

Victory Cheers to Defeat Tears:
A Sentimental Saga of Indian Cricket
Devotees Pre and Post-World Cup Loss

Project Report

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INTRODUCTION & MOTIVATION:

Cricket has beyond the domain of sports in India, becoming a cultural phenomenon that has intertwined the lives and emotions of millions. This project begins an enthralling investigation of the emotional journey taken by Indian cricket fans during and after World Cup matches. Our goal is to untangle the complicated tapestry of emotions that throb through the collective heart of the nation during these critical times in cricket.

- Importance of Analyzing Fan Sentiment:

Beyond the boundary lines, cricket serves as a communal experience, shaping the identity of diverse communities. The study of emotional highs and lows among cricket enthusiasts not only provides a window into the cultural narrative but also sheds light on the profound impact of sport on the collective psyche. By delving into the sentiments of fans, we aim to uncover the nuanced layers that contribute to the rich mosaic of Indian cricket fandom.

- Significance of the World Cup Context:

As the pinnacle of international cricket, the World Cup unfolds as a huge stage where expectations collide with realities and successes are celebrated as national triumphs. Defeats, on the other hand, reverberate collectively, reverberating across streets, living rooms, and digital places equally. We chose to analyze fan sentiments in this heightened emotional environment in order to better comprehend the complicated dance of emotions that surrounds this worldwide sporting spectacle.

As we embark on this analytical adventure, we hope to uncover the captivating storylines that emotions convey, from the anticipated jubilation preceding a match to the contemplative introspection that follows a loss.

The goal of this project is to capture the essence of Indian cricket fans, depicting it as a dynamic and ever-changing expression of national spirit.

PROBLEM STATEMENT:

The central objective of this research is to conduct hypothesis testing to systematically examine or challenge, the assertion that there has been a noticeable alteration in the sentiment and opinion of the Indian population towards the Indian cricket team or cricket in general following the recent World Cup loss.

This study employs hypothesis testing techniques within the framework of Natural Language Processing (NLP), specifically VADER sentiment analysis as discussed in class, to analyze comments extracted from viral social media posts and videos related to the World Cup and the Indian cricket team.

- **Scope and Objectives:**

The primary aim of this project is to investigate the dynamics of sentiment within the Indian cricket community, specifically exploring whether a noticeable shift occurs in fan emotions from pre-World Cup optimism to post-match reflection. The scope encompasses the analysis of sentiments expressed in unbiased YouTube videos—two recorded prior to the World Cup and two after the tournament's conclusion.

- **Research Questions:**

Is there a statistically significant change in sentiment among Indian cricket fans before and after the World Cup?

What patterns emerge from the sentiment scores, and do they align with the expectations and experiences of fans during the tournament?

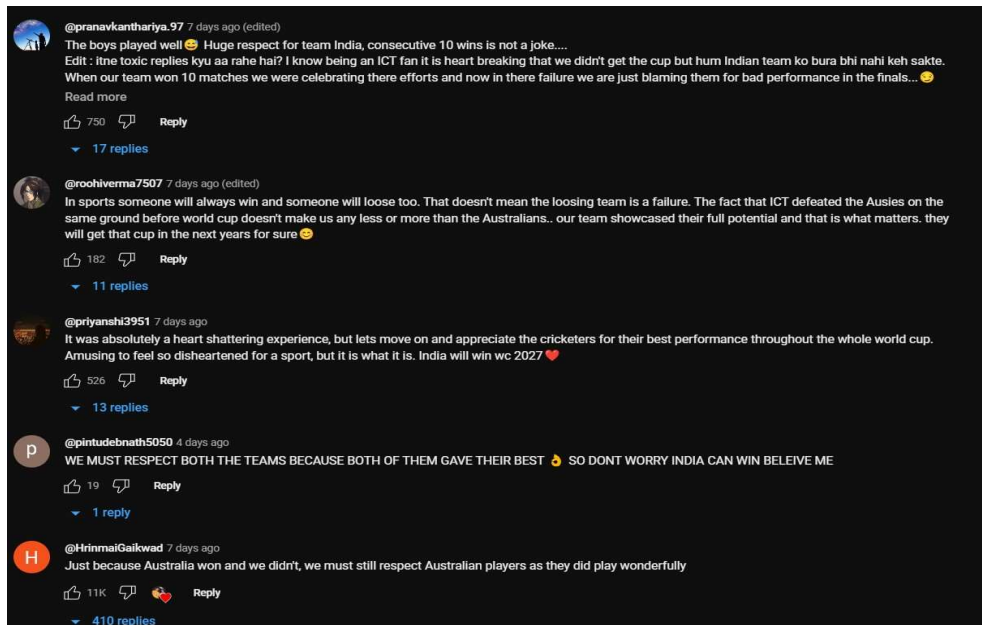
DATA COLLECTION:

- **Selection of Unbiased Videos:**

To ensure a representative cross-section of sentiments, we meticulously chose two unbiased YouTube videos before the World Cup and two after its conclusion. These videos serve as our primary source of qualitative data, capturing unfiltered expressions of fan emotions.

The data has been collected from the following youtube videos:-

To analyze sentiment of fans before world cup:
<https://www.youtube.com/watch?v=mEOBGY4-7JA>
<https://www.youtube.com/watch?v=HNXhdo5j914>
 To analyze sentiment of fans after world cup:
<https://www.youtube.com/watch?v=akyu9pSbArY>
<https://www.youtube.com/watch?v=jOGiuabQumQ>



• Processing Methodology:

The extraction process involved collecting comments from these videos, translating non-English comments to English for a uniform dataset, and a subsequent rigorous cleaning process. The result is a refined dataset, ready for sentiment analysis. Here are some images of the text we got

	author	published_at	updated_at	like_count	text
0	@erenjaeger7825	2023-11-18T23:48:37Z	2023-11-18T23:48:37Z	1	Angle is looking at it at 23
1	@placefornewthings7763	2023-11-18T23:22:36Z	2023-11-18T23:22:36Z	0	There is no kick in the comment
2	@gamerbabagg	2023-11-18T22:41:55Z	2023-11-18T22:41:55Z	0	Chutia Chutra Dubbing Book
3	@wahedlimon	2023-11-18T22:04:37Z	2023-11-18T22:04:37Z	1	Again india on final,,, Today is the cwc 2023 ...
4	@monukashyap1	2023-11-18T21:40:44Z	2023-11-18T21:40:44Z	1	A night before a final ❤️
...
167	@RudrakshaHudge	2023-11-16T13:36:25Z	2023-11-16T13:36:25Z	0	India almost repeat create history in 2023 wor...
168	@officialzack06	2023-11-16T13:11:20Z	2023-11-16T13:11:20Z	3	Kon kon hai ji ind vs nz 2023 semi final dekh...
169	@kunalgautam3567	2023-11-16T12:50:03Z	2023-11-16T12:50:03Z	1	After India won in semi-final 2023.
170	@aastha2146	2023-11-16T12:12:01Z	2023-11-16T12:12:01Z	1	May we recreate the same moment in 2023 CWC
171	@user-nn1cm4fg2l	2023-11-16T11:05:07Z	2023-11-24T03:34:11Z	2	Who is here after India lose 2023 wc 😞😞

- Expected Outcomes:

We expected the sentiment of fans will change after the world cup loss significantly, we used hypothesis testing on the comment's sensitivity to Prove or disprove our claim. Our Alternate hypothesis is that fans sentiment has changed significantly we took mean and standard deviation of the sentiment of comments we took from popular YouTube videos let μ_1 and s_1 be the mean and standard deviation of the sentiment values of comments before world cup and μ_2 and s_2 be the mean and standard deviation after the world cup final

OBSERVATIONS AND RESULTS:

$$H_0: \mu_1 = \mu_2$$

$$H_a: \mu_1 \neq \mu_2$$

We got the following Results from the comments

$$\mu_1 = 0.1518 \text{ and } s_1 = 0.3467$$

$$\mu_2 = 0.0313 \text{ and } s_2 = 0.2564$$

The t value for the means comparison from class is

$$t = \frac{(\mu_1 - \mu_2) - 0}{\sqrt{\frac{s_1^2}{n_1 - 1} + \frac{s_2^2}{n_2 - 1}}}$$

$$t = 0.7348$$

Here we take degrees of freedom as 157 since $n_1=200$ and $n_2=158$

We took $\alpha = 0.1$ for our hypothesis test

The critical for the test

$$t_{cr} = 1.6546$$

Since $t_{cr} > t$ we do not reject null hypothesis.

CONCLUSION:

On conducting a hypothesis test to examine the potential shift in sentiment among the Indian population regarding the Indian cricket team or cricket in general following the recent World Cup loss, our

investigation led to insightful findings. The research was framed around the alternate hypothesis suggesting a significant change in sentiment among fans.

Upon meticulous analysis using hypothesis testing techniques, particularly with a careful examination of critical values and significance levels, the results led to the conclusion that we did not reject the null hypothesis. The null hypothesis posited that there is no substantial alteration in the sentiment of the Indian population post the World Cup loss.

This outcome indicates that, based on the statistical evidence available, there is insufficient support to affirm that a noteworthy change has occurred in the sentiment of Indian cricket fans. While the alternate hypothesis suggested the potential for a significant shift, the data did not provide convincing evidence to deviate from the assumption that the sentiment remains relatively stable.

It is crucial to acknowledge the dynamic nature of sentiments, which can be influenced by a multitude of factors, and the study's findings represent a snapshot within a specific timeframe. Additionally, the research underscores the importance of robust statistical analyses and hypothesis testing in drawing nuanced conclusions from complex data.

While the present study did not discern a significant change in sentiment, it provides a valuable foundation for continued exploration into the evolving dynamics of public opinion and emotional connections in the context of major sporting events. Future research endeavors could delve deeper into understanding the multifaceted nature of sentiments, considering additional factors that might contribute to sentiment shifts among cricket enthusiasts in India.

REFERENCES:

- For downloading comments from YouTube, we used to google API: <https://developers.google.com/youtube/v3/docs/comments/list>
- For Translating Comments to English google translate python library:
- *pip install googletrans*