Swiggy Orders, Customers, and Restaurant Performance Analysis using MySQL

This project analyses Swiggy’s transactional SQL database to derive actionable business insights related to customer behaviour, restaurant performance, order patterns, and delivery partner efficiency. Using MySQL advanced SQL queries (joins, aggregations, subqueries, date functions), the project answers 13 industry-aligned problem statements . The final output supports data-driven decision-making for growth, efficiency, and customer retention.

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Challenges

Food delivery platforms operate in a hyper-competitive environment where success depends on balancing three critical forces: customer engagement, restaurant partnerships, and delivery efficiency.

The challenge: optimize marketplace performance across all three dimensions while maintaining service quality and profitability. Historical order data holds the answers.

Project Objectives & Success Metrics

01

Identify Active vs. Inactive Customers

Segment the customer base using order history patterns

02

Measure Restaurant Performance

Rank partners by revenue generation and average ratings

03

Analyze City-Level Demand

Compare ordering behavior across Delhi and Mumbai markets

04

Evaluate Delivery Partner Productivity

Track completed deliveries per partner over time

05

Detect Customer Loyalty Patterns

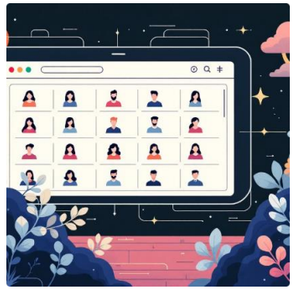
Identify repeat ordering behavior and frequency trends

Success Metrics

- Percentage of customers with ≥1 order
- Top 5 restaurants by total revenue
- Top 5 restaurants by average rating
- Orders per customer (city comparison)
- Delivery partners completing multiple orders

Dataset Architecture Overview

The Swiggy database contains 11 interconnected tables capturing transactional and master data across the entire platform ecosystem.

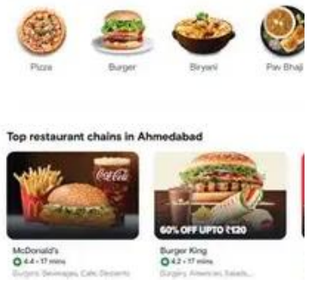


Customers

Profile data including ID, name, city, email, phone, and address

Restaurants

Partner details with ID, city, rating, cuisine type, and name

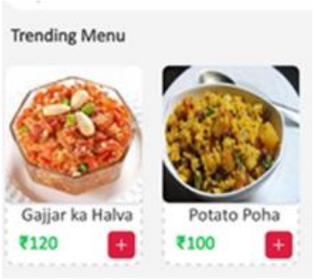


Orders

Transaction records tracking order ID, date, customer ID, restaurant ID, amount, and status

Delivery Partners

Driver information including ID, name, phone, and city



Menu Items

Restaurant offerings with item ID, restaurant ID, item name, price, and category

Feedback & More

Plus payments, complaints, delivery updates, and order items tables

Technical Approach & SQL Toolkit

Database Platform

MySQL serves as the relational database management system for all queries and analysis

Join Operations

INNER JOIN and **LEFT JOIN** combine data across tables to reveal relationships

Aggregation Functions

GROUP BY and **HAVING** clauses compute summaries and filter aggregated results

Advanced Queries

Subqueries enable complex nested logic for multi-step calculations

Distinct Counting

COUNT(DISTINCT) identifies unique values for customer and order analysis

Date Functions

DATE operations support time-based filtering and temporal pattern analysis

Key Business Metrics & Formulas

These calculated metrics transform raw data into actionable business intelligence:

Average Rating

`AVG(rating)`

Restaurant satisfaction scores

Total Revenue

`SUM(order_amount)`

Partner revenue performance

Order Volume

`COUNT(order_id)`

Transaction frequency tracking

Active Customers

Defined as customers with `COUNT(order_id) ≥ 1` in the analysis period

Repeat Customers

Measured using `COUNT(DISTINCT order_date)` to identify loyalty patterns

Five-Step Analytical Framework

Understand Schema

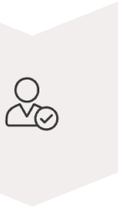
Map table relationships using primary and foreign keys

Apply Aggregation

Compute counts, averages, and sums for business metrics

Filter Results

Use HAVING and WHERE clauses for business-specific conditions



Validate Output

Cross-check totals across tables to ensure accuracy

LinkedIn.com GitHub.com

Visual Presentation of Project Performance

https:drive.google.com/drive/folders/1r_PBSRGPQEsFH-PleBVcYqVA4e_4czie

Also Available on

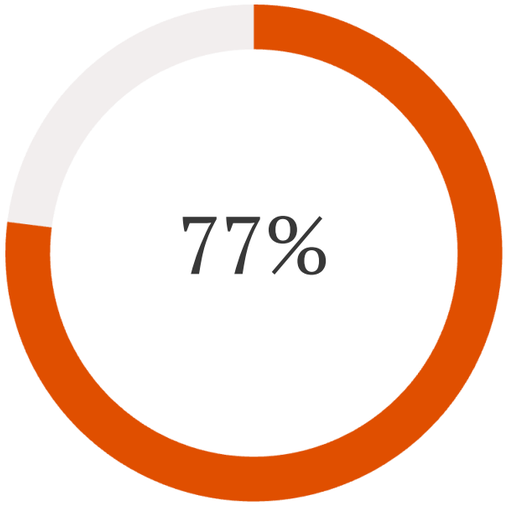
LinkedIn

GitHub

Google Drive

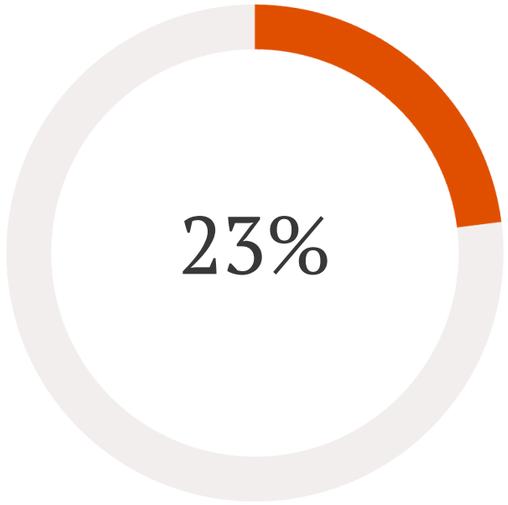
Click on link or site

Customer Order Behavior



Active Customers

Placed at least one order



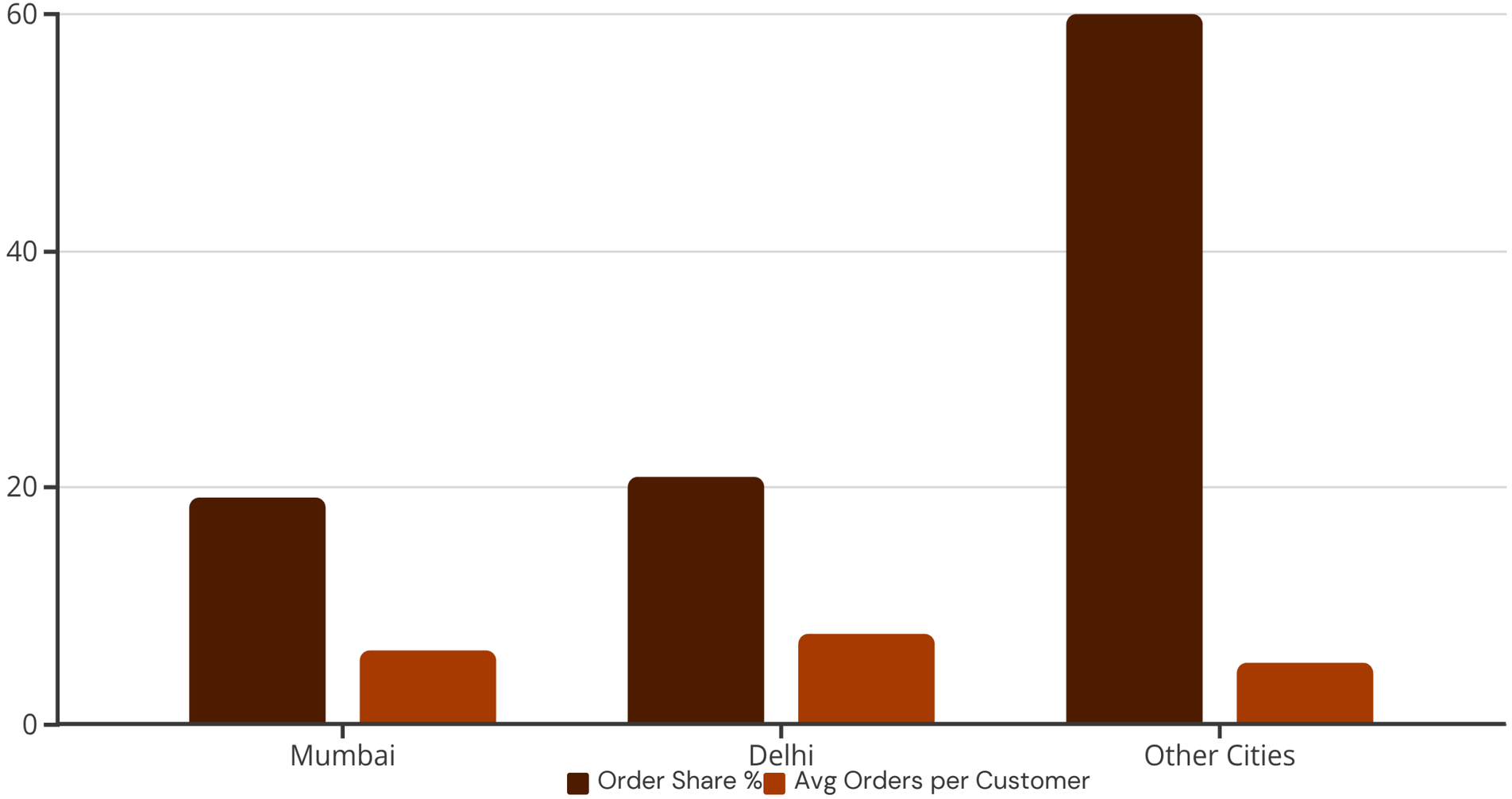
Zero Orders

Clear churn or onboarding gap

The Challenge

Nearly one-quarter of registered users never converted to paying customers, indicating significant drop-offs during first-time experience or pricing sensitivity issues.
This represents a critical opportunity for improving onboarding flows and initial user engagement strategies.

City-Level Demand Analysis



Delhi leads with 7.67 average orders per customer, while Mumbai follows at 6.25. Higher restaurant density and working population in these metros drive repeat usage patterns.

Restaurant Performance

Total Revenue

₹43K analyzed across platform

Top 5 Concentration

₹21K (49%) from leading restaurants

Average Rating

4.35 overall platform score

The Rating-Revenue Connection

Trust Drives Performance

Higher ratings significantly improve customer trust, leading to increased order frequency and larger basket sizes.

Both Mumbai and Delhi restaurants maintain consistent 4.3 average ratings, demonstrating quality standards across major markets.

Key insight: Restaurant quality directly correlates with revenue concentration patterns.

Delivery Partner Efficiency

33

Total Partners

Active delivery workforce

37%

Multi-Delivery

Partners completing 2+ deliveries

3.34

Average Load

Deliveries per active partner

A core group handles the majority of orders, indicating operational efficiency but raising concerns about potential burnout risk among high-performing partners.

What Was Accomplished

Data Transformation

Converted raw transactional data into actionable business-level KPIs

Strategic Insights

Identified revenue drivers, demand centers, and operational inefficiencies

Excellence

Built strong SQL analytics project aligned with industry use cases

Limitations & Future Opportunities

Current Constraints

- Historical snapshot only (no real-time data)
- Customer demographics limited to city-level
- Static restaurant ratings assumed
- Delivery time and distance data unavailable

Growth Pathways

- Add delivery time & distance for SLA analysis
- Integrate RFM customer segmentation
- Build Power BI / Tableau dashboards
- Predict customer churn using ML models

Strategic Recommendations

Customer Retention

Target inactive 23% with personalized discounts and onboarding improvements

Restaurant Strategy

Promote high-rating, high-revenue restaurants to maximize platform value

City Expansion

Increase restaurant onboarding in high-demand cities beyond Mumbai and Delhi

Delivery Optimization

Incentivize high-performing partners while preventing burnout

Conclusion

This project demonstrates how structured SQL analysis transforms Swiggy's operational data into actionable insights. By analyzing customers, restaurants, orders, and delivery partners, the study highlights revenue concentration, demand patterns, and efficiency gaps.

The outcomes directly support strategic decision-making, operational optimization, and customer experience improvement, making this analysis highly relevant for real-world data analyst roles.

> *"Data-driven insights are the foundation of operational excellence in the competitive food delivery landscape."*

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