communication for Resource Allocation.

2. Understanding how to perform Revenue KPI calculations and querying data for reporting.