

Project: Is talking to Alexa enough? Or do we need more?

Data analysis

Previous data analysis has shown that reviewers, as shown in Figure 1, when they are not as satisfied with the device given the lower star rating, would write more. Interestingly, the two screen-less devices, with their relatively higher mean star ratings, have shorter reviews than the three devices with screen.

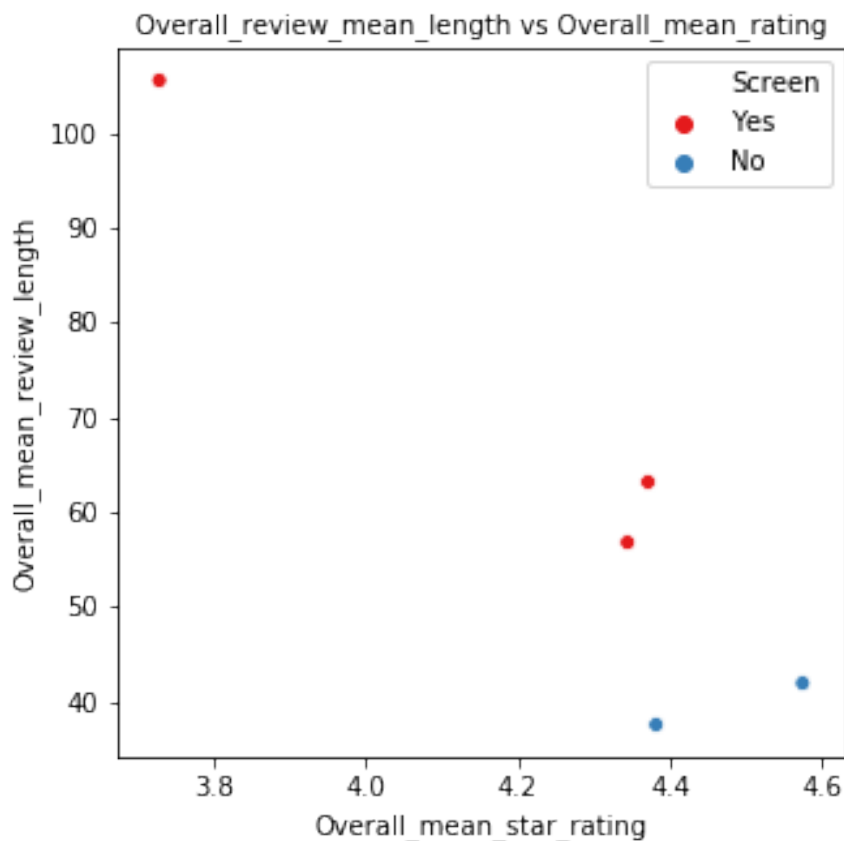


Figure 1. Mean review length vs. mean star rating of selected devices.

Further examination of the data shows that the reviews for all the five selected devices are highly skewed with mostly 5-star reviews. The number of reviews and their relative proportion for each star-rating group are plotted in Figures 2 and 3, respectively. Figure 2 shows that 5-star reviews made up for about 70% of the reviews for all devices but Echo Show 1st Generation, from which ~50% are 5-star reviews.

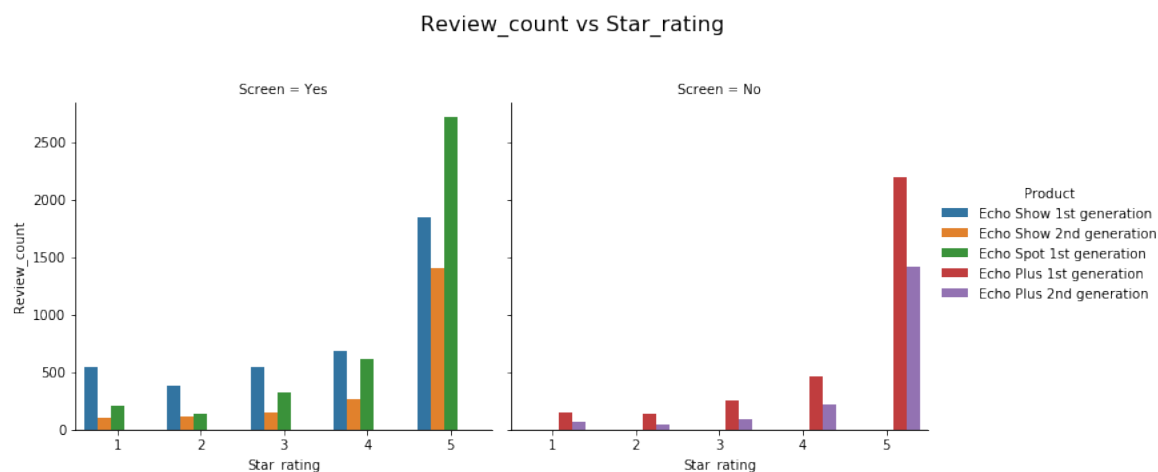


Figure 2. Number of reviews from each star rating group.

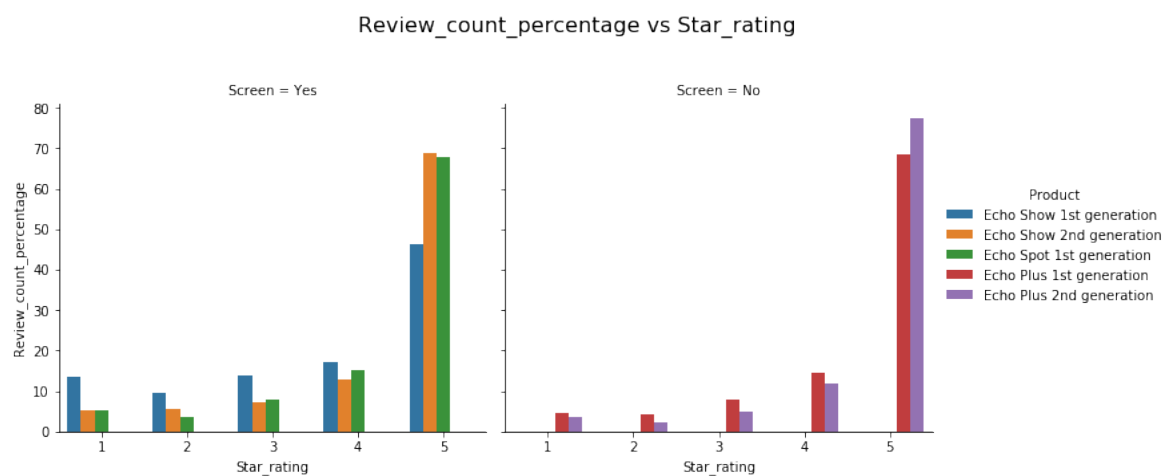


Figure 3. Relative proportion of review count from each star rating group.

The overall high mean star ratings can probably be explained by the skewed reviews. The above analysis also suggests that reviewer's satisfaction might correlate with how much they write. Understanding the relationship between the reviewer's sentiment and the review content would be of interest. However, being able to extract information regardless of the review's length would be important. The next steps will include examining the reviews further by word cloud analysis, which would help identifying features that are liked and disliked by the reviewers, and by performing a sentiment analysis, which would allow us to measure and analyze the sentiments expressed quantitatively.

Word cloud analysis

Monogram, bigram and trigram word cloud analyses were performed on both review titles and review contents of each star-rating group from all selected Echo devices. Aiming to identify the most liked and disliked features, the following analysis will focus on the 5-star and 1-star

reviews. Word clouds were generated based on monogram, bigram and trigram frequencies, which are shown respectively in Figures 4 and 5 from 5-star and 1-star reviews. In each figure, the 20 most frequent words/phrase are shown and the word size based on the computed frequency.





Echo Show 1st Gen



Figure 6. Word clouds from 1-star review titles of Echo Show 1st Generation. Words and phrases related to screen flickering is highlighted in pink.