



The Relationship Between Media Bias and the Political Views of US Adults

Shoshana Henderson
March 7, 2021

Hypothesis

- ◎ The hypothesis of this research is that there is a direct relationship between the extent of bias of one's news sources, and the extremeness of one's political views.
- ◎ I expect that people who report using extreme and biased news sources, will have extreme answers to the political statements in the survey.

Procedure

1. Design survey consisting of demographic questions, political statements assessed with a Likert scale, and questions on news sources used
2. Distribute surveys to US adults through emailing and social media
3. Tag news sources based on bias rankings from AllSides and Pew Research Center
4. Analyze and graph data using Python and Excel
5. Run ANOVA and Tukey HSD statistical tests

Key Variables and Measures

- ◎ Source Score
 - Each news source was scored from -2 to +2 (extreme liberal to extreme conservative bias)
- ◎ Source Count
 - The amount of sources viewed by each respondent
- ◎ Strength of Conviction about Each Statement (overall)
 - Average absolute value of the difference from 3 of each statement's total responses
 - Highest possible score is 2
- ◎ Individual Extremeness
 - The mean absolute value of the difference from 3 (neutral) on each participant's response to the seven political statements
 - Highest possible score is 2

The background of the slide is a light gray network diagram. It consists of numerous small circular nodes, some of which are highlighted with a darker gray or blue color. These nodes are interconnected by thin, light gray lines, creating a complex web of connections that fills the entire page. The overall aesthetic is clean and technical, typical of a data science or technology presentation.

Data Analysis

Table of Statements, Median Answers, and the Strength of Conviction about Each Statement *

Statement	Median Answer	Strength of Conviction about Each Statement (overall)	Standard Error
There should be universal background checks for all gun purchases.	5	1.8892	0.0118
Abortion should be illegal.	1	1.6898	0.0194
The government should do more to address climate change.	5	1.6435	0.0199
The government should help provide affordable healthcare to all citizens.	5	1.4884	0.0217
The wealthiest people and largest corporations should not bear an increased portion of the overall tax burden.	2	1.3979	0.0223
The death penalty should be abolished.	4	1.1599	0.0246
The trade war with China is justified.	3	0.8459	0.0246

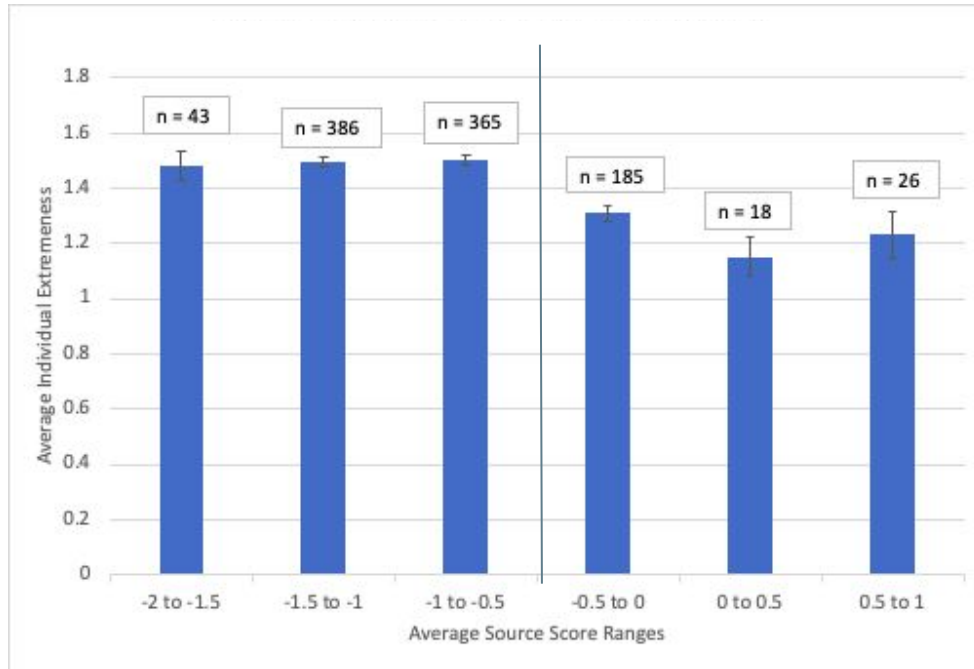
→ Respondents were given these 7 statements and asked to rate their agreement on a 5-point Likert scale

→ The table is organized such that the statements with the most polarized median responses are at the top, in red, to the most neutral one, in green.

→ This table implies that respondents feel strongest about gun control, abortion, climate change, and healthcare (in that order). They feel least strongly about the trade war in China.

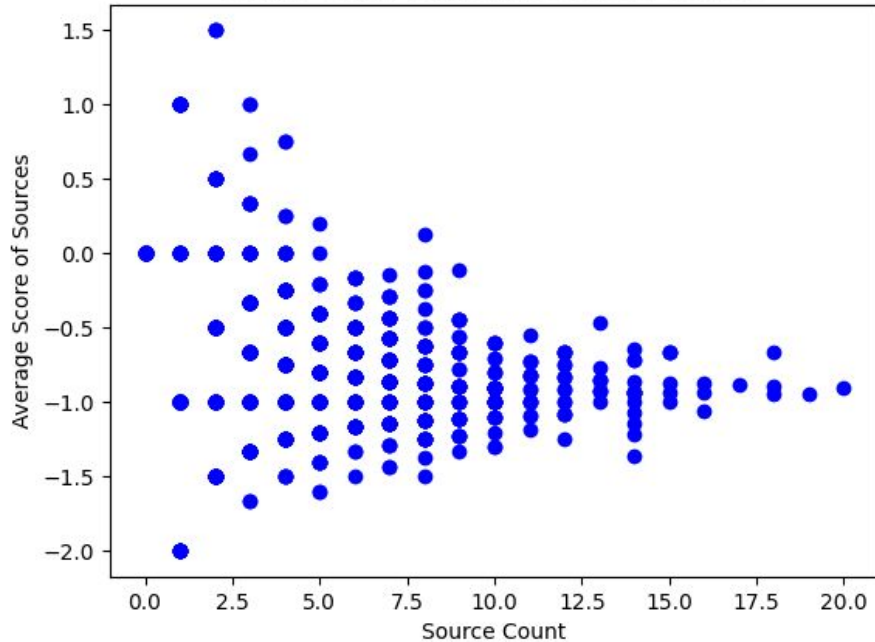
*Average absolute value of the difference from 3 of each statement's total responses. Highest possible score is 2.

Average Source Score vs. Average Individual Extremeness



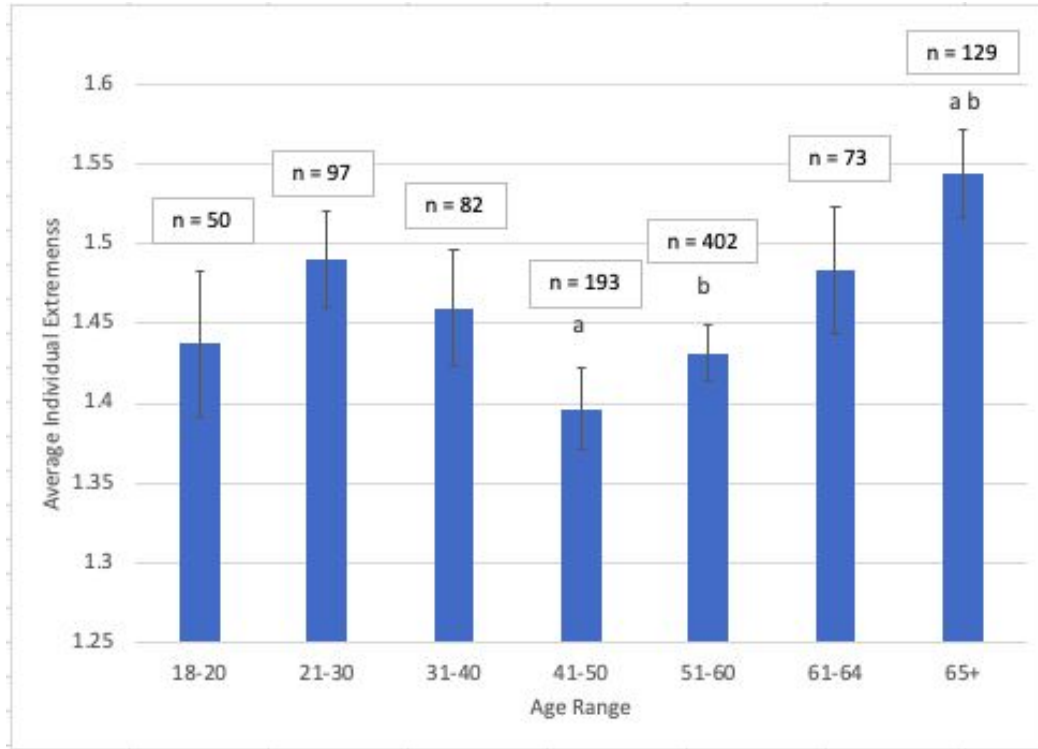
- This graph consists of data from respondents who reported that they view news sources (n = 1028)
- P-value from ANOVA test = 1.7986 e-14
Tukey HSD test showed that the first three groups were individually statistically different from the second three groups
- This graph shows that as the average source score gets closer to zero (4th and 5th bars), the average individual extremeness scores decrease. This directly supports the hypothesis.
- The population represented in the data, on average, looks at more biased news sources than neutral ones.

Source Count vs. Average Source Score



- On this graph, a score of negative two signifies very left leaning sources and positive two, very right leaning
- As the amount of sources looked at increases, the average score gets closer and closer to negative one. The fewer sources looked at, the more scores are closer to the extremes of negative two and positive two
- It is important to note that the survey had more self-identified Democrats than Republicans, so it makes sense that the graph is shifted down and that there are many data points around $y = -1$, which is an average of left leaning sources.

Age Range vs. Average Individual Extremeness



- An ANOVA test was run on these data groups, and the p-value calculated was 0.0063. Since the p-value = 0.0063 < 0.01, we have convincing evidence that the groups are statistically different
- A Tukey HSD test was also run, and there were two sets of groups that were statistically different.
- The average individual extremeness score of the 41-50 age group and the 51-60 age group are both statistically different from the 65+ group.
- On the graph, you can see these differences represented by 'a' and 'b' above the bars.
- The oldest age group (65+) had the highest average individual extremeness score

Summary

- ◎ This research draws conclusions about the population represented in this survey and helps gain insight into the political polarization so prevalent in our country today.
- ◎ The hypothesis that there is a direct relationship between the use of biased news media and the extremeness of one's political views has been supported by the data and statistical analysis.
- ◎ Analysis is still underway to compare source count directly to individual extremeness.

Future Work

- ◎ Conduct two surveys, at two different times, and compare results.
 - Have respondents alter their media consumption habits and test if there is a change in their extremeness score.
- ◎ Assess awareness of bias by asking participants to rate each source on how biased they believe it is and compare to the Pew and AllSides scores.