

Analysing Twitter Reactions to the Tesla Cybertruck: Before and After Launch (1267 words)

1. Introduction:

The Tesla Cybertruck unveiling in November 2019 generated substantial public reaction due to its angular, futuristic design that was a major departure from traditional truck styles. However, the production version launched in late 2023 underwent several design changes, including a 50% price increase from the originally announced \$39,900 to \$60,990 (Hawkins, 2023). The promised 500-mile range dropped to 300 miles, and the towing capacity decreased from the announced 14,000 lbs to 11,000 lbs (Jain, 2023).

These alterations from the 2019 prototype to the 2023 production model have impacted public perceptions on Twitter as evidenced by content analysis of social media discourse around new product releases. For example, Rathore and Ilavarasan (2020) have utilized Twitter data to examine shifts in consumer opinions pre and post launch of new products in the market. Similarly, Mollema et al. (2015) leveraged Twitter content to track public sentiment changes during disease outbreaks. The present study aims to perform content analysis on Cybertruck-related Twitter data and by evaluating user discussions, sentiments, and engagement metrics, this research can provide insights into how the production model changes influenced public views compared to the original 2019 concept.

While prior work has analysed Twitter to track opinion shifts around events, no study has specifically focused on shifts in perceptions from automotive concept announcements to final production models. This research aims to fill that gap by investigating the Twitter discourse around Tesla Cybertruck as a case study.

2. Research Question:

What are the opinions of Twitter users on the Tesla Cybertruck based on their tweets, retweets, and replies before and after its official launch?

3. Method

3.1. Data:

The data for this study was manually collected from Twitter, with 50 posts related to the Tesla Cybertruck within two distinct time frames: two weeks following the prototype launch event on 20th November 2019 and two weeks following the official launch event on 30th November 2023. Random tweets were chosen through Twitter's advanced search where they were filtered appropriately based on certain keywords, a minimum engagement, and the "Dates" option.

The data collection involved using specific keywords, like "Tesla Cybertruck" and hashtags such as "#cybertruck" "#teslacybertruck" and "#TSLA", which were chosen due to their popularity in the trending section during the launch date. The dataset included original tweets, retweets, and replies, all in the English language. Engagement metrics such as likes, replies, retweets and views were collected, and an engagement score was calculated by summing up all the metrics per post. Because of old data, views from tweets before the launch were not available, and thus engagement in terms of views was only collected for tweets after the launch event. The written dates of tweets were also collected to conduct comparative analysis.

3.2. Analysis:

To analyse shifts in sentiment and engagement between the original 2019 Cybertruck unveiling and the final 2023 production model launch, a qualitative content analysis was conducted on Twitter data from both time periods. An initial codebook was developed by randomly sampling 25 tweets from each timeframe and performing open coding to categorize tweets based on their content. Through this process, four mutually exclusive categories were developed: Positive Appreciation,

Critical Feedback, Trolls/Humour/Meme, and Negative Reactions. They are further clearly defined with examples in Table 1.

Table 1: Codebook

Category	Definition	Example
Positive Appreciation	Tweets expressing admiration, enthusiasm, or positive opinions about the truck's features or design.	<i>“Cybertruck is the biggest leap forward in automotive history. It is the first to do... - 48v electrical system - daisy chain power and electronics - exoskeleton shell - steer by wire - bullet proof cold rolled steel - shatterproof glass.”</i>
Critical Feedback	Tweets constructively critiquing or suggesting improvements to the truck.	<i>“Make the Tesla CyberTruck wheelchair accessible in someway and I’ll buy one. The future should be accessible for everyone. No one else is doing it, how about you take on that challenge. It can’t be as hard as making a rocket land on a boat right?”</i>
Trolls/Humour/Memes	Tweets with humorous, sarcastic, or satirical content about the truck, often including memes.	<i>“But can cybertruck pull me out of the friendzone?”</i>
Negative Reactions	Tweets expressing disapproval, disappointment, or frustration with the truck's features, price, or changes	<i>“Just noticed the top speed on cybertruck awd is 112mph.. and 130 for beast version. Seems a little low :/”</i>

To make the categories mutually exclusive, tweets that contained both clear positive sentiment and focused critical feedback were coded under the Critical Feedback category. The Positive Appreciation category was reserved only for tweets expressing enthusiasm, admiration, or praise without any prominent critique. Although some humour tweets mocked or complained about aspects of the Cybertruck, if humorous intent was identified, they were coded in the Trolls/Humour/Memes category. Similarly, tweets that used dissatisfied, frustrated language, and focused on weaknesses, disappointments or anger were categorized as Negative Reactions.

The frequency proportion of tweets in each category were calculated to find out the distribution of public opinions and plotted using a stacked bar chart. User engagement was quantitatively compared between the two time periods, where the number of retweets, likes, and replies for each tweet were compiled to calculate average engagement metrics per category. These metrics were compared using bar charts from both the time frames.

4. Results:

The distribution of tweets across the four codebook categories is shown in Table 2 below for both the 2019 and 2023 time periods. In 2019, Positive Appreciation made up the largest proportion at 32%, while Negative Reactions was the smallest category at 20%. By 2023, the distribution had shifted such that Negative Reactions became the most prevalent at 32%, while Critical Feedback decreased to just 20%. The proportions of Humour/Memes tweets remained stable from 2019 to 2023 at 20% each.

These results demonstrate a decrease in positive sentiment and constructive criticism regarding the Cybertruck from the prototype reveal to the production model launch. Alternatively, negative reactions increased by 12% between the two time periods as aspects like pricing and specifications changed from original promises. The content analysis indicates an overall shift toward more disappointed and disapproving discourse by the time of the official launch in 2023. However, the overall distribution across both the time periods, represented in the form of a stacked bar chart signifies that the Tesla Cybertruck received positive appreciation (30%) throughout from a total of 50 tweets.

Table 2. Frequencies and percentages of tweets in each codebook category

Code	Tweets from the year 2019		Tweets from the year 2023	
	#	%	#	%
Positive Appreciation	8	32	7	28
Critical Feedback	7	28	5	20
Trolls/Humour/Memes	5	20	5	20
Negative Reactions	5	20	8	32

Figure 1. Tweet Categories Before and After Launch

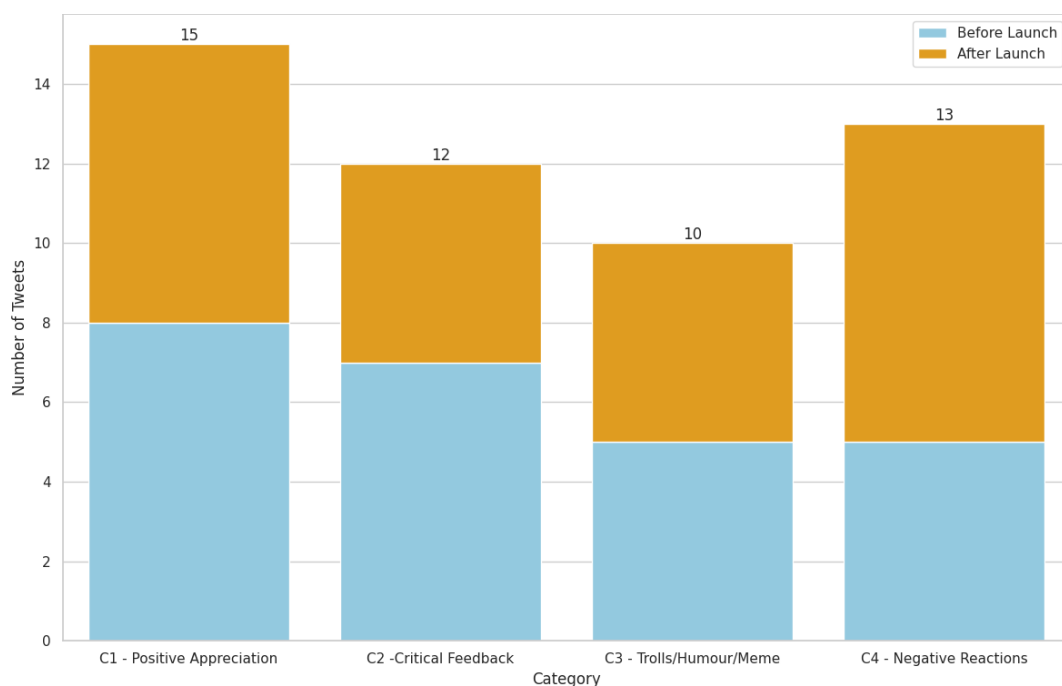


Figure 2 shows the total engagement scores for each category from tweets in 2019, where Trolls/Humour produced the highest total engagement score of nearly 130,000, along with Positive Appreciation being the second most engaged category. Figure 3 displays the total score in the year 2023, where Critical Feedback ranked amongst the top category with a combined score of 39815 impressions, followed again by Positive Appreciation. The data indicates humour and entertainment value decreasing as conversations shifted to more critical and negative reactions in 2023.

These results demonstrate that tweets containing disappointed, or critical sentiments gained much more attention after the final production Cybertruck details and pricing were unveiled. It is also worth noting that in both the years, likes contributed to producing the most engagement whereas replies barely contribute to the overall score. This suggests that opinions of people can be judged more effectively by analysing engagement in terms of likes.

Figure 2. Total Engagement Score per Category Before Launch - 2019

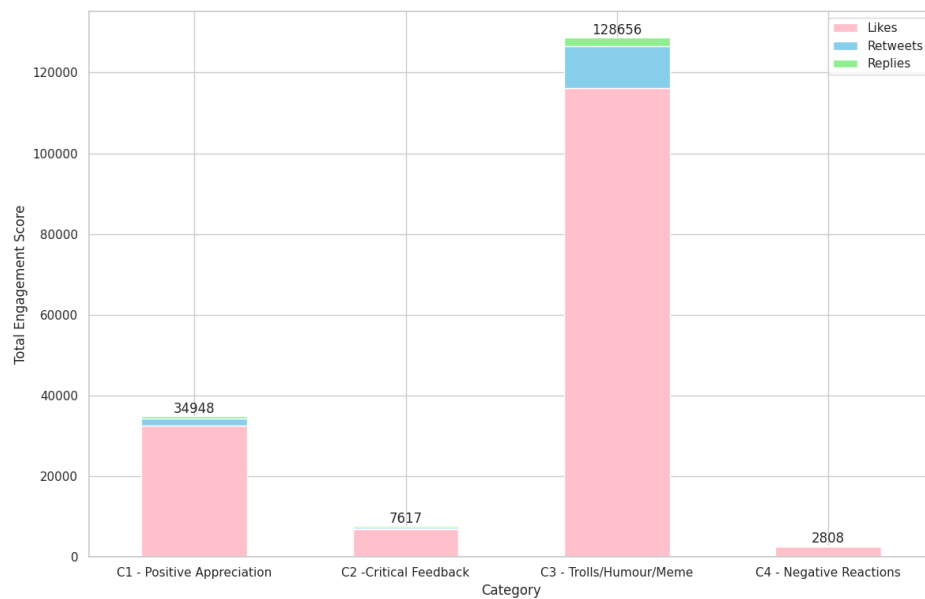
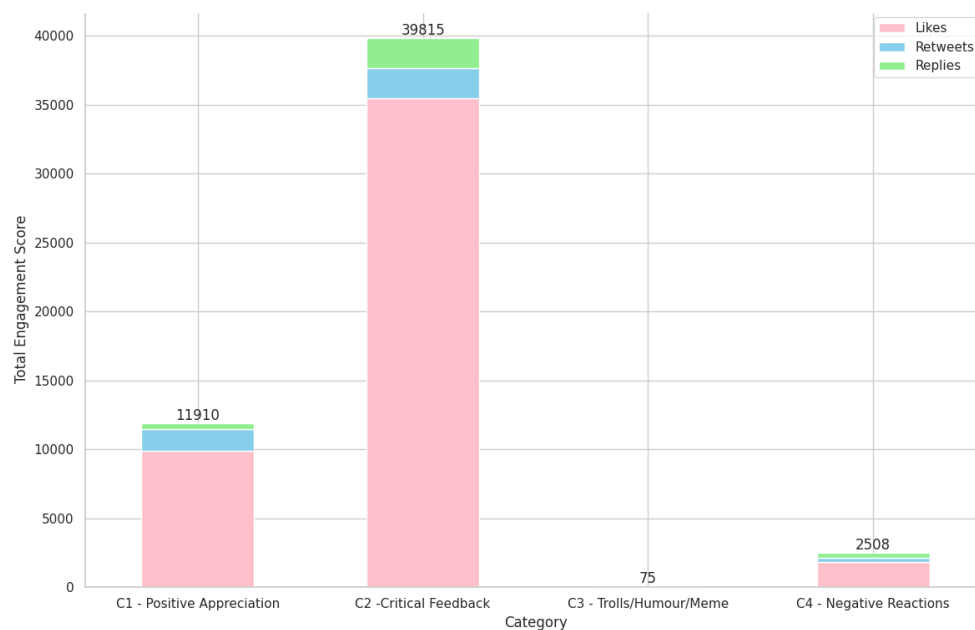


Figure 3. Total Engagement Score per Category After Launch - 2023



5. Conclusion and Limitations:

The study aimed to analyse user opinions regarding the Tesla Cybertruck before and after its official launch. The results revealed a decrease in positive sentiment and an increase in negative reactions from concept to production launch. The engagement analysis further justified these shifts indicating a reduced impression for positive tweets but increased attention to critical and negative content after launch. It was found out that users showed a high interest in sharing memes/humorous content in 2019, whereas they become more critically acclaimed by 2023. Overall, even though there was a drop in positive tweets and its engagement, Positive Appreciation still consisted of the highest number of tweets per category.

There were several limitations in the current study. First, the sample size of 50 tweets was very small, and thus may not represent the totality of discussions happening on Twitter around the Tesla Cybertruck. Due to manual data collection, biases were introduced in the study, which led to the data being skewed for a given category. Second, only basic engagement metrics such as retweets, likes and replies were considered, whereas advanced social media analytics through Tweepy API could have been utilized to track public opinions. Lastly, the current study focuses solely on categorizing tweets into four categories, whereas multiple classes could be defined which can help in expanding the codebook. Despite these limitations in sampling, and analysis methods, this study provides a framework for future research to build upon in investigating Twitter sentiment shifts around new product launches.

6. References:

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