

Selective rating: Partisan bias in crowdsourced news rating systems

Crowdsourced news rating systems have been suggested as a solution to reducing the amount of misinformation online audiences see. This study expands previous research crowdsourcing by looking at how characteristics of the rating system affect user behavior. In an experiment ($N=1,021$), two parameters of the rating system were manipulated. First, users were shown different varieties of news brands on the “menu” they were asked to rate. Second, participation was mandatory for half and voluntary for others. Results indicate partisans rated more news brands when they saw an ideologically dissimilar news menu than one that matched their ideology. Further, the trustworthiness rating of the mainstream news menu decreased when participants had a choice to participate rather than were forced. These results have important implications for understanding how users participate in crowdsourcing news credibility.

Keywords: crowdsourcing ratings, partisan news audiences, news credibility, misinformation, survey experiment, selective expression, corrective action hypothesis

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Audiences in the United States are exposed to thousands of news brands (Farhi, 2018), many of which are untrustworthy (Silverman, Lytvyneko, Vo & Singer-Vine, 2017). Entire ecosystems of partisan news pages were developed in the past few years from never-before-heard-of news websites (Bhatt, Joglekar, Bano, & Sastry, 2018), including hyperpartisan networks of “pink slime” news masquerading as local partisan news (Mahone & Napoli, 2020). Audiences are often exposed to these sites online (Thorson, Cotter, Medeiros, & Pak, 2019) without an easy way to recognize the news brand’s credibility. The number of news brands available to the average audience member today diminishes the ability of the audience to navigate to trustworthy, credible news with ease (Bucy, 2004).

In an effort to help improve the quality of news that users saw online, Facebook announced it would crowdsource news brand credibility. This system presented to users a menu of news brands and asked two questions about each news brand: “Are you familiar with these websites?” and “How much do you trust each of these domains?” (Clement & Borchers, 2018). The results of the crowdsourced ratings helped decide the news brands that are promoted or suppressed in Facebook users’ news feeds. Zuckerberg (2018) wrote that allowing users to rate the news would be the most objective way to choose what news brands are included and excluded from news feeds.

While some worried the results would be influenced by the audience’s biases and motivations (Clement & Borchers, 2018), others heralded the idea as “not as crazy as you think” (Funke & Benkleman, 2019). This was in part because researchers found that mainstream news sources were rated higher compared to obscure and partisan news sites (Pennycook & Rand, 2019). In that test of crowdsourced news ratings, participants were given a menu of 60 news

brands ranging from mainstream to hyperpartisan to obscure and asked to rate each on its trustworthiness. When the results were aggregated, partisan bias was a non-factor (Pennycook & Rand, 2019).

However, these results were limited to one specific type of news rating system. First, each participant saw the same menu. Second, participants had no choice about what brands on the menu to rate because rating all 60 brands was required (Pennycook & Rand, 2019). While these conditions were modeled on Facebook's crowdsourcing system, research into audience behavior suggests if the parameters of the rating system were to change behavior might also. Choice allows for partisan motivations to emerge (Sears & Freedman, 1967) because audiences prefer to engage with information that confirms their worldview (Lord, Ross, & Lepper, 1979) and counterargue information that challenges their view (Festinger, 1957). These theories have been used to explain news choices (Garrett, 2009; Sears & Freedman, 1967; Stroud, 2008) and expressions (Shin & Thorson, 2017). A news rating system that changes partisan motivations or introduces choice may also change behaviors.

This study examines the prospect that the outcomes of news ratings will change when audiences see menus that are more partisan or more mainstream, and when they have the choice of rating news brands or when rating is mandatory. It views participating in news rating systems as a form of expression, relying on past research about selective sharing (Shin & Thorson, 2017). Past research has found partisan bias in audience behaviors such as sharing fact-checks (Shin & Thorson, 2017) or news stories (Johnson, Neo, Heijnen, Smits, & van Veen, 2019). This study expands the conceptualization of selective sharing beyond choosing which information to share to include partisan participation in a crowdsourcing news credibility system – not as a private act – but as part of a public aggregate.

Because crowdsourced news ratings could contribute to the perceptions of public opinions about the news brands rated, the corrective action hypothesis (Rojas, 2010) posits motivated partisans who want to change the perception of public opinion will more aggressively express their opinion. In a system that allows participants to choose to participate or abstain, more frequent expression by partisans compared to moderates or those uninterested could introduce proportionally more bias to news ratings than a system where rating is mandatory. Similarly, when more partisan news brands are included on a news menu for rating, partisans may be more motivated to express a more extreme opinion. This study, therefore, seeks to expand understanding of corrective action partisan expression to a crowdsourced news rating system.

The purpose of this study is to examine audience behavior in a crowdsourced news context. It tests how giving participants the choice to participate affects their behavior in a crowdsourcing scenario. Additionally, it varies the composition of the list of news brands participants are given to rate – or “news menu” – to test how the brands on the news menu affect the ratings. It does this with a 2 (choice/forced participation condition) X 4 (mainstream, conservative, liberal, mixed news menu condition) experimental design. Slightly more than 1,000 adults living in the United States rated the trustworthiness of 20 news brands. The composition of these news menus and whether rating the brands was mandatory or voluntary were manipulated.

Literature review

Crowdsourcing, a term coined to mean the use of free labor from the collective wisdom of internet users (Howe, 2008), is being used in a new way fifteen years later: To sift through misinformation. Several companies have systems that gather the opinions of everyday users to decide what news is credible. Twitter announced a crowdsourcing platform called “Birdwatch” that asks users to spot inaccurate or misleading tweets and add “notes” that correct the

information (Coleman, 2021), and Facebook briefly asked users to crowdsource misinformation by flagging troublesome posts (Allen, Arechar, Pennycook, & Rand, 2021). Facebook designed a front-end crowdsourcing credibility system, as well. This one gathered the opinions of users about news brands' credibility by presenting them a menu of news website domains and asking participants to rate the brands (Clement & Borchers, 2018). This crowdsourcing system is particularly of interest because it hints a shifting trend where social media companies turn the gatekeeping duties of credible information over to the public. Social media companies are increasingly using to how crowdsourcing might be used to determine the credibility of the news. Yet, while researchers have examined crowdsourcing as a way to solve business problems or build better software (Howe, 2008), little is known about how users participate in crowdsourced news credibility. Because the motivations to participate in credibility crowdsourcing systems are different than motivations that come with other forms of crowdsourcing – such as community support, monetary rewards or 15-minutes of fame (Howe, 2008) – behavior in these developing systems deserves attention.

When announcing the plan to use crowdsourcing to influence which news brands would be included in Facebook's news feed, Zuckerberg (2018) used the word "trust" 18 times in a 464-word post. He wrote that asking experts to rate news brands would not solve "the objectivity problem." To get the most objective results, he said, he was turning the social media platform's users to find the most "broadly trusted" news brands. When Zuckerberg characterized experts as biased and everyday audience members as objective, he was getting at one of the tricky aspects of defining and conceptualizing trustworthy news. What is trustworthy or credible can be influenced by a news organization, but ultimately it is a perception of the message receiver (Gunther, 1992).

The difference between the concepts of trustworthy news and credible news has been met with some tension in the literature (Kohring & Matthes, 2007), though they are not necessarily mutually exclusive concepts (Self, 1996). While research about audience perceptions of news largely developed around the concept of credibility, the concept of news trust has gained popularity and prominence with a number of public-facing news literacy programs like The Trust Project and Trusting News. Similarly, Facebook has named their initiative to improve the quality of news on its platform The Trust Project and Trust Indicators (Anker, 2017). This was apparent in news coverage of Facebook's crowdsourcing announcement, which often used trust and credibility interchangeably (e.g. Clement & Borchers, 2018; Frenkel & Maheshwari, 2018; Funke & Benkleman, 2019). In fact, one frequently used definition of credibility in news research includes trustworthiness as a dimension (Meyer, 1998), while an operationalized definition of media trust focuses on the selectivity of information (Kohring & Matthes, 2007). Both of these concepts are understood by researchers to be a perception of the audience rather than a characteristic of the news itself.

While researchers have repeatedly asked audiences to report their credibility or trustworthy assessments of news, little research has examined ratings in a crowdsourced context. Crowdsourcing trustworthiness ratings of news could be different from surveys about the credibility of news brands by Pew Research (Jurkowitz, Mitchell, Shearer, & Walker, 2020) or The Trusting News Project (Kearney, 2017) because of the measurement simplicity of crowdsourced ratings. Facebook, for example, uses a single-item dependent variable. Additionally, parameters such as the choice to participate or not or the expectation that their answers could influence what news others see could alter their behavior in crowdsourcing.

A prescient study found that while individual audience members rate news brands with a partisan bias, a large participant pool eliminated partisan bias and the most credible news brands ranked the highest (Pennycook & Rand, 2019). Results suggest mainstream news brands end up with the highest trustworthiness ratings, while hyperpartisan and propaganda-like websites had lower ratings (Pennycook & Rand, 2019). The implications of this study suggest that the partisan biased expression observed at the individual level can be eliminated at the aggregate, or “crowdsourced,” level. Thus, “wisdom of the crowd” techniques could be used to cut through polarization and arrive at politically neutral results that could then be used to help fight misinformation and identify credible news brands. In the system tested by Pennycook and Rand (2019), participants were forced to rate all 60 news brands presented to them.

Selective expression

A web of theories predict audience motivations to read, share and comment on news. First, audiences are motivated to minimize their cognitive load (Fiske & Taylor, 1991). As cognitive misers, people reduce the cognitive load when making credibility decisions by relying on heuristic cues (Chaiken & Maheswaran, 1994), such as brand reputation or familiarity. Two mechanisms reduce cognitive load and motivate people to lend credibility to likeminded brands: avoidance of cognitive dissonance and tendency toward confirmation bias. Because it takes so much cognitive effort to simultaneously hold two beliefs that are at odds, known as cognitive dissonance (Festinger, 1957), audiences are motivated to counter-argue attitude-discrepant information. People like to avoid information that conflicts with their worldview because scrutinizing and choosing to accept or reject that information is burdensome work (Festinger, 1957). Conversely, confirmation bias motivates the audience to choose agreeable information and maintain their personal status quo of beliefs and opinions (Lord, Ross, & Lepper, 1979).

People are prone to seek out, selectively remember, and give credibility to information that agrees with their worldview (Lord, Ross, & Lepper, 1979). Avoidance of cognitive dissonance and motivation to engage in confirmation bias work like magnetic forces toward favorable information and against unfavorable information. Though the concept of selective exposure to information (Sears & Freedman, 1967) is decades old, it more recently took on renewed importance because of the multitude of news brands available to audiences in the 21st Century as online environments made sharing news with others easier.

Selective expression theories developed from the selective exposure theories, and posit that audiences are more likely to share with others likeminded information. Research suggests online information platforms are shaped by partisan selective expression. Twitter users are more likely to retweet information that agrees with them than disagrees (Barberá, et al., 2015). Liberal Facebook users tend to share liberal news stories while conservatives tend to share conservative news (Bakshy, Messing, & Adamic, 2015). Similarly, Facebook audiences are more likely to share fact-checks that help the political in-group rather than harm it (Shin & Thorson, 2017), and they share news stories with a pro-attitudinal view than a counter-attitudinal view (Johnson, Neo, Heijnen, Smits, & van Veen, 2019). Sharing disagreeable information with others appears to be particularly rare (Shin & Thorson, 2017).

These studies, however, look at the partisan expression choices of individuals who often have their names attached to the expression. Expression actions could be different when audiences think they are just one of thousands of people participating in nameless, faceless expression. Indeed, audiences make different news choices when their choices are viewable to others than when their choices are private (Coppini, et. al, 2017). However, a follow-up crowdsourcing study provides evidence that crowdsourcing users exhibit similar expressive

behaviors even when their name is not attached to their expression (Epstein, Pennycook, & Rand, 2019). To measure how the knowledge of that their decisions would influence public news visibility, researchers told some participants their credibility rating would influence a ranking algorithm that controlled information exposure (Epstein, Pennycook, & Rand, 2019). Others were given no instructions about the influence of their answers. The authors found that both groups answered similarly.

Politically involved audiences are more prone to selective expression than selective exposure (Johnson, Neo, Heijnen, Smits, & van Veen, 2019). Beyond the desire for attitudinal homeostasis created by cognitive biases, partisan audiences are motivated by opinion and social identity management when their expression is public (Coppini, et al, 2017). Similar to the sender's effects Pingree (2007) found, the amplified effects found in selective expression compared to selective exposure may be because expression involves extra cognitive effort compared to merely reading a story (Lane, et al, 2019). These findings suggest that partisan audiences are motivated to express their political beliefs more than those who are moderate.

Corrective action hypothesis

When audiences have the choice to participate in a rating system, they may behave differently than when they are force to participate. Modifying the parameters of system to introduce choice may influence the results because past research suggests many people choose to sit out participation in crowdsourcing answers, especially moderates and those who are apathetic to (Duncan, et al, 2020; Metzger, Hartsell, & Flanagin, 2015; Prior, 2007). At the same time, hyperpartisans are highly motivated to express their opinion (Prior, 2007; Rojas, 2010; Shin & Thorson, 2017). A mandatory rating system would include both the votes of the apathetic and the hyperpartisans. Introducing choice may skew the ratio of participation toward hyperpartisans.

Viewing participation in a rating system as a form of expression suggests that selective expression and corrective action behaviors could produce a “selective rating” phenomenon.

The corrective action hypothesis suggests that partisans with strong opinions are more likely to express their opinions when they feel like they are in the minority (Rojas, 2010; Rojas, Barnidge, & Abril, 2016). This hypothesis grew from third-person effects, which explain that partisans believe media influences others to a greater degree than it influences them, which motivates behaviors like censorship (Davison, 1983). Therefore, these partisans are highly motivated to express their opinion when they perceive public opinion to be against them to “correct” other audience members’ perception of public opinion (Rojas, 2010). In the context of online comments, those with the most extreme opinions most frequently voice their opinion when other commenters oppose their worldview (Duncan, et al, 2020). This results in an imbalance in the number of comments from partisans compared to the voices of moderates, who are less motivated to express their opinion.

Because the variety of news brands available to choose from influences how partisans behave (Glenski, Pennycuff, & Weninger, 2017) and a perception among partisans that their opinion is in the majority or minority influences the frequency of engagement (Barnidge & Rojas, 2014; Rojas, 2010; Rojas, Barnidge, & Abril, 2016), corrective action hypothesis suggests varying the menu of news brands would affect the frequency partisans participate in crowdsourcing. Audiences use a variety of heuristics to gauge public opinion and whether their opinion is in the majority or minority (Rojas, 2010; Rojas, Barnidge, & Abril, 2016). Partisans may use a news menu of exclusively partisan news brands as a cue to the types of news brands to which audiences are paying attention. That cue about what news is seen as popular may motivate users to express their opinion to correct public opinion. In online comment sections, the

distribution of opinions affects the audience's perception of the opinion climate and can spur more expression among those who do not see their opinion represented (Duncan, et al, 2020; Duncan & Coppini, 2019). Similarly, audience members may be more motivated to express their opinions if likeminded news brands are not represented in the options available to rate. Though news rating systems may involve more expressive constraints than commenting online, audiences who believe that their news ratings could be seen by others or influence an algorithm may view news rating systems as an opportunity to advance their political interests and "correct" public opinion by downvoting ideologically dissimilar news brands.

H1: Users who see a news menu dissimilar from their own partisanship will rate more news brands than those who see a news menu that matches their partisanship.

Partisan motivations

Because politically partisan audience are more prone to selective expression, they are more likely to have the motivation to participate in a crowdsourcing system. In their test of crowdsourcing, Pennycook and Rand (2019) used a system with a "mixed" news menu that included mainstream and partisan news brands and required participation. They found that credibility ratings by partisans "washed out" as partisans from both sides and non-partisans participated in the system equally. However, in a system that allowed users the choice to participate, those who are less motivated by partisanship may opt out of participation. This may increase the partisanship of ratings in a crowdsourced system because the ratio of motivated partisans to less motivated non-partisans will increase compared to a system that compels participation.

Because even a few very motivated people can skew the data in a crowdsourced scenario (Howe, 2008), theory suggests that when partisans see a news menu that is ideological, they will

rate be more likely to express their opinion than moderates and those who are apathetic. This could increase the trustworthiness rating of the news menu when participation in rating the news brands on the menu is voluntary rather than required. When these motivation phenomena are seen in conjunction with the corrective action hypothesis (Rojas, 2010), it suggests that those who have low partisan motivations and would rate politically partisan menus lower compared with those with high partisan motivations. Meanwhile, political partisans who are highly motivated and also worried that their voice will not be heard will continue to participate in crowdsourcing even when given the choice to abstain.

H2a: The conservative partisan news menu will be rated as more trustworthy when users have a choice to participate in a crowdsourcing system compared to when users are required to participate.

H2b: The liberal partisan news menu will be rated as more trustworthy when users have a choice to participate in a crowdsourcing system compared to when users are required to participate.

The opposite may be true for news menus that are comprised of partisan news brands. Non-partisans are more likely to see mainstream news as credible compared to political partisans. The hostile media perception (HMP; Vallone, Ross, & Lepper, 1985) is the tendency by partisans to see news as biased against them. When news content is neutral to the cause and includes information from both sides of a conflict, people on both sides of the conflict often see the news as biased against them (Gunther, 1988; Gunther & Liebhart, 2006). In content that is not neutral, like that which comes from a source that is known to have a political bias, researchers still observe a relative hostile media perception (Feldman, 2011; Perryman, 2020). Here, even when audience members acknowledge that the news is biased, they report

exaggerated bias against them or tempered bias for them. As a result, partisans trust different news brands than the U.S. population. Of late, news researchers have found those who consistently use mainstream news have the most trust in news while those who identify as politically conservative and those who support former President Donald Trump have the least trust in news (Mourão, Thorson, Chen, & Tham, 2018). According to Pew Research, the most trusted news brands among Americans is ABC (Jurkokwitz, Mitchell, Shearer, & Walker, 2020). But, the same survey found the most trusted news brand among Democrats is CNN, and the most trusted among Republicans is Fox News.

H3: The mainstream news menu condition will be rated as more trustworthy when all users are required to participate in a crowdsourcing system compared to when users have a choice to participate.

Methods

To test these hypotheses, participants were asked to rate the credibility of news brands in a 2 (forced/ choice participation condition) X 4 (mainstream/ conservative/ liberal/ mixed news menu condition) between-group, survey-embedded experiment. Each participant was presented one of four menus of 20 news brands. Those menus were constructed to represent mainstream news, conservative news, liberal news, and mixture of news on other menus. Additionally, the survey software randomly assigned participants to conditions in which they could not advance in the survey if they did not rate all 20 news brands, or allowed them to advance after rating only the news brands they wanted. Participants were also asked about their partisanship so that the news menu ideology could be matched based on three categories: liberal, moderate and conservative. A power analysis accounting for a full-factorial 24-cell experiment that designed to

detect an effect size of 0.15 suggested a participant sample of 1,024 would have a power of 0.81. The responses of 1,021 participants were analyzed here.

Participants

To test these hypotheses, participants were recruited from Lucid Fulcrum Academia. Lucid, a large online survey vendor, provides a sample that matches similar to the U.S. population on most benchmarks (Coppock & McClellan, 2019). Participants were compensated in accordance with their agreement with the vendor that directed them to Lucid.

A sample of 1,021 adults living in the United States completed the 15-minute survey. Participants were 51% female and 48% male, were on average 44 years old, and had on average “some college” education. Where participants could indicate multiple races and ethnicities, participants reported they were 77% white, 13% African-American or black; 11% Hispanic; 7% Asian or Pacific Islander; and 2% American Indian or Alaskan Native. Participants reported their average household income was between \$40,000 and \$49,000 annually.

Procedures

After reading an information sheet approved by the Institutional Review Board at the researcher’s institution, participants were asked several questions about their opinion of journalism and the influence they believe it has on others. Then, they were told they would rate news brands. At this point, participants were shown one of four lists of 20 news brands. An individual participant saw the same list of 20 news brands – displayed in randomized order – to rate three times. See Table 1 for the list of news brands. Half of the participants were randomly assigned to be required to rate the news brands, and the others were given the choice to participate. See Table 2 for the number of participants assigned to each condition. After the

ratings, participants were asked about their motivations for rating the news organizations. Finally, they reported demographics and sociographics.

Participation conditions

During the first rating of news brands, participants were asked to rate the degree to which they trusted each of the brands on the menu. Half of the participants ($N=512$) were in the *forced* participation condition and told: “Please rate **all 20** of the following. **You cannot continue until you rate all the organizations**” (emphasis in survey). Additionally, the survey software was programmed to prevent participants from continuing until the brands were rated. The remainder of participants ($N=509$) were in the *choice* participation condition: “**You may rate as many or as few as you wish. You can continue when you are finished rating the ones you want to rate**” (emphasis in the survey). The survey software allowed participants to continue even if they had not rated any of the news brands.

News menu conditions

Four conditions of news menus were created to manipulate the partisanship and familiarity of the news brands available to the participants for rating. Menus were created from news brands with a reputation for being mainstream, conservative partisan or liberal partisan. A fourth menu condition was created, drawing a mixture of the news brands used in the other three conditions. This final menu condition, the mixed condition, was intended to serve as a control condition. It contained a mixture of mainstream and partisan news brands to mimic the menu displayed by Pennycook & Rand (2019). The menus were primarily constructed from the list Pennycook and Rand (2019) created. However, by the time this experiment was fielded many of the hyperpartisan news brands on the Pennycook and Rand (2019) menu were no longer active. News brands listed from the appropriate category on Media Bias Fact Check, an independent

organization that rates the ideological bias of news organizations (Media Bias, 2019), were used to supplement the list. Because news organizations were repeated in some news menu conditions (e.g., mainstream and mixed), there were 48 unique news brands included in the experiment. It is important to note that the lists were not intended to be comparable to each other on trustworthiness because the partisan news menus contained fewer traditionally credible news brands than the mainstream menu. However, the two partisan menus were designed to be comparable, with similar make-ups of mainstream, hyper-partisan and conspiratorial brands. For menus, see Table 1.

Variable construction

Participant ideology. Participants were asked to indicate their ideology on a scale from 1 (very liberal) to 7 (very conservative). Participants who answered very liberal, liberal, or somewhat liberal, were grouped as liberal ($N=363$). Participants who answered moderate created a second category ($N=330$). Participants who answered somewhat conservative, conservative or very conservative were grouped as conservative ($N=328$).

Number of news brands rated. For those who were assigned the choice condition ($N=503$), number of brands rated was the count of the brands rated. Participants could rate as few as zero or as many as 20 ($M=18.28$, $SD=4.58$).

Trustworthy rating. Participants were shown the menu of news brands and asked to rate each on “How much do you trust the information that comes from the following sources?” (Pennycook & Rand, 2019). Participants could rate the news brands on their perceived trustworthiness from 1 to 5, where 1 was ‘none at all’ and 5 was ‘a great deal.’ The trustworthiness scores a participant assigned each news brand on the menu were aggregated into a single sum for the menu itself. This created the variable *trustworthy rating* ($M=2.26$, $SD=.97$).

The trustworthiness score is created to be able to compare how participants rated a slate of 20 news brands between similar conditions. Because it is difficult to create a menu of news brands that have a reputation of being partisan that are equal in trustworthiness to a menu that is mainstream, the trustworthiness cannot be compared across all menu conditions. But, the measure is helpful to test hypotheses concerning the participation condition or between groups of partisan participants, for example.

Results

Manipulation checks

After the first rating of the news brands, participants answered a manipulation check question that asked them to recall whether they were forced to rate all the organizations or had the choice ratings. These answers were matched with the condition participants were randomly assigned, and 73% of participants ($N=745$) answered correctly. A manipulation check failure rate of 27% is in line with similar types of experiment studies that have manipulated heuristic cues (e.g., Amazeen & Muddiman, 2018).

The percent of participants in the choice condition who rated each news organization ranged from 97% (CBS and Fox News Channel) to 85% (Alternet). See Supplemental Appendix for descriptive statistics of the frequency and quality of rating of each of the news brands. An ANOVA found that while the participation condition did have a significant difference on the number of news brands rated $F(1, 1020)=71.82, p<.001$, the news menu condition did not have a significant difference on the number rated $F(3, 1018)=.83, p=.476$.

Hypotheses testing

The first hypothesis to be tested is H1, which predicted that partisans would rate a larger number of news brands when they were shown a menu of ideologically dissimilar news brands

than similar news brands. For analysis of H1, the participants were grouped according to the match between their own ideology and the ideology of the menu. This was to ensure that the groups saw the same menus. Because a menu comprised of all conservative news brands is inevitably different than a menu of all liberal news brands, this analysis looked at both liberal participants who saw a conservative menu and conservative participants who saw a liberal menu in the same “dissimilar category.” Liberals who saw a liberal menu and conservatives who saw conservatives were in the “similar category.” Moderate participants were not matched with a particular menu as there is no fair comparison, and they were not the target of this hypothesis. This analysis only included those who were assigned to the choice participation condition because participants in the forced condition all rated the same number of brands. The one-way ANOVA therefore includes participants assigned to the choice participation condition and the liberal partisan or conservative partisan news brand conditions ($N=258$). Because the assumption of equality of variance was violated, the Welch’s statistic was used. The results when accounting for that violation indicate the number of brands rated differed based on the match of ideology between the participant and the news menu, $F(2, 143.83)=6.23, p=.003$. A Games-Howell post-hoc test revealed when partisans saw a news menu dissimilar to their own identity, they rated more news brands ($M=19.36, SD=2.69$) than when they saw a likeminded news menu ($M=17.14, SD=6.05$), $p=.008$. See Figure 1. H1 is supported, suggesting a group who sees an ideological menu dissimilar to their own partisan views will rate more brands on that menu than when they see a menu that is similar to their own partisan views. See Table 3 for the Games-Howell post-hoc test confidence intervals.

An ANOVA was used to test H2a, H2b, and H3, all of which suggested that whether users were required to participate in crowdsourcing would affect the trustworthiness rating of the

news menu depending on whether the menu was mainstream or partisan. Participation (forced/choice) condition and news menu condition were used as independent variables, while the trustworthiness rating was used as the dependent variable. The model is significant $F(7, 1007)=11.00, p<.001$. While there is a main effect for the news menu condition, $F(3, 1007)=22.08, p<.001$, that is modified by an interaction between the participation condition and the news menu condition, $F(3, 1007)=3.07, p=.027$. This interaction suggests that whether participants were forced to participate in crowdsourcing or not did not have a uniform effect. In some menu conditions it had a significant effect, while in others the effect was minimal or null. Examining the interaction further to look specifically at the mainstream menu, trustworthy ratings suggest that the participation condition affected the mainstream menu so that those in the forced participation condition rated the menu as more trustworthy ($M=2.77, SE=.08$) than those in the choice participation condition ($M=2.45, SE=0.8$). See Table 4 for confidence intervals. H3 is supported. Using the same ANOVA, the two partisan news menus (liberal and conservative partisan menus) were examined to test H2a and H2b. Neither of the partisan menus were rated significantly differently between the choice or forced participation conditions. There is no support for H2a nor H2b. See Figure 2.

Discussion

The purpose of this study was to expand the corrective action and selective expression literature beyond news sharing to the realm of crowdsourced news ratings. Prior research on selective expression suggested that partisans would be particularly engaged when given the opportunity to share their identity and influence the opinions of others (Johnson, Neo, Heijnen, Smits, & van Veen, 2019; Shin & Thorson, 2017; Weeks & Holbert, 2013). Further, research suggests that when partisans feel as if they are in the ideological minority, they will be even

more motivated to express their opinions (Rojas, 2010; Rojas, Barnidge, & Abril, 2016). This study investigated how audience choice to participate in expression influences behavior in a crowdsourcing system. In an experiment, 1,021 participants were randomly assigned to a participation (forced/choice) condition and a news brand (mainstream/liberal partisan/conservative partisan/mixed) condition. They were asked to rate the extent to which they thought each news brand on the menu they saw was trustworthy.

The results indicate that whether audience members are required to rate all news brands or have the choice to rate news brands on a menu makes a difference to the ratings when rating mainstream news brands. When given a menu of mainstream news brands, audiences who had the choice to participate rated the 20 familiar news brands as less trustworthy on average than when they were required to rate the brands. This is an important finding because a list of mainstream news brands would be the most likely list to be used by social media companies in a crowdsourcing system. The hostile media perception (Gunther, 1988) predicts partisans are more likely to see mainstream news brands as biased against them. Meanwhile mainstream news users are the most likely to have high trust in the news (Mourão, Thorson, Chen, & Tham, 2018). Indeed, when user ideology is considered, moderates who saw the mainstream news menu in the choice condition rated a larger number of brands than either liberals or conservatives who saw the same menu. There was no effect of the participation (forced/choice) condition on the overall trustworthiness rating of those explicitly partisan (liberal or conservative) menus, unlike the case for the mainstream news condition. This difference of effects between the mainstream and partisan menus deserves further inquiry. Future research should investigate to what extent moderates and partisan users participate in gamesmanship and adjust their ratings based on who else they think is participating in the crowdsourcing.

While it seems unlikely that social media companies would purposefully craft one-sided partisan news menus for crowdsourcing, the conditions were tested here to be able to expand the corrective action hypothesis (Rojas, 2010). The partisanship of the news menu did influence the frequency of participation in the crowdsourcing system. Partisans expressed their opinion on a larger number of news brands when they were shown a menu of ideologically dissimilar news brands when they were given a choice how many to rate than when they were shown a menu of ideologically similar brands. Liberal participants rated news brands more frequently when they saw a conservative news menu than when they saw a liberal menu. The inverse was true for conservatives, who rated more brands when they saw a liberal news menu. This suggests partisans were highly motivated to express their opinion and identity when they felt their views were not represented in a news menu. They gave the dissimilar news brands low trustworthy ratings. These findings support prior research on selective expression and the corrective action hypothesis.

Theoretical implications

Despite more than a decade of crowdsourcing, user behavior in crowdsourced ratings of news is an emerging area of research. Past researchers (Allen, Arechar, Pennycook, & Rand, 2021; Epstein, Pennycook, & Rand, 2019; Pennycook & Rand, 2019) have focused on the viability of using crowdsourcing as a tool for identifying credible news and misinformation. Little political communication theory has been applied to make predictions about user behavior. Here, various threads of political expression theories are gathered to include selective expression (Shin & Thorson, 2017) and corrective action hypothesis (Rojas, 2010) and applied to crowdsourcing. These theories predict that user behavior will differ between motivated hyperpartisan users and those more apathetic to politics. The results of this experiment provide

evidence that the differences in motivations are activated in a task as simple as rating news brands.

The crowdsourcing that Howe (2008) envisioned when he coined the term involved tight, active communities to perform activities such as picking winning T-shirt designs and submitting ideas to solving business problems. When social media companies such as Facebook implement crowdsourcing that chooses users at random to participate, the motivations to participate will likely be different than those who choose to spend hours on Saturday tweaking an algorithm for Netflix. Howe (2008) observed a key principle of crowdsourcing was that when the answers of most people are randomly distributed the answers of even a few astute people can skew results. The crowdsourcing social media companies are now proposing could be highly influenced by those with strong motivations – whether they are particularly astute or not. Future research should do more to examine the motivations of users to participate in crowdsourcing outside of tight communities. The proliferation of crowdsourcing systems among social media companies raises theoretical questions about motivation and commitment as yet unanswered by theory. Who participates when asked a single multiple-choice question once by Facebook compared to who would volunteer to participate in a longterm project to identify misinformation like Twitter's Birdwatch? Further, a typology of crowdsourcing activities might be helpful to improve theory about participant behavior given various parameters of a crowdsourcing system.

The results reported here expand the selective expression literature by showing similar effects that have been observed in partisan news sharing are found in crowdsourced news rating. First, corrective action hypothesis (Rojas, 2010) was applied in a new expression context from past research on news comments (Duncan, et al, 2020) or political conversations (Barnidge & Rojas, 2014). The findings expand the corrective action hypothesis by finding that a menu of

ideologically dissimilar news brands activates the audience to rate a larger number of news brands, suggesting that audience members are especially motivated to rate news brands when it does not match their own ideology. The liberal partisan and the conservative partisan news menu conditions were both rated at larger numbers by ideologically dissimilar partisans. Future research should investigate how news rating systems would work when partisans were able to recruit co-partisans to participate in a voluntary system, which might multiply these results many times over.

Practical implications

Pennycook and Rand (2019) and Epstein, Pennycook, and Rand (2019) found when a large number of participants rate a large number of news brands, the crowdsourced results match up closely with how journalists would rate those news brands. This study expanded the parameters of the crowdsourcing system to answer two additional questions: Would crowdsourcing work in under conditions where audiences had a choice to participate in the rating system? How would varying the news menu change who participates? These results indicate that small tweaks to the system can how users behave when asked to participate in crowdsourcing. Particularly, these results suggest the type of news brands are included on the list and whether people have the choice to participate could change both the rating of news brands and the number of people who participate.

Any rating system where audience members opt-in will be vulnerable to partisans who will rate a larger quantity of news brands and downvote ideologically dissimilar news. This experiment offered to participants to the choice to rate as many or as few brands as they wanted, but they were already enrolled in the experiment and offered incentives to finish. If the results of the choice condition were extended to the initial choice of opt-ing into the crowdsourcing

activity, the motivation gap between hyperpartisans and those who are apathetic might be even larger. If the ratings of only motivated hyperpartisans were fed to an algorithm to whitelist news brands shown to millions, or if the rating system were to be used as the basis to blacklist news brands from online social networking platforms, this could have implications for the ability of unfamiliar news brands to break through to a larger audience, polarization of the news ecosystem, and further polarization of online audiences. Engineers of a crowdsourced news rating system will need to consider carefully a variety of factors to prevent the system from being “gamed” by highly motivated partisans. Differences in the parameters of the crowdsourcing system design could introduce bias.

While research suggests that partisans are motivated to express their opinion publicly because they want others to know their opinion (Coppini, et al, 2017), the credibility rating system here did not attach the news rater’s name or likeness to the rating. This has implications for those who suggest “real name” policies in online social networks will ease partisan vitriol. Partisans demonstrated the same expressive behaviors here even though they were anonymous, as suggested by previous findings that ratings did not deviate when participants were explicitly told their answers would be used to create policy (Epstein, Pennycook, & Rand, 2020).

Limitations

Though this experiment reports important theoretical and practical findings, the results need to be interpreted with several limitations in mind. First, the world of online-only news brands is ever-changing. Several news brands in this experiment made major changes soon after data collection. The news ratings of brands included here are temporaneous and cannot predict how ratings would look if they were crowdsourced daily over long periods of time.

Second, the news brand conditions were designed to approximate menus of mainstream, liberal partisan and conservative partisan, and mixed news brands. But, the conditions were not designed to be equal with the others on an aggregated trustworthiness scale. Particularly, the two partisan conditions included more hyper-partisan news brands that may be considered lower in trustworthiness than the mainstream condition. Indeed, it is perhaps impossible to engineer a list of partisan news brands on par with mainstream news brands in trustworthiness because of the history and culture of politically neutral journalism for the past 100 years (Carlson, 2017). Because the unevenness of the menus, caution should be exercised when interpreting main effects of the aggregate news menu ratings between all four menus. This study design tried to compensate for that by placing the same news brand on different news menus. However, this is not a perfect solution. On the other hand, the two partisan news menu conditions were designed to be of equal trustworthiness. However, liberal audience members trust news media more than conservative audience members in general (Jurkowitz, Mitchell, Shearer, & Walker, 2020). The effects of this uneven trust from ideological groups were seen in these results.

Conclusion

Crowdsourcing to identify misinformation is a growing trend. Mozilla's Firefox (Ivanov, 2019), Twitter (Coleman, 2021) and Fiskkit (2021) have introduced crowdsourcing elements to their efforts to identify credible information online. This study uses the crowdsourcing plan proposed by Facebook, which asked participants to rate the credibility of news brands, as a model to investigate how the crowd would behave (Frankel & Maheshwari, 2019). Combining what is known about partisan expressive behaviors with what is known from some of the first studies on crowdsourced news ratings, this tests how the parameters of a ratings system would influence how users behave. It finds selective expression behaviors of political partisans apply to

crowdsourcing news trustworthiness. Further, it finds audiences behave differently when presented with menus of mainstream news brands than when shown partisan menus.

Accepted version

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Tables

Table 1.

News brands included in each condition

Mainstream	Conservative partisan	Liberal partisan	Mixed
abcnews.go.com	angrypatriotmovement.com	abcnews.go.com	addictinginfo.com
bbc.co.uk	breitbart.com	addictinginfo.com	angrypatriotmovement.com
bloomberg.com	chicagotribune.com	altnet.org	cbsnews.com
cbsnews.com	chicksontheright.com	americanprogress.org	cnn.com
cnn.com	conservativetribune.com	bbc.co.uk	commondreams.org
economist.com	dailycaller.com	cbsnews.com	crooksandliars.com
fortune.com	dailymail.co.uk	cnn.com	dailykos.com
foxnews.com	dailysignal.com	commondreams.org	foxnews.com
huffingtonpost.com	dailywire.com	crooksandliars.com	freedomdaily.com
msnbc.com	foxnews.com	dailykos.com	infowars.com
nbcnews.com	freedomdaily.com	huffingtonpost.com	lgbtqnation.com
news.yahoo.com	ijr.com	lgbtqnation.com	newsbreakshere.com
newsweek.com	infowars.com	msnbc.com	newsmax.com
npr.org	newsbreakshere.com	news.yahoo.com	npr.org
nytimes.com	newsmax.com	nytimes.com	pbs.org
pbs.org	nypost.com	rawstory.com	rawstory.com
politico.com	redstate.com	splinternews.com	redstate.com
usatoday.com	thepoliticalinsider.com	usatoday.com	thepoliticalinsider.com
washingtonpost.com	westernjournal.com	washingtonpost.com	winningdemocrats.com
wsj.com	wsj.com	winningdemocrats.com	wsj.com

Table 2.

Number of participants assigned to each condition

Assigned condition	Liberal participants	Moderate participants	Conservative participants	Total participants
MSM menu forced participation	49	45	36	130
MSM menu choice participation	40	33	53	126
Conservative menu forced participation	43	47	36	126
Conservative menu choice participation	46	42	43	131
Liberal menu forced participation	58	34	35	127
Liberal menu choice participation	38	45	44	127
Mixed menu forced participation	41	47	41	129
Mixed menu choice participation	48	37	40	125
Total	363	330	328	1021

Table 3

Post-hoc test with Games-Howell correction for number of news brands rated in the choice participation condition when the ideology of the news menu matched or mismatched with the participant ideology.

Group 1	Group 2	<i>MD</i>	<i>SE</i>	<i>p</i>	95% CI	
Match	Mismatch	-2.22	0.73	0.008	-3.9529	-0.4866
Match	Moderates	-0.74	0.89	0.683	-2.8334	1.3578
Mismatch	Moderates	1.48	0.64	0.059	-0.0446	3.0086

Table 4

Confidence intervals for trustworthiness ratings by participation (forced/choice) condition and news menu condition.

Participation condition	News menu condition	<i>M</i>	<i>SE</i>	95% CI	
Forced participation	Mainstream	2.77	0.08	2.61	2.93
	Conservative	1.88	0.08	1.72	2.04
	Liberal	2.34	0.08	2.17	2.50
	Mixed	2.16	0.08	2.00	2.32
Choice participation	Mainstream	2.45	0.08	2.28	2.61
	Conservative	2.05	0.08	1.89	2.21
	Liberal	2.28	0.08	2.12	2.45
	Mixed	2.12	0.08	1.96	2.29

Figures

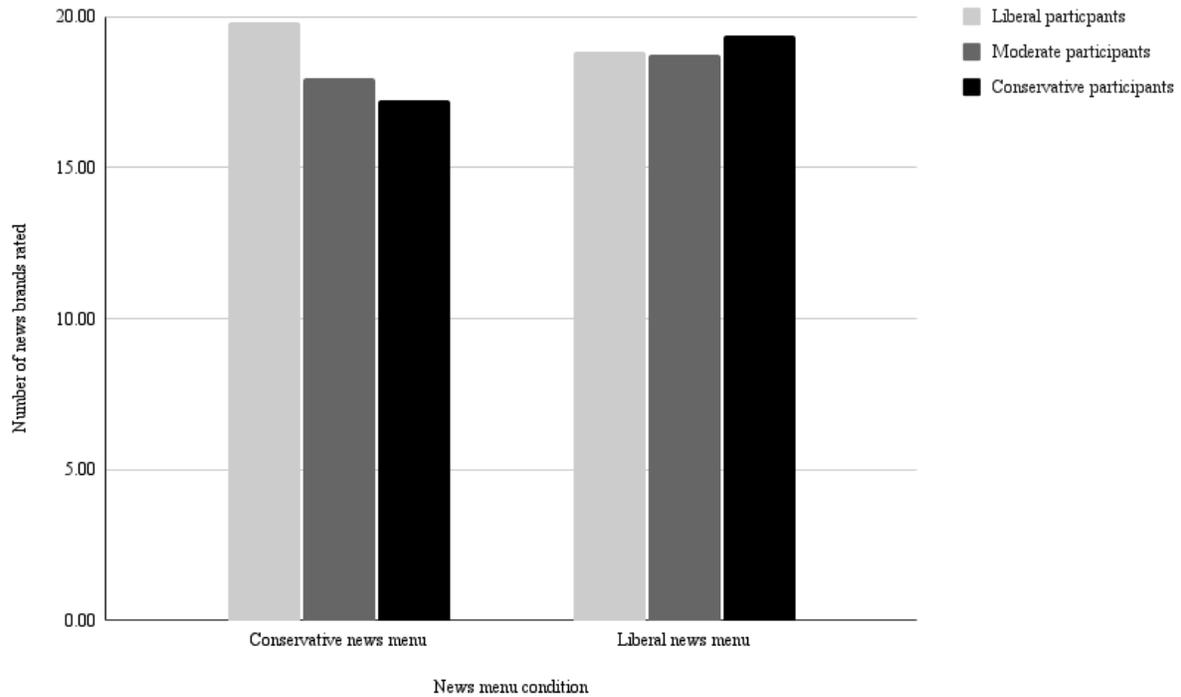


Figure 1. The effect of participant ideology and news menu condition on the number of news brands rated among those in the choice participation condition. There was an interaction effect so that liberals who saw a conservative news brand menu rated more news brands than liberal participants who saw a liberal menu while conservatives who saw a liberal news brand menu rated more news brands than conservatives who saw a conservative news menu.

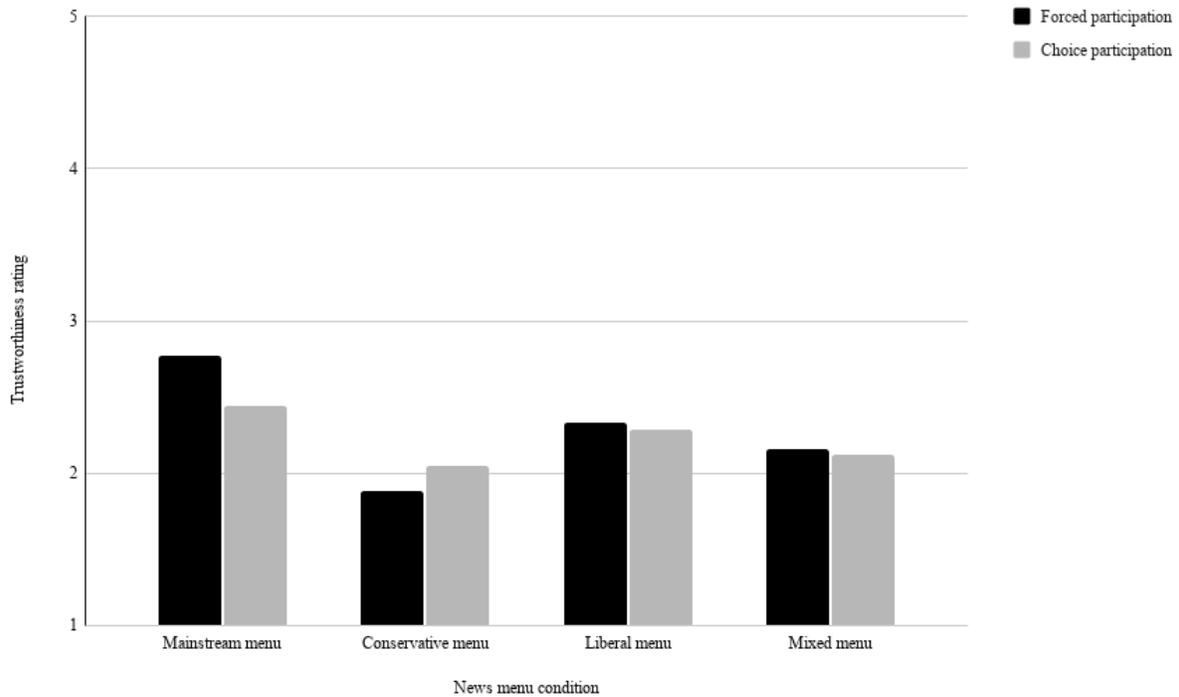


Figure 2. The interaction between news menu condition and participation (forced/choice) condition. There was an interaction effect so that the mainstream menu was rated as more trustworthy when participants were required to participate in crowdsourcing compared to when they had the choice to participate.

Appendix A

Table A1. Independent t-tests of participation condition by menu

Menu condition	Participation condition	<i>N</i>	<i>M</i>	<i>SD</i>	<i>df</i>	<i>t</i>	<i>p</i>
Mainstream	Forced	130	2.77	0.91	253	2.76	.006
	Choice	125	2.44	0.97			
Partisan	Forced	253	2.10	0.92	505	-.067	.51
	Choice	254	2.17	1.01			