

# Before and After Roe: Tracing Partisan Polarization and the Shifting Landscape of Congressional Discourse on Abortion

## Introduction

There is much debate over the impact of the 1973 Supreme Court decision Roe v. Wade, which established the constitutional right to an abortion before it was overturned in 2022. Some scholars suggest the ruling resulted in a “backlash” to the abortion movement that caused further ideological entrenchment among opposing sides of the issue, while others argue that this theory is overstated (Ziegler, 2014). It is undeniable that abortion remains a hotly contested topic today. This study aims to use sentiment analysis and structural topic modeling to explore whether and how the discourse around abortion in the United States Congress changed after the seminal Supreme Court decision.

## Research Questions

1. Did the discourse on abortion in Congress change after the Supreme Court decision Roe v. Wade?
2. Did the discourse on abortion among Democrats and Republicans show evidence of increased ideological entrenchment or polarization after Roe v. Wade was decided?

## Hypotheses

1. Sentiment levels in the discourse on abortion in Congress will shift after Roe v. Wade was decided.
2. Topics discussed by political parties will be more polarized after Roe v. Wade was decided.

## Data Description

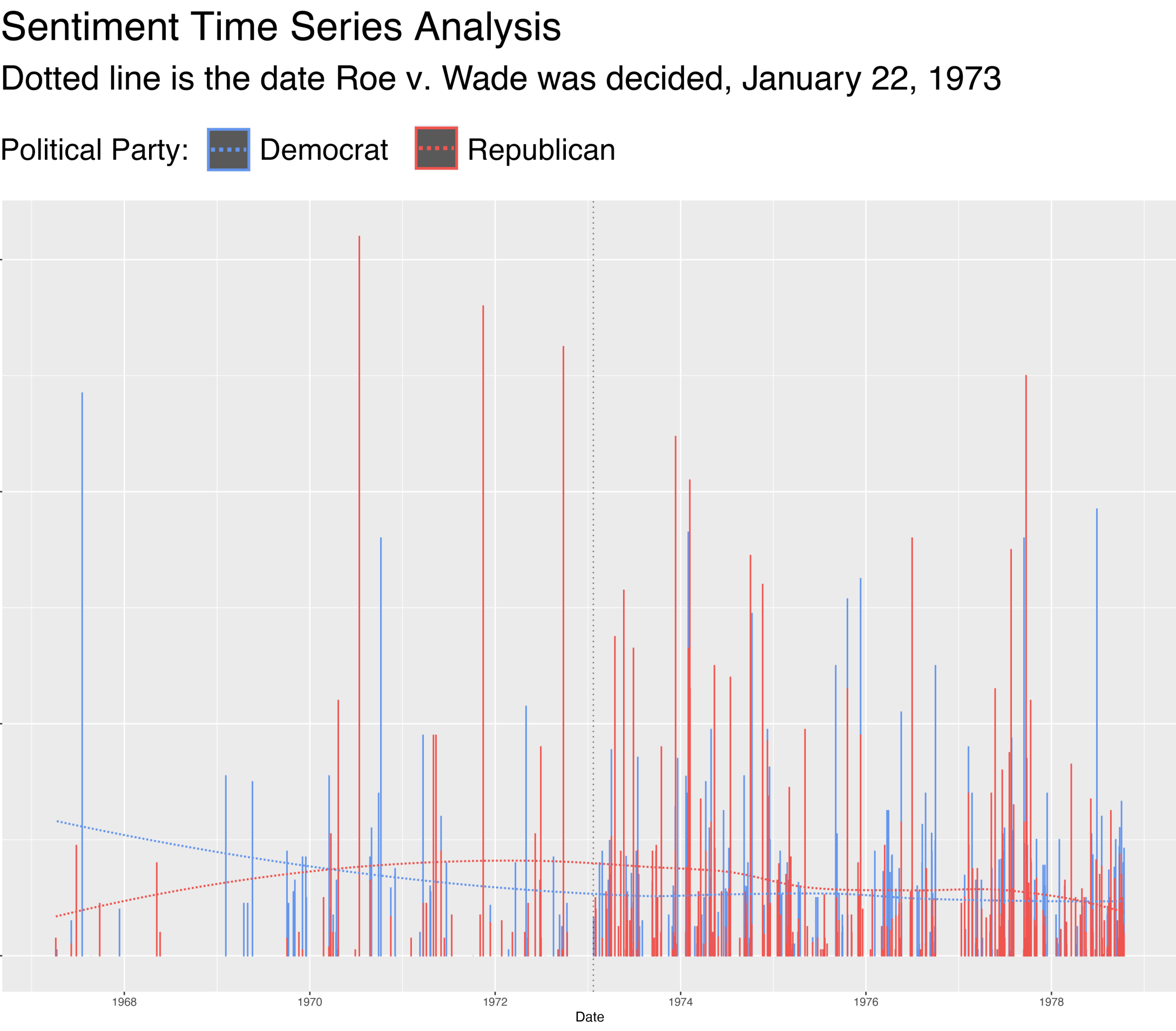
The data used for this research is composed of 1,715 speeches from the floor of the United States Congress. I used the Congressional Record dataset made available by Gentzkow, Shapiro, and Taddy (2018) as part of the Social Science Data Collection at Stanford University. This data was parsed by an automatic script and includes all speeches made in both chambers of Congress: The House of Representatives and the Senate. The data used in this study is from the 90th-95th Congress (January 1967 - October 1978); 6 years before and 6 year after Roe v. Wade was decided, encompassing 12 years of Congressional speeches in total.

## Sentiment Analysis

I employed the NRC Word-Emotion Association Lexicon, which consists of eight emotions and two sentiments, to assess levels of anger in the congressional speeches. While I focused on anger for this study, similar results were found when testing with other emotions, such as sadness, fear, and trust.

First, I split the text into two groups: one with speeches delivered before Roe v. Wade and one with speeches delivered after. Sentiment analysis using the quanteda NRC dictionary was performed on the two sets of speeches, and levels of anger were compared using a two sample t-test.

Next, I split the two sets of speeches by political party, resulting in four total sets of speeches: two sets from before Roe v. Wade (one set by Republicans and the other by Democrats) and two sets from after Roe v. Wade. A two sample t-test was used to compare the difference in anger levels between speeches delivered by Democrats and Republicans both before and after the Supreme Court decision.



## Structural Topic Modeling

I chose to use Structural Topic Modeling because this method incorporates document metadata (such as author) into the estimation of topic prevalence. Since I am interested in understanding whether topics after Roe v. Wade became increasingly polarized by political party, I used the party identification of the speaker as a covariate in these models.

After trying several different numbers of topics and utilizing the searchK function, I decided on 25 topics for the speeches made before Roe v. Wade (Model 1) and 35 topics for the speeches made after (Model 2). The difference in topic number is driven by the difference in number of total documents included in each model.

Model 1: Speeches before Roe v. Wade

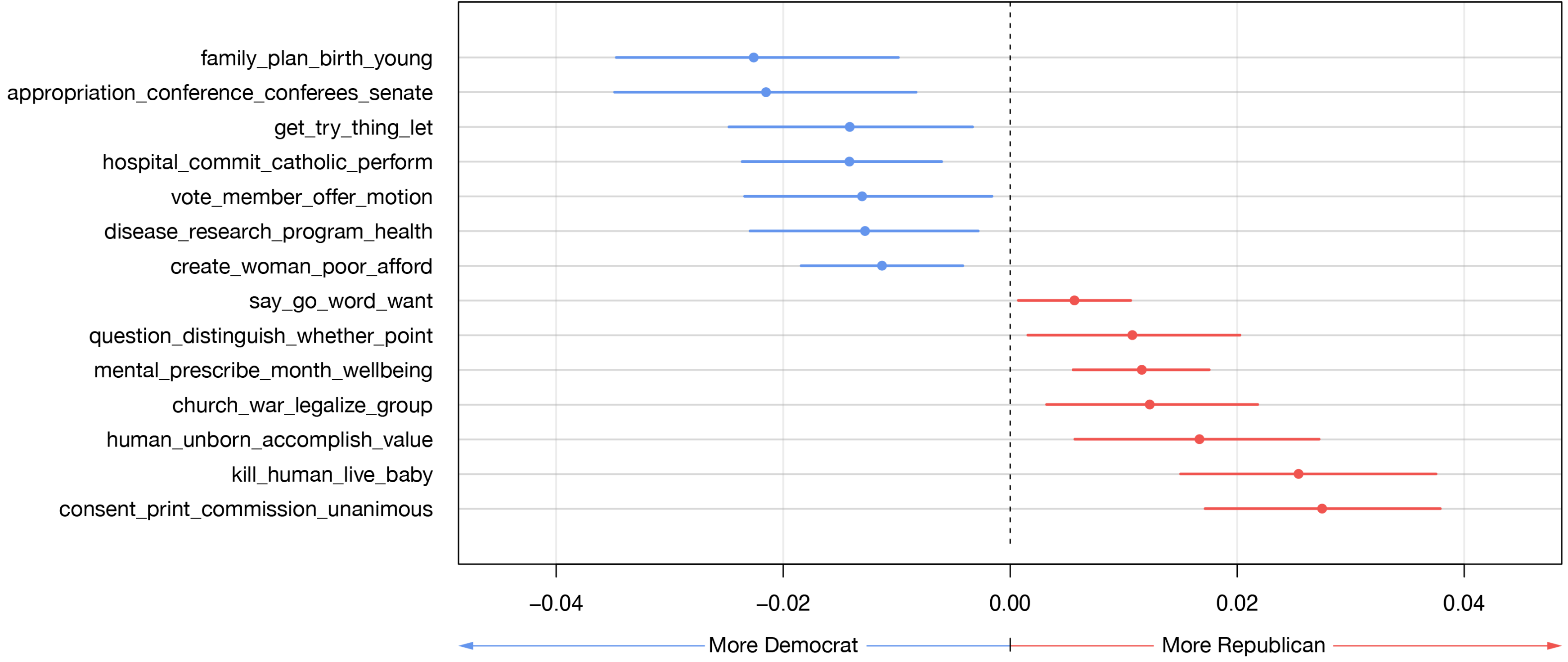
- Documents: 114
- Topics: 25
- Prevalence covariate: Party identification of the speaker

Model 2: Speeches after Roe v. Wade

- Documents: 1601
- Topics: 35
- Prevalence covariate: Party identification of the speaker

## Effect of Political Party on Topic Prevalence After Roe v. Wade

Only topics where the effect of the covariate was significant are shown.



## Results

**SENTIMENT ANALYSIS:** The results of the two sample t-test comparing anger levels in speeches made in Congress before and after Roe v. Wade showed the difference was significant, with anger levels decreasing after the Supreme Court decision.

The results of two sample t-test comparing political parties before Roe v. Wade showed that there was not a significant difference in anger levels between the parties before the Supreme Court ruling.

The results of the two sample t-test comparing levels of anger between the parties after Roe v. Wade showed that speeches made by Republicans had significantly higher levels of anger than those made by Democrats.

**STRUCTURAL TOPIC MODELING:** Of the 25 different topics identified in Model 1, there were none where political party had a significant effect on topic prevalence. Of the 35 different topics identified in Model 2, political party was found to have a significant effect on topic prevalence for 14 topics. Party affiliation was split down the middle with 7 topics more likely to be discussed by a Democrat speaker and 7 topics more likely to be discussed by a Republican speaker.

Comparison	Num of Speeches	Mean	P-Value
Speeches <u>before</u> and <u>after</u> Roe v. Wade	Pre: 114 Post: 1601	Pre: 17.23 Post: 8.78	0.001628***
Before Roe v. Wade: Speeches by <u>Democrats</u> and <u>Republicans</u>	Dem: 57 Rep: 57	Dem: 17.04 Rep: 17.23	0.9698 (not sig.)
After Roe v. Wade: Speeches by <u>Democrats</u> and <u>Republicans</u>	Dem: 709 Rep: 892	Dem: 8.07 Rep: 9.56	0.02052**

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

## Future Research

- Further study could explore using a supervised learning approach to be able to identify speeches related to abortion and reduce noise.
- Additionally, employing stance analysis could enhance this research by enabling the detection of the positions of authors and political parties on the issue. This approach would likely involve the use of supervised machine learning techniques.

## Conclusion

This analysis supports the first hypothesis that sentiment levels in the discourse on abortion in Congress shifted after Roe v. Wade. Sentiment analysis showed that levels of anger were reduced significantly after the Supreme Court decision.

This analysis also supports the second hypothesis that topics discussed by political parties became more polarized after the Supreme Court ruling. The analysis employing structural topic modeling revealed the effect of political party as a covariate on topic prevalence was not significant before Roe v. Wade. However, post-ruling, the effect of political party was significant across 14 topics. This increase in the effect of political party can be interpreted as indicative of heightened polarization and a deepening partisan divide.

## References

- Mary Ziegler, Beyond Backlash: Legal History, Polarization, and Roe v. Wade, 71 Wash. & Lee L. Rev. 969 (2014).
- Gentzkow, Matthew and Shapiro, Jesse M. and Taddy, Matt. (2017). Congressional Record for the 43rd-114th Congresses: Parsed Speeches and Phrase Counts. Stanford Digital Repository.