Effect of Political Polarization on News Related to National Holidays
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GitHub Repository: https://github.com/baaneeraheja/DS4002-CS3/tree/main

Context/Scenario: Imagine taking the lead on a project that places you at the intersection of data science, media analysis, and political discourse. In this case study, you'll work with a dataset of 135 news articles, each tied to major national holidays known to spark political conversation. Using tools such as VADER sentiment analysis and ANOVA statistical testing, you'll uncover how tone and sentiment vary across prominent news outlets. This will allow the investigation on how media shapes public perception and contributes to the growing polarization. You'll be responsible for identifying trends, visualizing differences, and drawing meaningful conclusions that could reshape how we think about news consumption.

Our political landscape is more divided than ever, and young people are increasingly feeling the impact. From the COVID-19 pandemic to social justice movements and global conflicts, we've witnessed how major events are reported with strikingly different tones and narratives across various news outlets. This project explores how sentiment fluctuates across major news sources, particularly around national holidays that tend to evoke strong political discourse. Why do these holidays amplify partisan divides? Which outlets display the most pronounced bias in tone? Most importantly, how does this affect public understanding and civic engagement? This case study offers a unique opportunity to critically analyze the media landscape and gain deeper insight into the mechanisms driving polarization today.

Task: You will be provided with a data set containing 45 articles per national holiday (135 articles total). Using this data, proceed with the following tasks.

1. Conduct a sentiment analysis to detect tone and categorize opinions of each news source using VADER. Detect tone (positive, neutral, negative) and categorize opinions expressed in each article.
2. Perform an ANOVA statistical analysis test to determine if the results were significant.
3. Create visualizations to compare sentiment scores across news sources and holidays. Ensure the visuals clearly highlight differences in sentiment by source and occasion.

Deliverable: This case study will be deemed thorough and well-executed if it includes the following key parts.

- Sentiment analysis results segmented by news source and national holiday, using VADER to assess tone and polarity.
- One-way ANOVA test performed to evaluate the statistical significance of sentiment differences across news sources.
- A brief written conclusion summarizing key findings, discussing potential limitations, and offering insights drawn from the analysis.