

## Introduction

The **framing** of an issue refers the choice of words which encourages an audience to view the issue from a particular perspective.

E.g.: “*Is the American government spending too little on... welfare?*” 23% of Americans agree

*assistance to the poor?*” 63% of Americans agree

We are interested in politicians’ framing of culture-war issues such as abortion and LGBT+ rights. To address this question, we propose a data-driven approach.

## Data and Methods

1,371 .txt files of web-pages of House of Representative candidates from 2008–2018 discussing abortion with covariates for each candidate/year combination.

We analyzed this text through **structural topic modeling**, which assumes the following document generative process: (1) draw document-level attention to each topic, (2) draw each word’s topic assignment, (2) draw a word from the assigned topic.

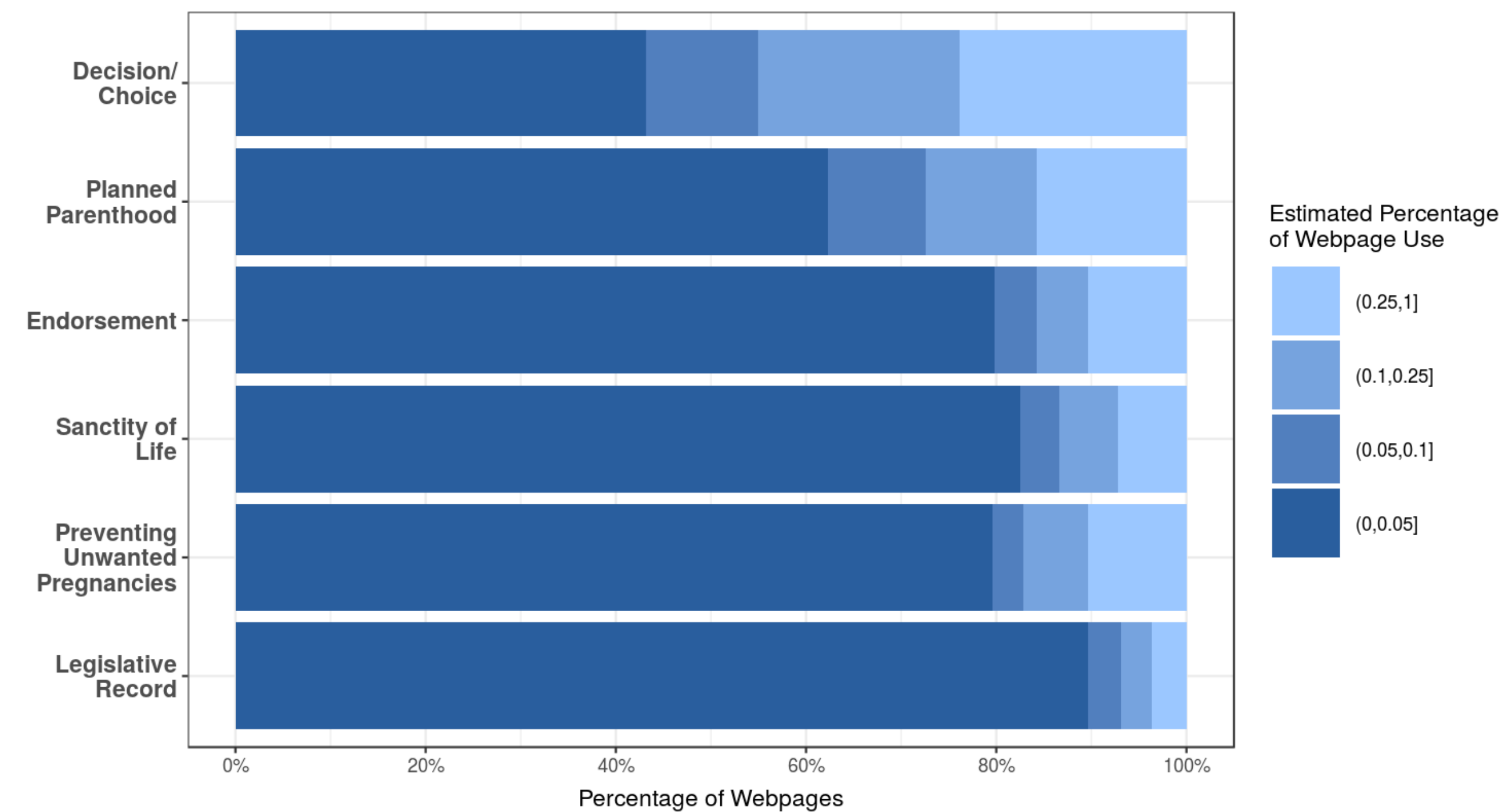
Our initial exploration of the data revealed that the Democratic and Republican candidates frame issues in such sharply divergent ways that we decided to examine the pages of each party separately to allow for a more fine-grained analysis.

To fit topic models, we needed to specify,  $K$ , the number of topics. To do so, we fit models across a wide range of  $K$ , various scores for each fit such as held-out likelihood, and semantic coherence.

## Results

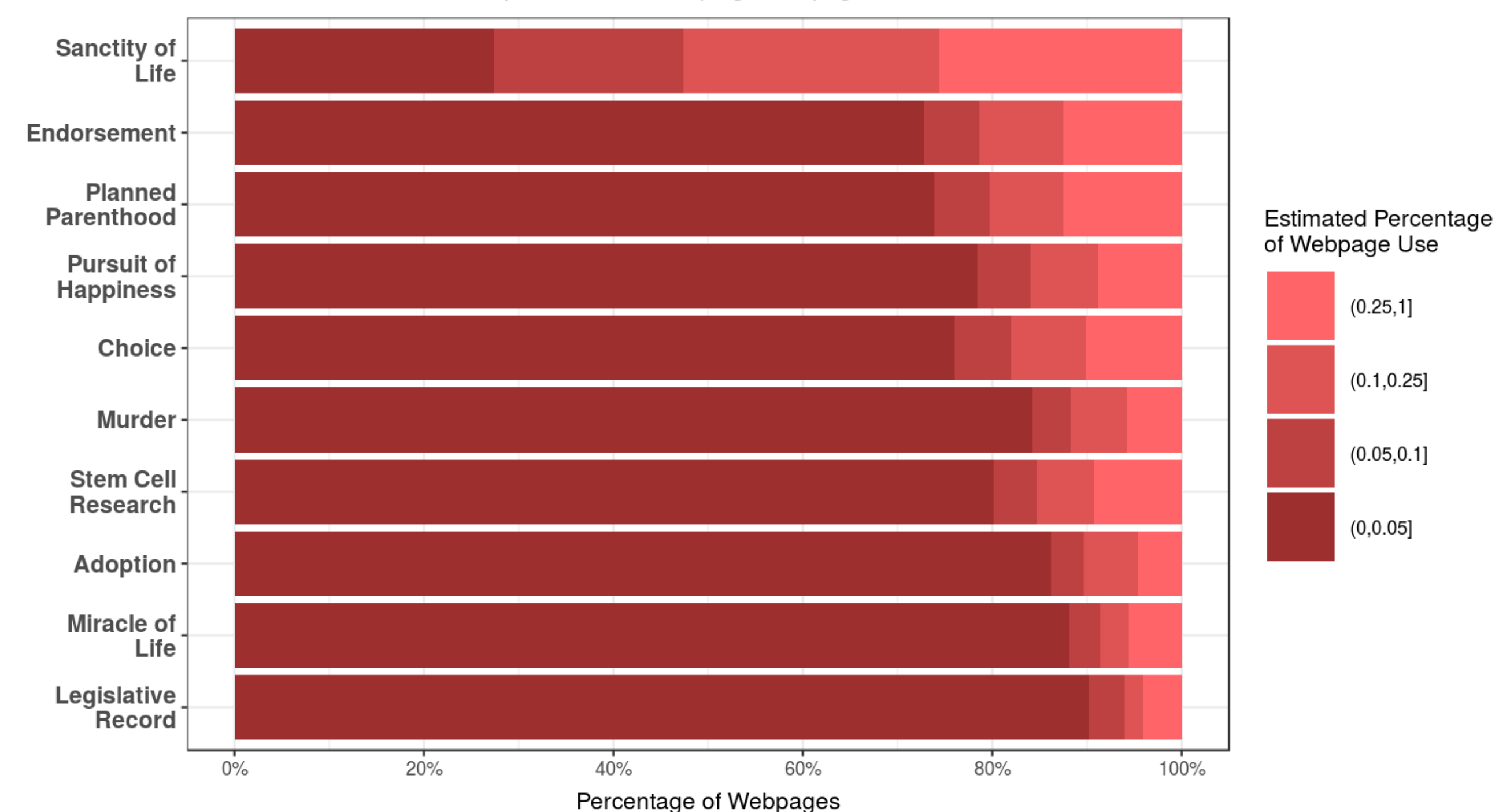
### Democrats Candidates' Framing of Abortion

From 2008–2018 House of Representatives Campaign Webpages



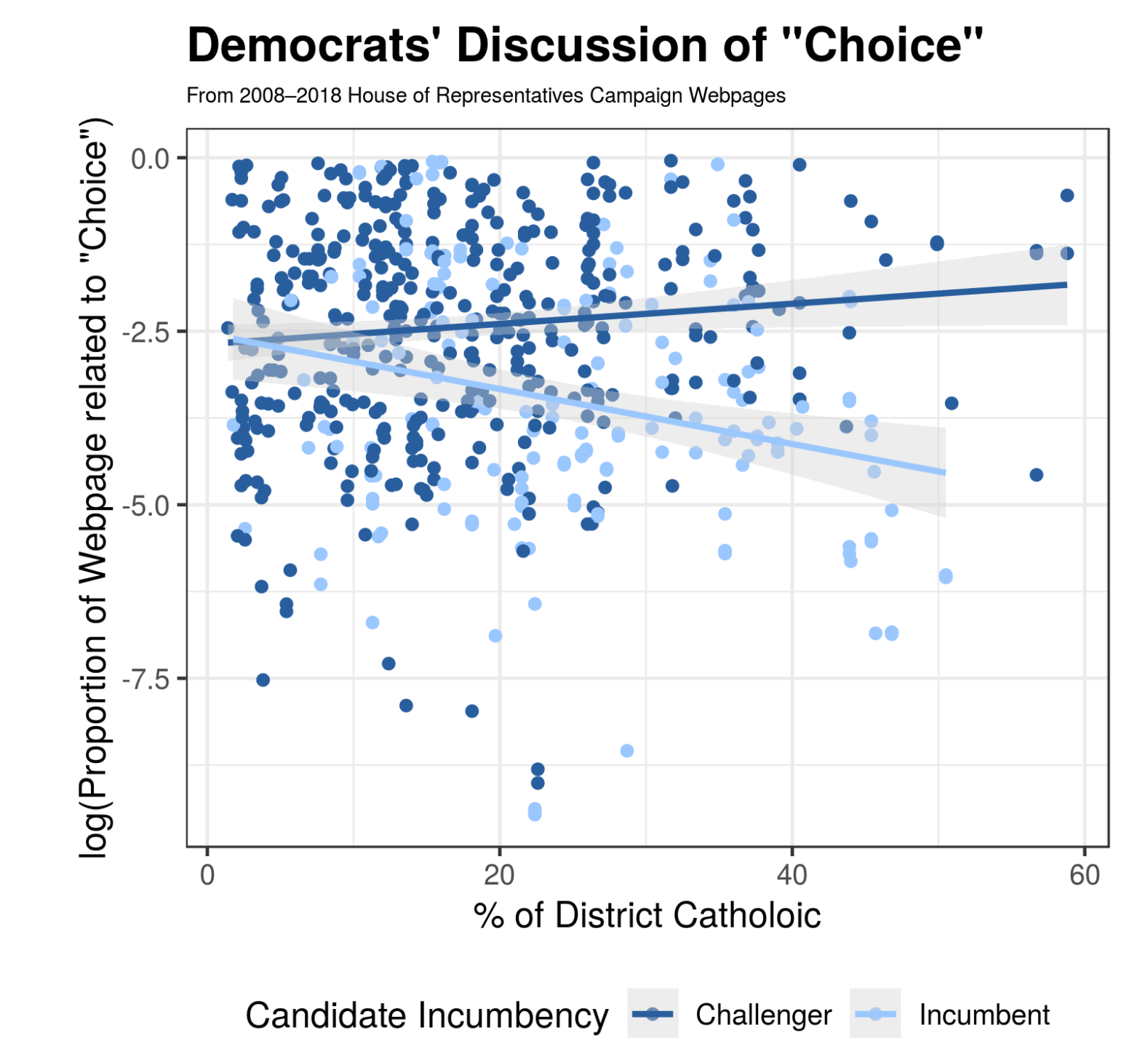
### Republican Candidates' Framing of Abortion

From 2008–2018 House of Representatives Campaign Webpages



## Validation

In addition to manually checking randomly selected documents’ scores, we generated linear models to check that the direction and magnitude of the effect of the district variables is what political theory expects to see. The plot on the right illustrates challengers’ general greater willingness to take risks (such as discussing “Choice” in heavily Catholic districts).



## Discussion

Our work proposes a rigorous approach to identify frames within an issue when topic modeling that synthesizes subjective, human analysis with data-driven methods. Moving forwards, we are interested in the following tasks:

- conduct larger-scaled human validation,
- explore candidate- and district- factors that predict the proportions of topics employed by the candidates, and
- relate the identified topics to sentiment analysis using LIWC dictionaries.

## References

- [1] Kenneth A. Rasinski. “The Effect of Question Wording on Public Support for Government Spending”. In: *Public Opinion Quarterly* 53.3 (Jan. 1989), pp. 388–394. ISSN: 0033-362X. DOI: 10. 1086/269158. eprint: <http://oup.prod.sis.lan/poq/article-pdf/53/3/388/5301247/53-3-388.pdf>. URL: <https://doi.org/10.1086/269158>.
- [2] Margaret E. Roberts, Brandon M. Stewart, and Dustin Tingley. “stm: R Package for Structural Topic Models”. Forthcoming. URL: <https://github.com/bstewart/stm/blob/master/inst/doc/stmVignette.pdf?raw=true>.