

Streets vs Avenues:

Where to eat in Manhattan.

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Abstract

Yelp data and statistical sampling was used to determine that the average restaurant is better on Manhattan streets than avenues, with an average rating of 3.62 on streets vs 3.49 on avenues. The difference was statistically significant. In addition, you are almost 50% more likely to find an outstanding restaurant while on a street compared to when you are on an avenue. 18% of restaurants on the streets had a score of 4.5 or higher, compared to 13% of restaurants on avenues.

Motivation

On the podcast Conversations With Tyler, Economist Tyler Cowen asked Alain Bertaud “In Manhattan, will you find better food on the streets or the avenues?”¹ This paper attempts to answer that question.

Methodology

Yelp reviews were chosen as the source for restaurant ratings. Yelp ratings include a large number of restaurants and the data is easily searchable. A possible concern is that some restaurant fraudulently manipulate their rating. Additionally, each user has their own personal parameters when rating restaurants.

Yelp provides a free Application Program Interface (API)² to request yelp review data but limits downloading large datasets, which prevents attempts to get all reviews for a city.

Instead of using all the reviews, the author used a randomly distributed list of geographic points across the island of Manhattan and then queried the Yelp API for reviews at these points. To determine if the restaurant was located on a street or avenue the address was simply scanned for synonyms of either word, street or avenue. In Manhattan, avenues run North-South and are typically larger traffic and commercial corridors. Streets run East-West and are generally smaller.

¹ Tyler Cowen, interview with Alain Bertaud, Conversations With Tyler, podcast audio, September 25, 2019, <https://conversationswithtyler.com/episodes/alain-bertaud/>.

² https://www.yelp.com/developers/documentation/v3/business_search

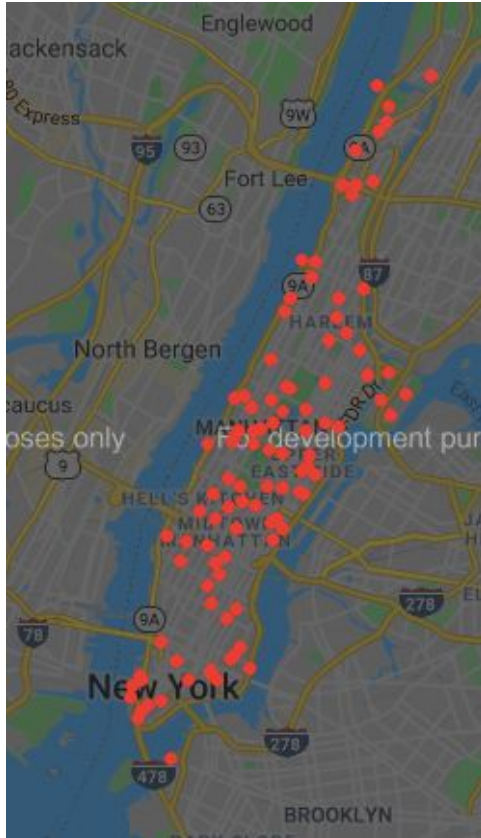


Fig 1- Random Points in Manhattan

Sampling 25,000 points yielded 18404 restaurants on streets and 1479 restaurants on avenues. The average review on streets was 3.62 and on avenues was 3.49.

Yelp Ratings	# of Street Restaurants	# of Avenue Restaurants
1	337	308
1.5	212	172
2	560	555
2.5	1227	1307
3	2164	2148
3.5	4400	4026
4	6194	4104
4.5	2543	1417
5	760	530

Fig 2. Rating Distribution

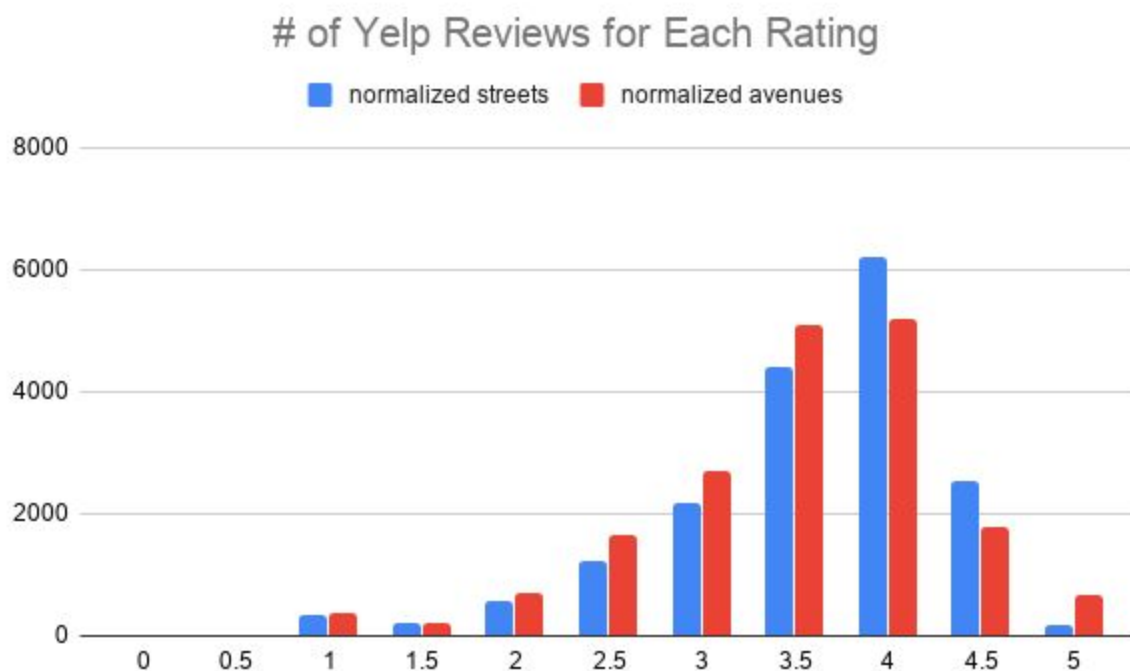


Fig 3. Rating Distribution

On average, restaurants on streets scored 0.13 stars higher than those on avenues. A student's t-test was used to test the difference, returning a p-value of less than .001.

The code to randomly select restaurants, get review data, and analyze the results is available on github.³

Conclusion

In the podcast, Alain Bertaud responded "I think you have more specialty restaurants in the streets. In the avenues, you have more people who are just transient, just pass by and are looking for faster food. I think so." With the data analysis we can confirm what Alain Bertaud surmised. Specifically, that the quality of restaurants on the streets is on average better and especially so with higher quality restaurants. The author suggests eating at restaurants on the street.

³ <https://github.com/Bellspringsteen/other.nyc>