Data overview

- This dataset is a subset of Yelp and has information about businesses across 8 metropolitan areas in the USA and Canada.

- The original data shared by Yelp is JSON files.

- The five Jason files are business, review, user, tip, and check-in.

- The JSON files are stored in the database for easy retrieval of data.

ANALYSIS AND FINDINGS

- Out of 150k businesses, 35k are restaurants businesses are open.

- Table showing the distribution of business success metrics (review count and average rating).

	0
average_review_count	55.975400
min_review_count	5.000000
max_review_count	248.000000
average_star_rating	3.477281
min_star_rating	1.000000
max_star_rating	5.000000

Highest Rating

	name	review_count	avg_rating
0	Oat Bakery	123.0	5.0
1	Lian Hsing's	8.0	5.0
2	Jet City Espresso Hyde Park	152.0	5.0
3	American Express century and lounge	5.0	5.0
4	La Petite Iza	7.0	5.0
5	In and Out Express Food Market	5.0	5.0
6	European Flavors	11.0	5.0
7	bb.q Chicken - O'Fallon	42.0	5.0
8	The Kitchen Table	26.0	5.0
9	King Tut's	48.0	5.0

Highest Review Count

	name	review_count	avg_rating
0	McDonald's	16490.0	1.868702
1	Chipotle Mexican Grill	9071.0	2.381757
2	Taco Bell	8017.0	2.141813
3	Chick-fil-A	7711.0	3.369427
4	First Watch	6761.0	3.875000
5	Panera Bread	6613.0	2.661905
6	Buffalo Wild Wings	6483.0	2.344828
7	Domino's Pizza	6091.0	2.290210
8	Wendy's	5930.0	2.030159
9	Chili's	5754.0	2.500000

- The highest ratings do not guarantee a higher review count, or vice versa.
- The success of restaurants is not solely determined by ratings or review counts.
- Review count reflects used engagement but not necessarily overall customer satisfaction or business performance.

Do restaurants with higher engagement tend to have higher ratings?

- Data shows a general increase in average review, check-in, and tip counts as ratings improve from 1 to 4 stars.

- Restaurants rated 4 stars exhibit the highest engagement and show a downward trend for ratings above 4.

- The drop in engagement at 5 stars might suggest either a saturation point where fewer customers feel compelled to add their reviews or a selectivity where only a small, satisfied audience frequents these establishments.

AVG Engagement based on Rating

	Review Count	Checkin Count	Tip Count
1.0	14	18	3
1.5	24	34	4
2.0	28	52	5
2.5	37	79	6
3.0	48	106	8
3.5	64	126	10
4.0	73	127	11
4.5	65	86	9
5.0	31	28	4
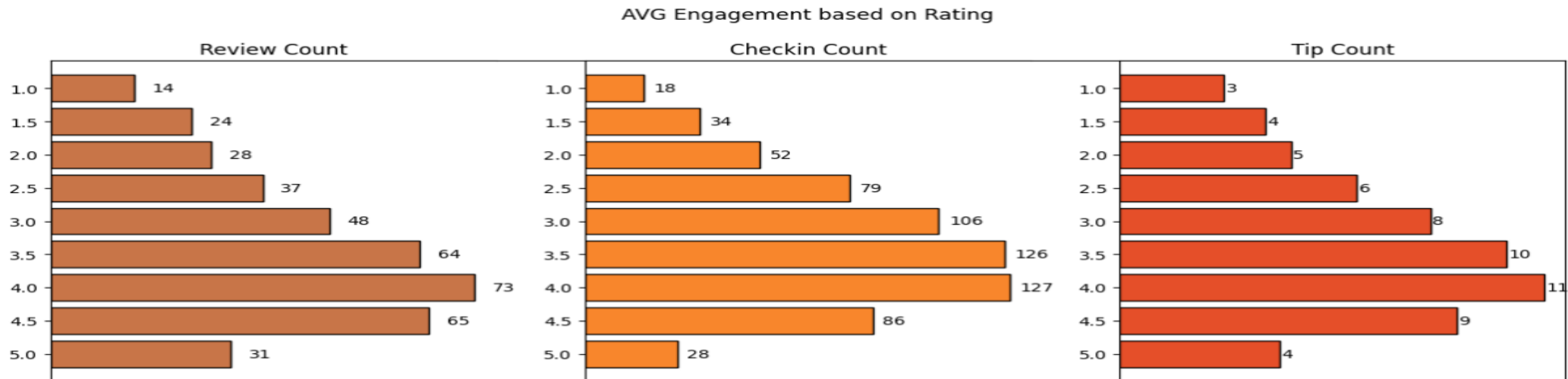
Is there a correlation between the number of reviews, tips, and check-ins for a business?

- These correlations suggest that user engagement across different platforms (reviews, tips, and check-ins) is interlinked; higher activity in one area tends to be associated with higher activity in others.

- Businesses should focus on strategies that boost all types of user engagement, as increases in one type of engagement are likely to drive increases in others, enhancing overall visibility and interaction with customers.
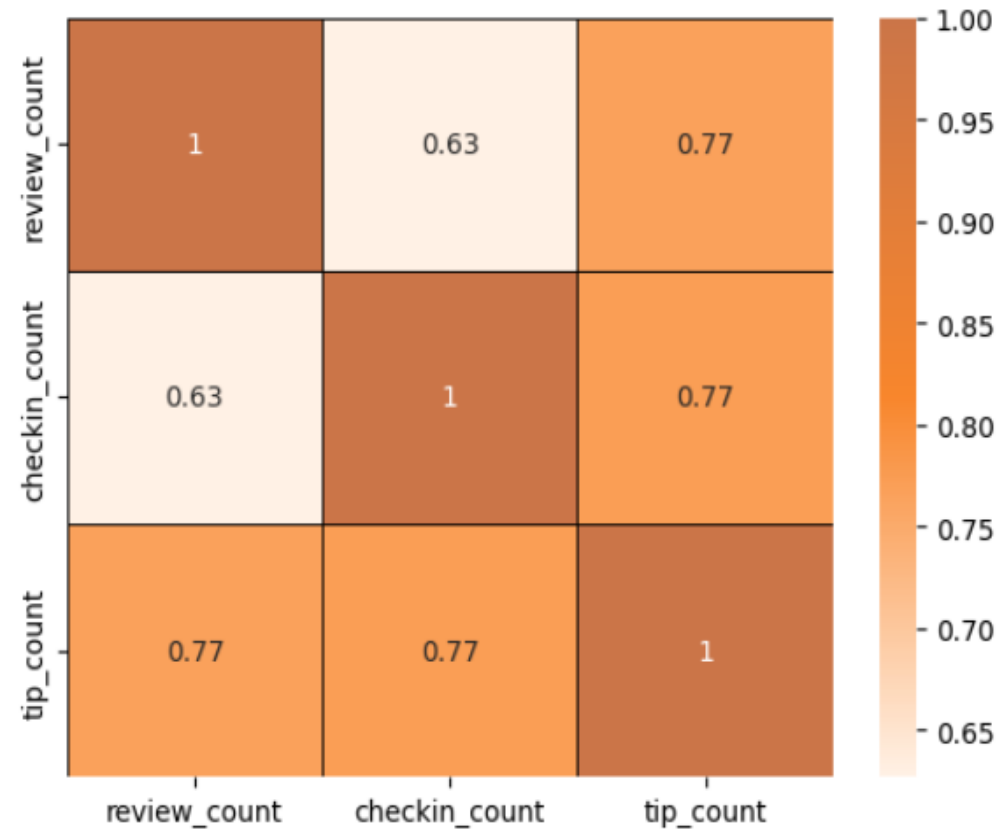
# Is there a difference in user engagement between high-rated and low-rated businesses?

- Data indicates a clear correlation between higher ratings and increased user engagement across reviews, tips, and check-ins.

- This pattern underscores the importance of maintaining high service and quality standards, as these appear to drive more reviews, check-ins, and tips, which are critical metrics of customer engagement and satisfaction.

| category	review_count	tip_count	checkin_count
High-rated	72.291062	10.162766	122.066641
Low-Rated	42.123420	6.541689	88.880828

How do the success metrics of restaurants vary across different states and cities?

- Philadelphia emerges as the top city with the highest success score, indicating a combination of high ratings and active user engagement.

- Following Philadelphia, Tampa, Indianapolis, and Tucson rank among the top cities with significant success scores, suggesting thriving restaurant scenes in these areas.
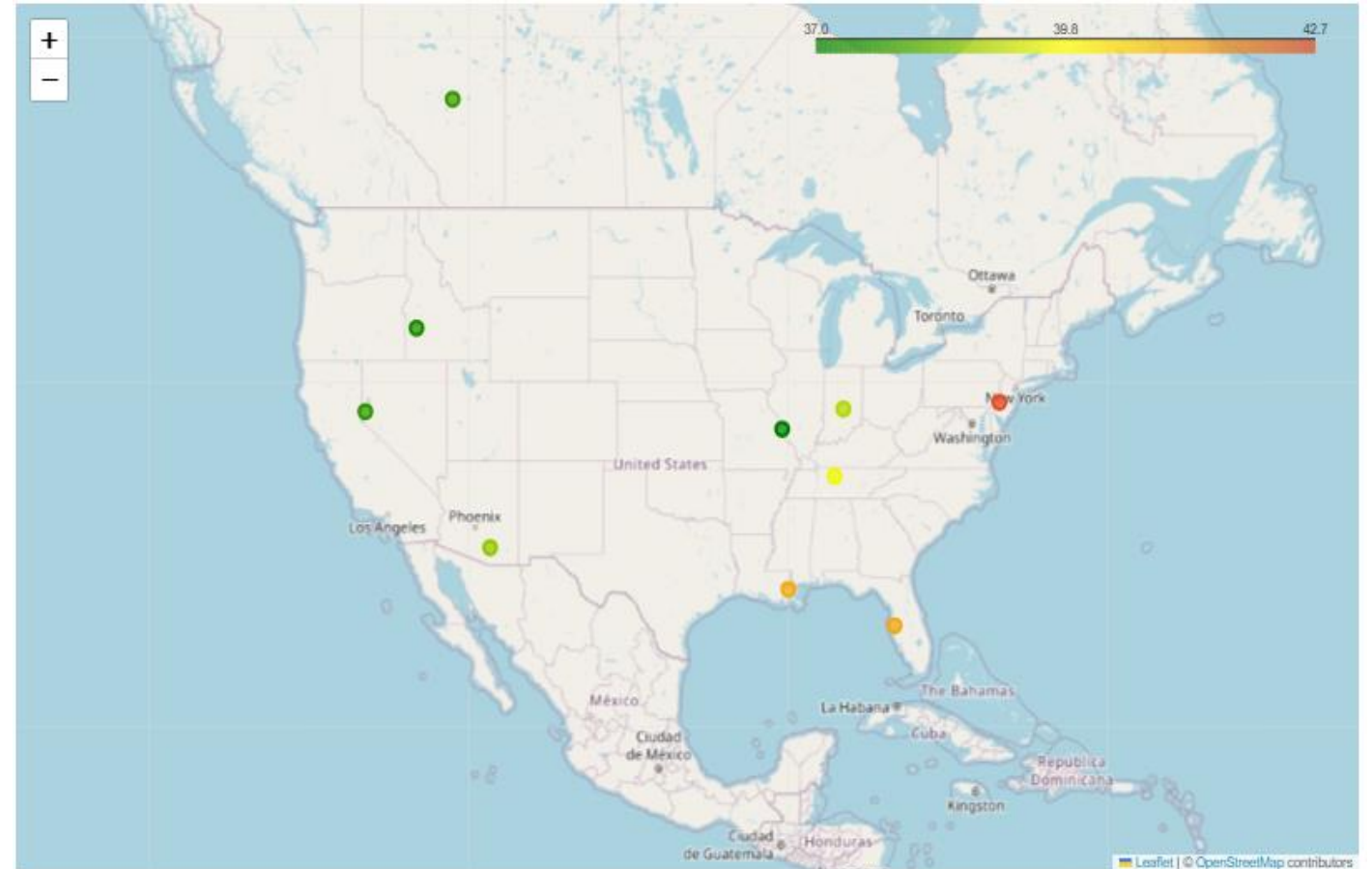
Are there any patterns in user engagement over time for successful businesses compared to less successful ones?


Drop due to COVID
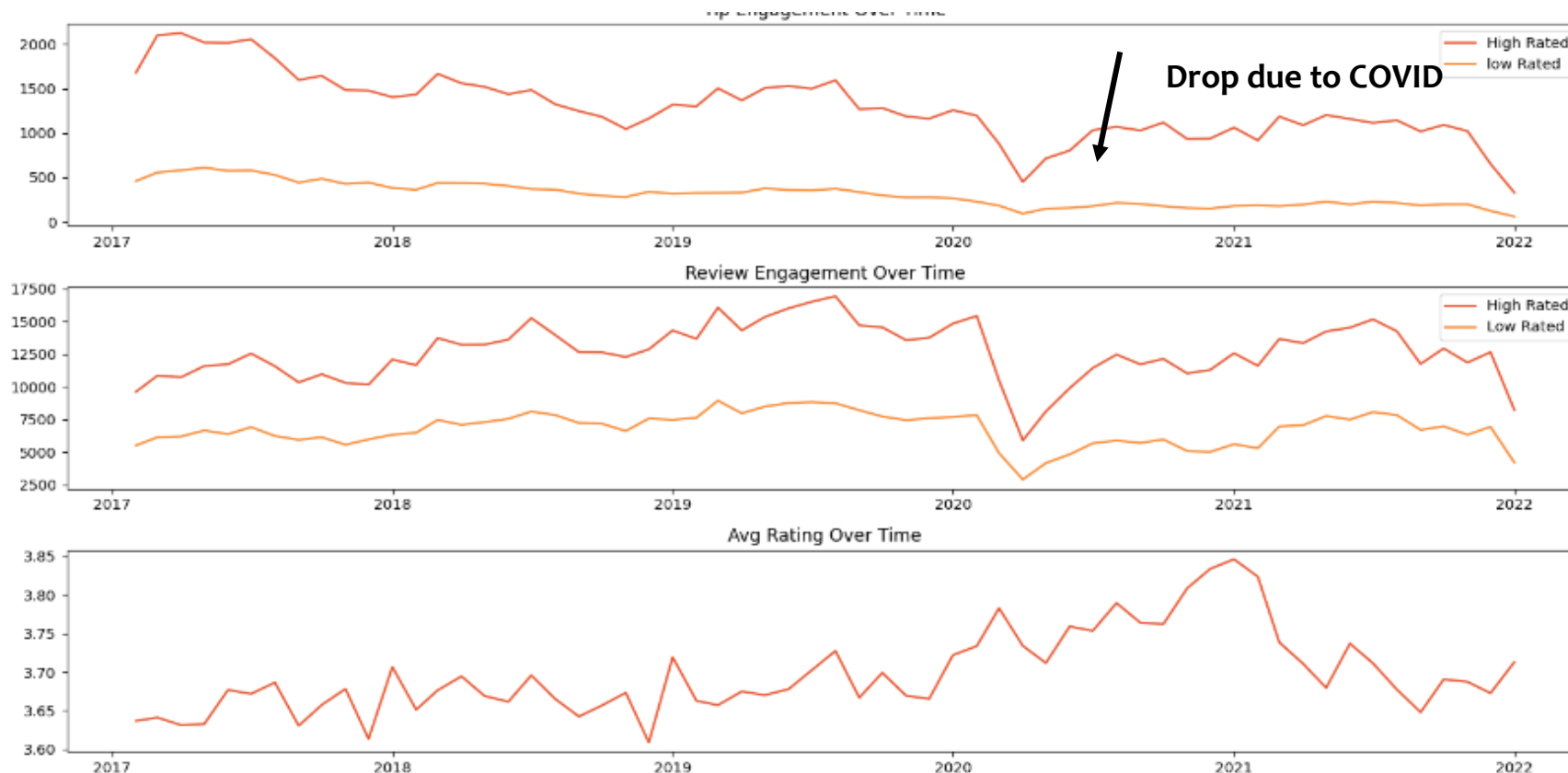
- Successful businesses, particularly those with higher ratings above 3.5, exhibit consistent and possibly increasing user engagement over time.

- High-rated restaurants maintain a steady or growing level of user engagement over time, reflecting ongoing customer interest and satisfaction.
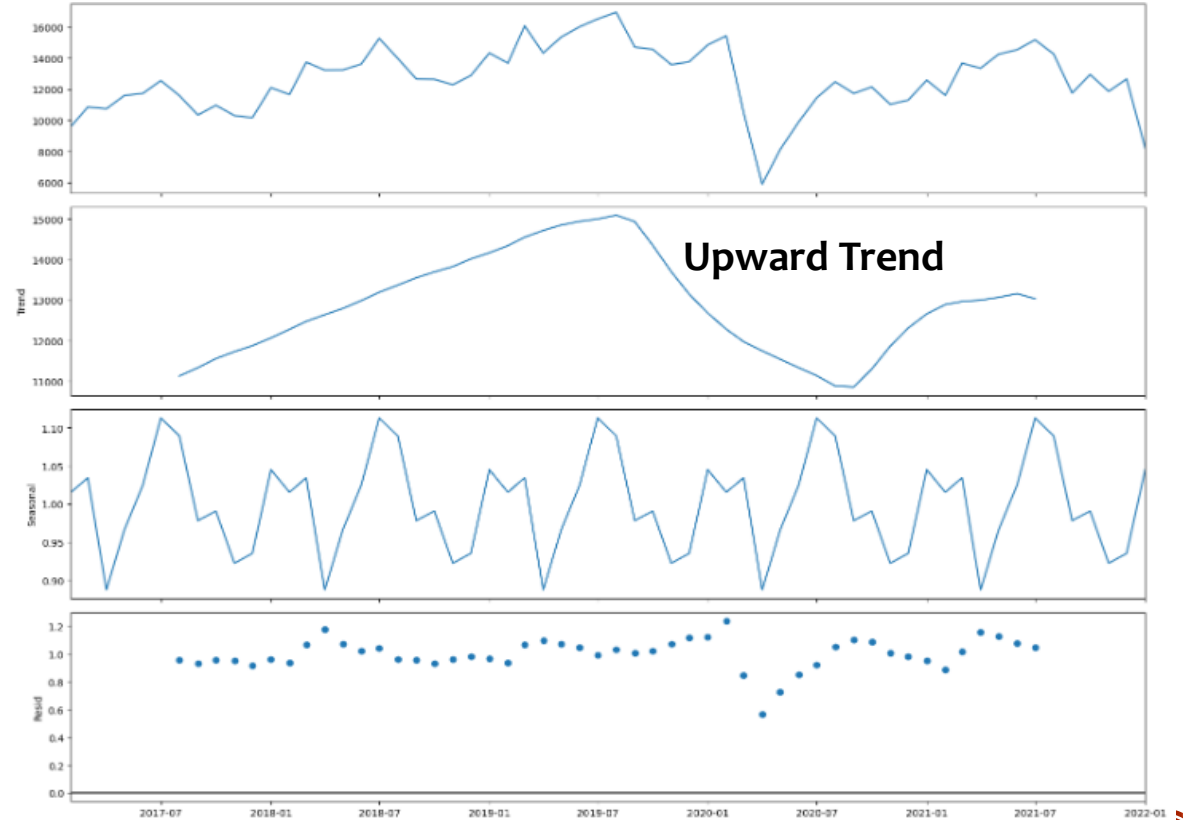
TREND AND SEASONALITY ANALYSIS

Tip Count

## Review Count

Downward Trend

Upward Trend
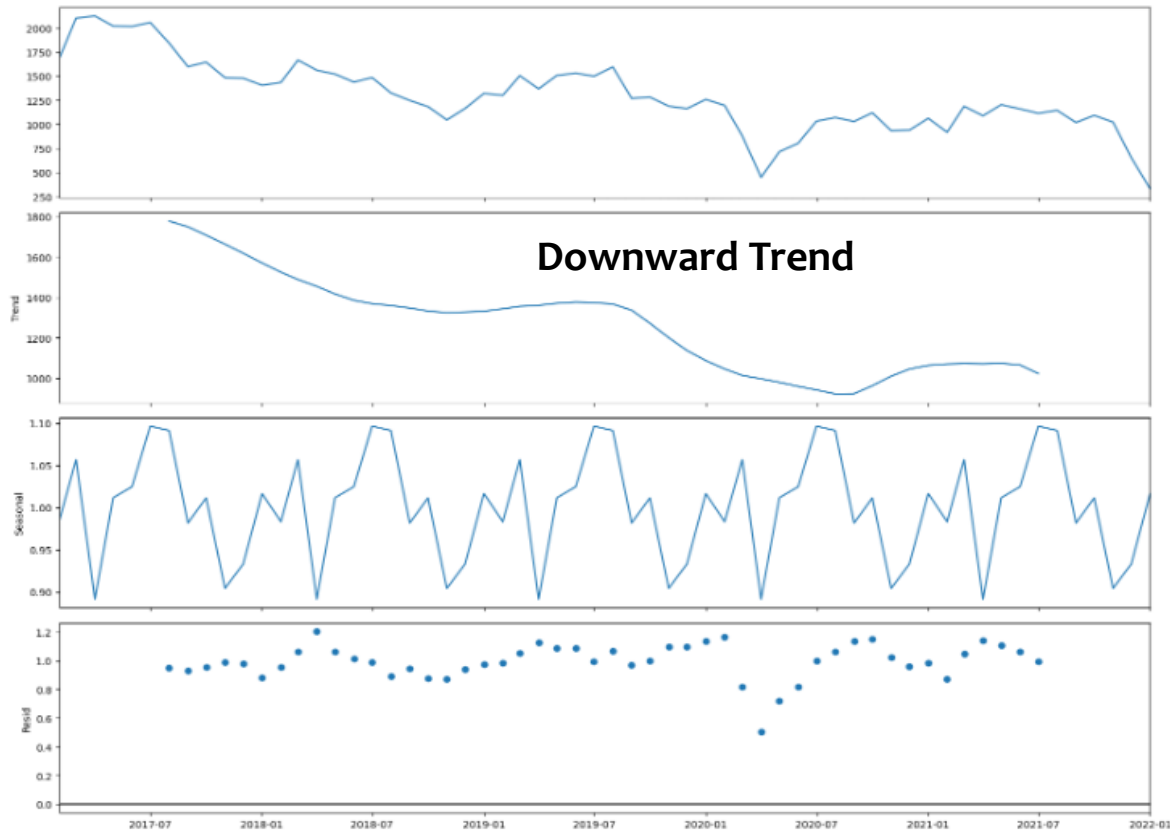
The year starting and ending(November-March) is highly engaging.

How does the sentiment of reviews and tips (useful, funny, cool) correlate with the success metrics of restaurants?

- 'Useful', 'funny', and 'cool' are attributes associated with user reviews. They represent the feedback provided by users about the usefulness, humor, or coolness of a particular review.

- Higher counts of useful, funny, and cool reviews suggest greater user engagement and satisfaction, which are key factors contributing to a restaurant's success.
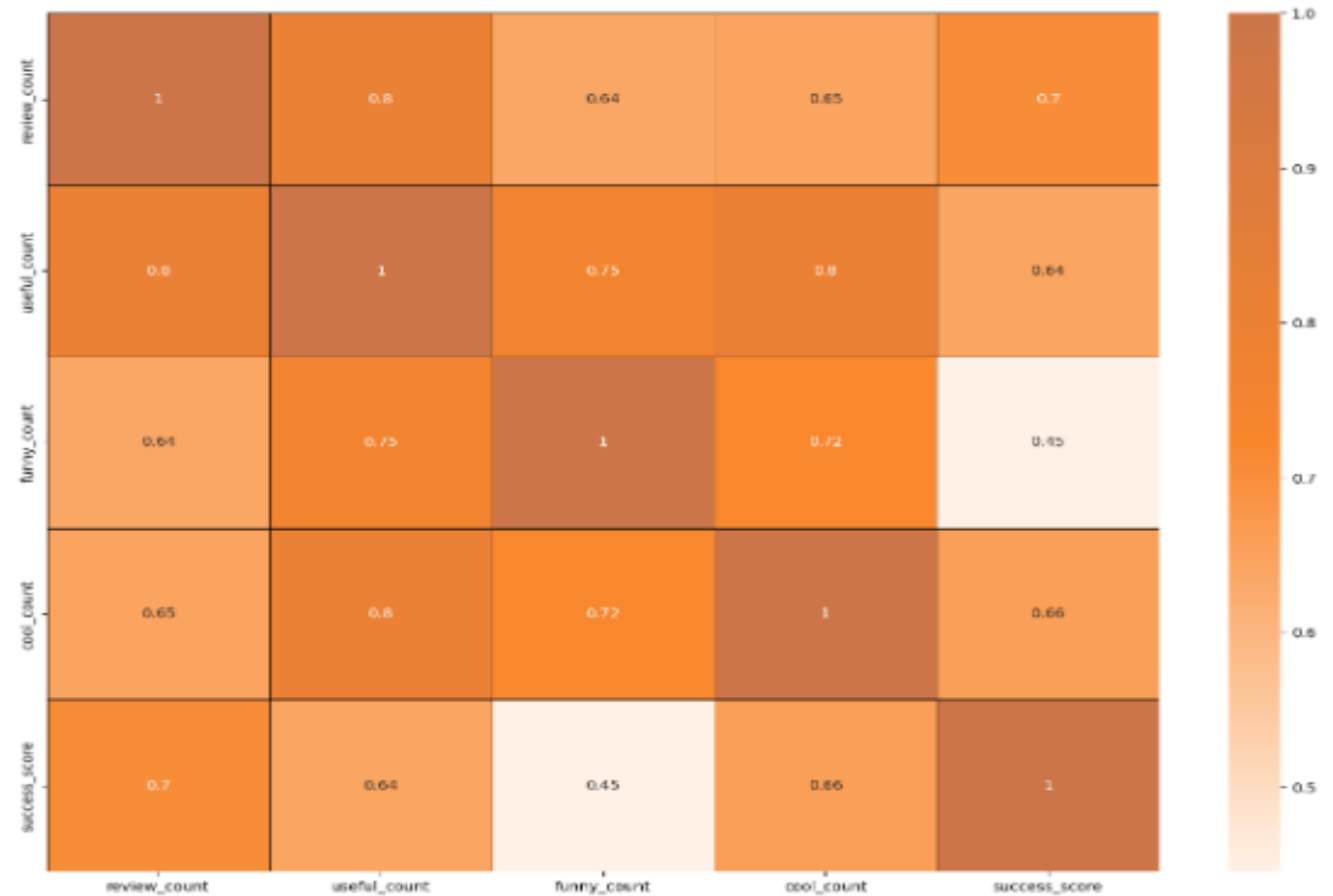
Is there any difference in the engagement of elite users and non-elite users?

- Elite users are individuals who have been recognized and awarded the 'Elite' status by Yelp for their active and high-quality contributions.

- Elite users, despite being significantly fewer in number, contribute a substantial proportion of the total review count compared to non-elite users.

- Establishing a positive relationship with elite users can lead to repeat visits and loyalty, as they are more likely to continue supporting businesses they have had good experiences with.

User Distribution

Elite 4.587662
Not Elite 95.412338

Review Distribution

Elite 44.047183
Not Elite 55.952817

Busiest Hours

- The busiest hours for restaurants, based on user engagement, span from 4 pm to 1 am.

- Knowing the peak hours allows businesses to optimize their staffing levels and resource allocation during these times to ensure efficient operations and quality service delivery.

- The concentration of user engagement during the evening and night hours suggests a higher demand for dining out during these times, potentially driven by factors such as work schedules, social gatherings, and leisure activities.
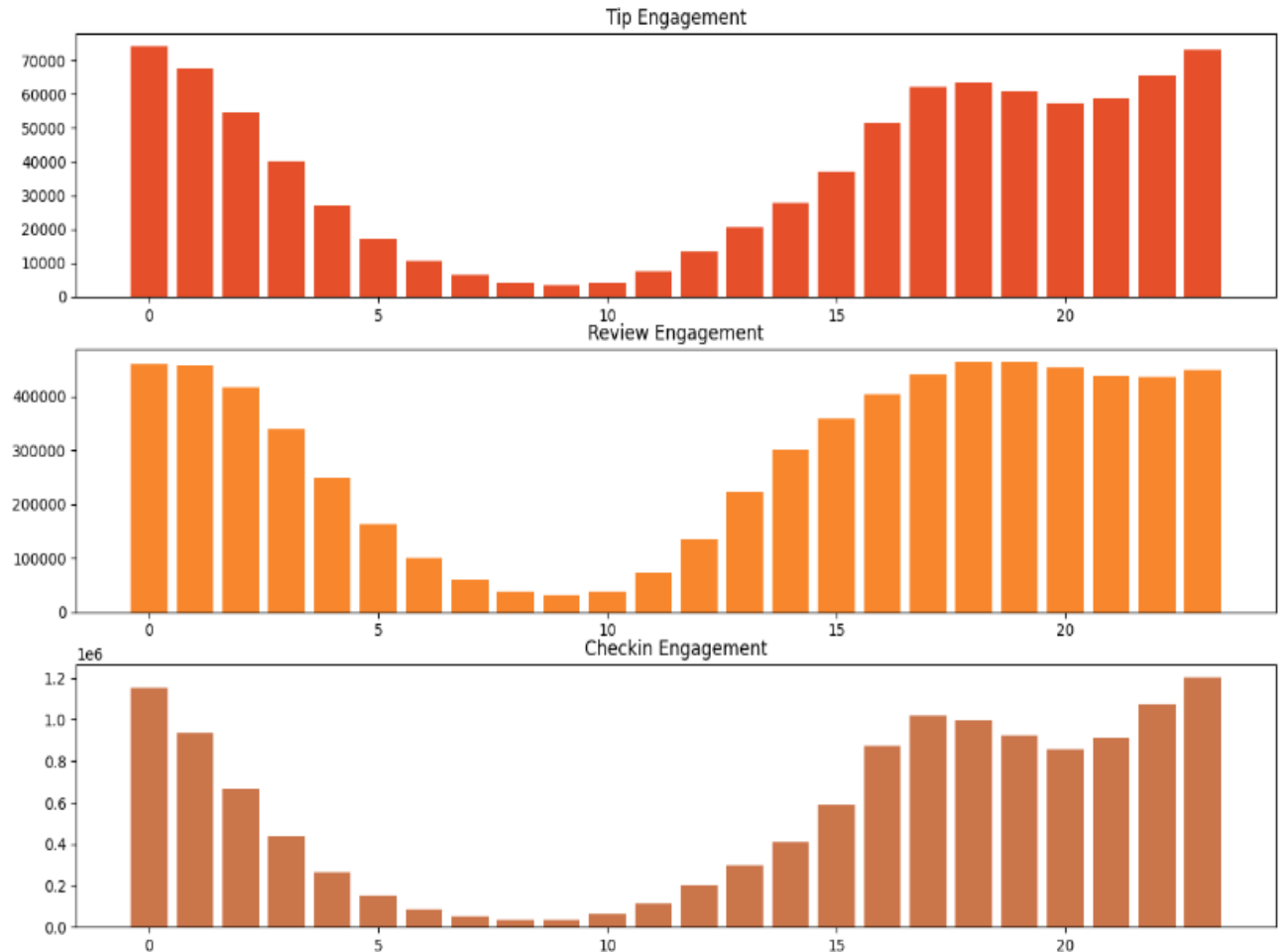
Recommendations

- Utilizing insights from the analysis of various metrics such as user engagement, sentiment of reviews, peak hours, and the impact of elite users, businesses can make informed decisions to drive success.

- Collaborating with elite users and leveraging their influence can amplify promotional efforts, increase brand awareness, and drive customer acquisition.

- Businesses can adjust their operating hours or introduce special promotions to capitalize on the increased demand during peak hours.

- Less successful businesses may need to focus on strategies to enhance user engagement over time, such as improving service quality, and responding to customer feedback.

- Cities with high success scores present opportunities for restaurant chains to expand or invest further.

Thank you