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DOES THE AMERICAN PUBLIC BELIEVE THAT THE SUPREME COURT IS STILL IMPARTIAL? A SENTIMENT ANALYSIS

Introduction

The judicial system was created in the United States to act as a final voice in deciding whether laws enacted align with this country's ideals and values. The courts of the judicial branch enjoy the sole power of interpretation of law. However, this power requires a unified and neutral voice, a necessary responsibility. The responsibility lies the greatest upon the shoulders of the Supreme Court and the justices within, as the Supreme Court is the head party at the top of the judicial hierarchy.

However, the reputation of the Supreme Court as a non-partisan voice has been called into question recently. As several huge, and rather controversial, decisions were made in recent years by the Supreme Court including the overturn of Roe v. Wade, rejecting the Biden administration's authority to overwrite statutes in the HEROES Act to eliminate student debt, and the most recent ruling that certain affirmative action in college admissions programs is unconstitutional.

These rulings stand behind very charged social issues during an already polarized political environment, and citizens' reactions to recent Supreme Court rulings have them asking the question: Are Supreme Court justices still impartial in their interpretations of the constitutionality of laws, or do recent spikes in political tensions cause them to rule based on a hidden agenda?

The present study aims to use sentiment analysis to gauge the polarity and subjectivity of Reddit comments. Comments analyzed in this study were attached under a thread titled "The American public no longer believes the Supreme Court is impartial", based on an article posted in The Hill in early January of 2023. The objective of the study is to see if Reddit users agree or disagree that the Supreme Court is no longer impartial.

Methods

The post was found using Python Reddit API Wrapper (PRAW), to convert Reddit posts into a Python data frame. The subreddit "r/Politics" was used as a source to create a list of possible posts to select from. Once the above-mentioned post was selected to retrieve all the comments made under that post, as well as additional attributes including ID, score (how popular it is/difference of upvotes to downvotes), timestamp, and the number of upvotes and downvotes.

The resulting data frame then underwent pre-processing, removing missing/invalid data values and cleaning comments to have them prepped for sentiment analysis. First, unnecessary

columns of information were removed from the data frame. Regular expressions were then used to eliminate non-letter characters and white spaces, as well as eliminating stopwords (e.g., “the” or “not”). The remaining comments were then tokenized (splitting up each comment as a sentence into individual “buzzwords”) and stemmed (shrinking each tokenized buzzword into its root form) using the NLTK library. A word cloud was made to highlight the most frequently appearing words in the data frame.

In regards to sentiment analysis, TextBlob and VADER were used to calculate the polarity and subjectivity of each comment. Polarity refers to the comment being positive, negative, or neutral in sentiment, and is measured on a scale of -1 to 1. Comments were sorted into 3 bins based on polarity score (negative polarity score = negative sentiment, positive polarity score = positive sentiment, and a polarity score of 0 = neutral sentiment). For the purposes of the current study, having positive sentiment/polarity denotes the belief that the Supreme Court is still impartial, and negative sentiment/polarity denotes the belief that the Supreme Court is not impartial. Subjectivity refers to if the comment is coming from a subjective or objective viewpoint. Measured on a scale from 0 to 1, comments that had a subjectivity score of less than 0.5 were labeled as objective, and those with a subjectivity score of 0.5 or above were labeled as subjective.

Descriptive statistics were calculated on polarity and subjectivity scores, reporting measures of central tendency, dispersion, and minimums/maximums. Frequency tables and crosstabs were also run for a general overview of the data. Then, histograms of both polarity and subjectivity of the comments were made in a side-by-side comparison. A bar chart was also made comparing the scores of the comments, sorted by both sentiment and subjectivity. Finally, a relationship plot was made to compare subjectivity and polarity scores. A red reference line was added to the relationship plot at the 0.5 mark to show the divide between “objective” and “subjective” comments.

Results

Results from the sentiment analysis showed that for all of the 3,418 comments used in the analysis, the average sentiment rating was 0.0296, and the average subjectivity score was 0.343. This means that overall, the average polarity for all comments were slightly positive, and average subjectivity for all comments were mostly objective. Positive sentiment comments (1,294) and negative sentiment comments (1,281) are relatively the same, with 843 neutral comments. Majority of the comments were objective (2,372).

Histogram data shows that over 1,600 comments are neutral in sentiment, and over 1,000 comments are completely objective (subjectivity score of 0). This data aligns with findings from frequency and crosstab data. The bar chart shows that subjective comments with negative sentiment have the highest average score (highest ratio of upvotes to downvotes) and subjective comments with neutral sentiment has the lowest average score. However, objective comments have the least variance overall in average score across levels sentiment than subjective comments. Results from the relationship plot shows that objective comments has less variability

in polarity than subjective comments. In other words, objective posts are more likely to be neutral in sentiment, while subjective posts are more likely to have charged sentiment.

Conclusions

Reddit users who responded to a post about the non-partisan nature of the Supreme Court recently coming into question. Over 3,400 comments were submitted under this post, and while the large majority of users project neutral, mixed, or no sentiment towards this post, it leans slightly in favor of the Supreme Court still being impartial. In regards to objectivity, a strikingly large majority of Reddit user opinions come from a completely objective standpoint. This means that most comments are using facts or certain truths to portray their opinion, as opposed to employing ethos or personal feeling.

The main finding from the bar chart is that, surprisingly, the average score of subjective comments is more than double for negative sentiment than that of positive and neutral sentiment posts combined. This means that despite the average sentiment being slightly in favor of the Supreme Court being imparital, subjective posts that claim the Supreme Court being partial get much more net positive interaction from other Reddit users. Average scores of objective comments remained relatively constant across levels of sentiment, and the relationship plot is evidence that is consistent with these findings. The relationship plot shows that objective comments, overall, are more neutral in their finial opinion toward the Supreme Court, whereas subjective comments carry more polarized opinions toward the Supreme Court.

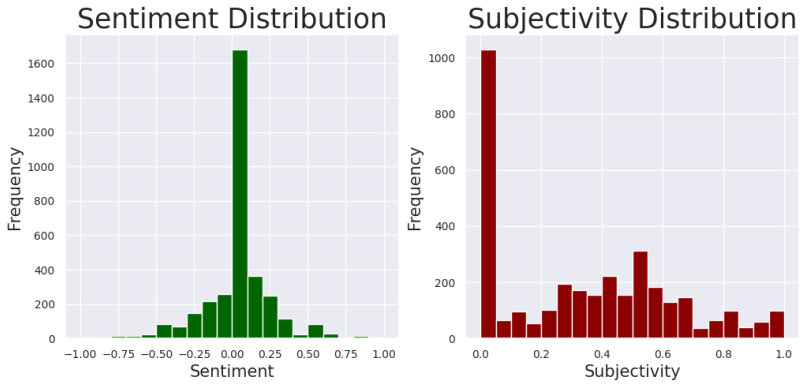
The present analysis used a repository of comments made concerning a post about the Supreme Court to gauge whether people believe if the Supreme Court is still impartial or not. Findings show that there is extreme polarity in opinion, but on average people believe that the Supreme Court is still impartial. It is paramoount to the functioning of American society that government institutions remain uncorrupted by hidden agendas, and that there is still trust in the judicial system and the courts to provide non-partisan interpretations of the law. Future studies might conduct sentiment analysis on scrapped text from other platforms (e.g., Twitter) to increase sample size, or conduct predictive analysis to understand which factors and traits of Supreme Court justices might cause the most distrust.

APPENDIX

Desctiptive Statistics

	polarity	subjectivity
count	3418.000000	3418.000000
mean	0.029583	0.343128
std	0.226230	0.294501
min	-1.000000	0.000000

Side-by-Side Histograms



25%	0.000000	0.000000
50%	0.000000	0.350000
75%	0.116536	0.550000
max	1.000000	1.000000

Frequency Tables

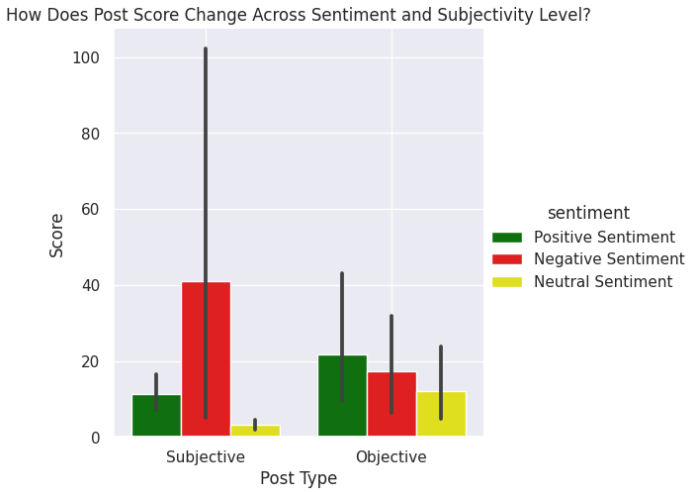
Sentiment Level	Count
Positive Sentiment	1294
Neutral Sentiment	1281
Negative Sentiment	843

Subjectivity Level	Count
Objective	2372
Subjective	1046

CrossTab

	Objective	Subjective
Negative Sentiment	399	444
Neutral Sentiment	1244	37
Positive Sentiment	729	565

Bar Chart



Relationship Plot

Word Cloud