Data Science Research Series

Does Yelp Matter? Analyzing (And Guide to Using) Ratings for a Quick Serve Restaurant Chain

BACKGROUND

Many businesses, including restaurants, have access to data generated every day from customers on sites like Yelp, the largest restaurant review site with over 135 million monthly visitors, but do not take advantage of the data. The quick service restaurant sector plays a significant role in the US economy. In 2015, 200,000 fast food restaurants generated revenue of over $200 billion. Industry estimates indicate that 50 million Americans eat in a quick serve restaurant every single day. While the food is often highly processed and prepared in an assembly line fashion, customers of these restaurants have placed value on consistency of service, value for money, and speed. The current study examined both numeric and text reviews for over 2,000 locations of a quick serve restaurant chain across the United States.

APPROACH

Numeric ratings taken from Yelp can range from 1-5 stars, where 1 star represents the worst possible rating and 5 stars represents the highest possible rating. Ratings are aggregated at the restaurant level and comparisons are made by state to show the differences in average rating across the country. In addition to the numeric ratings, text reviews left by customers for individual locations were pulled to associate the numeric rating of the review to the written comment. Within the context of this study, we also explored operational performance differences between company-owned (non-franchise) and franchise outlets of this restaurant chain, and the most frequently used terms associated with 5-star restaurants versus 1-star restaurants.

RESULTS

Geographically, states in the Southeast and Northeast regions generally have higher numeric Yelp ratings for this restaurant chain than the rest of the country. In comparing franchise and non-franchise outlets of this chain, the average rating for non-franchise locations was higher in almost every state which had both franchise and non-franchise locations. Analysis of the text reviews largely showed that there is not a great distinction in terms of what people are saying when rating restaurant locations. Generally, customers will talk about the food items, good or bad, followed by mentions to the staff, restaurant experience or amount of time spent waiting. One interesting discovery was that for restaurants rated 5 stars, customers were more likely to express perceptions of the quality of service and cleanliness of the restaurant rather than their food experience, suggesting that customers do care about the overall experience even when purchasing fast food items.

CONCLUSIONS

Given the volume of reviews, combined with the detected variation between franchise and non-franchise outlets, this study provided evidence for the position that Yelp reviews are relevant to operational performance and evaluation of customer satisfaction in the quick service restaurant sector. Overall, accessing information from review sites like Yelp can provide practitioners with quick, inexpensive (effectively free), valuable information regarding operational productivity, customer perceptions, efficacy of messaging and advertising. The flexibility provided to researchers by Yelp to extract specific data related to location, time period, identified words related to products or menu items, allows for the translation of previously "dark data" into meaningful information to improve decision making.

CITATION FOR FULL ARTICLE

Gadidov B., & Priestley J. L. (2018). Does Yelp matter? Analyzing (and guide to using) ratings for a quick serve restaurant chain. In Srinivasan S. (Eds.), *Studies in Big Data: Vol. 26. Guide to big data applications* (pp. 503-522). Cham, Switzerland: Springer International Publishing. doi: https://doi.org/10.1007/978-3-319-53817-4_19