

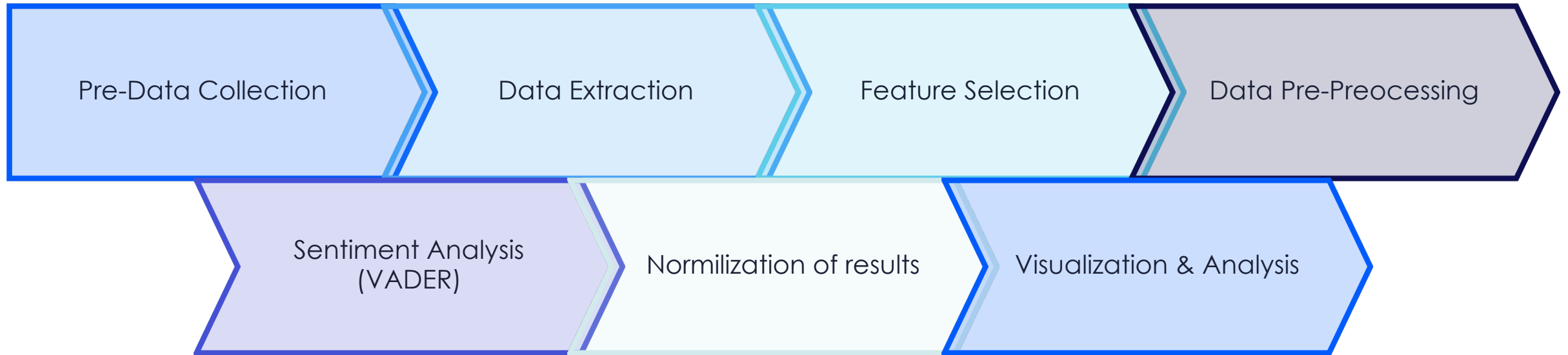
Sentiment Analysis of Reddit and News Articles on Climate Change

Introduction:

- Amidst the global climate change crisis, social media platforms like Twitter and Reddit offer real-time snapshots of public sentiment.
- That with structured input from traditional media, they offer valuable insight into public opinion about climate change.
- Enabling the prediction of environmental attitudes, policy acceptance, and behavioral changes toward sustainability
- **Aim of this study is to gather those insights from the sentiment analysis of Reddit posts and News articles.**



Methodology:



Sentiment Analysis (VADER):

Short Texts (2 or Fewer Sentences):

- Analyze overall sentiment.
- Classify as Positive, Negative, or Neutral.

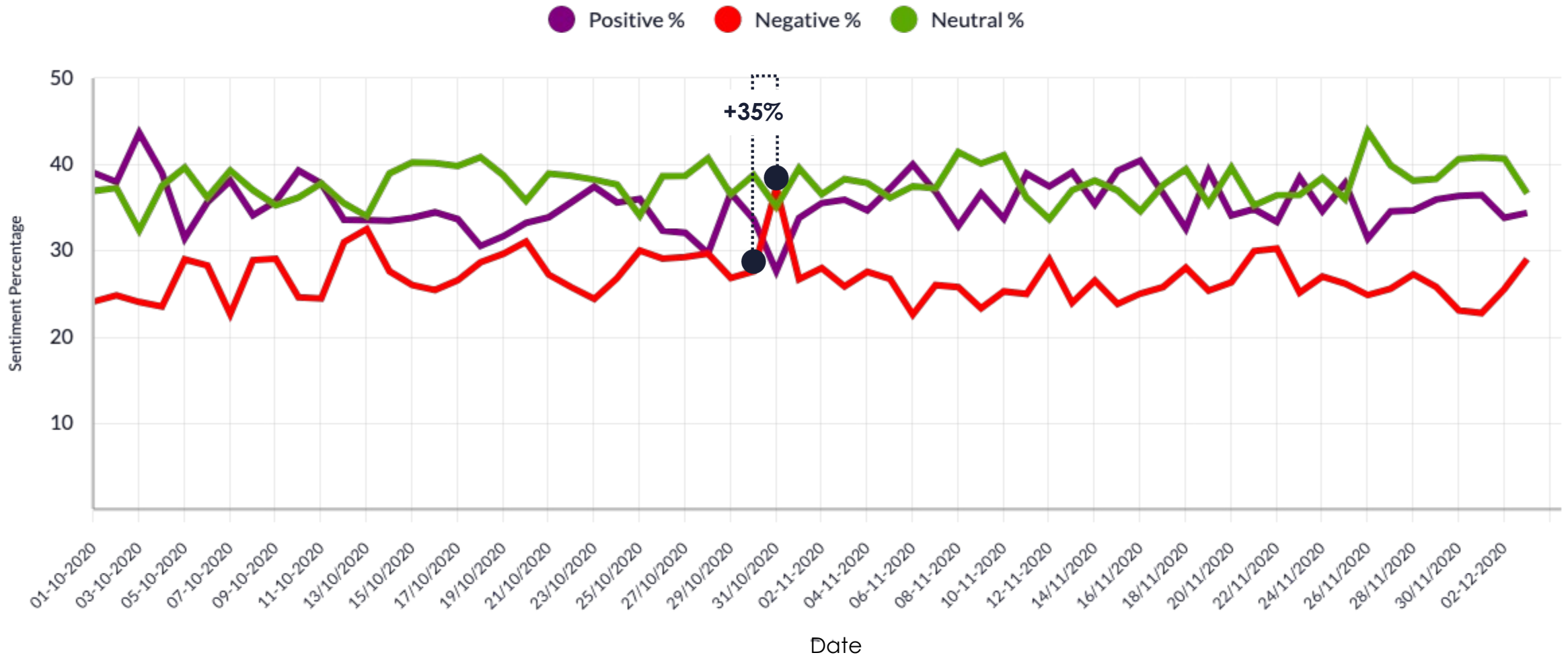
Longer Texts (More Than 2 Sentences):

- Break down text into sentences.
- Use sentiment intensity analyzer for each sentence.
- Classify sentiment of each sentence as Positive, Negative, or Neutral.
- Count number of positive, negative, and neutral sentences.
- Compare counts to determine overall sentiment.



Findings & Results :

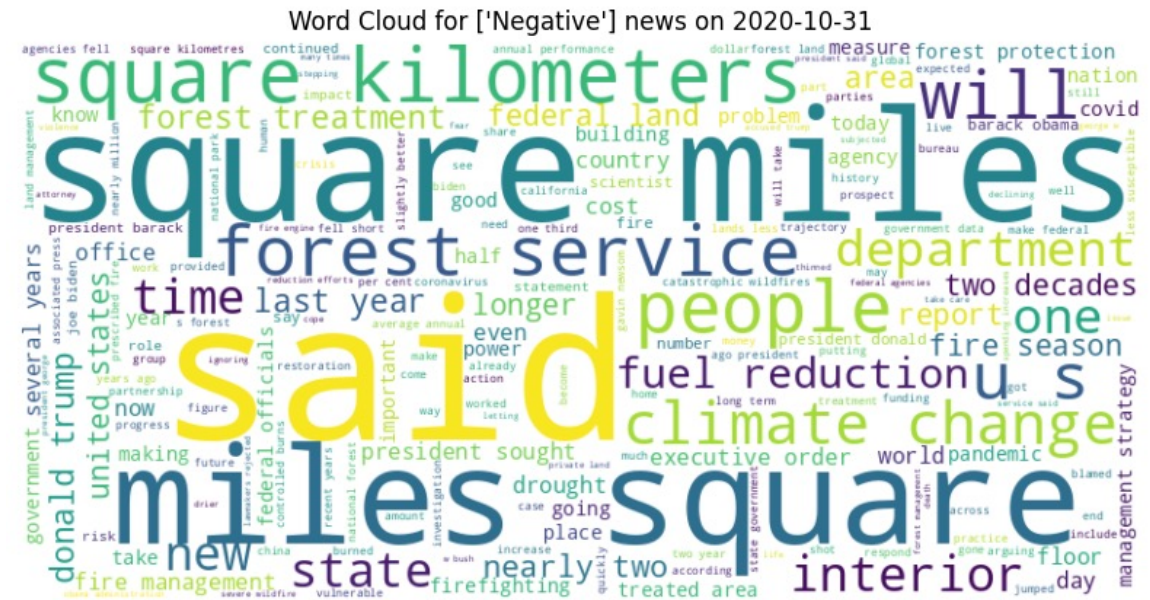
- Reddit is more event centric where News sentiments appear to be predominantly influenced by the political climate. This can be clearly seen in the below example of 2020 Reddit sentiment graph.



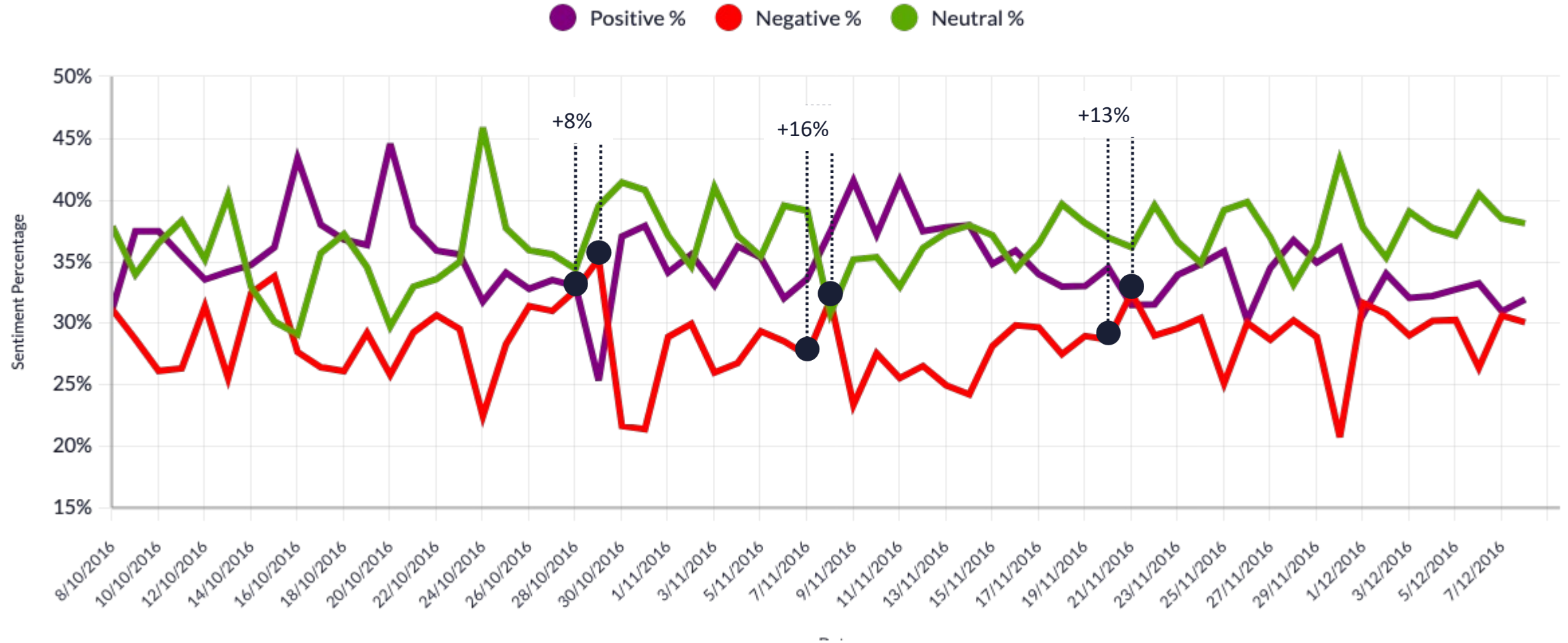
Page 10 of 10



War between Azerbaijan- Armenia.



Sentiment Percernatge of Reddit 2016



On 29th Oct 2016

- On 27th Authorities tried to force clear the protesters that created a Negative reaction on the reddit. That continued till 29th Oct 2016

Oct. 27, 2016

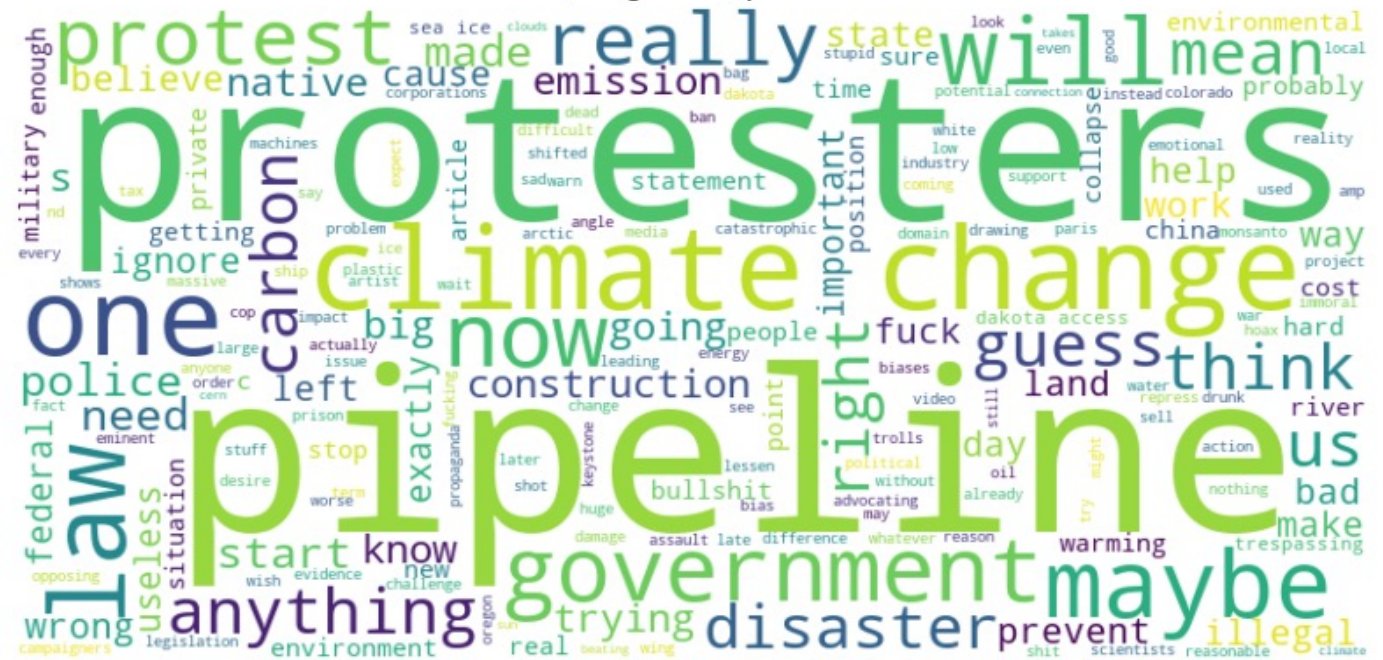
Authorities moved in to clear protesters from private land and dismantle a roadblock that closed down a state highway. Heavily armed law enforcement officials surrounded protesters and reportedly used pepper spray, tear gas and a sound cannon. The Morton County Sheriff's Department announced that 141 protesters were arrested, bringing the number of those arrested since the protests began to more than 400.



Tires burn as armed soldiers and law enforcement officers stand in formation on Oct. 27, 2016, to force Dakota Access pipeline protesters off private land where they had camped to block construction.

Mike McCleary/The Bismark Tribune via AP

Word Cloud for ['Negative'] posts on 2016-10-29



Word Cloud for ['Negative'] news on 2016-10-29

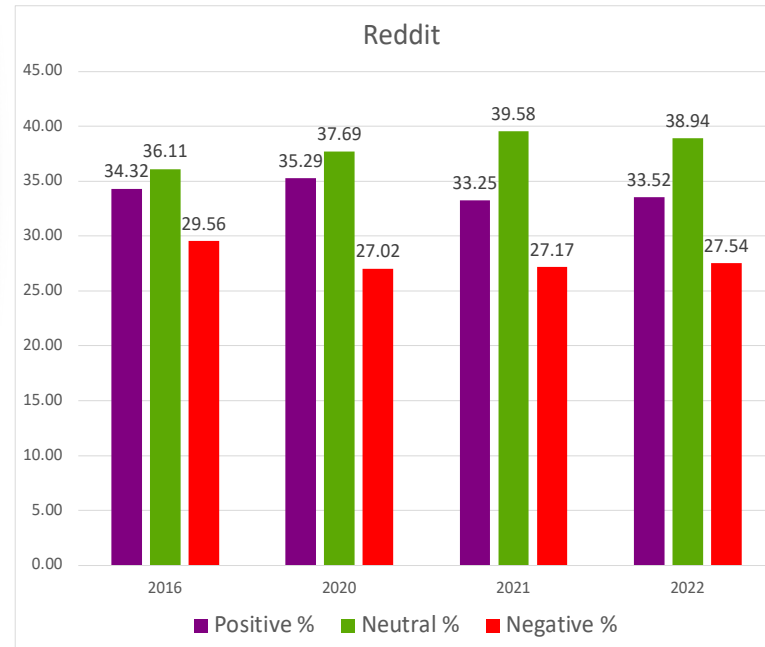


Findings & Results:

- The analysis of sentimentality across four distinct time periods reveals a consistent pattern in both News and Reddit platforms.
- Within the News category, a clear trend towards high positive sentiment emerges, consistently outweighing both Neutral and Negative sentiments.
- Conversely, Reddit's sentiment is much closer with slightly high Neutral sentiments, with Positive and Negative sentiments following.

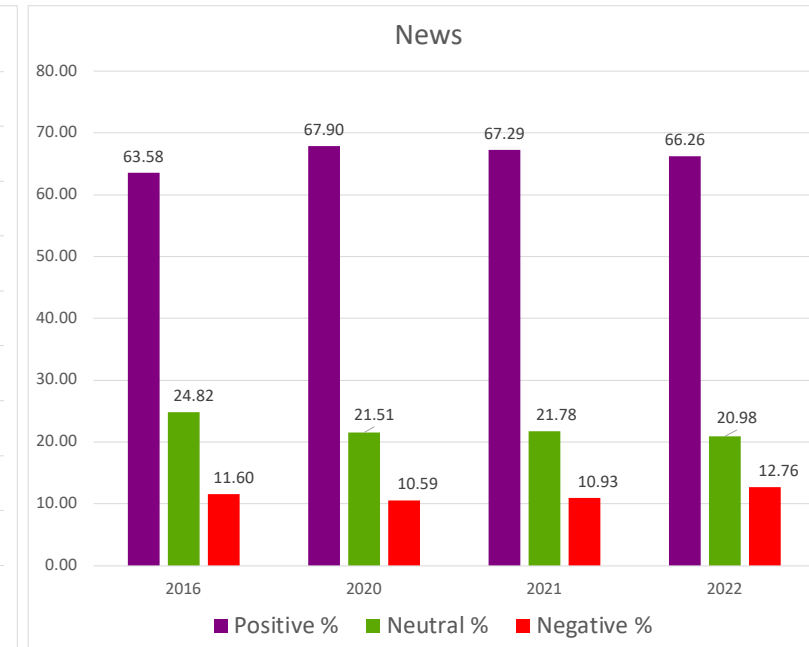
Reddit:

Year	Positive %	Negative %	Neutral %
2016	34.32	29.56	36.11
2020	35.29	27.02	37.69
2021	33.25	27.17	39.58
2022	33.52	27.54	38.94

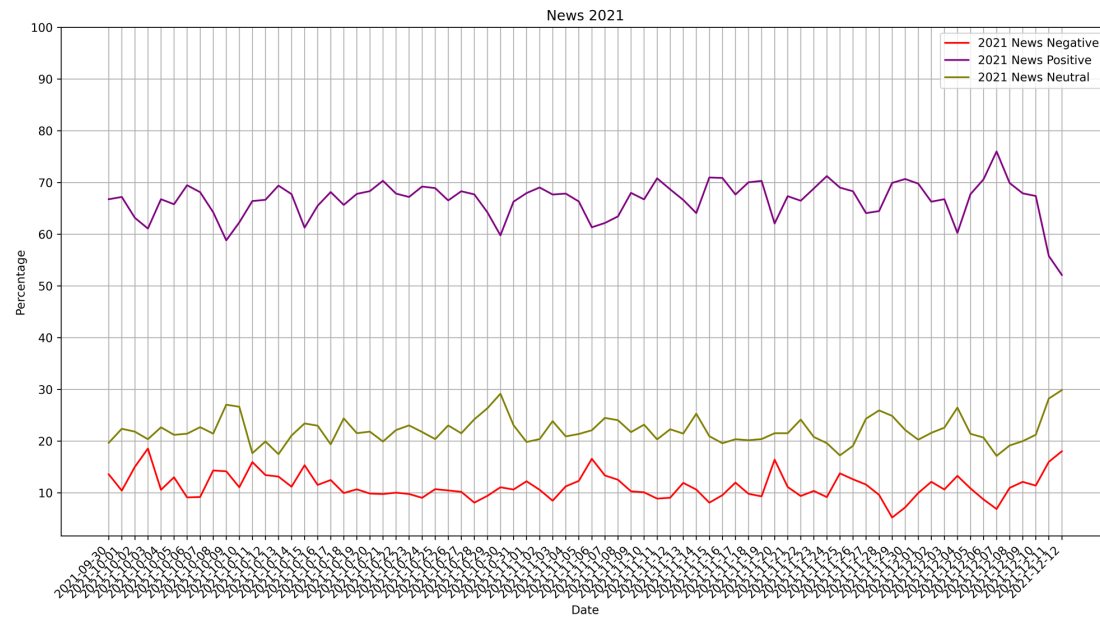


News:

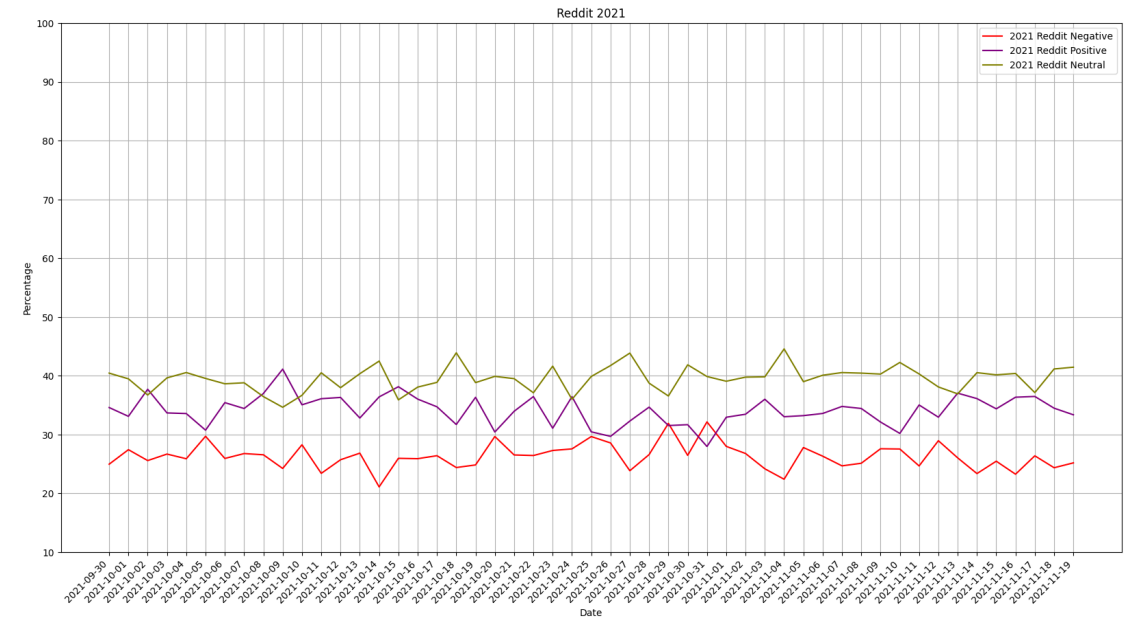
Year	Positive %	Negative %	Neutral %
2016	63.58	11.60	24.82
2020	67.90	10.59	21.51
2021	67.29	10.93	21.78
2022	66.26	12.76	20.98



News 2021



Reddit 2021



Findings & Results :

- The data reveals a complex interplay of sentiments, with an emerging pattern of increased negativity and reduced positivity across both political alignments in over time towards climate change.
- Right-leaning networks have shown a trend towards higher negative sentiment percentages, compared to left-leaning networks.
- On the other hand, positive sentiment percentages were relatively close between both sides in 2016 but began to diverge in the 2020 election and beyond.

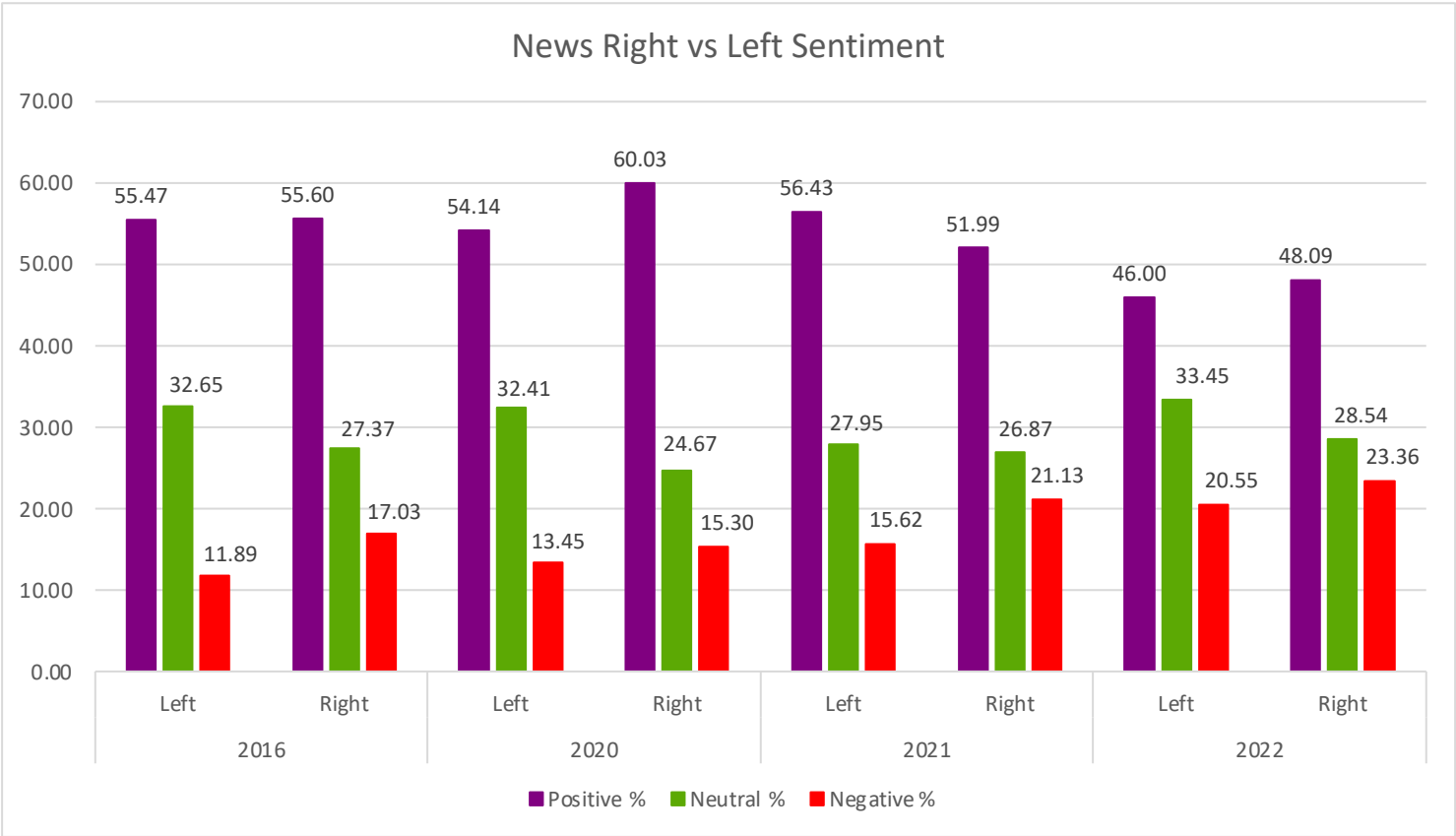
Sample Networks:

Left leaning sources are "The New York Times", "Mother Jones", "CNN", "New York Post", "The Gaurdian" .

Right leaning sources are "FoxNews", "NewsMax", "National Review", "Breitbart", "Washington Examiner".

Left Leaning Sources Sentiment Percentage			
Year	Positive %	Neutral %	Negative %
2016	55.47	32.65	11.89
2020	54.14	32.41	13.45
2021	56.43	27.95	15.62
2022	46.00	33.45	20.55

Right Leaning Sources Sentiment Percentage			
Year	Positive %	Neutral %	Negative %
2016	55.60	27.37	17.03
2020	60.03	24.67	15.30
2021	51.99	26.87	21.13
2022	48.09	28.54	23.36

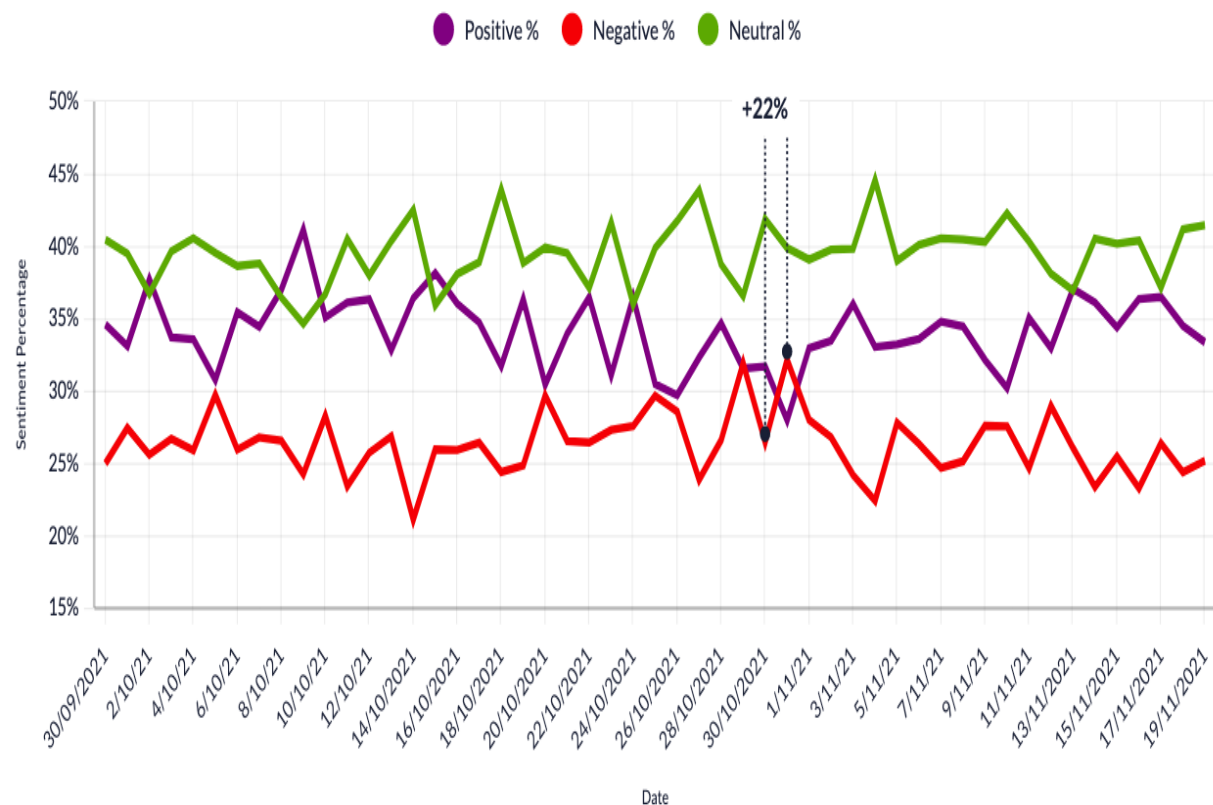


Findings & Results:

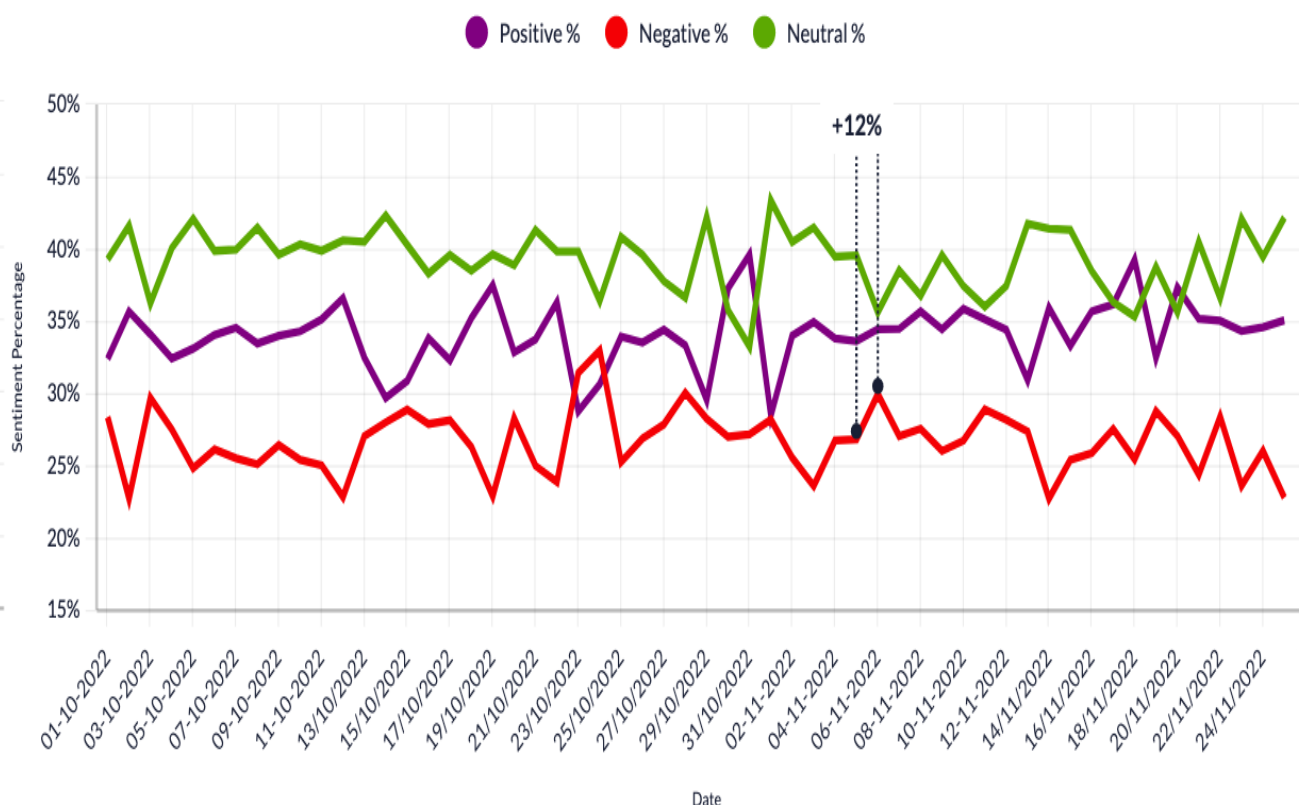
- On Reddit, similar patterns can be observed across different periods when similar events occur.

Eg: On 31st October 2021, at the start of COP26, there was an increase in negative posts. A similar pattern was observed at the beginning of COP27 on 6th November 2022, showing a consistent trend in public sentiment during these events

Reddit 2021



Reddit 2022



Conclusion:

- The sentiment analysis of News and Reddit platforms conducted in this study unveils divergent trends in both public and media reactions to climate change.
- Within the domain of News, the sentiments appear to be predominantly shaped by the contemporaneous political climate, thereby reflecting a consistent pattern characterized by an elevated degree of positive sentiments.
- Conversely, the sentimentality within Reddit exhibits a tendency to be more event- or issue-specific. Rather than displaying uniform alignment with the news media's portrayal of a particular climate-related issue.
- Reddit users manifest a more nuanced response, orienting their reactions to the implications of an issue, as well as its direct consequences on themselves or the surrounding society.
- This understanding has significant implications for both scholars and policymakers engaged in climate change discourse, enabling the development of interventions and strategies that are more consistent with prevailing public opinion on the matter.



Presentation Link:

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If any issues with SharePoint link access, please use below YouTube link to view the presentation.

https://youtu.be/_YjltWnscTg

Thank you.

