Twitter Sentiment Analysis for the F1 Drivers

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I) Motivation

The motivation of this research was found after watching the 2021 British Grand Prix which involved a major accident between the World Driver's Championship contenders. The negative sentiments of fans were starkly different over several mediums of social media. These sentiments were also very highly volatile as time passed on. This made me wonder about how the opinions of Formula One fans changes as the seasons go by.

II) Methodology

I decided to use tweets related to the three major drivers of the past 15 seasons – Lewis Hamilton, Sebastian Vettel, and Max Verstappen. All these drivers have very different storylines in their successful careers and have had received their criticisms at different times of their careers. I used the snscraper library to collect all tweets for each driver per year. After segregating by each year, I used TextBlob – an NLP library to find the sentiment of a given text.

III) Results and Analysis

I used matplotlib to plot out the overall polarities – the net sentiment of the fans for a certain driver over the season and compared to the other drivers using a line graph. The graph is presented down below in Figure 1
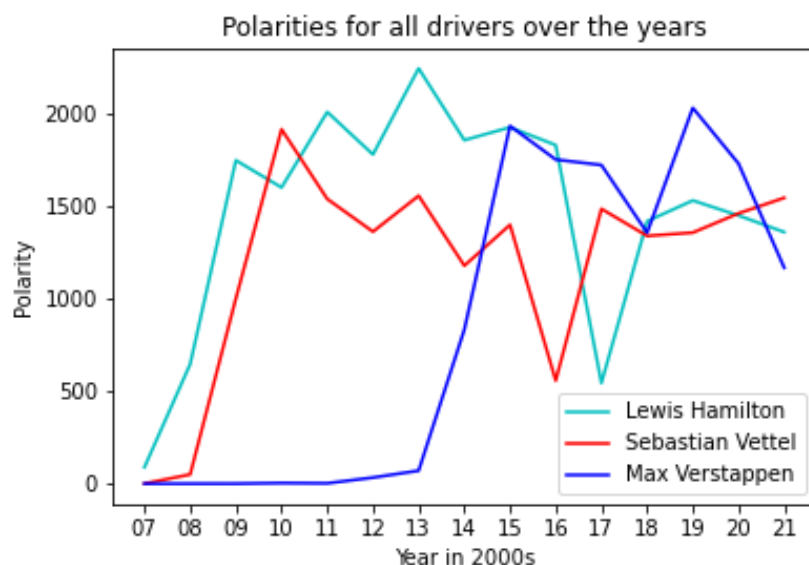

Figure 1 The polarities of drivers through their careers

From the graph we can summarize that, drivers tend to rise to popularity when they find themselves in a top team. All three drivers have had highs in polarity when they joined their most successful team i.e., Hamilton in 2013 when he moved to Mercedes, Vettel in 2009 when he joined Red Bull and Max Verstappen in 2016 – his first year at Red Bull.

We can also point out the drop in popularity of drivers when they're dominating the sport. Sebastian Vettel had received a lot of hate back when he won 4 consecutive championships with Red Bull. He was deemed as a villain in Formula One. The young world champion did see a drop in his polarity rating from 2009 to 2013 where he won 4 of 5 championships. The same can be made of the drop in polarity for Hamilton in 2017 when he won his 4th world title. While Max Verstappen is yet to win a world championship as of writing this paper, he too has seen a drop in popularity in 2021, when he got his first chance at a championship battle. We can assume that fans tend to become more negative towards drivers when they are at their career highs.

Vettel's career graph reveals some more interesting information. The increase in positive comments towards Vettel have increased ever since his career ending crash in 2018. Ever since, he has not been able to put up a championship battle. His harsh divorce with Ferrari and his welcome into a lower midfield Aston Martin in 2021, brought out the likable personality of Vettel and changed the opinions of the fans altogether. This is another example of how one's career trajectory may change the opinion of fans. In Vettel's case it might have even been that the negativity may have reduced to him losing form and no longer being the limelight of the championship.

Rising star Max Verstappen's graph shows how his young age and the many mistakes he made in his early career at a top team like Red Bull affected his impression on the fans. We can see a dip in his polarity between 2017 and 2018 as he was known to be reckless 'Crashstappen.' His maturity in driving ever since has changed his career trajectory and his likeability amongst fans.

   IV)   Limitations

TextBlob works best with English Tweets and can be inaccurate at times. These drawbacks in TextBlob are reduced by filtering by using only English tweets and using a large sample of 10000 tweets per driver per season. It must also be acknowledged that the selection of only tweets written in English will add a bias towards drivers who have fans from English speaking countries – such as Briton Lewis Hamilton in our study. Vettel, German, and Verstappen, Dutch, may be at a disadvantage. With that being said, most of the world uses the English language and therefore it is likely that the bias is neutralized.

   V)   Conclusion

From the research I was able to conclude that Formula One fans do tend to show negative behaviors towards their favorite drivers when they are at the top of their game or when they are

young and making mistakes. This shows that the industry along with its fans is ruthless. The crowd also tends to see the good parts of a driver's personality when the driver is not in the limelight of the championship which seems unfair to the ones who are fighting for the championship as they have added negativity from the fans when they are making a bid for the championship.