

Impact of Online Reviews on Restaurant Foot Traffic in Los Angeles

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Problem Statement: This project aims to understand how the evolution of Los Angeles restaurant service models (dine-in, takeout, delivery) after the pandemic affects customer behavior, specifically related to online reviews. We will analyze how online reviews (e.g., Google ratings, Yelp reviews) influence restaurant foot traffic and sales. Additionally, we want to understand the relationship between ratings for different services (dine-in, takeout, delivery) and their effects on customer traffic. The goal is to provide actionable insights that help restaurants optimize their service models and use online reviews to drive customer satisfaction and engagement.

Data Collection: Data will be collected from multiple sources:

- **Yelp API and Google Places API:** Ratings, reviews, and service types (dine-in, takeout, delivery) for restaurants in Los Angeles.
- **Food Delivery Platform APIs (e.g., UberEats or DoorDash):** Data on delivery orders, times, and pricing.
- **SafeGraph or Placer.ai:** Foot traffic data to compare against online reviews.

We will also use web scraping with BeautifulSoup for additional data collection from delivery platforms, and Natural Language Processing (NLP) tools to analyze review content and extract customer sentiment.

Analysis and Visualizations: The project will involve:

- **Correlation Analysis:** Regression analysis to explore the relationship between restaurant ratings and customer traffic, and individual service types' impact on traffic.
- **Sentiment Analysis:** NLP techniques to assess positive, negative, and neutral reviews.

We will create visualizations such as line charts to show traffic changes, scatter plots to assess correlation between ratings and traffic, word clouds for sentiment analysis, and bar charts to compare sentiment across service types.

Conclusion: The analysis will help understand the development trends of Los Angeles restaurants during the post-pandemic period. The insights provided can help restaurant owners adjust their strategies based on customer feedback to attract more traffic.