

# Donald Trump and Joseph Biden: Comparative analysis on Twitter usage pattern

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## Abstract:

The need to utilise social media platforms to impart an image as an elected official has become a vital part of today's political landscape. Among the tens of social media platforms available, Twitter has gained a lot of prominence among political personnel due to its ease and efficiency in disseminating messages to the citizens. The paper collected data from the personal Twitter accounts of the 45th and 46th Presidents of the United States of America to analyse their tweeting pattern and sentiment shared by them during their first 100 days in their office. The tweets were then coded manually to six categories prescribed by Gregory Krieg and Will Mullery in their article for CNN. Apart from that, the retweeting pattern as well as sentiment analysis is also done to understand the difference of usage between the two Presidents. The retweeting pattern proved to us that Trump had more original tweets from his Twitter handle than Biden. Apart from that, Trump's reliance on conservative news media was also made clear in his retweeting pattern. In terms of sentimental analysis, Donald Trump used 1.6 positive words to every negative word, Biden used 2.2 words associated with positive emotion to every negative emotion

## Introduction

The capacity for US presidents to converse directly with their citizens have transformed drastically since we humans have started toying with the idea of communication technology. Franklin D. Roosevelt's well-received radio addresses through the Televised messages of John F. Kennedy and to the period of internet-based media and administrations. This innovation in communication has remarkably sped up the capacity for presidents to address and make claims unswervingly and immediately to the citizens.

Social media became a primary platform to facilitate direct communication. This new system for communicating has specific ramifications: the rapid spreading of ideas through multiple audiences and the audience's ability to react to them on a real-time basis. Other than democratizing the communication, the usage of such social media by politically elected people allowed for an extraordinary chance to examine striking signs demonstrative of more extensive sociotechnical wonders in an undeniably conspicuous part of politics.

## **Social Media and Social Networking: What is the difference?**

For most people, social media and social networking appear to be exchangeable. However, there are particular contrasts. Primary is the nature of communication. Social media acts as a stage for disseminating thoughts, while social networking serves to provide a location for speaking between each other.

### **Defining Social Media**

When we hear the word 'media', Conventional outlets, like newspapers, magazines or other broadcasting mediums like Radio and TV, are brought to our mind space. However, adding the prefix 'social' takes on an entirely new paradigm. The term Social adds certain appendages to the platform, including technological, adaptable etc., This has changed how an individual understands what is being provided to him. In this way, social media can be superlatively called a web-based approach that can distribute or communicate computerized messages that pursuers can collaborate. It is also important to remember that anybody can distribute social media. Conventional news media outlets distribute their material for digital consumption.

### **Defining Social Networking**

We can best understand Social networking by studying the party from which an audience receives his/her content. Primarily, the idea of social networking is constructed on having a platform. Facebook, Instagram and Twitter are some of the well-known examples of social networking platforms. Here, the users start interfacing with other users. This provides a unique opportunity for a user to select the people they want to communicate with. Sometimes, communication is single direction. However, several times it is either reciprocating from the intended user.

#### **Social Networking and Political communication in the USA**

The last ten years have been exemplary when it comes to the usage of social media by politicians; both 44th President of United States, Barack Obama and 45th President of the United States, Donald Trump, are the notable examples to spark this trend. However, the usage of internet medium to speak to their voters started way back in 2002. Former Governor of Vermont Howard Dean has been attributed as the first legislator to do so when he contested in the 2004 Democratic primaries. Surprisingly, Dean garnered 44% of votes in a digital primary conducted by a public policy advocacy group Moveon.org. This provided favourable coverage for Dean from the conventional News outlets. He is also the first person to develop a dedicated website for his democratic primaries campaign. The website was popularly called virtual command central and became a nodal point to raise campaign contributions and volunteers.

The campaign site also had the option to collect cash in minor augmentations. In January 2004, his campaign gathered 41 million USD, generally from his website donations. An aggregate of 318,884 people vouched for his campaign, whereas more than 61% of commitments were under 200 USD. Under 1% of people gave 2000 USD. This campaign fundraiser was something

contrary to his adversaries. For instance, George W. Bush brought \$130.8 million up in 2003. More than 65% of his funding touched the federal ceiling limit of 2000 USD.

### **2008 presidential election: Rise of Social Networking and Political Communication**

One of the founding members of Facebook, Chris Hughes, joined Obama's 2008 presidential campaign and was appointed as an advisor. Working at Facebook, Hughes had planned a Facebook page for the then-presidential applicant. Joining Obama's campaign, Hughes chipped away at Obama's Facebook page and applied the insight he possessed in content management. This allowed him to bring new improvements to outperform other competitors' online presence. Hughes also made Barack Obama's official campaign site "MyBarackObama.com", which had a comparative idea and format as Facebook. In the 2008 race, Facebook was utilized by the candidates in the presidential race. However, the usage of the social network by Obama exceeded all of his competitors. Republican Nominee Romney also used Facebook during his presidential campaign, yet not however much Obama did.

The 2008 US Presidential Election is the principal political race where the frontrunners shifted from conventional media to Internet and social media for their primary campaign instrument. Almost 75% of Internet users in the USA used the Internet to get familiar with frontrunners. Among them, the quickest to utilize the Internet to organize allies, publicize, and speak with people was Barack Obama. He connected with video sharing platforms, especially YouTube, to promote his ideas via recordings. Obama's followers drove McCain followers when it came to online political activism. Some considered this to be the main reason for Obama's Presidential win. A study by Pew Research Center on the 2008 election revealed that 30% of each individual who wrote something political on their pages was younger than 25. Among which, 66% of that equivalent segment decided in favour of Obama, while 33% decided in favour of McCain. This can also be attributed to the idea that Obama's online presence expanded his odds of winning.

### **2012 presidential election: Perfecting Social Networking for Political Communication**

All the applicants who were planning to run for the presidential office started utilizing online media platform more extensively. What was once dissuaded as an informal communication platform began to emerge as new media apparatuses. A few front runners even used social media platforms to declare their willingness to run for office. Mitt Romney conveyed his candidacy via a tweet. While President Barack Obama sent a video message to all his 13 million followers explaining his decision to run for re-appointment. This pre-recorded message was distributed on several video sharing platforms and permitted viewers to donate to his campaign without leaving the video-sharing site.

This gave Obama a lot bigger digital existence than Republican front runner Romney throughout the campaign. By October 2012, Obama was followed by more than 20 million accounts on Twitter. Whereas Romney had an unimposing 1.2 million followers count. The same reflected on Facebook as well. There Obama had a little over 29 million likes to his page, while Romney was struggling to punch a little over 7.9 million. Comparing them, Obama had gained a more significant digital presence than Romney in other platforms as well. This includes platforms like Spotify, Pinterest, and YouTube. Several works of literature on this

area recommend that simply following a political personality on social media platforms may only have a negligible impact on voting behaviour. Obama likewise drew more people into his social media by having constant engagements with his followers. He effectively posted more on his social media handles.

Several political personalities also utilized social media to announce their support for a presidential front runner. This made Obama flaunt an 80% approval rating, which drove unsure electors to the Obama camp.

### **2016 presidential election: Rise of Twitter War**

In the 2016 Presidential primary, Twitter became the fundamental stage for both front runners: Trump and Clinton. Both the applicants utilized the internet as well as social networking platforms in an unprecedented way. At the same time, Trump's presents centred tweeting URLs for news articles, especially from Fox News, to stand out enough to be noticed, whereas Clinton zeroed in on featuring her campaign networks.

Trump on Twitter retweeted tweets from the general population, while they principally retweeted tweets that spoke of her campaign missions. However, both the frontrunners tweeted about one another multiple times. Hillary Clinton utilized the "@" option made available on Twitter, connecting users to Trump's Twitter page. Trump resisted this method; however, he alluded to Clinton a few times, but he infrequently utilized the "@" option.

Trump had a more unusual reaction from social media users than Clinton, which is likely because Donald Trump comparatively had more followers during his political campaign.

Research done by the Pew Research Center stated a little over 75% of Donald Trump's retweets were made from tweets from the general population. He was also quick enough to react to competitors and his position regarding different issues. Before winning the ticket from the Republican party, considerable numbers of Trump's tweets straightforwardly assaulted his fellow Republican runners every time their figures rise. A prominent critic of Trump, Slate web magazine, stated that Trump succeeded because he held his "vulgar vigor and translated it into the political arena".

At another time, the Washington Post passed off his Twitter account as "prolific, populist, and self-obsessed". After his victory, Trump kept posting on Twitter all through his administration until his own Twitter account was suspended "due to the risk of further incitement of violence" on January 9, 2021, because of his controversial tweets during the time of "storming of the United States Capitol" incident.

### **2020 Presidential Election: Online campaign becomes mainstream**

In 2020, the Influence of social media outweighed all the previous presidential races. For instance, according to a CNBC article, Joe Biden's campaign spent around 45 million on Facebook advertisements alone, whereas Donald Trump and his team spent close to 49 million for the same. However, Facebook and Twitter are confronting extreme condemnation from legislators for their part in politics. This censure comes after the Facebook–Cambridge Analytica data scandal. Speaking after the expose, the House Judiciary subcommittee on antitrust stated, "In the absence of competition, Facebook's quality has deteriorated over time,

resulting in worse privacy protections for its users and a dramatic rise in misinformation on its platform." Due to these issues, Facebook has declared that it wouldn't run any political promotions in the realm of North America.

Even after the election was officially called in favour of Biden, Donald Trump continued to challenge the legitimacy of the presidential election, utilizing social media stages while likewise challenging it through various claims. Albeit every one of the claims was fruitless, Donald Trump's social media is seen by numerous individuals to have become a primary driver in the "2021 storming of the United States Capitol". This, at last, prompted Trump's Twitter account to be suspended.

### **Aim and Objective**

The hundred-day landmark is usually an opportunity to check any president's accomplishments, guarantees kept and broken, fights won and lost. In the case of the Twitter age, their pattern of tweets matters, as well. Thus, the study compares the tweeting pattern between Donald Trump and his successor Joe Biden to gain a quick insight to achieve the following objectives.

- Identify and analyse the nature of the tweets
- Analyse their Twitter usage and retweeting pattern during their first hundred days of the presidency.
- Recognize the sentiment involved in those tweets.

### **Methods**

#### **Data Collection**

Even though Twitter has an in-house profile metrics tool that provides variables like profile visits, mentions and impressions, they are made available only to the profile user. So, using in-house Twitter analytics can be ruled out. The other option to collect Twitter data is by checking the feed manually and gathering the information regularly. As we are trying to study historical data, the daily gathering option can be ruled out. The third option to collect the data is to use available datasets. Because of the significance of the personality, there are several independent resources that have collected the data and made the same available for academic usage.

#### **For Donald Trump:**

The data required to study Donald Trump's Twitter usage pattern was gathered from the website [www.thetrumparchive.com](http://www.thetrumparchive.com). The creator of the website, Brendan, used Tweet Scraper to scrape the tweets made by Donald Trump starting from May 4 2009. However, the tweets ranging from January 20, 2017 (Inauguration day) to April 30, 2017, have been sourced from [thetrumparchive.com](http://thetrumparchive.com) for the study. This includes all the deleted tweets.

## For Joe Biden:

A non-profit organisation that advocates for digital privacy rights and political accountability called Politiwatch have created an archive of the tweets made by US president Joe Biden. Apart from Joe Biden, the organisation also tracks 1,341 public figures. Unlike [thetrumparchive.com](http://thetrumparchive.com), Politiwatch does not allow for the extraction of the data available on the web pages. Thus, the data had to be extracted manually from the website. Here tweets from the date January 20, 2021 (Inauguration day) to April 30, 2021, has been sourced for the study.

## Methodology

The Content analysis method is selected to study the pattern that exists between the two presidents. Primarily, Manual content analysis was performed by the author to classify tweets into central themes. This study is written in the prescribed format of Standards for Reporting Qualitative Research. Ethical approval was not necessary for this research as the collected data rests in the public domain.

Tweets of the corresponding authors were classified into six different types based on the nature of the tweets after manual coding. They are

- **Model Presidential:** This category includes tweets that are typically made by presidents, like announcements regarding any meeting
- **Political Argument:** Criticism of political opponents or statements made to advance the agenda are placed here.
- **Personal attack:** Tweets where the political argument takes the second seat and the primary driver being a personal attack.
- **Commenting on Press:** Outburst and Complaints made against impartial coverage or fake news are categorised under this category
- **Conspiracy Theory:** Tweets that support baseless accusations and assertions are filed under this category
- **Self-Plugs:** Using tweets for self-promotion are placed in this category.

These classifications are based on a story authored by Gregory Krieg and Will Mullery titled "Donald Trump's first 100 days, in tweets" for CNN. The report used the same method to codify the tweets into the categories mentioned above to understand trump's tweeting pattern. However, due to the deadline, they studied trump's Twitter activity only for his first ninety-seven days. In this study, we will be adding the data for the other three days to give a total number. Other than that, the study also categorises Joe Biden's tweets from his first 100 days of presidency.

Apart from the classification mentioned, the study also looks into the percentage of retweets and sentiment scores to provide a thorough look at their Twitter usage.

The study uses R Language to understand the sentiment embedded in their tweets. Using the RStudio computer program, the tweets will be analysed to study the sentiment in the tweets. A package titled "Syuzhet" will be used in the RStudio to study both datasets. Syuzhet includes four sentiment dictionaries - "syuzhet", "afinn", "nrc", and "stanford". For the study, 'nrc' will be employed as it can measure positive and negative scores.

### Data Analysis

### Donald Trump

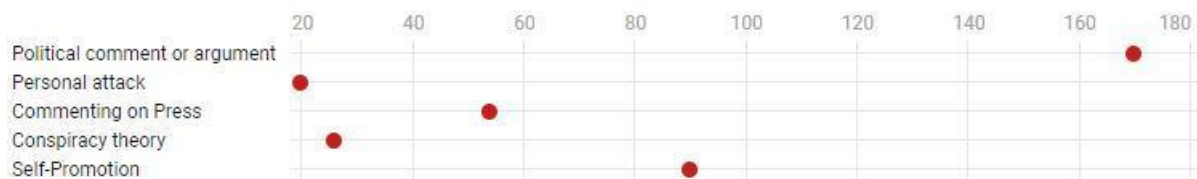
### Categorisation of Donald Trump Tweets

After being sworn in as the 45th President of the United States, Donald Trump had tweeted a little over 500 times in his first 100 days of his presidency. This produces an average of five tweets in a day. Following manual coding, those tweets have been classified into the categories mentioned above. The classification is shown in the table below.

Sl.No	Category	Number of Tweets
1	Model presidential	144
2	Political Argument	170
3	Personal attack	20
4	Commenting on Press	54
5	Conspiracy theory	26
6	Self-Plugs	90
Total Tweets		504

The above data is visualised in a dot plot format below for easier interpretation.

### Donald Trump Tweets - First 100 days

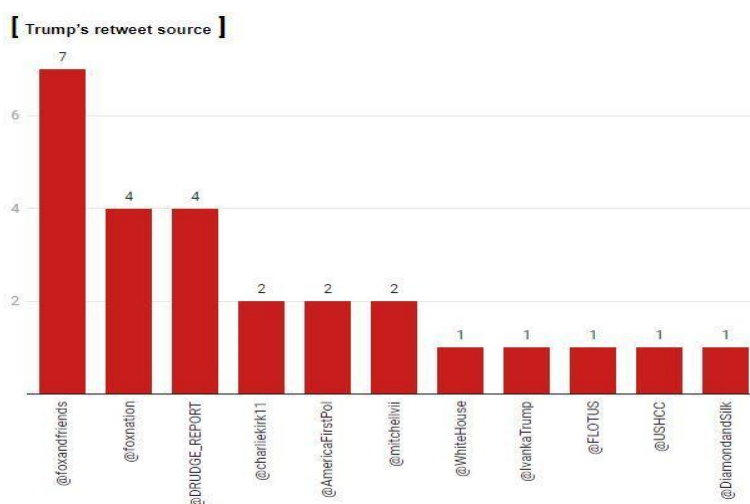


### Retweeting Pattern

Out of the 504 tweets, only 28 tweets are retweets. This refers to the fact that Trump has 476 original posts in the first hundred days of his presidency. Now let us look at the breakup of his retweets.

Source Handle	Number of tweets retweeted by Trump
@foxandfriends	7
@foxnation	4
@DRUDGE_REPORT	4
@charliekirk11	2
@AmericaFirstPol	2
@mitchellvii	2
@WhiteHouse	1
@IvankaTrump	1
@FLOTUS	1
@USHCC	1
@DiamondandSilk	1

Out of the twenty-eight retweets, seven belong to the handle @foxandfriends, the official handle for the weekday morning news show that Fox News Channel hosts. Apart from that, another four retweets come from other arms of the Fox News Channel. Tallying total retweets number to 11, Fox News Channel has the lion share of 39% regarding retweets received from Donald Trump, followed by conservative news aggregation website, Drudge Report. Trump has retweeted four stories that were initially posted by Drudge Report's official handle @DRUDGE\_REPORT. Conservative activist and radio talk show host Charlie Kirk follows the list. Trump retweeted two tweets from kirk's official handle, @charliekirk11. Apart from this, Trump had retweeted for a couple of his ardent supporters, his wife and former first lady of the United States, Melania Trump, and the official Twitter handle of the White House.



Trump’s retweets are visualised here for easier interpretation.



## Frequently used Words

In his Five hundred and four tweets, we found Two thousand eighty-five unique words. The R Program was used to identify the frequently used words. In RStudio, the imported tweets were transformed into an .CSV file. The accumulated corpus was turned into a vector source using the code 'Corpus(VectorSource(corpus))'. The data was then subjugated to preliminary cleansing, which includes removing white space, URL links, symbols, emojis, and stop words. Once the corpus was cleaned, a term-document matrix was created from the existing corpus. This included all the terms from the tweets made by Trump in his first 100 days of presidency. The matrix was then visualised using the 'ggplot2' package. Here, the bar graph code was used to identify the top 25 words frequently utilised by Trump in his tweets. The top five frequency used words in his tweets are: great, fake, news, big and media.

### Review on the usage of Top three terms:

#### Great

The word 'great' is part of Trump's campaign slogan 'Make America Great again'. In his tweets, Trump has used the word great in several tweets. Apart from using it in his campaign slogan, he often uses it to define a person's quality.

#### *Example Tweet:*

“My daughter Ivanka has been treated so unfairly by @Nordstrom. She is a **great** person -- always pushing me to do the right thing! Terrible!” tweeted on the date 08.02.2017

#### Fake

This word became synonymous with Trump. He popularly weaponised the phrase 'fake news' against any media which doesn't agree with Trump's worldview.

#### *Example Tweet:*

"Chris Cuomo, in his interview with Sen. Blumenthal, never asked him about his long-term lie about his brave ""service"" in Vietnam. FAKE NEWS!" tweeted on the date 09.02.2017.

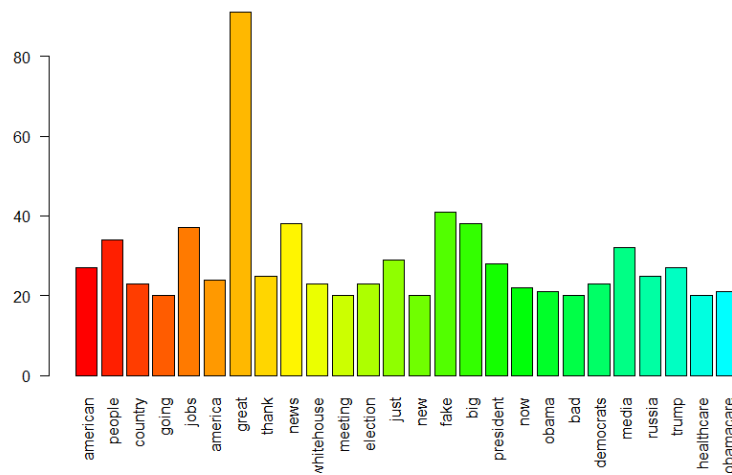
#### News

The higher usage of the tern 'news' makes sense when we look at the fifty-four tweets directly commenting on the press.

#### *Example tweet:*

“Just heard Fake **News** CNN is doing polls again despite the fact that their election polls were a WAY OFF disaster. Much higher ratings at Fox” – tweeted on

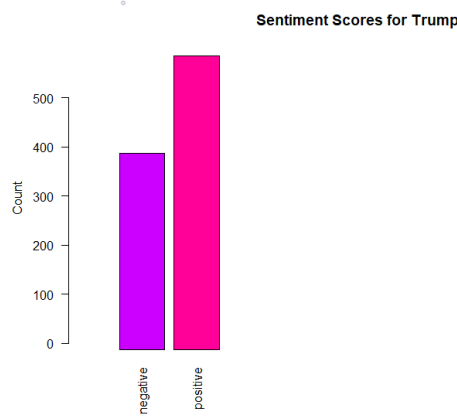
The top twenty-five words used by trump based on the frequency is visualised below for better understanding



### Sentiment score of the tweets

The matrix created for studying the tweet's frequency in the tweet was also used to research the sentiment score of the tweets. The Syuzhet package was installed in RStudio, and its 'get\_nrc\_sentiment' function allowed us to provide the score based on the emotions associated with the used words. We again used the same ggplot2 package to get the visual representation of the sentiment score. A little over 650 words related to positive sentiment and close to 400 words associated with negative sentiment were discovered by the program.

A visual representation of the sentiment score for Trump’s tweets is provided below for comparison.



### Joe Biden

By the end of his 100th day in the oval office, Joe Biden has sent out 186 tweets. Thus, the average score for the number of tweets comes around 1.8 tweets in a day. This is comparatively less than Donald Trump, who scored an average of 5 tweets per day. Biden’s tweets were

subjugated to the same classification mentioned above to maintain consistency in the study. The results are as follows.

Sl.No	Category	Number of Tweets
1	Model presidential	66
2	Political Argument	68
3	Personal attack	0
4	Commenting on Press	0
5	Conspiracy theory	0
6	Self-Plugs	52
Total Tweets		186

The above data is visualised in a dot plot format below for easier interpretation.

### Joe Biden Tweets - First 100 days



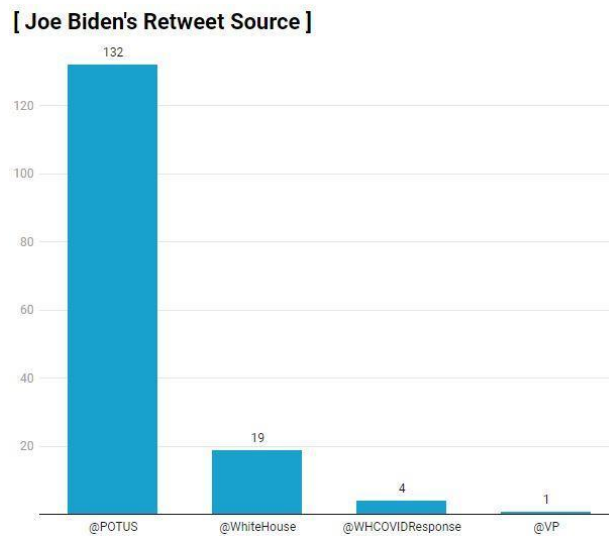
### Retweeting Pattern

The official account for the US President @POTUS became the primary account for Joe Biden the day he took oath as the 46th President of the United States. This had significantly reduced the usage of his personal account. While the @POTUS has 737 tweets in 117 days since the inauguration, averaging an impressive 6.2 tweets per day, the personal id @JoeBiden has an abysmal 186 tweets.

Source Handle	Number of tweets retweeted by Joe Biden
@POTUS	132
@WhiteHouse	19
@WHCOVIDResponse	4
@VP	1

The tweet to retweet ratio of the handle also shows a similar figure. For every one original tweet, the handle had 5.2 retweets. A closer look at the handles gives a better clarity on the subject. All the 158 retweets had their origins from four handles. Most of the retweets originated from @POTUS. To be specific, 132 retweets out of 158 came from @POTUS. In

other words, 83% of retweets done by @JoeBiden had their origin from @POTUS. Nineteen retweets had official White House handle as their source. The official handle of Vice President Kamala @VP was the source for one retweet.



Biden's retweet sources are visualised here for easier interpretation.

### Frequently used Words

The frequently used words were identified using the same method applied for Trump's tweets. Following the elimination of 'stopwords', the term-document matrix for Biden included 1,181 unique words. These are the words that Biden used in his tweets during his first 100 days of presidency. To find the frequently used words, we installed the ggplot2 package. A code to recall the frequently used words gave us a list of 14 words.

The fourteen frequently used words by Biden in his tweets are as follows:

American, plan, get, vaccine, rescue, every, today, president, Whitehouse, covid, million, time, help, can

### Review on the usage of frequent terms:

#### American:

The term American was the most commonly used in Biden's Twitter data. It amounts to a little over 80 times in his 183 tweets. Apart from the word referring to the nationality of his citizens, the recurrence of the term has another reason.

The word is part of Biden's COVID-19 Stimulus Package. Popularly dubbed as 'The American Rescue Plan Act of 2021' is the \$ 1.9 trillion stimulus package passed in March 2021.

#### Example tweet:

"RT @POTUS: 100 days ago, America's house was on fire. We had to act, so we: - Passed the American Rescue Plan" - tweeted on 29.04.2021

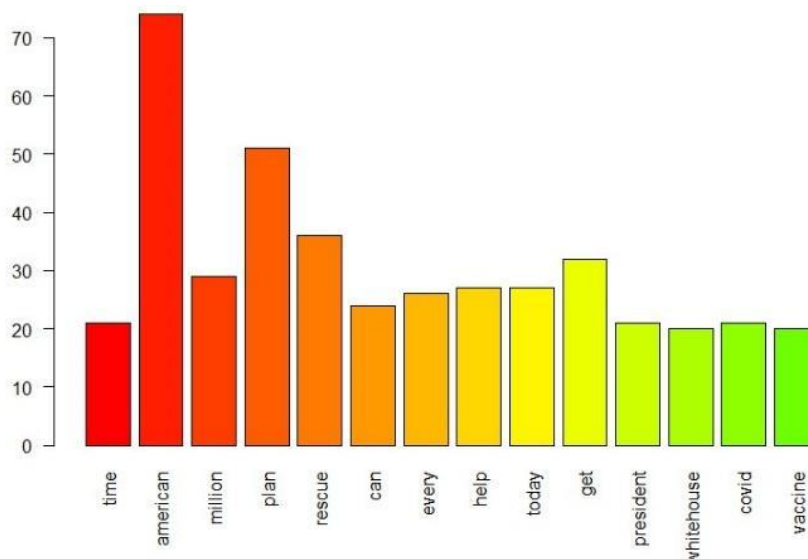
**Covid:**

A day after his inauguration, Biden announced a national plan to combat the ongoing pandemic. Titled "National Strategy for the COVID-19 Response and Pandemic Preparedness", a White House COVID-19 Response Team was also created to implement the plan.

**Example tweet:**

"RT @WhiteHouse: Before President Biden took office, the U.S. was administering an average of 900,000 COVID-19 vaccine doses a day. Last week, we averaged 2.5 million per day." - tweeted on 21.03.2021

The top fourteen words used by Biden in his tweets is visualised below for better

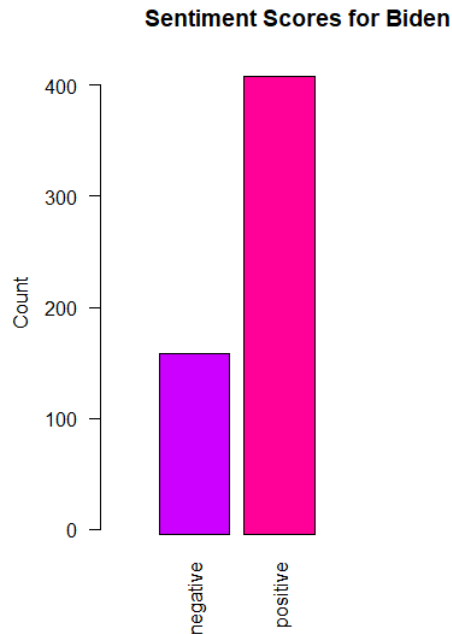


understanding.

**Sentiment score of the tweets**

The same matrix used to analyse the frequency of words was used to predict the sentiment embedded in the tweets. As stated above, we utilised the Syuzhet package to get the sentiment score. The study used the ‘nrc’ dictionary to maintain consistency. The program revealed a little over four hundred words associated with positive sentiment were found on the tweets. The program found only 175 words related to negative sentiment. In other words, for every word related to negative emotion, 2.2 words associated with positive sentiment are found.

A visual representation of the sentiment score for Biden’s tweets is provided below for comparison.



## Findings:

The classification of tweets showed us that Trump usage of Twitter was more amateurish and more personal. The high number of tweets targeting personal and media attest to the statement. In contrast, Biden's Twitter usage seems consistent with Obama's usage: formal and professional space.

The retweeting pattern proved to us that Trump had more original tweets from his Twitter handle than Biden. Apart from that, Trump's reliance on conservative news media was also made clear in his retweeting pattern. However, Biden's handle did not make any retweets from any news organisation. All the retweets made by Biden's handle originated from the official Twitter handles of the administration.

The sentiment analysis of the tweets from Donald Trump and Joe Biden shows us that Biden used more percentage of positive words in his tweet than Trump. Donald Trump used 1.6 positive words to every negative word, Biden used 2.2 words associated with positive emotion to every negative emotion.

## Conclusion

It is without a doubt social networking has become an essential political communication channel. The ability of social networking platforms to allow the institutions and their citizens to have direct communication has created a new paradigm in political communication. Even though Obama harnessed the power of social networking to win elections and approval ratings, the method of communication has been a formal one. Donald Trump's more amateurish and authentic style of using social media has made this de-professionalism a counter-trend. However, the newly elected Joe Biden usage of social networking seems to be reassuring the theories made on the professionalisation of political communication.

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