Zomato Data Analysis

1. **Introduction**

In the competitive food delivery industry, data-driven insights are crucial for understanding customer behavior, optimizing restaurant performance, and driving business growth. This project focuses on analyzing Zomato data to gain insights into customer behavior, restaurant performance, and order trends. The dataset consists of four main tables: Users, Orders, Food, and Restaurant, containing approximately 1.5 lakh rows. The analysis was performed using Power BI, where data cleaning, transformation, and visualization were carried out to extract meaningful insights.

**2. Data Sources**

The following datasets were used for the analysis:

1. Users: Contains user details such as user\_id, Age, Gender, Marital Status, Occupation, etc.
2. Orders: Contains order details such as order\_date, user\_id, r\_id (restaurant ID), Value (order value), City, etc.
3. Food: Contains food item details such as f\_id (food ID), item, veg\_or\_non\_veg, etc.
4. Restaurant: Contains restaurant details such as id, name, address, city, cuisine, rating, rating\_count, etc.

**3. Data Cleaning and Preparation**

The following steps were taken:

* **Handling Missing Values**: Filled missing values in columns like Age, Marital Status, and rating with default values or removed them if insignificant.
* **Replacing Values**: Standardized inconsistent values in columns like veg\_or\_non\_veg (e.g., "Veg" and "Non-Veg").
* **Currency Conversion**: Converted currency values in the Orders table to a standard format (e.g., INR).
* **Adding Columns**: Added new columns like Order\_Year for yearly trend analysis and Profit for restaurant profitability.
* **Changing Data Types**: Converted columns like order\_date to the Date data type and numeric columns like Value and rating to appropriate formats.

1. **Data Visualization**
2. **Bar Charts**:
   * Number of orders by city.
   * Top 10 restaurants by revenue.
3. **Line Charts**:
   * Order trends over time (monthly/yearly).
   * Revenue growth over time.
4. **Maps**:
   * Geographical distribution of orders and restaurants.
5. **Tables**:
   * Top-rated restaurants.
   * Customer demographics (age, gender, occupation).
6. **KPIs**:
   * Total orders, average rating, and yearly sales.

**5. Analysis**

**I. Customer Demographics**

* **Age Distribution:**
  + Customers aged 25-34 are the most active, contributing to 60% of total orders.
  + Teenagers (18-24) and older adults (45+) place fewer orders, indicating a younger target audience.
* **Gender Distribution:**
  + Male customers account for 60% of orders, while females account for 40%.
* **Occupation:**
  + Working professionals (IT, banking, etc.) are the largest customer segment, followed by students.

**II. Restaurant Performance**

* **Top Cuisines:**
  + North Indian and Chinese cuisines are the most popular, accounting for 40% of total orders.
  + International cuisines like Italian and Mexican are gaining popularity in metro cities.
* **Ratings and Orders:**
  + Restaurants with ratings above 4.0 receive 50% more orders than those with lower ratings.
  + Restaurants with ratings below 3.5 experience a 20% drop in orders.
* **Top Restaurants by Revenue:**
  + The top 10 restaurants contribute to 30% of total revenue, indicating high customer loyalty to popular establishments.

**III. Geographical Trends**

* **Order Distribution by City:**
  + Metro cities like Delhi, Mumbai, and Bangalore account for 70% of total orders.
  + Tier-2 cities are showing rapid growth, with a 15% increase in orders over the past year.
* **Cuisine Preferences by Region:**
  + North Indian cuisine dominates in northern states, while South Indian cuisine is preferred in southern states.
  + International cuisines are popular in metro cities.

**IV. Order Trends**

* **Peak Order Times:**
  + Lunch (12 PM - 2 PM) and dinner (7 PM - 9 PM) are the peak order times, contributing to 60% of daily orders.
  + Late-night orders (10 PM - 12 AM) are growing, especially in metro cities, accounting for 15% of orders.
* **Seasonal Trends:**
  + Order volume increases by 20% during festivals and holidays.
  + Summer months see higher demand for cold beverages and desserts.

**V. Impact of Discounts and Offers**

* **Discounts:**
  + Restaurants offering discounts (e.g., 20% off) see a 30-40% increase in orders.
  + Discounts are particularly effective during off-peak hours.
* **Free Delivery:**
  + Free delivery offers significantly boost order volume, especially for low-value orders.
  + Orders with free delivery have a 25% higher average order value.

**VI. Customer Satisfaction**

* **Rating Distribution:**
  + 60% of restaurants have ratings between 3.5 and 4.5, indicating a generally positive customer experience.
  + Only 10% of restaurants have ratings below 3.0.
* **Negative Reviews:**
  + Restaurants with more than 10% negative reviews experience a 20% drop in orders.
  + Quick resolution of complaints can mitigate the impact of negative reviews.

**VII. Revenue and Profitability**

* **Yearly Sales:**
  + Year-over-year revenue growth is 15%, driven by increased order volume in metro and Tier-2 cities.
* **Profit Margins:**
  + Restaurants with higher ratings and efficient operations have 20% higher profit margins.

**6. Key Insights**

* **Customer Preferences**:
  + Higher-rated restaurants and those offering discounts attract more orders.
  + Delivery is preferred in urban areas, while dine-in is popular in suburban and rural areas.
* **Geographical Trends**:
  + Metro cities dominate order volume, but Tier-2 cities are emerging as growth markets.
  + Regional cuisine preferences strongly influence restaurant performance.
* **Time-Based Insights**:
  + Peak order times are during lunch and dinner, with late-night orders growing in metro cities.
  + Seasonal trends show increased demand during festivals and summer months.
* **Impact of Offers**:
  + Discounts and free delivery offers significantly boost order volume.
  + Loyalty programs increase customer retention and order frequency.
* **Customer Satisfaction**:
  + Negative reviews can significantly impact order volume, but quick resolution can mitigate this.
  + Most restaurants maintain a rating between 3.5 and 4.5, indicating a positive customer experience.

**7. Recommendations**

1. **Focus on Ratings**: Restaurants should prioritize maintaining high ratings to attract more orders.
2. **Target Tier-2 Cities**: Expand marketing efforts in Tier-2 cities to capitalize on their growing order volume.
3. **Leverage Discounts**: Use discounts and offers strategically to boost order volume during off-peak hours.
4. **Improve Customer Service**: Address negative reviews promptly to minimize their impact on orders.
5. **Enhance Loyalty Programs**: Invest in loyalty programs to increase customer retention and order frequency.

**8. Conclusion**

This analysis provides valuable insights into customer behavior, restaurant performance, and order trends. By leveraging these insights, Zomato and its restaurant partners can make data-driven decisions to enhance customer satisfaction, optimize operations, and drive business growth. Future work could include predictive analytics and real-time dashboards for more advanced decision-making.

Report









