Exploratory Data Analysis(EDA)

SWIGGY DATASET

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INTRODUCTION TO PROJECT

Objective: To analyze the Swiggy dataset to uncover patterns, relationships, and insights using Exploratory Data Analysis (EDA).

Employ statistical and visualization techniques to better understand customer preferences, market opportunities, and operational challenges.

Approach: Utilize R for cleaning, analyzing, and visualizing the data.

PURPOSE

a. **Understand the Data:**
   - Analyze ratings, costs, and food preferences to evaluate customer behavior.

b. **Identify Trends:**
   - Highlight key areas for improvement in restaurant listings and services.

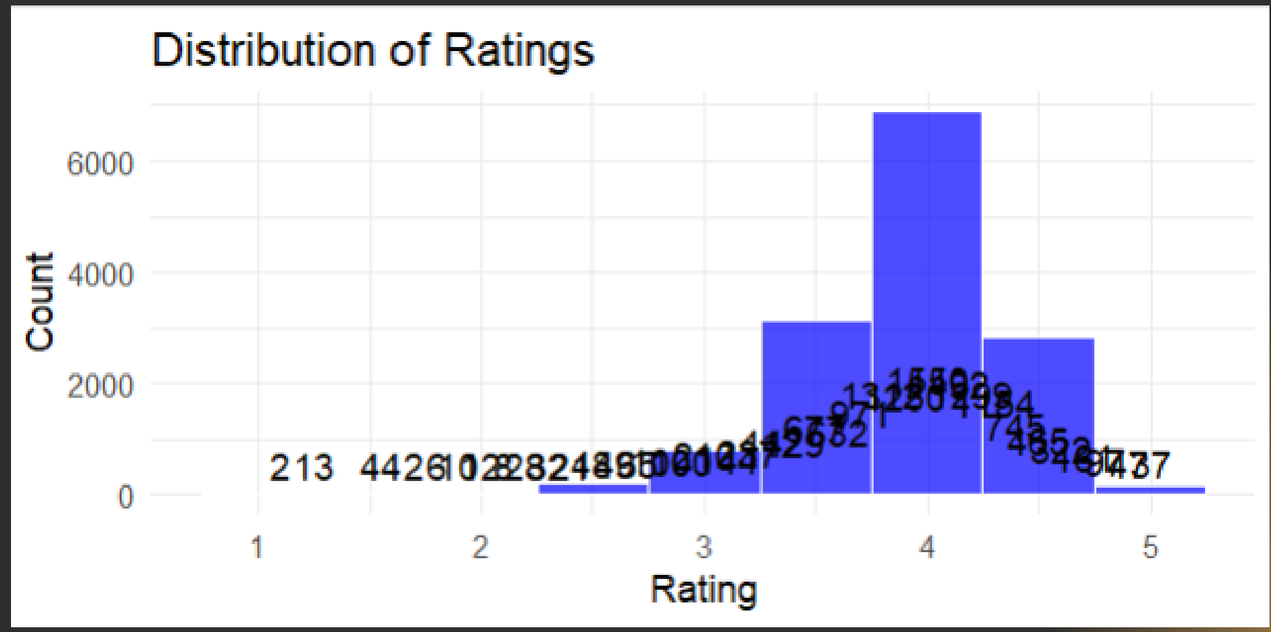
c. **Support Decision-Making:**
   - Provide data-driven insights to enhance user experience, optimize costs, and plan business strategies.

d. **Discover Opportunities:**
   - Identify underserved areas, pricing gaps, and customer preferences to drive growth.

DATA ANALYSIS USING R

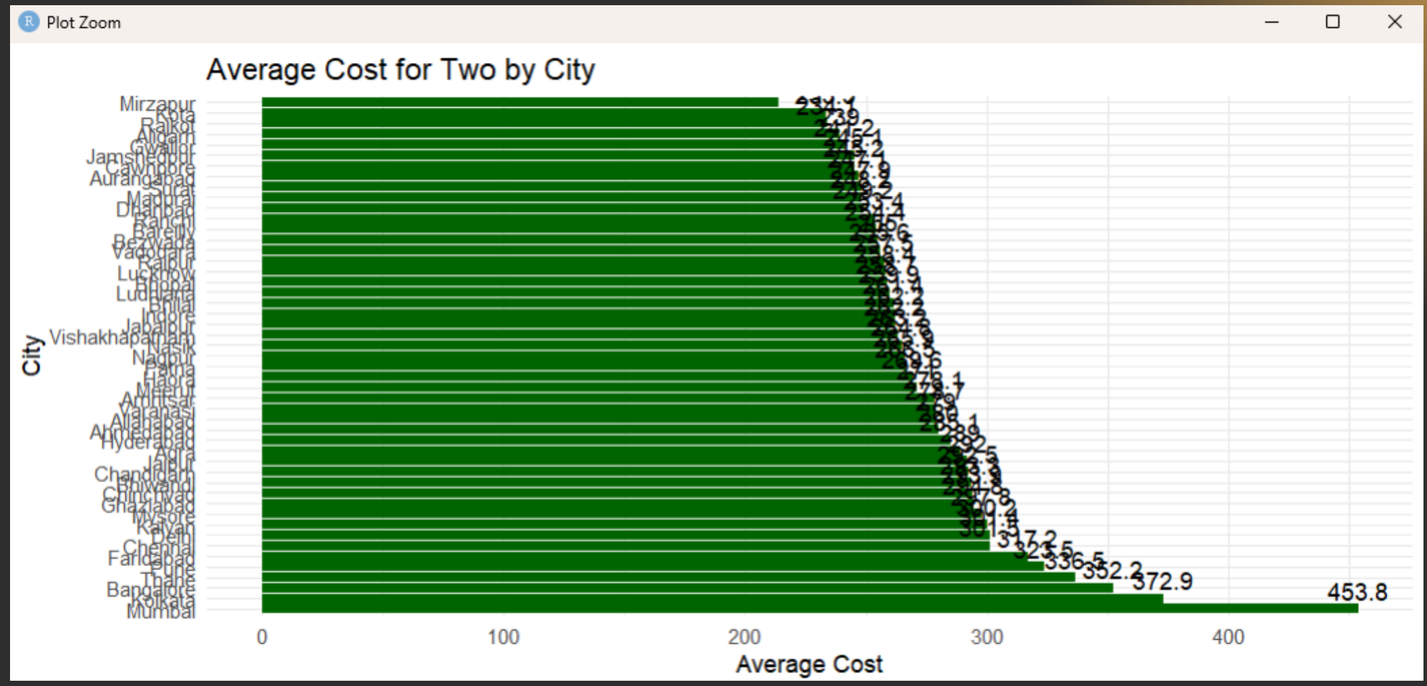
INSIGHT NO.1

- **Insight:** Most restaurants have ratings concentrated in a specific range.
- **Visualization:** Histogram with counts annotated.
- **Analysis:**
  - Peaks in specific ranges indicate customer satisfaction trends.
  - Identifies the benchmark for acceptable ratings.
- **Implications:** Helps evaluate the quality of listed restaurants and set rating improvement targets.



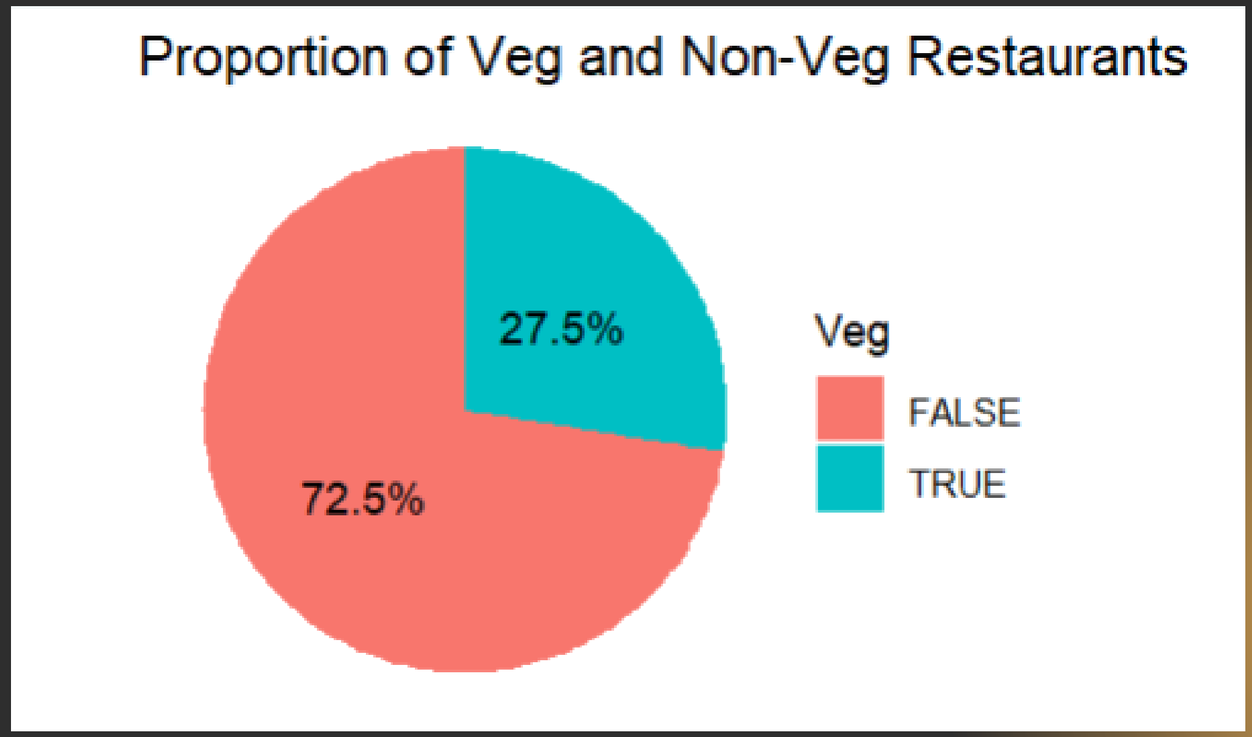
INSIGHT NO.2

- **Insight:** Cities show significant variations in dining costs.
- **Visualization:** Bar chart with average costs per city.
- **Analysis:**
- Cities like [City A] have premium dining, while [City B] offers budget options.
- Patterns reflect local spending behavior.
- **Implications:** Inform pricing strategies and city-specific marketing campaigns



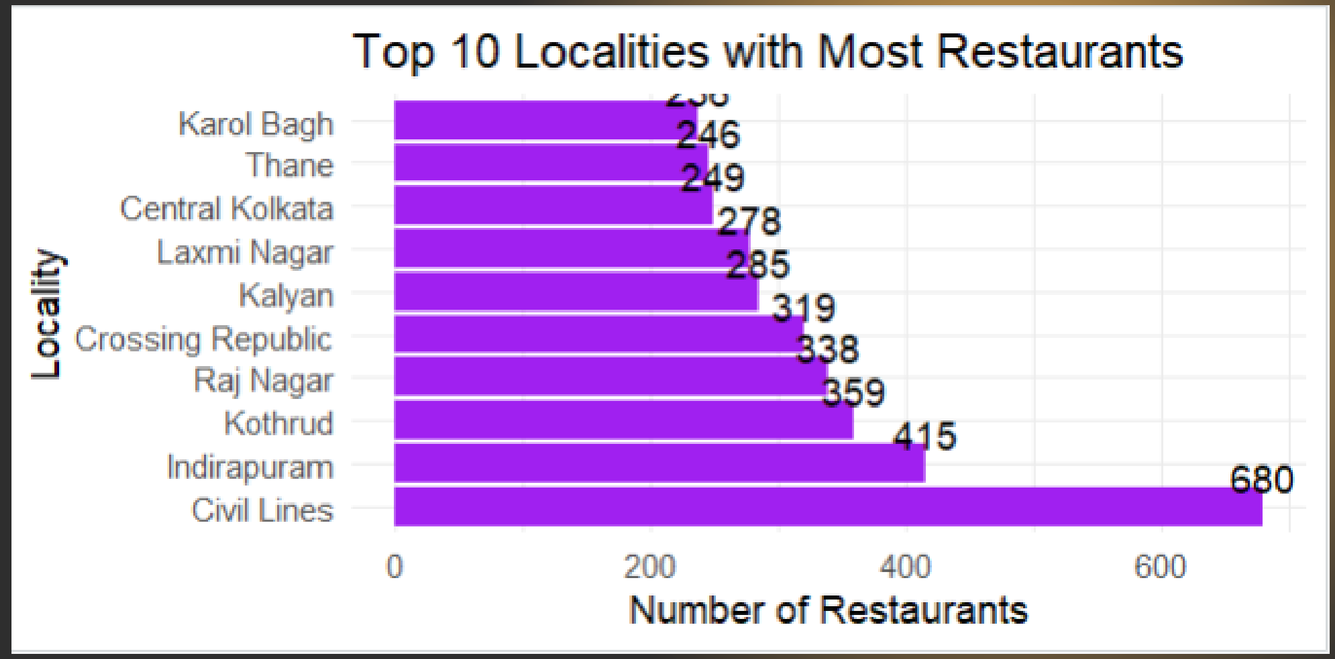
INSIGHT NO.3

- **Insight:** Distribution between vegetarian and non-vegetarian offerings.
- **Visualization:** Pie chart with percentages.
- **Analysis:**
- A higher proportion of non-veg restaurants may reflect demand trends.
- Regional preferences for vegetarian options may need more exploration.
- **Implications:** Guides diversification of listings and promotions.



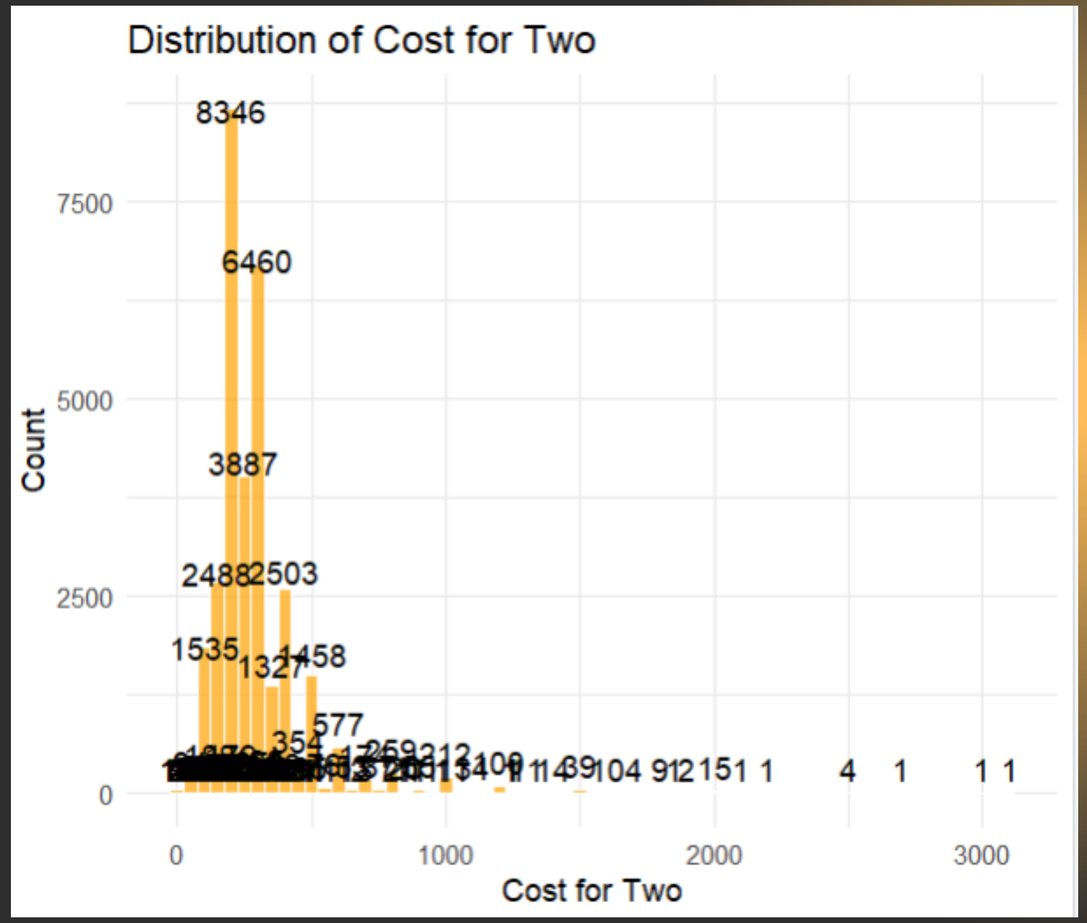
INSIGHT NO.4

- **Insight:** These localities are restaurant hubs.
- **Visualization**: Bar chart with counts per locality.
- **Analysis:**
  - Concentration of restaurants in high-footfall areas.
  - Potential for saturation or growth in these areas.
- **Implications:** Prioritize these areas for new restaurant partnerships or service enhancements.



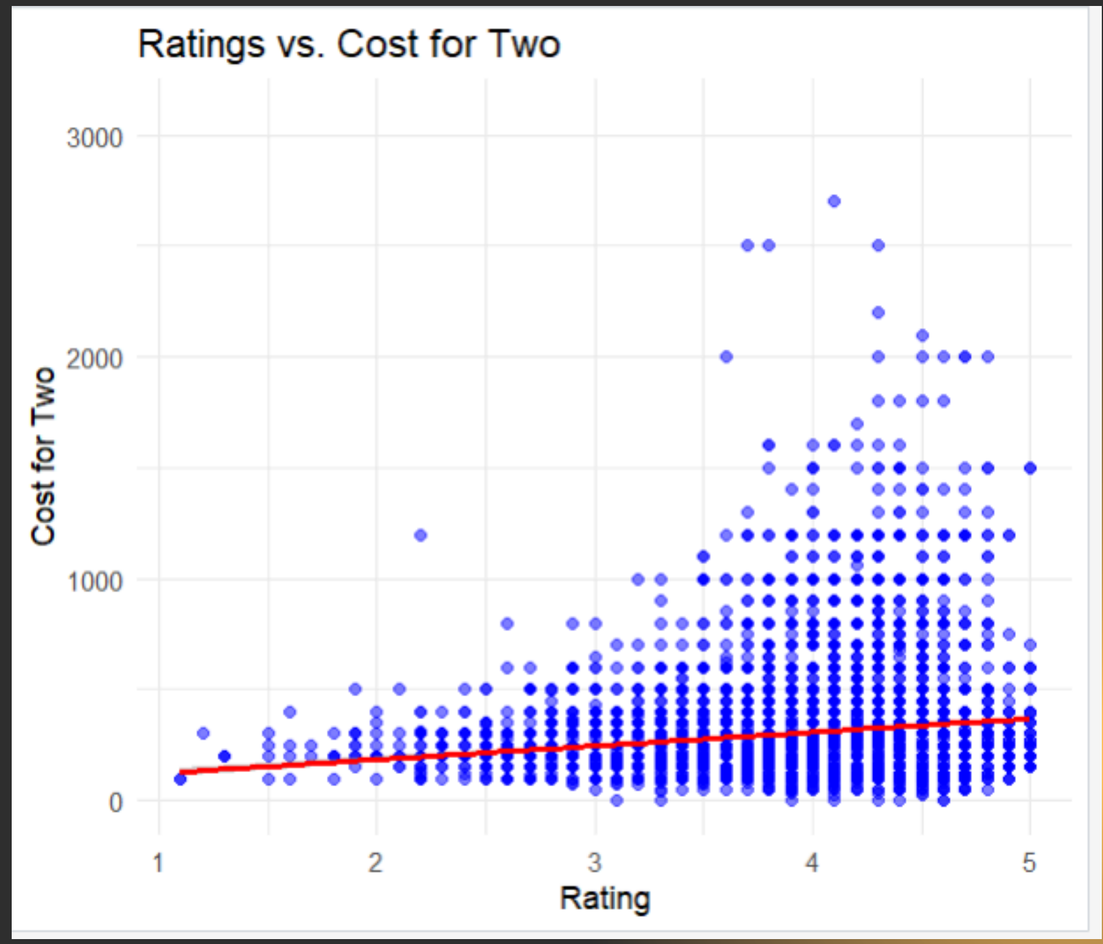
INSIGHT NO.5

- **Insight:** Dining costs are concentrated within specific price ranges.
- **Visualization:** Histogram with counts for cost bins.
- **Analysis:**
  - Highlights affordability trends for users.
  - Reveals gaps in mid-range or premium offerings.
- **Implications:** Target specific customer segments based on spending behavior.



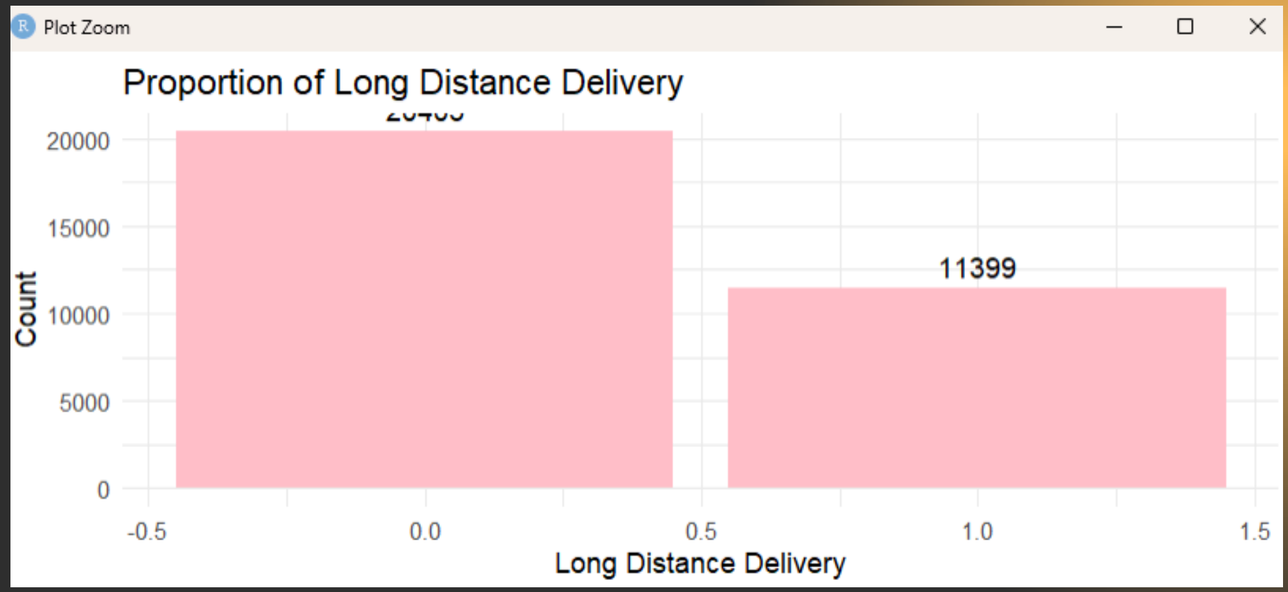
INSIGHT NO.6

- **Insight:** Ratings and dining costs show a weak correlation.
- **Visualization:** Scatter plot with a trend line.
- **Analysis:**
- Expensive options don’t guarantee higher ratings.
- Indicates that quality and customer experience matter more than price.
- **Implications:** Encourage restaurants to focus on value for money.



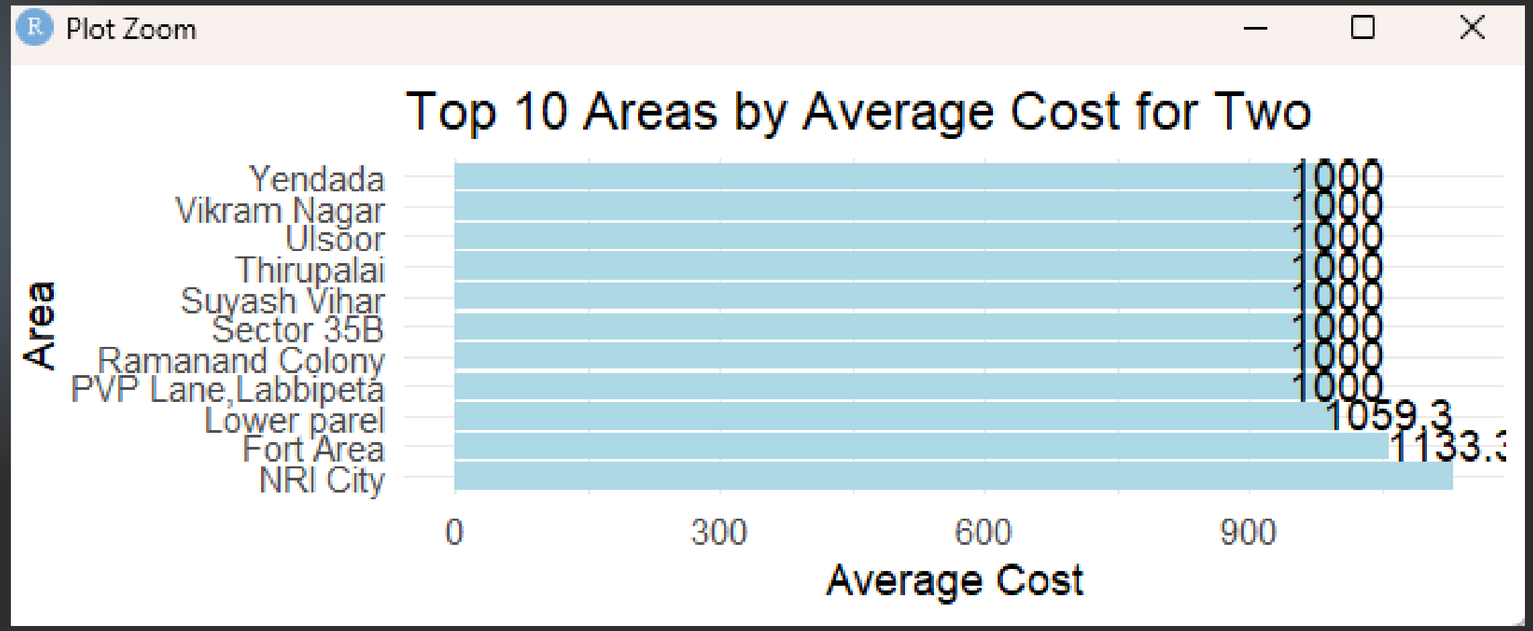
INSIGHT NO.7

- **Insight:** Significant portion of orders involve long-distance deliveries.
- **Visualization:** Bar chart with counts for delivery type.
- **Analysis:**
- Shows demand for extended delivery ranges.
- Long-distance deliveries might face logistical challenges.
- **Implications:** Optimize delivery networks for efficiency.



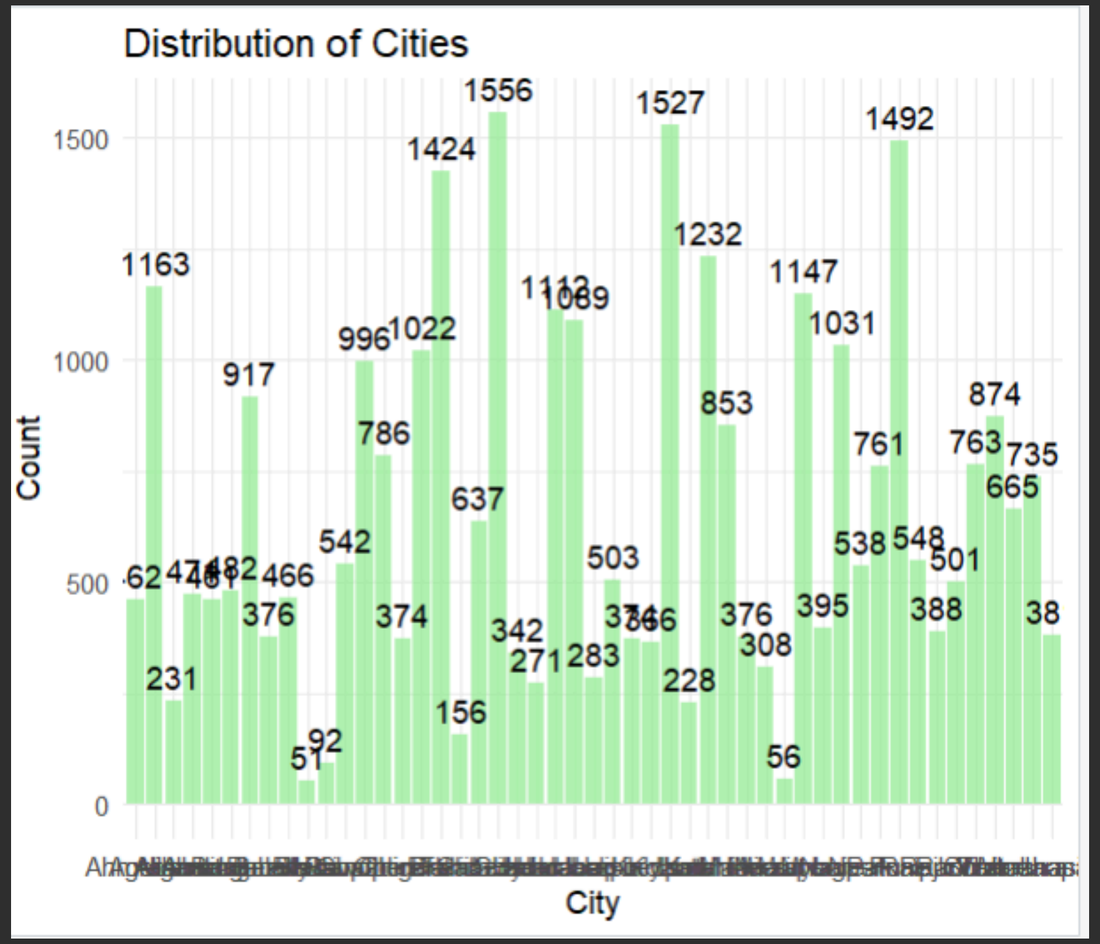
INSIGHT NO.8

- **Insight:** Certain areas have a higher average cost for dining.
- **Visualization:** Bar chart with top 10 areas by cost.
- **Analysis:**
  - Affluent areas lean towards premium dining.
  - Budget options dominate in residential zones.
- **Implications:** Tailor restaurant partnerships to match area demographics.



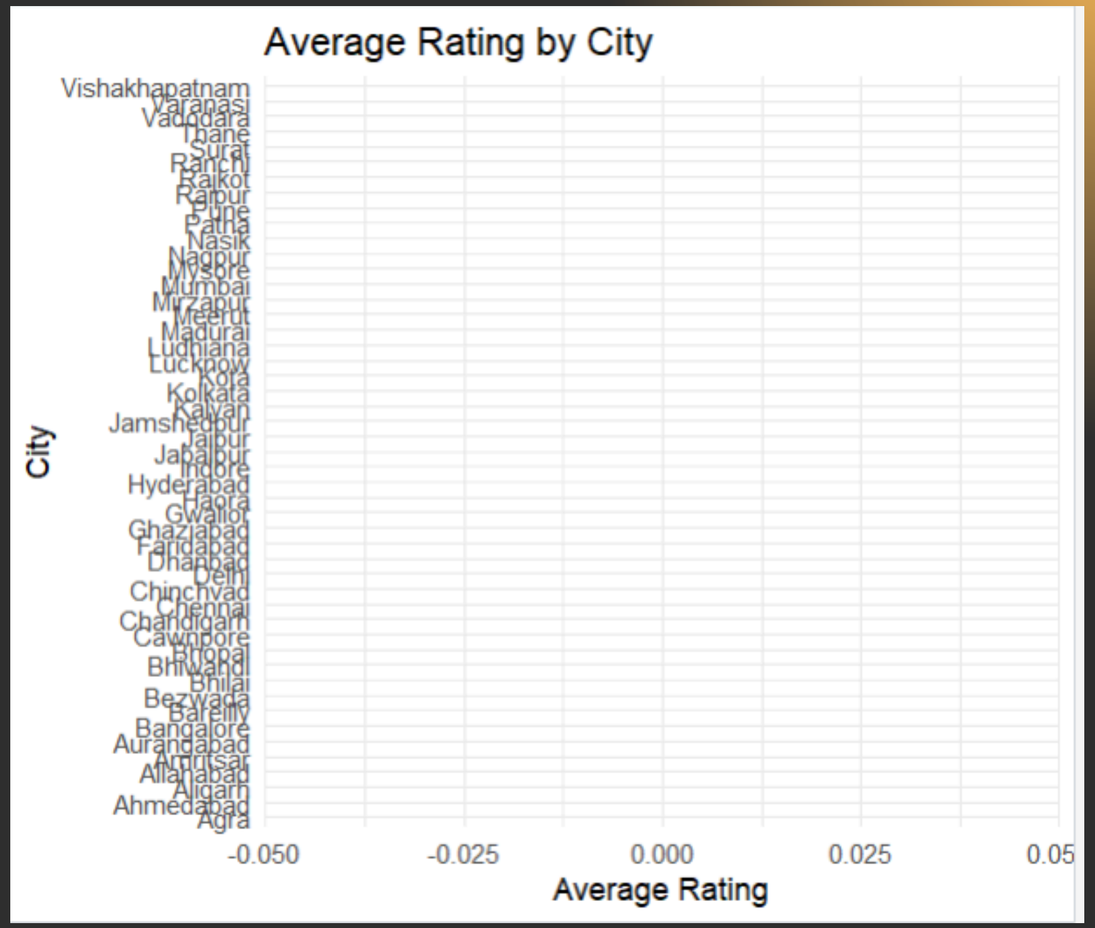
INSIGHT NO.9

- **Insight:** Restaurant listings are concentrated in specific cities.
- **Visualization:** Bar chart with city counts.
- **Analysis:**
- [City X] dominates in restaurant listings.
- Cities with fewer listings indicate potential growth opportunities.
- **Implications:** Guide city expansion and resource allocation.



INSIGHT NO.10

- **Insight:** Cities show differences in average restaurant ratings.
- **Visualization:** Bar chart with average ratings.
- **Analysis:**
  - Cities like [City C] show high customer satisfaction, while others lag.
  - Reflects the quality and competitiveness of the market.
- **Implications:** Focus improvement initiatives in cities with low ratings.



INSIGHT NO.11

- **Insight:** Shows density of ratings across cost ranges.
- **Visualization:** 2D density plot.
- **Analysis:**
- Identifies "sweet spots" for pricing where ratings peak.
- Outliers highlight areas for further investigation.
- **Implications:** Inform pricing strategies for optimal customer satisfaction.
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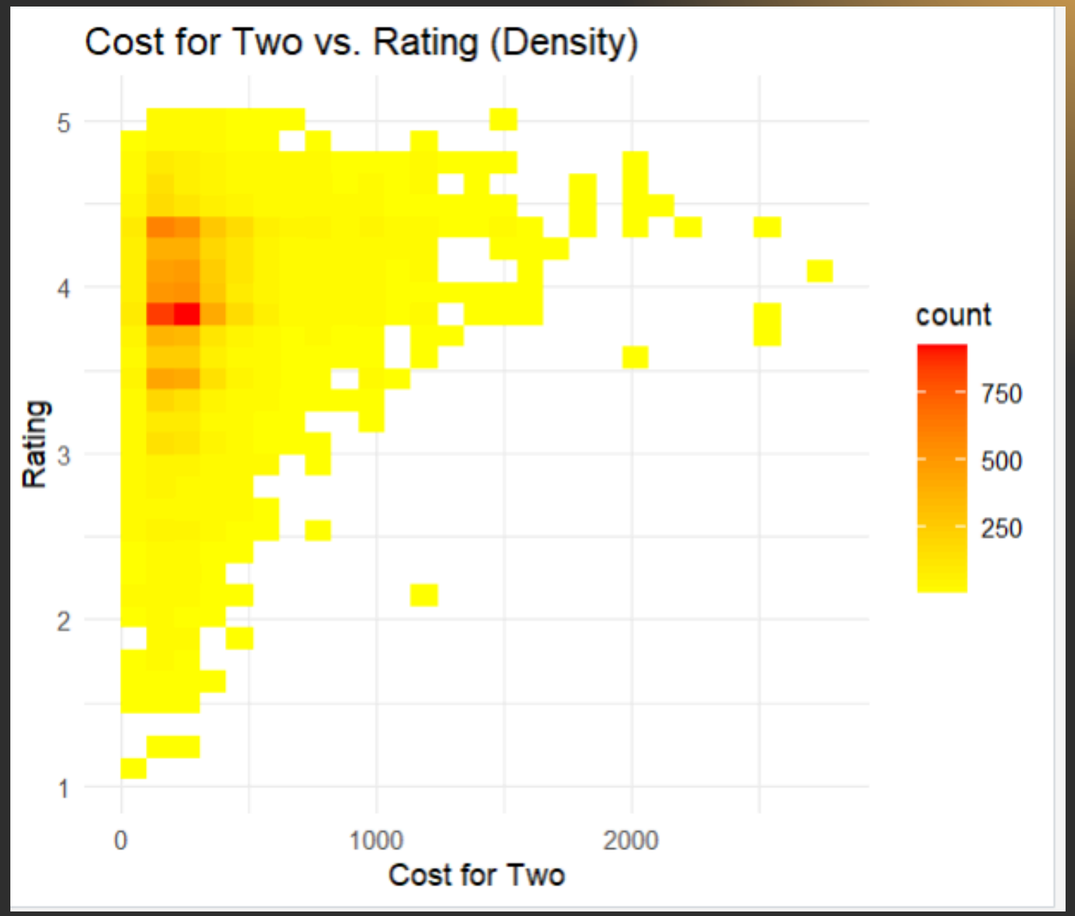

INSIGHT NO.12

- **Insight:** Some areas dominate in restaurant density.
- **Visualization:** Bar chart with counts.
- **Analysis:**
- High restaurant counts in popular areas.
- Opportunity to explore underserved regions.
- **Implications:** Strategize new restaurant onboarding in less crowded areas.
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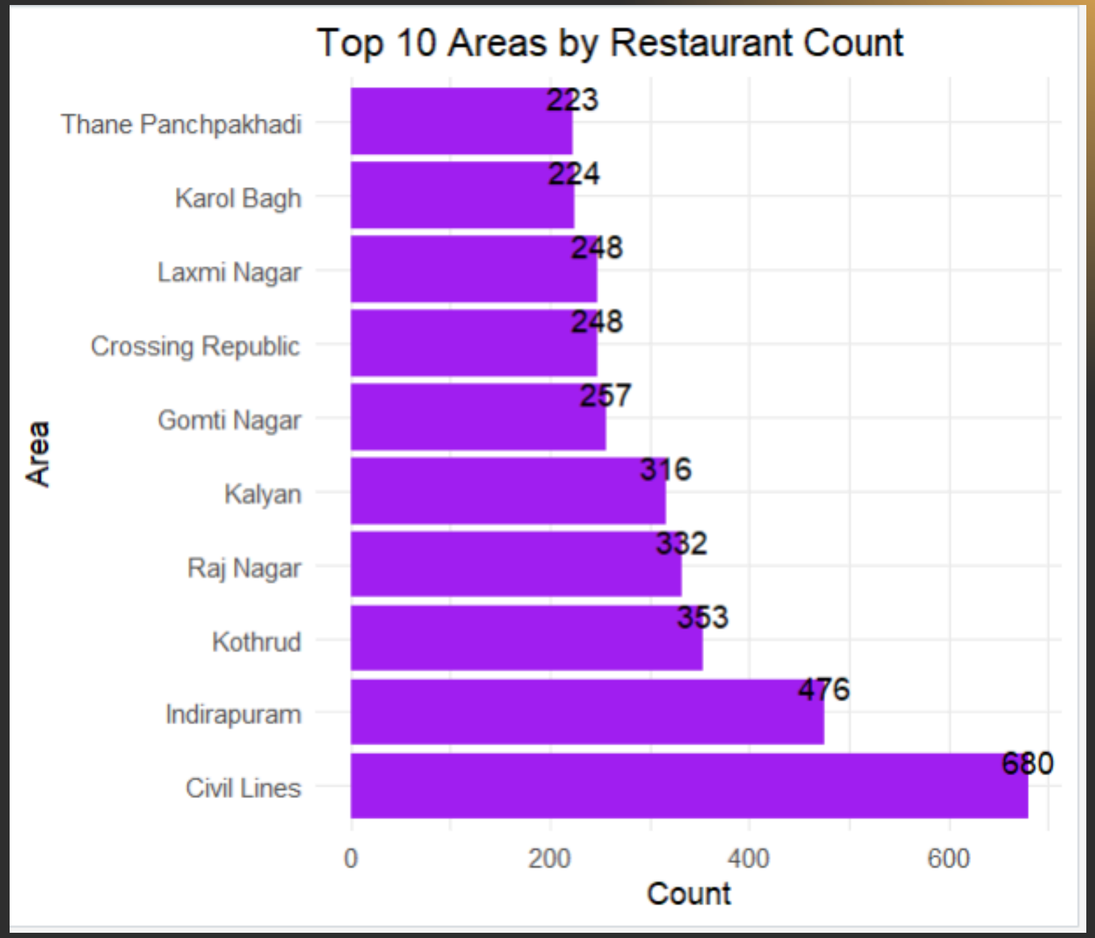
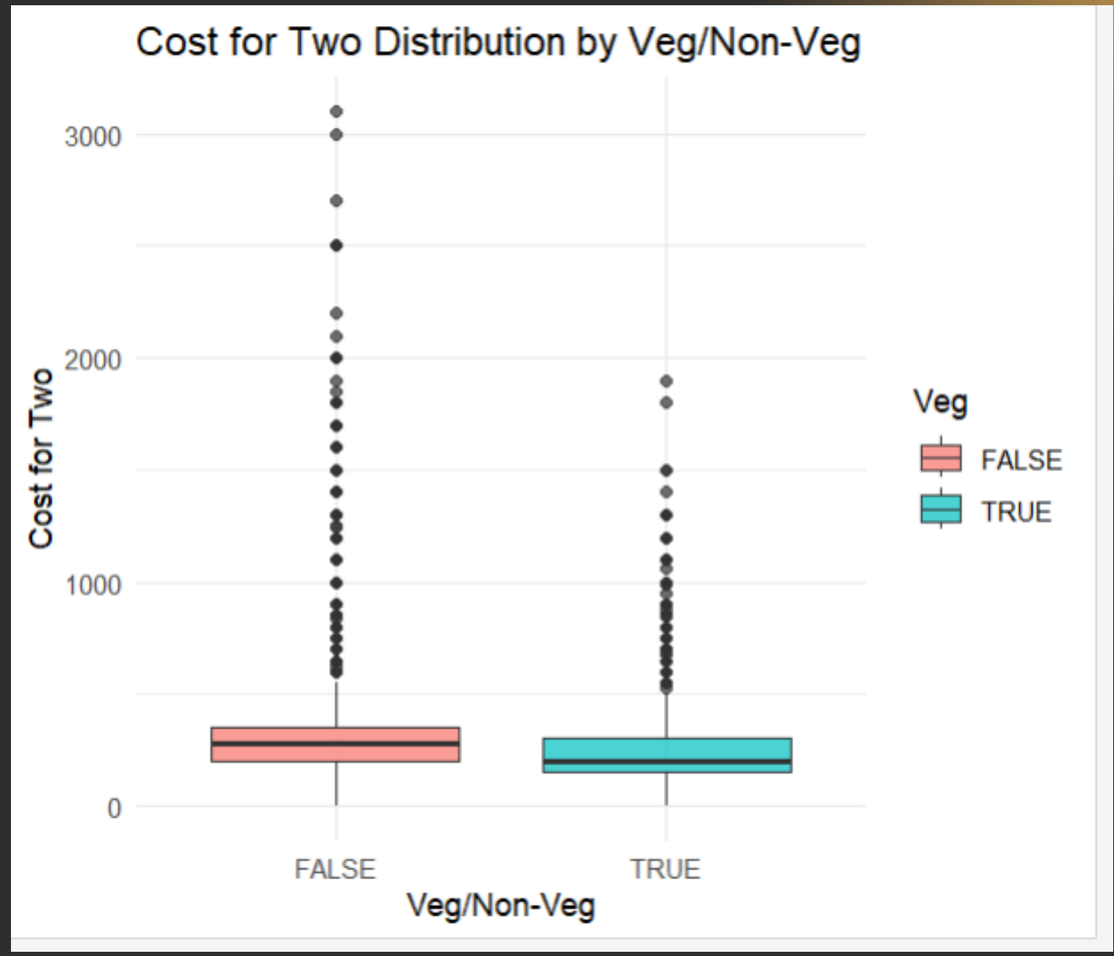


INSIGHT NO.13

- **Insight:** Cost distributions vary significantly by food type.
- **Visualization:** Box plot.
- **Analysis:**
- Non-veg restaurants tend to have higher average costs.
- Wide variability in both categories highlights diverse offerings.
- **Implications:** Guide pricing recommendations for restaurants based on food type.



CONCLUSION

- Ratings skew towards acceptable to good, reflecting general satisfaction.
- Costs vary by city and area, revealing distinct market segments.
- Veg and non-veg distribution highlights growth potential in both categories.
- Long-distance delivery is significant, requiring logistics optimization.
- Premium dining thrives in affluent areas, while budget options cater to broader audiences.

RECOMMENDATIONS

- Improve Customer Experience: Focus on value for money and quality to boost ratings.
- Expand Strategically: Add listings in underserved regions with diverse price options.
- Optimize Pricing: Use data insights for competitive and quality-driven pricing.
- Enhance Delivery: Invest in logistics for better long-distance delivery efficiency.
- Run Targeted Campaigns: Promote popular categories and cuisines.
- Diversify Menus: Add more vegetarian options where demand exists.
- Leverage High-Demand Areas: Partner with restaurants in popular localities.

THANK YOU