Geographical variation of U.S presidential candidates' speeches in 2024 Presidential Election
EPPS 6356 Data Visualization

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I.   Research Question

Do United States presidential candidates adjust their speeches based on their audience at the presidential campaign rallies? Although past research shows that presidential candidates would hold more campaign events in the swing states, as these states' electoral results are more likely to determine who is going to win the elections (Snyder & Yousaf, 2020), whether the candidates would adjust their speech based on the interests of the audience who physically attend these events is less certain. The uncertainty results from the increased coverage of social media, which redefines the scope of the audience, as their rally speeches can reach every voter in real-time.

Would social media cause the candidates to deliver more similar rally speeches? We propose to conduct a text analysis on the presidential candidates of the major parties in the 2024 presidential election to test the between-candidate variations, to see whether Donald Trump and Kamala Harris would prioritize different issues in their speeches. Also, we would ask where to test within-candidate variations, to test whether the same candidate would say differently at rallies held in different states.

Current research on speech campaigns tends to be more single-issued and mostly focuses on word choice differences among candidates (BBC, 2024; Bonikowski & Gidron, 2016; Lerer & Haberman, 2024, Slatcher et al., 2007), our proposal hopes to extend the current research further to conduct candidate comparison from a different angle.

II.   Background & Topics

Poll surveys and studies by Pew Research Center and Ballotpedia suggest some salient issues in which American citizens are currently interested, ranging from

economic, and domestic issues to foreign policy, especially new developments on the Israel-Palestine conflict and Russia-Ukraine war.

We compile the following important topics for our data analysis:

- Economics
    - Manufacturing jobs, Inflation, Taxes, Trade (China)
- Health Care
    - Social Security, Medicare
- Climate change
    - ESG
- Supreme Court appointment
    - Trump indictment, impeachment, court
- Violent crime
    - Gun regulation
- Immigration
    - Border security
- Foreign Policy
    - Israel-Hamas, Israel-Palestine, Russia-Ukraine

III. Data Collection & Methodology

Speech data of the Democratic and Republican presidential candidates will be collected from the [American Presidency Project](#) website. Separate corpora will be created for each of the candidates. Initially, a structural topic model will be employed to find out the relevant topics identified by the unsupervised machine learning method. In the next step, using the topics obtained from the 1st step as well as the literature, a dictionary will be created to isolate any pattern of topics mentioned. Finally, the obtained results will be matched to Google Trends data to compare whether the topics in the Google Trends are mentioned by the presidential candidates.

IV. Visualization

In addressing the research question on geographical variations in U.S. presidential candidates' speeches, we will deploy sophisticated data visualization

techniques to elucidate campaign strategies. Using bar and line charts, we will compare the frequency and evolution of topics discussed by candidates across different states. Geographical heat maps will illustrate regional focus on specific issues through color-coded intensity, while word clouds will highlight dominant themes and words in the speeches.

To dynamically present our findings, we will develop an interactive dashboard. It will feature detailed maps, timeline sliders for temporal analysis, and toggle options for various political topics, allowing users to interactively explore the data. This integration of visualization tools and interactive elements aims to provide a clear, user-friendly interface for in-depth analysis of political rhetoric during the campaign season.

References

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