

Distortion of Normal: The Decline of Local News and the Increase of Political Polarization

1st Brianna Butler
Computer Science
Princeton University
Princeton, NJ
bb5943@princeton.edu

2nd Shirley Dongwei Chen
Architecture
Princeton University
Princeton, NJ
dc4119@princeton.edu

Abstract—In this project we aim to investigate the correlation between the decline of local news and the increase of political polarization with the rise of national news and the vast use of social media. Through a survey, we gathered Princeton University students their preferences on news sources on the local and national levels. Our findings point to a possible reason for the declination of local news, and, as a result, increasing levels of polarization in the United States.

Index Terms—polarization, news, social media

I. INTRODUCTION

Political polarization is an increasingly prominent issue globally, but it is particularly prevalent in the United States (Newman et al. 2017). According to Pew Research Center’s 2014 Report on Political Polarization in the American Public surveying 10,000 adults nationwide, the overall percentage of Americans who express consistently conservative or consistently liberal opinions has doubled over the past two decades from 10% to 21% (Pew, 2014). Moreover, partisan animosity has increased substantially over the same period of time, as the percentage within both the Republican and Democrat who have a highly negative view of the opposing party doubled since 1994 (Pew, 2014).

News consumption and political engagement on social media, such as Facebook and Twitter, play an increasingly critical role in political polarization in the United States. Polarization in the media sphere is expressed as the tendency to form communities with other ideologically similar individuals and engage in discourse predominantly in support of their ideology (Nelmarkka et al., 2018). Scholars have linked the increase in polarization to online technologies through terms such as “selective exposure”, “echo chambers” and “filter bubbles” in the online public sphere (Nelmarkka et al., 2018). For instance, Barberá et al. showed that information was exchanged primarily among individuals with similar ideological preferences regarding political issues on Twitter (Barberá, 2015). Itkonen et al. demonstrated that Facebook users tend to have friends with similar concerns as their own, and those who disagree about certain issues are less than half as likely to be friends (Itkonen et al., 2015).

Most Americans use social media to obtain information or communicate with one another. Based on Pew Research Center’s 2021 survey of US adults, Youtube and Facebook

remain the most popular social media platforms, which are used by 81% and 69% of adults in the US respectively, followed by Instagram (40%), Pinterest (31%), LinkedIn (28%), Snapchat(25%), Twitter (23%), Whatsapp (2—%), Tiktok (21%), Reddit (18%), and Nextdoor (13%) (Auxier & Anderson, 2021). Among the surveyed individuals, a majority of Facebook, Snapchat and Instagram users say they visit these platforms on a daily basis (Auxier & Anderson, 2021).

Social media has increasingly become a way of receiving news and facilitating political conversations. A recent Pew Research Center study on online news consumption further showed that 48% of U.S. adults say they get news from social media “often” or “sometimes” in 2021. Nearly a third of surveyed individuals (31%) say they get news regularly on Facebook, while 22% report they regularly get news on YouTube. Twitter and Instagram are regular news sources for 13% and 11% of Americans, respectively (Walker & Matsa, 2021). As news consumption on online platforms increases overtime, social media has become a new playing field for political campaigns and political debate. In the 2020 US presidential election, both candidates had a significant amount of followers, engaged actively on social media during the election cycle, and invested in campaigns on social media (Suciu, 2020).

The decline of local news contributes to a changing media landscape in the United States. According to UNC Center for Innovation and Sustainability in Local Media, between 2004 and 2014, 664 of the 8591 surveyed local newspapers vanished and the majority surviving sources had a circulation of less than 15,000 copies (Abernathy, 2016). Many concerns have been expressed about the negative effects of local news decline. Some studies suggest that the decline of local news in recent years corresponds to increasing viewership of national news, which has a stronger ideological priming towards the audience (Ellger et. al, 2021). Moreover, the diminishing of local political news can lead to decrease of civic engagement (Hays & Lawless, 2018). Amidst the overall decline of local news on printed newspapers, online platforms have become a new source of local news broadcasting. Among the Americans who read local news, social media and news website/apps are now the second most popular source of local news, consisting of 37% of the surveyed individuals, only following TV (41%),

and far outpacing printed newspapers(13%) or the radio (8%) (Pew, 2019).

To further study the correlation between the decline of local news and the increase of political polarization with the rise of national news and vast use of social media, this study conducts a Google Survey among Princeton students to investigate their social media news consumption patterns.

II. PRIOR WORK

Overall, prior work has shown that there is a relationship between the evolution of news and the increase of political polarization. A number of our sources have discussed the decline of local news and the subsequent rise of national news with the influence of social media. Political polarization is a popular research topic as of late, and many researchers have found a correlation between the rise of social media and the increase of political polarization in the US. Some of our chosen papers try to find ways to counterbalance radical opinions in an attempt to find a way to decrease polarization. However, this approach has been found to consistently have adverse effects. Many of our sources point towards many strategies and tactics modern forms of news use to draw in more viewers and clicks, and thus pulling attention away from the local newspaper or nightly news show.

Based on our research, we have discovered a vast amount of study about the modern state of news, the relationship between social media and political polarization, and means to combat political polarization through alteration of news consumption patterns. We would like to highlight, however, there is a lack of research on the role of alternative methods for depolarization. Therefore, we propose to investigate the relationship between sources of social media news consumption (national vs. local outlet) and levels of polarization. The two main questions we hope to answer are: How does the composition of news from national and local outlets on social media differ from one another? How do these differences contribute to polarization/depolarization of viewer's political opinions? Using the result from the survey, we hope to find answers to the questions above and suggest an alternative method of depolarization. We will now go further into each subtopic and the previous works relating to these subtopics.

A. Polarization on Social Media

Polarization in the media sphere is the tendency to commune with those ideologically similar to oneself while sharing media and engaging in discourse that predominantly supports their own perspectives (Nelmarkka et al., 2018). Even though increasing polarization is a global political phenomenon, evidence has shown that the U.S. media landscape is exponentially more polarized than any other country (Newman et al. 2017). While a majority of American citizens report themselves as centrists, those who have already been very politically involved tend to grow more polarized and the less politically engaged remain moderate (Dimock et al., 2014; Joffre, 2018).

Selective exposure or motivated reasoning on social media lead to an increase in political polarization among viewers (Joffre, 2018). Social media users not only voluntarily engage in self-segregation to interact with those with similar political leaning, but become subject to algorithmic filtering that presents more "favorable" results based on their preference as well (Joffre, 2018). Concepts such as "echo chamber" and "ideological cocoons" were drawn to describe such phenomena (Schkade et al., 2007; Sunstein, 2018). Overall, previous studies suggest that there is a tendency for social media users to form smaller communities with similar views when it comes to political topics on online platforms.

B. False Balance, Cross-cutting and Common Design Method

Current research on mediating polarization in the media sphere focuses on counterbalancing radical opinion with opposing viewpoints. This strategy stem from traditional journalism. Traditional journalism often attempts to provide a balanced account of the competing expert opinions when it comes to controversial issues (Bennett, 1996; Dunwoody, 2005; Entman, 1989). In TV news reporting, for instance, the cross-cutting method is used to balance viewpoints on political issues (Ellger et. al, 2021). This strategy, however, could lead to a "false balance" which distorts perceptions of related issues (Kohler, 2016). HCI researchers have attempted a similar strategy to balance news on social media. Coined by Nelmarkka et al. as "common design agenda", a number of HCI research on depolarization seek to explore design opportunities in order to expose people to diverse perspectives, often of opposing political camp (Nelmarkka et al., 2018). The common design methods in HCI and "cross-cutting" in traditional journalism are closely related, both suggesting that presenting opposing radical viewpoints in order to encourage unbiased, balanced public opinions.

However, these opinion-balancing strategies often fail to direct the audience to a multitude of viewpoints, and sometimes even lead to increased polarization. For instance, in traditional media, cross-cutting media reports can lead to an increase in polarization among viewers, as consumers refute information opposing their own political leaning (Levendusky, 2013). According to Nelmarkka et al., common design agenda in social media news consumption is not well received by the audience, and instead give rise to antisocial behavior or escape from the social media platform to avoid information from opposing political camp (Nelmarkka et al., 2018). In general, news viewers often respond to opposing viewpoints with negative reactions. As a result, the opinion-balancing strategies tend to only reinforce the viewers' original beliefs rather than helping them to incorporate more diversified viewpoints (Joffre, 2018).

C. Local News, National News and Social Media News Consumption

Close examination of national and local news outlets provide new potential directions to investigate polarization on social media news consumption. In many countries including

the United States, local news sources are found to be less partisan than national news (Bucchianeri 2020; Ellger et. al, 2021). The decline of local news in recent years corresponds to increasing viewership of national news, which, as mentioned earlier, has a stronger ideological priming towards the audience (Ellger et. al, 2021). Compared to national news, local news provides rich information about local matters to maintain cohesive community identity regardless of partisan viewpoints (Park, Fisher and Lee, 2021). Such information can build a common ground of shared identity for residents of the same geographical region, which in return helps to overcome their ideological differences. Contextualizing political news with other local events may also help to depolarize viewers with different political ideology. As Alain de Botton suggests, “We can be properly concerned about the sad and violent interruptions only if we know enough about the underlying steady state of a place, about the daily life, routines and modest hopes of its population (Botton, 2015).

National news media outlets are having no problem adjusting to the increasingly online nature of the world and its attention. Local newspapers, however, have experienced an extreme decline in sales. These newspapers were the main source of information about the local government and situation in a person’s community, allowing readers to be fully informed of local government platforms and hold local government leaders accountable (Darr et. al, 2019). This is leading to a direct decrease in elections only concerning local leaders (Darr & Hitt, 2018). A lot of national news networks are aligned with a certain side of the political spectrum (AllSides, 2021). A number of research find local news to be by far less polarized than national networks, thus forcing users to make their own decisions about how they interpret a local leader’s words and actions whereas national news is likely to remain polarized (Ellger et. al, 2021).

III. METHODS

A. Survey

To supplement our investigation into the link between the local news and polarization, we decided to survey individuals on opinions of news’ social media posts. First we wanted to investigate if there truly was a preference in national news social media posts over local posts. Then, we also wanted to investigate any patterns in why one type of post is preferred over the other (amount of likes, political source, article image, etc.). Finally, as a bonus, we wanted to get a small subsequent look into any patterns between preferences in social media news sources and political leaning.

The survey was created and administered through Google Forms. Our participants were recruited through an email sent to an email list targeting undergraduate students at Princeton University in Princeton, NJ. We wanted to specifically target individuals from the same geographic region. We felt that it would have been difficult to get opinions of local news posts if we sent the survey to a wider geographic audience. Some of the political stories would not make sense to say, a person from Georgia would be very unfamiliar with a representative

for New Jersey. This allowed us to focus on news sources from the New Jersey area. We also extended this radius out to New York and Pennsylvania, because many Princeton students and faculties live in those states and commute to Princeton for class.

The first section of the survey consisted of an informed consent form and notified our users that we would be obtaining their emails for the purpose of raffle upon completing the survey.

The second section of the survey consisted of the main portion of our investigation: the comparison between local news and national news. Participants were presented with an image from a local news social media post and an image from a national news social media post back-to-back. Then, they were asked which social media post they were more likely to pick, and were subsequently presented with multiple recommended options to explain why they chose this specific post:

- 1) Article tile more interesting
- 2) Amount of likes/shares
- 3) I recognize the source
- 4) They used a better article image

and if their answer did not fit these choices, we gave them the option to type out their choice reasoning.

Overall, participants were shown 9 different news stories with two social media posts each. One post was from a local news source, and the other was from a national new source. Each pair of posts for each story were from the same social media platform, to prevent platform preference from skewing results.

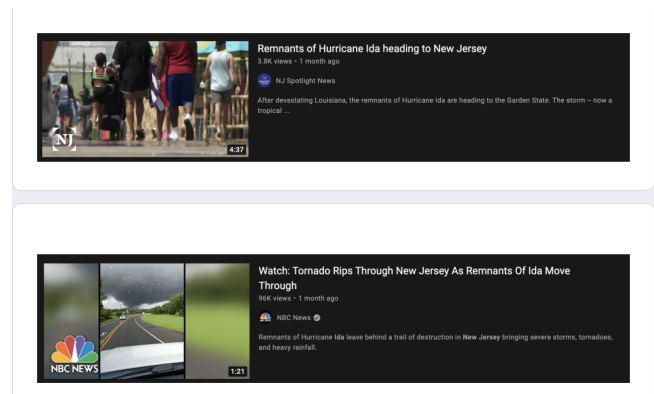


Fig. 1. An example of the post comparisons made in the survey. The top YouTube post was from a local source, and the bottom YouTube post was from a national source.

In addition preventing platform preference, we also made sure to diversify the political leanings of our news sources. We made sure to include a mix of left-leaning, center/neutral sources, and right-leaning sources. We obtained those leaning definitions from AllSide’s Media Bias Chart, which is consistently updated through their community (AllSides, 2021). An attention check question was placed within this section of the survey to prevent low-effort responses.

The third section of the survey consisted of social media and news questions so we could also look into general use and preferences when it came to social media news posts. Platform and new source preference was asked, and we also asked about the political diverseness of the news sources they follow.

The final section of the survey consisted of demographic questions to help identify patterns that could contribute to our subsequent results. Other than general identity questions, we also included a question about political leaning and identity. We diversified the leanings of the news sources in the survey, but as some of the news sources in the survey have a more controversial than others, we wanted to know if our audience skewed politically in one way. This is in case of one post being chosen simply because people didn't like the source, which defeats the purpose of having the survey taken through a non-political lens.

B. Participant Demographics

In total, we received 138 high-effort responses to our survey request.

As expected through the way we recruited the participants, most (90%) of our participants were undergraduates, and 94% were students. A small percentage (4.4%) of students were employed for wages. As common for undergraduates, 98% of our participants were between the ages of 18 and 24. 66.9% of our participants identified as female. 27.2% of participants identified as male. Two different ethnicities made equal parts of the majority of our participants: white and Asian, both making up 48.5% (97% total) of our participants. The most common political identity amongst our participants was liberal (38%), and the next most common highest political identity was a combination of liberal and democrat (14%).

1) *Social Media Preferences:* The most preferred social media platform amongst our participants was Instagram with 52.2% saying the app was their favorite. Three-quarters of our participants stated that they used social media as a source of news. Most participants answered that they use social media as a source of news occasionally (37.7%), with the next largest subset (25.4%) of our participants saying they use social media frequently as a source of news.

More than half of our participants followed CNN on social media (59.4%) with NBC, CBS, New York Times, and ABC following behind as the next most popular social media accounts amongst our participants.

60.4% of our participants admitted to following multiple sources with a similar political leaning on social media, 32.6% follow multiple sources with different political leanings on social media, and 6.5% preferred one primary source.

IV. RESULTS

Overall, our participants preferred the national news social media for 6 out of the 9 total comparisons in the survey. Participants had a split opinion for one comparison, and for the remaining post comparisons, participants preferred the local post. This aligned with our previous hypothesis that generally,

news social media posts from national news source accounts are interacted with more than social media posts from local news source accounts.

The most common reason amongst participants for choosing a national post was that the article title was more interesting than the local post, which was the most popular reason for choosing 5 out of 6 of the preferred national posts. Interestingly, however, is that for the remaining chosen national post, the most popular reason for choosing the national post was that they used a better article image.



Fig. 2. The national news post chosen by participants because it had a "better article image"

The most common second-place reason amongst participants for choosing a national post was "I recognize the source", which was the second most popular reason for choosing 4 out of 6 of the preferred national posts. The other second-place choices for social media reasons were that one post used a better article image than the other, and that one had a more interesting title (this was the post that had "better article image" as the top reason for post preference).

A. Local Posts

We wanted to take a deeper investigation and analysis of the local posts that were chosen as the majority preference of the participants of the study.

1) *50/50 Split Post:* The only post comparison in the survey to result in a 50-50 tie in choice of preference amongst participants was the choice of a Fox News YouTube video featuring an street interview titled "New York mandates proof of vaccination for indoor activities" and a Eyewitness News ABC7NY YouTube video featuring Bill de Blasio titled "SEE IT: De Blasio announces NYC school vaccine mandate, no testing option". Visible under the title of each post was the

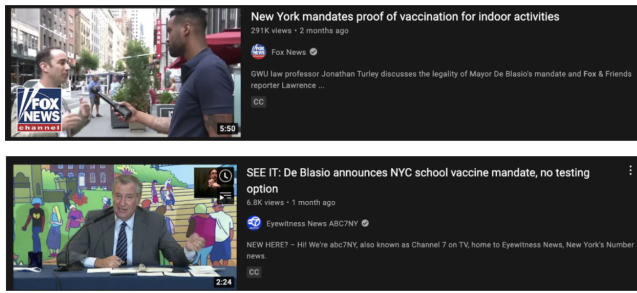


Fig. 3. Image of the YouTube video thumbnail from national news source Fox News (top). The bottom source is a YouTube video from the New York local news media source Eyewitness News ABC7NY.

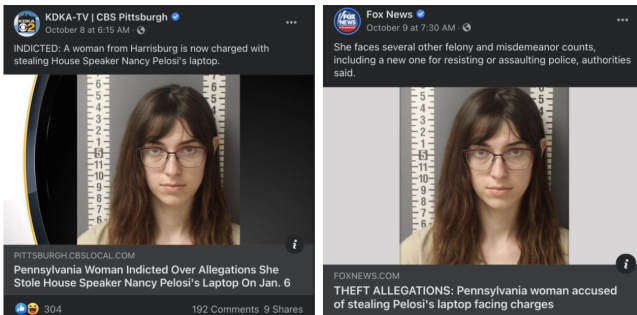


Fig. 4. Image of the Facebook post from national news source Fox News (right). Image of a Facebook post from the Pennsylvania local news media source KDKA-TV CBS Pittsburgh (left).

number of views the post had accumulated as of now with Fox News having the most views (20+ times of views the Eyewitness post had).

The survey results of reasons why each post was chosen varied greatly - but this was only for the set reasoning options we provided them on the survey. However, this was not the same for the option we gave the students of typing their own reasons if the ones we had already provided were not sufficient enough for an explanation of their choice. Across most of the fill-in choices, the reason for choosing the local source was because the other source option came from the highly controversial Fox News. Some students even went as far to express their dislike of Fox News with expletives.

The most common reason for choosing the Fox News source was that the article title was more interesting, which accounted for more than half of our participants' reasons. The two most common reasons for choosing the local source was that the source was not Fox News, and that they utilized a better article title.

As mentioned before, more than half of our participants identified as being left-wing or a democrat. Fox News is a well-known conservative news source, but it is also notorious - a lot of political posts on social media call-out Fox News or are from Fox News themselves - CITE. We should heavily take this into account when looking upon the results of this survey question for analysis on differences between how local news sources are perceived, and how national news sources

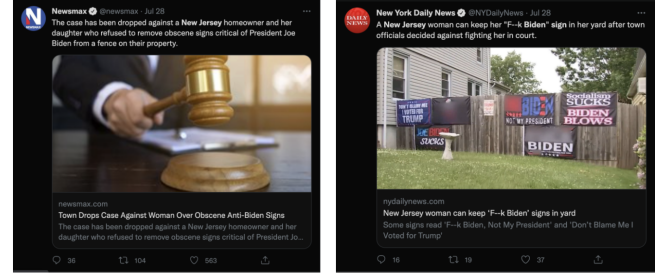


Fig. 5. Image of the tweet from national news source Newsmax (right). Image of a Facebook post from the New York local news media source New York Daily News (left).

are perceived in comparison.

2) *Local News Winner 1*: The first local post to be chosen as the preferred post by our survey participants was a Facebook post featuring a mugshot of a woman titled "INDICTED: A woman from Harrisburg is now charged with stealing House Speaker Nancy Pelosi's Laptop." from KDKA-TV CBS Pittsburgh, a news source local to Pennsylvania, a surrounding state to New Jersey. The post it was being compared to featured the same mugshot image, but titled "THEFT ALLEGATIONS: Pennsylvania woman accused of stealing Pelosi's laptop facing charges" from national news media source Fox News's Facebook account.

The most popular for preference of the local post for our participants was that the article title was more interesting. However, similar to what we found with 50/50 split survey questions, the fill-in answers provided more insight into why people preferred the local news source. Many survey participants filled in their own answers of why they preferred the local post over the national news post. In addition to having a more interesting title, a large portion of survey participants attributed their distaste of Fox News to their choosing of the local news Facebook post.

As mentioned before, due to our survey participants skewing left-politically, we have to take into account that some news posts could be chosen simply because participants would not likely choose a post that heavily goes against their own values.

3) *Local News Winner 2*: The second local post to be chosen as the preferred post had quite a few differences than the other two posts we have already mentioned. The second chosen local post was a news article titled "New Jersey Woman can keep 'F-k Biden' signs in yard" tweeted by local source New York Daily News featuring a snapshot of the aforementioned woman's yard. The post it was being compared was a news article titled "Town Drops Case Against Woman Over Obscene Anti-Biden Signs" tweeted by national source Newsmax.

Unlike the two previous posts comparisons resulting in a local post victor, this post comparison did not involve Fox News. However, Newsmax is also a right-wing news source, just less sensational than Fox News. A few participants did mention choosing the local post over the national post because they disliked Newsmax, but not nearly as much as with the

previous 2 mentioned posts.

The most common reason for choosing the local post this time around was that the local article used a better image for their article thumbnail. Because this was a provided answer choice, participants simply selected the option, so we were unable to gather secondary information of why participants thought the article used a better image. However, we hypothesize that because Newsmax used a standard stock photo for their story, it seems less trustworthy/accurate as the local post, which features an image of the actual story subject's yard.

V. DISCUSSION

A. Study Flaws

There are many conclusions that can be drawn from our results, but first we would like to address the faults of our method of study. First, we would like to discuss the demographic of our study participants. We mainly targeted Princeton University students, which does not represent the average United States citizen at all.

As mentioned before, most of our survey participants were democrat and/or left-leaning, resulting in skewed results for any survey question comparing a local news source to a national news source. According to Gallup's mid year report in 2020, around 36% of Americans are conservative, 35% are moderate, and 25% are liberal, and our study did not accurately reflect political ideology distribution (Saad, 2021).

Another downfall of our focused participant recruitment/pool is that the majority of our participants were white and Asian equally. According to the 2019 Census, the majority of Americans are white (60.1%), which our participant pool did somewhat accurately represent. However, only 5.9% of Americans are Asian, making them the 4th largest population in the United States, which our study did not accurately reflect, showing them as the most populous demographic of our studied tied with white participants (US Census Bureau, 2021).

In addition to race/ethnicity and political ideology not being accurately represented in our participant pool, a majority of our participants, as we have mentioned, were undergraduate students. Although being an undergraduate student means that you have not obtained your bachelor's degree yet, Princeton University has had a bachelor's degree completion rate of over 95% consistently over the past four years. Thus, we can infer that a majority of these students will join the minority (32.1%) of Americans with a bachelor's degree of higher (The Trustees of Princeton University, 2021 & US Census Bureau, 2021).

Although it may not need to be stated, the majority of our participants were between the ages of 17 and 21, which also probably does not represent the majority of the U.S. population. The majority of United States citizens are between the ages of 25 and 65 (over 30%) (US Census Bureau, 2021).

The last flaw of our method of study we wanted to point out was the actual survey. Had we had more time to plan out and create the survey, we would have included more comparison questions. With the current number of comparison questions we had, it was not too difficult to draw some conclusions about

local news versus national news on social media, but it would have been much easier to find different patterns amongst more of a variety of sources.

B. Future Study

There are interesting observations that we believe future studies could further address. Several type-in response explaining choice of certain posts recognize "sensationalization" of news in certain social media posts. These posts often present image or title that dramatize the event. The responses to the "sensationalized" posts are split. Some participants reject it and choose the other option, and some embrace it as being more intriguing. Future study could further investigate how certain social media features contribute to the "sensationalization" of news posts, and how this affect news consumption pattern in general.

Another characteristic that is recognized by the participants and received generally positive response is the specificity of posts, either through title or image. "More detailed" or "more descriptive" are provided as reasons to choose one post over another under most of the questions. It is especially worth noting that for both Local News Winner 1 and 2, information specificity or descriptiveness are listed by participants as reason to choose the local post over the national source. More specific information about the location, time, activity or personnel involved in the news event could help readers to better situate it. Images that taken specifically for the event instead of stock photo may provide a better sense of authenticity. Although the effects need to be further confirmed by future studies, it suggests that local news platform could benefit from providing more descriptive information about news events in comparison to the national sources as a way to attract more viewership. Different from Common Design Method, subtle adjustment of content like this may be a new direction for political depolarization on social media.

VI. CONCLUSION

As the political landscape in the US becomes increasingly polarized and social media continues to grow as a primary source of political news, it is critical to address polarization in social media news consumption. Our findings indicate that social media users are more likely to select national news sources over local news when browsing for information. We discuss how certain features such as article title, article image, recognition of source, contribute to the choice of news source for the participants of the survey. Although our study is limited to the specific demographic of college students, it contributes to a series of studies on the decline of local news and the important role of social media in news consumption in today's political landscape in the United States. As political polarization remain a prevalent issue, it is critical for HCI researchers to continuously advance our understanding of news consumption on social media platform and investigate means of depolarization the social media environment.

REFERENCES

- [1] Abernathy, P. M. (2016). The Rise of a New Media Baron and the Emerging Threat of News Deserts.
- [2] Allsides Media Bias Chart. AllSides. (2021, August 27). Retrieved September 28, 2021, from <https://www.allsides.com/media-bias/media-bias-chart>.
- [3] Auxier, B., & Anderson, M. (2021, April 7). Social Media Use in 2021. Pew Research Center: Internet, Science & Tech. <https://www.pewresearch.org/internet/2021/04/07/social-media-use-in-2021/>
- [4] Botton, D. A. (2015). The news: A user's Manual. Hamish Hamilton.
- [5] Bennett, W. L. (1996). An introduction to journalism norms and representations in politics. *Political Communication*, 13, 373–384. <http://dx.doi.org/10.1080/10584609.1996.9963126>.
- [6] Bucchianeri, Peter. 2020. "Party Competition and Coalitional Stability: Evidence from American Local Government." *American Political Science Review* 114(4):1055–1070.
- [7] Darr, J., Dunaway, J., Hitt, M. (2019, February 11). Want to reduce political polarization? save your local newspaper. Nieman Lab. Retrieved September 28, 2021, from <https://www.niemanlab.org/2019/02/want-to-reduce-political-polarization-save-your-local-newspaper/>.
- [8] Darr, Joshua P, Matthew P Hitt
Johanna L Dunaway. 2018. "Newspaper Closures Polarize Voting Behavior." *Journal of Communication* 68(6):1007–1028.
- [9] Ellger, F., Hilbig, H., Riaz, S., Tillmann, P. (2021). Local newspaper decline and political polarization. <https://doi.org/10.31219/osf.io/nhwxs>.
- [10] Dimock, M., Kiley, J., Kelter, S. Doherty, C. (2014). Political Polarisation in the American Public. Washington DC: Pew Research Center. Retrieved from: <http://www.people-press.org/2014/06/12/political-polarization-in-the-american-public/>.
- [11] Dunwoody, S. (2005). Weight-of-evidence reporting: What is it? Why use it? Nieman Reports. Retrieved from <http://niemanreports.org/articles/weight-of-evidence-reporting-what-is-it-why-use-it/>.
- [12] Entman, R. W. (1989). *Democracy without citizens: Media and the decay of American politics*. New York, NY: Oxford University Press. Ellger, F., Hilbig, H., Riaz, S., & Tillmann, P. (2021). Local newspaper decline and political polarization. <https://doi.org/10.31219/osf.io/nhwxs>.
- [13] Hayes, D., & Lawless, J. L. (2018). The Decline of Local News and Its Effects: New Evidence from Longitudinal Data. *The Journal of Politics*, 80(1), 332–336. <https://doi.org/10.1086/694105>
- [14] Joffe, L (2018, 18 November). How Far Is Social Media Responsible for Political Polarisation?
- [15] Juha V. A. Itkonen. 2015. Social ties and concern for global warming. *Climatic Change* 132, 2 (9 2015), 173–192. DOI: <http://dx.doi.org/10.1007/s10584-015-1424-0>
- [16] Levendusky, Matthew S. 2013b. "Why Do Partisan Media Polarize Viewers?" *American Journal of Political Science* 57(3):611–623.
- [17] Nelimarkka, M., Laaksonen, S.-M., Semaan, B. (2018). Social media is polarized, social media is polarized. *Proceedings of the 2018 Designing Interactive Systems Conference*. <https://doi.org/10.1145/3196709.3196764>.
- [18] Nelimarkka, M., Rancy, J. P., Grygiel, J., Semaan, B. (2019). (Re)design to mitigate political polarization. *Proceedings of the ACM on Human-Computer Interaction*, 3(CSCW), 1–25. <https://doi.org/10.1145/3359243>.
- [19] Newman, N., Fletcher, R., Kalogeropoulos, A., Levy, D.A.L. Nielsen, K. (2017). *Reuters Institute Digital News report 2017*. Oxford: Reuters Institute for the Study of Journalism. Retrieved on 15/11/2018 from: <http://www.digitalnewsreport.org/survey/2017>.
- [20] Pablo Barberá, John T. Jost, Jonathan Nagler, Joshua A. Tucker, and Richard Bonneau. 2015. Tweeting From Left to Right. *Psychological Science* 26, 10 (10 2015), 1531–1542. DOI:<http://dx.doi.org/10.1177/0956797615594620>
- [21] Park, Sora, Caroline Fisher
Jee Young Lee. 2021. "Regional News Audiences' Value Perception of Local News." *Journalism* pp. 1–19.
- [22] Pew Research Center. (2014, June 12). Political Polarization in the American Public. Pew Research Center - U.S. Politics & Policy. <https://www.pewresearch.org/politics/2014/06/12/political-polarization-in-the-american-public/>
- [23] Pew Research Center. (2019, March 26). For Local News, Americans Embrace Digital but Still Want Strong Community Connection. Pew Research Center's Journalism Project. <https://www.pewresearch.org/journalism/2019/03/26/for-local-news-americans-embrace-digital-but-still-want-strong-community-connection/>
- [24] Saad, L. (2021, November 20). Americans' political ideology held steady in 2020. Gallup.com. Retrieved December 12, 2021, from <https://news.gallup.com/poll/328367/americans-political-ideology-held-steady-2020.aspx>.
- [25] Schkade, D., Sunstein, C.R. & Hastie, R. (2007). What Happened on Deliberation Day. *California Law Review*, 95(3), 915-940.
- [26] Sunstein, C.R (2018, 22 January). Guest Post: Is Social Media Good or Bad for Democracy?
- [27] Suciu, P. (2020, October 26). Social Media Could Determine The Outcome Of The 2020 Election. Forbes. <https://www.forbes.com/sites/petersuciu/2020/10/26/social-media-could-determine-the-outcome-of-the-2020-election/>
- [28] Taylor, S. D. (2019). The Decline of Local News and its Effect on Polarization. *Governance: The Political Science Journal at UNLV*, 6, 14.
- [29] The Trustees of Princeton University. (2021). University enrollment statistics — office of the registrar. Princeton University. Retrieved December 12, 2021, from <https://registrar.princeton.edu/enrollment>.
- [30] U. S. Census Bureau (2021, December 7). Data. Census.gov. Retrieved December 12, 2021, from <https://www.census.gov/data/>.
- [31] Walker, M., & Matsa, K. E. (2021, September 20). News Consumption Across Social Media in 2021. Pew Research Center's Journalism Project. <https://www.pewresearch.org/journalism/2021/09/20/news-consumption-across-social-media-in-2021/>