

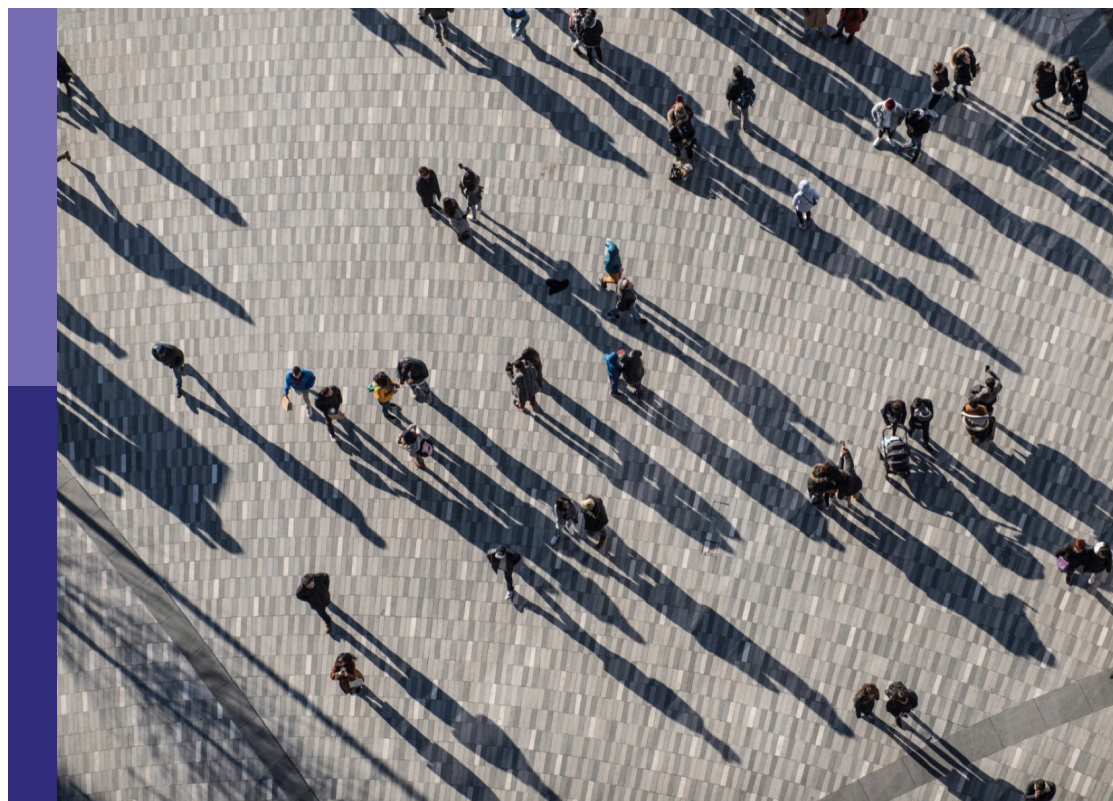
# Social media and political participation: unpacking the role of social media in contemporary politics

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**Published in**

Frontiers in Sociology  
Frontiers in Communication



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ISSN 1664-8714  
ISBN 978-2-8325-6710-4  
DOI 10.3389/978-2-8325-6710-4

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# Social media and political participation: unpacking the role of social media in contemporary politics

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## Citation

Eberwein, T., Nair, P., Sparkes-Vian, C. S., eds. (2025). *Social media and political participation: unpacking the role of social media in contemporary politics*. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-8325-6710-4

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RECEIVED 03 July 2025  
ACCEPTED 18 July 2025  
PUBLISHED 01 August 2025

CITATION  
Nair P, Eberwein T and Sparkes-Vian CS (2025)  
Editorial: Social media and political  
participation: unpacking the role of social  
media in contemporary politics.  
*Front. Sociol.* 10:1658996.  
doi: 10.3389/fsoc.2025.1658996

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# Editorial: Social media and political participation: unpacking the role of social media in contemporary politics

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## KEYWORDS

social media, political participation, democratic discourse, citizen engagement, public sphere, political knowledge

## Editorial on the Research Topic

[Social media and political participation: unpacking the role of social media in contemporary politics](#)

The emergence of social media has altered how people will access and use news and information for participation and engagement in political discourse. The most preferred media platforms like Facebook, Twitter, Whatsapp and Instagram has not only allowed people to participate in real-time discussions and debates but have also given them an edge to share and consume political content across time and geographical boundaries (Ahmed, 2023). It further empowered the marginalized communities by allowing them to speak their opinions and interact with others who share their perspective without any compulsions (Borah et al., 2022).

Despite the increasing role of social media in active political governance and policy domain, its socio-political consequences remain less explored. There is no doubt that in recent times, social media has become a crucial force in contemporary political world with more insights on how people access and engage with political information in their day-to-day life (Hopp et al., 2023). A large number of people worldwide have their dependency on social media for access to news and information. This overwhelming response to social media as the most preferred platform for communication has spurred considerable scholarly interest in defining the role of social media in modern democracy (Hutchens et al., 2023).

This Research Topic collection provides a body of research having new insights on how social media proves itself as an effective tool for accomplishing political goals by raising public awareness, changing people's minds about issues, getting elected officials to pay attention to issues influencing policy decisions (Kim and Lee, 2021). The published Research Topic collection has studies having a diverse and vast coverage. The research article "Informing vs. promoting. The use of TikTok on France TV, BBC, and SVT" by Maroto-González et al. intends to understand the use of TikTok by public broadcasters—France TV, BBC, and SVT to measure its informational and promotional relevance on the platform, and to identify the types of videos that generate the highest levels of engagement among users. The study examines the news profile associated with the information and the



corporate profile of each of the selected broadcasters. The findings of the study revealed an interest in both promotional and informational content shared by the platform on the TikTok. In the case of SVT, higher levels of engagement were observed in comparison to BBC and France TV profiles.

Another research titled *“The influence of multimodal connectedness on political participation in China: an empirical study of the O-S-R-O-R model based on the life span perspective”* by Li and Li talks about promoting the construction of internet democratic politics in China and how it requires an understanding of multimodal connectedness to enhance citizens’ political participation. The study introduced an Orientation-Stimuli-Reasoning-Orientations-Responses (O-S-R-O-R) model explaining the pathway from multimodal connectedness to political participation. The study *“Exposure to diverse political views in contemporary media environments”* by Steinfeld and Lev-on explores the nexus between digital media and citizens’ exposure to diverse political views. It urges for democratic engagement through digital media platforms. Contrary to the theories of echo chambers and filter bubbles, the study reveals a nuanced media landscape where digital platforms facilitate both homogeneous and heterogeneous political exposures. The research study by Elareshi et al. on *“Public engagement through public service advertisements for health care awareness during early COVID-19 in Pakistan”* talks about public engagement through public service advertisements and the effectiveness of health care awareness during early COVID-19 in Pakistan. The study finds that Public Service Advertisements (PSAs) have a noted impact on public perception about pandemic preparedness and they played an important role in spreading awareness in Pakistan. The study titled *“Role of public relations practices in content management: the mediating role of new media platforms”* by Al Hadeed et al. talks about the inter-linkages of media content management, audience and communication by explaining the role of public relations in media organizations of UAE. The study by Zimmermann et al. on *“Political news on Instagram: influencer versus traditional magazine and the role of their expertise in consumers’ credibility perceptions and news engagement”* provides new insights on the increasing role of source expertise in terms of credibility perceptions and news engagement intentions especially in the context of Instagram. The study titled *“Savvy and woke: gender, digital profile, social media competence, and political participation in gender issues among young Filipino netizens”* by Dayrit et al. talks about exploring and determining the predictive relationship of gender, digital profile, and social media competence and their role in political participation among young Filipino netizens.

The research study *“Storm the Capitol: linking offline political speech and online Twitter extra-representational participation on QAnon and the January 6 insurrection”* by Lee et al. explores the link between offline political speech and online extra-representational participation by examining Twitter within the context of January 6 insurrection and finds that there is an urgent need of policy implications for the role of online messaging as a tool of political mobilization. The study *“Trust and engagement on Twitter during the management of COVID-19 Pandemic: the effect of gender and position”* by Yousefinaghani et al. examined the different socio-

political contexts provided by Social Media in terms of gender and their positional role and concludes that Twitter has provided different gender roles to individuals to communicate and manage the pandemic preparedness. The last study of the Research Topic collection titled *“#funnypoliticians: how do political figures use humour on Twitter?”* by Mendiburo-Seguel et al. explores how politicians use aggressive humor in political tweets to attract audiences on Twitter and how it affects the audience engagement in political discourse.

We hope that this Research Topic collection will prove its worth for the readers by giving them some new insights on the opportunities and challenges of social media communication in political discourse. In this age of digital communication, we must acknowledge that the social media has proved its relevance in engaging a large number of people in political discourse by allowing marginalized voices to be heard. Due to its hyper-interactive nature, social media has the potential to draw attention of people to a large number of issues which were less reported and represented in mainstream commercial media (Theocharis et al., 2022). The variety and inclusiveness of political discourse on social media has given a larger representation of diverse viewpoints to be heard and contested. But at the same time, social media has also posed new challenges to political dialogues in terms of conspiracy theories, fake news, propagandas (Lee et al., 2024). The correspondence of users’ pre-existing ideas with social media algorithms results in frequent emphasis of issues resulting in echo-chambers further dividing and polarizing diverse dialogues and views (Li, 2025). Despite these challenges, social media is till date the most preferred platform for political communication, participation and discourse, giving everyone a space and sphere to communicate their viewpoints across geographies, ideologies and spaces with a sense of engagement and ownership.

## Author contributions

PN: Conceptualization, Writing – original draft. TE: Supervision, Writing – review & editing. CS-V: Formal analysis, Writing – review & editing.

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# #funnypoliticians: How Do Political Figures Use Humor on *Twitter*?

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### Specialty section:

This article was submitted to  
Media Governance and the Public  
Sphere,  
a section of the journal  
Frontiers in Sociology

**Received:** 03 October 2021

**Accepted:** 09 March 2022

**Published:** 01 April 2022

### Citation:

Mendiburo-Seguel A, Alenda S,  
Ford TE, Olah AR, Navia PD and  
Argüello-Gutiérrez C (2022)  
#funnypoliticians: How Do Political  
Figures Use Humor on *Twitter*?  
Front. Sociol. 7:788742.  
doi: 10.3389/fsoc.2022.788742

Social media has increased its popularity among politicians. If they wish to succeed in the political arena, politicians need to present themselves to citizens as attractive individuals through these platforms. This study examined how politicians present themselves using humor on *Twitter*. We analyzed *tweets* ( $n = 6,443$ ) from 27 politicians to determine their use of different types of humor and its relationship with age, gender, or political position. We also present changes in humor use in relation to the publication of a political survey in which politicians who were part of this study were evaluated. Results showed politicians' use of humor is relatively low in frequency and primarily aggressive. Politicians who are male, younger, and in the opposition tend to use more aggressive humor. We discuss the results considering the role of aggressive humor in political messages. Based on the analyses of *tweets* and the publication of the survey, we propose as a hypothesis for future studies that politicians' use of humor on *Twitter* could be affected by the publication of these kinds of surveys.

**Keywords:** evaluation of politicians, favorability toward politicians, politicians' humor, political evaluation, social networks

## INTRODUCTION

Politicians have long been aware of the power of humor to endear themselves with their constituents, to communicate their messages in a persuasive and memorable way, and to mock their opponents (e.g., Yarwood, 2001; Stewart, 2012). Indeed, U.S. Presidents Kennedy and Clinton each appointed joke writers to their speech writing teams, as they believed that well-crafted humor would make them seem closer to their audiences (Gardner, 1994; Rhea, 2012).

With the advancement of internet-based social media outlets and smartphone technology, politicians have increasingly used platforms such as *Twitter* to post political messages (Baum, 2005; Moy et al., 2005; McGregor, 2018). Accordingly, researchers have begun to systematically study the use of social media for communicating political messages (e.g., Gerodimos and Justinussen, 2015; Borah, 2016; Jungherr, 2016; López-Meri et al., 2017; Bullock and Hubner, 2020).

The present study contributes to this line of research by examining how politicians present themselves using humor on the social media platform, *Twitter*. The use of humor in public addresses by politicians is not a new phenomenon; however, there is little research on politicians' humor as a way of communication via social media, with some notable exceptions that have considered it either generically (e.g., Bullock and Hubner, 2020), or tangentially (e.g., Gerodimos and Justinussen, 2015; Borah, 2016; Jungherr, 2016; López-Meri et al., 2017). Thus, we conducted an exploratory descriptive study using 6,443 *tweets* from 27 Chilean politicians to determine how



often these politicians use different types of humor (i.e., aggressive, self-deprecating, affiliative). We also investigate demographic differences in humor usage, as well as explore how humor usage varies before and after the publication of a national public opinion survey.

## HUMOR AND POLITICS

Humor is viewed as a socially desirable and positive characteristic (Martin and Ford, 2018). Research suggests that humor benefits the persuasiveness of a message through a number of mechanisms: by drawing attention to the message (e.g. Hansen et al., 2009), improving message recall (Cline and Kellaris, 2007), biasing thoughts in favor of the persuasive arguments of the message and perceptions of the communicator's credibility (Nabi et al., 2007; Eisend, 2011; Stewart, 2011), and mobilizing emotions effectively (Wodak, 2015). Regardless of the specific mechanisms at play, humor is shown to help its users exert social influence (Yarwood, 2001; Nabi et al., 2007; Young, 2008).

Politicians commonly use humor not only to persuade but also to (a) communicate positive personal qualities (intelligence, social position, status), (b) generate greater recall of their message, and (c) build emotional connections with their constituents. Based on Martin et al. (2003) framework, there are three broad types of humor based on the target of the joke: aggressive humor (i.e., humor targeting others), self-deprecating humor (i.e., humor targeting one's self), and affiliative humor (i.e., benign/positive humor with no real target). However, studies addressing politicians' use of humor have largely only considered the use of two particular types: aggressive humor and self-deprecating humor (Becker, 2012; Stewart, 2012).

Aggressive humor (i.e., other-directed hostile humor) uniquely communicates two conflicting messages, an explicit message of denigration against a target, and an implicit message that the denigration is not malicious because it is "just a joke" not meant to be taken seriously (Zillmann, 1983; Martin and Ford, 2018). This inherent ambiguity gives it the appearance of social acceptability, thus averting the criticisms that serious denigration would incur (Bill and Naus, 1992). Accordingly, Verhulsdonk et al. (2021), found people were less critical of humorous vs. serious attacks on politicians.

A number of theories outline the mechanisms and contexts for which aggressive humor is positively received. The Social Identity Theory, for example, posits that individuals compare their in-groups with out-groups to build their social identity. To create a more positive identity and obtain positive distinctiveness, people highlight the positive characteristics of their in-groups and the negative attributes of the out-groups (Tajfel and Turner, 1986). From this framework, research demonstrates that experiencing aggressive humor targeting an outgroup enhances social identity, while humor targeting one's ingroup diminishes social identity (e.g., Abrams et al., 2015; Ford et al., 2020). Additionally, the Disposition Theory (Zillmann and Cantor, 1976) proposes that the response to a humorous stimulus depends on the recipient's affective disposition or attitude toward the targeted person or group (McGhee and Lloyd, 1981). That is to say, if a person

has an unfavorable attitude toward a particular target, then that person will find humor disparaging that target funnier. As an example from politics, Becker (2014) found that people who disliked a prominent Republican figure in the U.S. were more likely to appreciate humor directed against the Republican Party; similarly, people appreciated humor against the Democratic Party more to the extent they disliked Barack Obama (a Democrat). Finally, aggressive humor affects the acceptance of the expression of prejudice. As proposed by the Prejudiced Norm Theory (Ford and Ferguson, 2004), people high in prejudice against a group perceive humor targeting that group as indicative of a social norm of tolerance of discrimination toward the targets of that humor. That is, it expands the norm of what is acceptable or appropriate and facilitates the manifestation of negative prejudice. Research demonstrates that such humor can increase tolerance of discrimination against the humor's target, as well as encourage personal discrimination and even violence against the target group (for a review, see Ford and Olah, 2021). Regardless of which specific theory holds most true, they all posit that aggressive humor can have real power depending on how it is used.

Research on non-humorous communications shows that when politicians express anger, they are perceived as competent, higher in status, but more unlikeable (Tiedens, 2001). Consistently, the use of aggressive humor has been proposed to make people seem more intelligent, more powerful, and with higher status (Stocking and Zillmann, 1976; Fine and deSoucey, 2005), and even elicit positive emotions (Ortigueira-Sánchez and Cárdenas-Egúisquiza, 2021).

On the downside, aggressive humor can also make people seem unpleasant or disruptive (Cann et al., 2016) and less sincere (Derks and Berkowitz, 1989), probably because of the relationship between this style and low agreeableness (Mendiburo-Seguel et al., 2015) and low social skills (Yip and Martin, 2006). For example, Bitterly et al. (2017) observed in a series of experiments that in cases where humor was unsuccessful (inappropriate jokes), perceived status and competence are lower. Similarly, Baumgartner et al. (2015) found that compared to a no-humor control condition, watching a video of a politician engaging in other-disparaging humor led to lower evaluations and a lower likelihood of voting for him. As opposed to this, affiliative humor, which seeks to positively enhance relationships with others without denigration of others (Martin et al., 2003), has been found to have effects on perceptions of higher intelligence and sincerity (Derks and Berkowitz, 1989).

Self-deprecating humor involves humorous attempts that target oneself, like self-mockery. Increasingly, politicians have started to use it more (Becker and Waisanen, 2017). Although some studies have shown that it has no effects on public opinions about them (Becker, 2012), others have found links with higher favorability and higher probability of voting for certain political figures (Baumgartner, 2007; Baumgartner et al., 2015). Such humor could positively help politicians, because by presenting their own defects in a socially acceptable manner, they can generate greater identification (Meyer, 2000), a common goal of politicians when using humor in other contexts such as presidential debates (Rhea, 2012). At the same time, they can

demonstrate that they have not only the ability to see their own flaws and defects, but also the value and social status to be able to accept them publicly (Greengross and Miller, 2008; Stewart, 2011).

Although aggressive and self-deprecating humor have been the two main focus of study, there is a third humor type that could be used by politicians. As an instance of humor, affiliative humor is directed toward others in a positive way (Martin et al., 2003). Critical to understanding comic interactions on *Twitter*, there is an intention behind affiliative humor to have fun with others in a friendly way. That is, affiliative humor functions as a beneficial type of interaction and a facilitator of positive relations that enhances social relationships (Martin and Ford, 2018).

## HUMOR AND POLITICIANS ON SOCIAL NETWORKS

*Twitter* has become a useful tool for politicians to show interest and personally connect to people, thereby influencing their audience's general evaluation of their credibility and image (Jackson and Lilleker, 2011; Lassen and Brown, 2011; Jungherr, 2016). Politicians may also use social media to determine which communications have a more positive effect and help their visibility (D'heer, 2018); personalized messages can improve message recognition and recall and bolster the politicians' image among people higher in affiliative tendencies (Lee and Shin, 2012; Lee and Oh, 2013). That is, *Twitter* may allow politicians to foster feelings of intimacy and social presence through the development of unidirectional and para-social relationships that shorten psychological distance between citizens and politicians (Lee and Shin, 2012; McGregor, 2018).

Politicians use humor in their messages on social media (Papacharissi and Oliveira, 2012), although evidence varies widely on the extent they use it and its outcomes. For instance, in his campaign for the U.S. elections of 2008, 11.5% of all messages by Barack Obama on Facebook had humorous emotional content (compared to a 3.1% of John McCain), and in 2012 that number rose to 21.2% (Mitt Romney did not use humor). Obama's humorous posts garnered a higher number of interactions via "likes" or "shares" on his Facebook page (Borah, 2016). In other cases, such as the 2009 Federal Elections in Germany, the number of humorous messages varied between much lower numbers: 0.1% and 0.6% (Jungherr, 2014). Similarly, during the Spanish electoral campaign of 2016, humor was the least used content by political parties and politicians on *Twitter*, although Pablo Iglesias used it a 5.9% of the time, and one of his *tweets* (a joke about his relation with communism) was the most *retweeted* of the election (López-Meri et al., 2017). In summary, although not all politicians embrace humor to the same extent in their social media communications, it seems that using humor in online interactions has political impacts.

### The Role of Politicians' Political Affiliation, Gender and Age on Their Use of Humor on *Twitter*

The adoption of *Twitter* accounts seems to be related with strategic concerns instead of political affiliation or ideology

(Vergeer and Hermans, 2013; Quinlan et al., 2018), although there is evidence that suggests that more extreme (liberal or conservative) political figures use *Twitter* more than those that are less-extreme (Straus et al., 2013). In the case of humor use, research tends to focus on how people with different ideologies appreciate it more than how they produce or use it. In that line, more liberal individuals tend to enjoy more non-sense humor (Ruch and Hehl, 1988), while conservatives enjoy humor to a lesser extent in general (Bonanno and Jost, 2006). When understanding humor as a trait, or ways in which individuals show humor in their everyday life (or *humor styles*), research shows that people with left-wing orientation are more likely to use affiliative and aggressive humor, but they are not overall more humorous (Kfrerer et al., 2021); further, liberals tend to be higher in the cynic comic style, or the depreciation of commonly acknowledged values through humor (Mendiburo-Seguel and Heintz, 2020).

Regarding gender, it is not clear if male or female politicians have a higher use of *Twitter* or other social media (though research with general populations suggest gender is not associated with having a *Twitter* account; Straus et al., 2013). Some studies have found that women candidates are more active in its use (Evans et al., 2014), while other have observed the opposite (Hemphill et al., 2013).

Although research on gender and social media use is mixed, there is much evidence indicating gender differences and similarities between different humor-related characteristics. For example, men tend to use and enjoy aggressive humor more than women; there is no clear pattern regarding overall humor production, though some research suggests that humor communication is related with gender roles (for a review of gender differences in humor-related traits, see Hofmann et al., 2020). In fact, the stereotype of an "ideal sense of humor" refers to men in several different countries (Tosun et al., 2018).

Concerning age, evidence shows that younger politicians use new media (and specifically *Twitter*) to a larger extent (Straus et al., 2013; Vergeer and Hermans, 2013), probably because they have more familiarity with new technologies (Gibson and McAllister, 2006). Another explanation is press coverage: since older politicians tend to receive greater traditional press coverage (Straus et al., 2013), maybe the reason for younger politicians to use *Twitter* is to become more recognizable and not necessarily to be better evaluated.

Humor production tends to decrease with age (for a review, see Greengross, 2013), as do aggressive comic styles such as irony, sarcasm, and cynicism (Mendiburo-Seguel and Heintz, 2020); affiliative styles show a less consistent pattern across studies (Martin et al., 2003; Ruch et al., 2018; Mendiburo-Seguel and Heintz, 2020; Dionigi et al., 2021).

## THE PRESENT STUDY

This study contributes to humor and political communication research in two main ways. First, we seek to understand different political contexts, specifically by studying politicians in Chile. The study of variables related to politics has been largely based on specific Western countries; even then, there are differences even between similar political contexts and political

systems (Boxell et al., 2020). For this, the case of Chile offers an interesting example, considering the political changes that finally led to the social outburst of October 2019, the emergence of a more organized extreme right or the revitalization of the Communist Party and left-wing figures and movements, such as the coalition known as *Broad Front* [Frente Amplio] (Lindh et al., 2019). In such a context, it is possible to think that differences between these political actors and/or the need to differentiate themselves could make them use humor as a communication tool.

Our study also adds up to the existing literature by considering other aspects of politicians' use of humor on *Twitter* that have not been considered before. Previous research has focused on how frequently politicians *tweet*, the percentage of their *tweets* that intend to be humorous, or has considered humor as a generic variable not distinguishing between different types. Thus, the present study contributes to the existing research by examining *how* politicians use different types of humor on *Twitter*, also considering a third humor strategy: affiliative humor.

In particular, we explore the following research questions:

RQ1: To what extent are different types of humor used by politicians on *Twitter*?

RQ2: Are there any differences in the use of humor between politicians of different gender, political affiliation, and age?

RQ3: Does the way in which politicians use humor vary across time, considering the publication of political surveys?

To these ends, we first describe the use of each type of humor, and compare them depending on politicians' gender, political affiliation, and age. After this, we explore in a descriptive manner how the use of humor on *Twitter* by politicians varies considering two periods in time (before and after the publication of results of the 83rd Public Opinion National Study; that is, before and after politicians receive critically updated information about how they are perceived by citizens).

MATERIALS AND METHODS

In this study, we considered *tweets* from 27 Chilean political figures, which were selected based on the results of the 83rd Public Opinion National Study (Centro de estudios públicos [Centre of Public Studies], 2019), a survey that assessed opinions regarding each figure.

Although the dataset initially included 28 politicians, one was not part of our analysis because her *Twitter* account did not have any activity for at least 2 years. In all the cases, the complete list of *tweets* was retrieved via the *Twitter* API and using the *rtweet* package (Kearney, 2019) for R (R Core Team, 2020).

We retrieved all the *tweets* (total *n* = 47,063) from each politician's account since their accounts were first activated, including replies and *retweets* with comments by the politician, but excluding *retweets* without comments. However, considering the differences on these dates, we decided to work with *tweets* from 2016, since that was the year when at least half (59%) had an account (total *n* = 37,773). We therefore selected a stratified random sample considering political affiliation, gender, and age as strata (*n* = 6,443, margin of error = 1.1%, 95% CI).

Once the *tweets* were obtained, two coders were asked to read and classify each of them according to the variables of

TABLE 1 | Examples of humorous tweets.

Affiliative humor

We inaugurated the 1st "Popular Optic" of the Valparaíso region! It will be open to everyone no matter what their health system is. The differences are at "plain sight."

Aggressive humor

[As a reply to a user that insulted him] Don't tweet when you're drunk. People tell me it's your usual state, take care of yourself

Self-deprecating humor

[As a reply to a user that tweeted "If there's one thing I like about him, it's that he is not a thermocephalus"] Only that? 😂

interest (presence or absence of humor, and in the case of humorous *tweets*, if they implied the aggressive, affiliative, self-deprecating, or self-enhancing humor style). Both coders were students from a research methods course and were previously trained and given examples separately. The training consisted of giving and explaining the definitions of each type of humor. As a general rule, we asked the coders to classify as humorous any *tweet* that was intended to entertain or comically attract attention, emphasizing that such intent had to be directly attributable to the person who wrote the *tweet*. Given that the study's objective was related to humor creation and not the comic phenomenon in a general way, only *tweets* where the politician had been the creator of humor were considered. Others, such as responses like "hahaha," "how funny!," or "what a laugh!" were left out unless the context indicated that they were intended ironically.

We also trained coders to determine what type of humor each *tweet* was. To illustrate them, the first author gathered examples of *tweets* from the database that met the characteristics of each type. As aggressive humor, we asked them to search for any humorous *tweet* that sought to ridicule or attack a person, idea, or group, whether through irony, sarcasm, satire, or cynicism [according to the objectives of each style described by Ruch et al. (2018)]. In the case of self-deprecating humor, the target had to be the same politician alluding to his or her defects, errors, or faults comically. In the case of self-enhancing humor, *tweets* had to be a clear allusion to their own positive characteristics. Finally, in the case of affiliative humor, *tweets* had to have an affiliative and well-intentioned intention, according to the definition of Martin et al. (2003).

As *tweets* could include different contexts, such as replies, judges were also given the link to each of them. Coders were given 1 month to classify the *tweets*, after which their classifications were given to a third rater, who was asked to decide in the cases where there was no agreement. The third rater could also decide that classification was difficult enough so as to leave a particular *tweet* as "no agreement."

After this procedure, Kappa coefficients were computed to assess inter-rater reliability, obtaining satisfactory results in all cases: 0.93 for total use of humor (95% CI 0.92–0.95), 0.94 for affiliative humor (95% CI 0.91–0.98), 0.72 for aggressive humor (95% CI 0.69–0.75), 0.79 for self-defeating humor (95% CI 0.66–0.92). No cases of self-enhancing humor were found on the analyzed sample. Table 1 shows an example of each type of humorous tweets.



## Considered Variables

**Total use of humor** was computed as the percentage of the total *tweets* by each politician that was intended to be funny:  $[N \text{ humorous tweets} / (\text{humorous} + \text{serious tweets})] \times 100$

**Humor types** were computed as the percentage of the total *tweets* by a politician that used each of them:  $[N \text{ tweets containing each humor style} / (\text{humorous} + \text{serious tweets})] \times 100$

Politicians were classified depending on political affiliation (left wing or right wing), gender (female or male), and age (see Table 2).

## RESULTS

### Uses of Humor by Politicians and Differences Between Genders, Political Affiliation, and Age

Of the considered politicians, 5 (18.5%) were women and 22 (81.5%) were men, with a mean age of 55.48 years ( $S.D. = 12.51$ ).

**TABLE 2 |** Description of considered political figures.

Name	@	Affiliation	Gender	Age
Andrés Allamand	<i>allamand</i>	R	M	63
Álvaro Elizalde	<i>alvaroelizalde</i>	L	M	50
Andrés Chadwick	<i>andreschadwickp</i>	R	M	63
Jacqueline Van Ryselberghe	<i>coca_vanr</i>	R	F	54
Daniel Jadue	<i>danieljadue</i>	L	M	52
Mario Desbordes	<i>desbordes</i>	R	M	51
Evelyn Matthei	<i>evelynmatthei</i>	R	F	66
Fuad Chahín	<i>fchahin</i>	L	M	42
Felipe Kast	<i>felipekast</i>	R	M	42
Felipe Larraín	<i>felipelarraín</i>	R	M	61
Gabriel Boric	<i>gabrielboric</i>	L	M	33
Giorgio Jackson	<i>GiorgioJackson</i>	L	M	32
Guillermo Teillier	<i>gteillier</i>	L	M	76
Alejandro Guillier	<i>guillier</i>	L	M	66
Heraldo Muñoz	<i>HeraldoMunoz</i>	L	M	71
Hernán Larraín Matte	<i>hernanlarraín</i>	R	M	44
José Miguel Insulza	<i>insulza</i>	L	M	76
Jorge Sharp	<i>JorgeSharp</i>	L	M	34
José Antonio Kast	<i>joseantoniokast</i>	R	M	53
Beatriz Sánchez	<i>labeasanchez</i>	L	F	48
Ricardo Lagos Weber	<i>lagosweber</i>	L	M	57
Joaquín Lavín	<i>LavinJoaquin</i>	R	M	66
Michelle Bachelet	<i>mbachelet</i>	L	F	68
Marcela Cubillos	<i>mcubillosigall</i>	R	F	52
Manuel José Ossandón	<i>mjossandon</i>	R	M	57
Sebastián Piñera	<i>sebastianpinera</i>	R	M	69
Jaime Quintana	<i>senadorquintana</i>	L	M	52

R, Right; L, Left; M, Male; F, Female; T, Total number of tweets; S, Sample.

The number of female politicians was lower than the number of male politicians, which is in line with the proportion of women in positions of power in politics (26.0%; United Nations Development Programme, 2020).

**Table 3** shows total *tweets*, humorous *tweets*, and used humor types for each group. The analysis of the *tweets* shows that 7.0% of them had humorous intent: 5.2% were aggressive, 1.2% were affiliative and 0.2% were self-deprecating. The proportion of aggressive *tweets* was significantly higher than the proportion of affiliative and self-deprecating *tweets* (both  $p$ 's < 0.001), and the proportion of affiliative *tweets* was significantly higher than the proportion of self-deprecating *tweets* ( $p < 0.001$ ).

As shown in **Table 3**, male politicians used more humor than female politicians in general [ $\chi^2_{(1)} = 27.659$ ,  $p < 0.001$ ,  $\phi = 0.07$ ]. When breaking down by humor type, we see these gender differences are specific to the use of aggressive humor [ $\chi^2_{(1)} = 44.268$ ,  $p < 0.001$ ,  $\phi = 0.08$ ]. There were no gender differences in the use of affiliative humor or self-deprecating humor.

In the case of age, there was a negative correlation with the total use of humor [ $r_{s(25)} = -0.50$ ,  $p < 0.01$ ], the use of aggressive humor [ $r_{s(25)} = -0.42$ ,  $p = 0.03$ ], and the use of self-deprecating humor [ $r_{s(25)} = -0.43$ ,  $p = 0.03$ ]. That is, older politicians used less humor overall, and specifically used less aggressive and self-deprecating humor. The correlation between age and the use of affiliative humor was non-significant.

Regarding political affiliation, there were no differences between left-wing and right-wing politicians regarding total use of humor [ $\chi^2_{(1)} = 0.575$ ,  $p = 0.448$ ], aggressive humor [ $\chi^2_{(1)} = 0.244$ ,  $p = 0.621$ ], and self-deprecating humor [ $\chi^2_{(1)} = 0.013$ ,  $p = 0.908$ ]. Right-wing politicians tended to use more affiliative humor than left-wing politicians [ $\chi^2_{(1)} = 5.653$ ,  $p = 0.017$ ,  $\phi = 0.03$ ].

We also analyzed how the use of humor varied depending on what coalition was in government. During 2016 and 2017 the left-wing was the majority coalition, and during 2018–2019 it was the right coalition. During the time they were the opposition, right-wing politicians *tweeted* more humorous *tweets* (8.7%) than left-wing politicians [4.2%,  $\chi^2_{(1)} = 14.290$ ,  $p < 0.001$ ,  $\phi = 0.09$ ], specifically aggressive *tweets* (7.9 and 1.9%, respectively;  $\chi^2_{(1)} = 35.237$ ,  $p < 0.001$ ,  $\phi = 0.15$ ). When the left-wing politicians were the opposition, there were no differences in the total number of humorous *tweets*, but they *tweeted* fewer humorous *tweets* with affiliative content (0.7%) than the right-wing politicians [1.8%,

**TABLE 3 |** Percentage of tweets that contain humor depending on gender, and political affiliation.

	Gender		Political affiliation		Total
	Female	Male	Right	Left	
N	5	22	13	14	27
Total tweets containing humor	3.8%	7.8%	7.3%	6.7%	7.0%
Affiliative humor	1.2%	1.2%	1.6%	0.9%	1.2%
Aggressive humor	1.7%	6.2%	5.5%	5.0%	5.2%
Self-deprecating humor	0.2%	0.0%	0.2%	0.2%	0.2%

$\chi^2_{(1)} = 9.822$ ,  $p < 0.01$ ,  $\phi = 0.05$ ] and more humorous *tweets* with aggressive content [6.5 and 4.9%, respectively;  $\chi^2_{(1)} = 5.960$ ,  $p = 0.015$ ,  $\phi = 0.04$ ]. Collectively, the opposition party appears to use more aggressive humor than the majority party, regardless of which specific political affiliation is in charge.

## Use of Humor Over Time and Possible Relations With Opinion Surveys

To give an in-depth examination of the use of humor over time, we decided to do an exercise based on favorability. As a point of comparison, we considered the publication of the 83rd Public Opinion National Study, given that all the politicians that were considered for our study were evaluated in it. However, we do not propose a causal relationship between the survey and how politicians use humor; instead, we present this as an exploratory exercise.

**Figure 1** presents the use of humor from January 1st to July 19 of 2019 to have an overview, but comparisons are made considering seven weeks before (April 22–June 12) and after (June 13–July 20) the publication of the 83rd Public Opinion National Study (June 13). We used these periods because the obtaining of the *tweets* was on July 21 and we wanted to compare considering the same number of weeks before and after the publication. Given the low number of self-deprecating *tweets*, we did not consider them in these analyses. **Table 4** shows the number of humorous, affiliative, aggressive, and self-deprecating *tweets* before and after the 83rd Public Opinion National Study was published.

Considering all the politicians, although the number of *tweets* was similar, the percentage of total humorous *tweets* and

aggressive *tweets* dropped significantly after the publication of the 83rd Public Opinion National Study ( $z = 2.20$ ,  $p = 0.028$  and  $z = 4.63$ ,  $p < 0.001$ , respectively). In contrast, affiliative *tweets* increased significantly ( $z = 3.10$ ,  $p < 0.01$ ). **Figure 1** displays these trends in 2-week intervals over time.

## DISCUSSION AND CONCLUSIONS

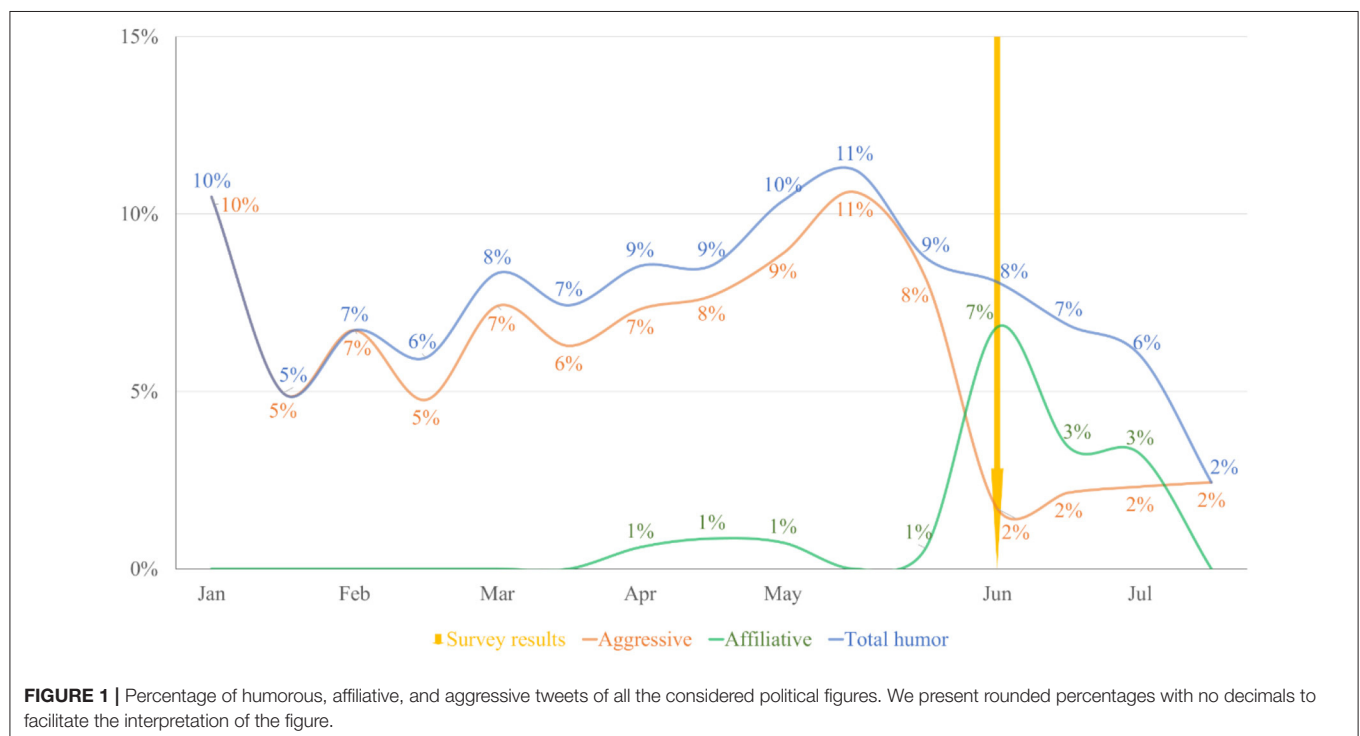
Although the use of social media as a vehicle for political communication has been a subject of interest previously, there has not been a specific focus on the use of humor. Considering both have been documented as effective political tools, the results of this study shed novel light on politician's use of humor on social media.

At a descriptive level, it is necessary to recall that all of the politicians that were considered for this study had a *Twitter* account and that -except for one- it was active, indicating that it has become a popular and almost mandatory way of

**TABLE 4 |** Total tweets and tweets containing humor 3 weeks before and 3 weeks after survey results.

	Before	After	Total
Total tweets	466 (100.0%)	490 (100.0%)	956 (100.0%)
Humorous tweets	47 (10.1%)	30 (6.1%)	77 (8.1%)
Affiliative humor tweets	2 (0.4%)	15 (3.1%)	17 (1.8%)
Aggressive humor tweets	43 (9.2%)	11 (2.2%)	54 (5.6%)

Percentages in parenthesis are in relation to total tweets.





communication for them. Regarding the main focus of this study, we found that politicians use humor in a relatively small number of their *tweets*, with the most common being aggressive. In fact, the use of the other types was much less frequent, which is in line with other studies (e.g., Stewart, 2011) that have observed that self-deprecating humor is not a predominant style among political candidates, although it is well-received by people.

It is possible that the higher use of aggressive humor is related to the attraction of attention. As Bode et al. (2016) propose, in the political arena *tweets* should attract attention and two ways of accomplishing that are through humor and insults/controversial statements. In fact, previous studies have found that in the case of Facebook, comments with negative emotional content generate more reactions and are shared more than other comments (Bene, 2017). Considering that, among politicians, traditional press coverage is higher for those with more seniority (Straus et al., 2013), it is possible that lesser-known politicians use humor (and especially aggressive humor) in order to attract attention and, in that way, become more recognizable. This idea is supported by the present study's finding that politicians' use of aggressive humor decreases with age, though future research might explicitly explore whether attention-seeking motives mediate this relationship.

When considering gender, we observed that male politicians use humor more than females, and especially aggressive humor. This is a common pattern in several studies unrelated to politics (Martin and Ford, 2018), so it is likely that this finding reflects general gender differences, such as men's preference for sexual or aggressive humor (Hofmann et al., 2020). Indeed, it has been observed that women prefer less offensive patterns of political behavior online (Maximova and Lukyanova, 2020), and the systematic review by Hofmann et al. (2020) concluded that there could be social pressures that discourage women's use of aggressive humor.

Regarding political affiliation, previous studies in the U.S. context have concluded that there are no significant differences between Republicans and Democrats regarding how they use humor focused on the in-group or out-group (Stewart, 2011). In our case, it is interesting to note that the use of different types of humor is in fact more related with the *role* (as part of the Government or the opposition) of political coalitions more than party affiliation. At a general level, right-wing politicians use more affiliative humor, although the effect size is very small, but when considering their role, aggressive humor appears as the key element: when politicians are part of the opposition, they use more aggressive humor. This could be expected since aggressive humor is a useful way to express dissent and attack others, so it could be expected that those who are part of the opposition attack the government through humor, probably aiming to be read by those of the same political position. Using humor as a vehicle of aggression adds a playful frame and ambiguity to situations, so people may interpret the user's intentions in different ways (Martineau, 1972; Meyer, 2015). Thus, by creating an ambiguous and "harmless" message, humor allows an attack that provides a "just joking" defense to politicians if this attack is not well-received (Kuipers, 2006). However, it should not be understood "just as a joke," as explained by the Prejudiced Norm Theory (Ford and Ferguson, 2004). Attacking through jokes

not only serves the opposition to express discontent with the government but could also mobilize people from more extreme political positions and, in this way, promote the manifestation of rejection toward the government's ideas and contrary positions in general. As a result, it could contribute to polarizing citizens.

In the case of how the use of humor varies over time, our results should be considered exploratory and in no way a sign of causation. Overall, we observed that the proportion of humorous *tweets*, both aggressive and affiliative, was relatively stable before the publication of the survey: aggressive *tweets*' proportion varied between 5 and 11%, and affiliative *tweets*' proportion was low (between 0 and 1%). Although aggressive humor showed variations before the publication of the survey, there was a notorious drop in its use after that point in time. The opposite happened in the case of affiliative humor, which had a peak at 7% to then drop to 3% 2 weeks later. Does this mean that the publication of the survey was the cause of these changes? Based on our data, it is impossible to say this, so these results should be interpreted as a trend more than causation. However, based on the analysis of these trends, a question arises: might politicians adapt their communication strategies (specifically on *Twitter*) in response to citizens' evaluations of them as indicated by polling data? Our results could serve as a starting point to study this in the future, considering comprehensive models like the two-step flow model Lazarsfeld et al. (1960). This model posits that politicians communicate indirectly to citizens through "Opinion Leaders," or people that inform themselves about politics, are present in various social structures, and transmit political information to other people; in this way, these opinion leaders serve as a mediator between politician's communications and citizens' perceptions, and thus might influence how a politician's humor is received. This model could help analyze how politicians use *Twitter* to reach primary and secondary audiences with their *tweets* and *retweets* (Karlsen, 2015; Vaccari and Valeriani, 2015).

## LIMITATIONS AND FUTURE STEPS

This study addresses a line of research that has become increasingly relevant to understand how political figures engage the public, explicitly observing humorous political communication in a cultural context that is not usually considered in academic political analyses. In order to have a better understanding of the implications of these results, there are some limitations to consider.

First, the nature of this study does not make it possible to establish causality. This is not only because of the characteristics of observational data but also because the period we used to observe variations in humor was long enough to suspect that several other variables could have affected it.

On *Twitter*-based studies, machine learning techniques allow researchers to analyze more data without having to individually code *tweets*. We think that it would be useful to apply this in cases like the ones we present in this study (acknowledging, however, that humor recognition -and specifically aggressive types like sarcasm or irony- using such technology still presents difficulties that human-based content analysis can help alleviate; Sykora et al., 2020). That way, mixed techniques emerge as a

good option to continue this line of research and get information from a higher number of politicians that could add heterogeneity to the sample. Finally, we think that other interesting analysis should be conducted. Specifically, we consider that focusing in particular on both the radical right and left (as opposed to more moderate politicians) would be interesting. These future inquiries could explore the use of particular types and targets of aggressive humor associated with these extreme sensibilities and evaluate its political efficacy. This could shed new light on the facets of personalization of politics through social media, on how a particular “rhetoric style” influences the way politicians are perceived by their supporters and opponents, and humor’s specific role in this relationship.

## DATA AVAILABILITY STATEMENT

The dataset will be available upon request after the publication of a second article based on it. Requests should be directed to andres.mendiburo@unab.cl.

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## AUTHOR CONTRIBUTIONS

AM-S conceived the original idea, worked out the technical details, analyzed the data, and wrote the first version of the manuscript. SA, TF, AO, and PN helped developing the theoretical formalism and development of the research questions, contributed to the interpretation of the results, the discussion of the results, and to the final manuscript. CA-G contributed to the interpretation of the results, the discussion of the results, and provided corrections to the final manuscript. All authors contributed to the article and approved the submitted version.

## FUNDING

This study was funded by the Fondo Nacional de Desarrollo Científico y Tecnológico—Fondecyt Grant No. 1210556 and Universidad Andrés Bello, Fondo Jorge Millas Grant No. DI-03-19/JM.

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**Conflict of Interest:** AO was employed by The Junkin Group, LLC.

The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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# Trust and Engagement on Twitter During the Management of COVID-19 Pandemic: The Effect of Gender and Position

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## OPEN ACCESS

### Edited by:

Martha Judith Chinouya,  
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### Specialty section:

This article was submitted to  
Medical Sociology,  
a section of the journal  
Frontiers in Sociology

**Received:** 09 November 2021

**Accepted:** 15 February 2022

**Published:** 04 April 2022

### Citation:

Yousefinaghani S, Dara R, MacKay M,  
Papadopoulos A and Sharif S (2022)  
Trust and Engagement on Twitter  
During the Management of COVID-19  
Pandemic: The Effect of Gender and  
Position. *Front. Sociol.* 7:811589.  
doi: 10.3389/fsoc.2022.811589

During the COVID-19 pandemic, health and political leaders have attempted to update citizens using Twitter. Here, we examined the difference between environments that social media has provided for male/female or health/political leaders to interact with people during the COVID-19 pandemic. The comparison was made based on the content of posts and public responses to those posts as well as user-level and post-level metrics. Our findings suggest that although health officers and female leaders generated more contents on Twitter, political leaders and male authorities were more active in building networks. Offensive language was used more frequently toward males than females and toward political leaders than health leaders. The public also used more appreciation keywords toward health leaders than politicians, while more judgmental and economy-related keywords were used toward politicians. Overall, depending on the gender and position of leaders, Twitter provided them with different environments to communicate and manage the pandemic.

**Keywords:** trust, public health, government, COVID-19 pandemic, Twitter, health leaders, political leaders

## INTRODUCTION

As the world is contending with the COVID-19 pandemic, the public has been using social media, including Twitter as a source of information (Sattar and Arifuzzaman, 2021; Yousefinaghani et al., 2021). Twitter has emerged as a novel way of communication between leaders and the public during the COVID-19 crisis. Globally, crisis communication has been used to provide information and public health directives to reduce disease transmission (Jong, 2021). Effective crisis communication that helps maintain trust in leaders requires clear messages about the risks including compassion, empathy, and ongoing engagement with communities (Hyland-Wood et al., 2021).

Unfortunately, trust in authorities has declined globally, resulting from widespread distrust of social institutions and the “infodemic” or widespread mis- and dis-information that undermines official crisis messaging (Ahern and Loh, 2020). Now more than ever, effective leadership and communication with the public is extremely crucial. Support for policies and recommendations during a pandemic is difficult to achieve without trust in leading organizations, especially when individuals must make sacrifices for uncertain long-term benefits (Ahern and Loh, 2020).



Greater trust in political and public health leaders results in greater compliance with public health policies and control measures and thus, is a crucial aspect of overcoming COVID-19 (Devine et al., 2020). During a crisis, people tend to trust leaders who are focused on the relational aspects of managing the crisis (Post et al., 2019). Relational behaviors such as showing compassion and anticipating and managing the emotions of others during a crisis can help build and restore trust (Post et al., 2019). For that reason, there can be a “female leadership trust advantage” that sometimes occurs during a crisis (Post et al., 2019).

Studies indicated that women use social media more effectively than men and female leaders make social media a supportive network to connect with other female leaders (McGregor and Mourão, 2016; Hayat et al., 2017). Yarchi and Samuel-Azran (2018) compared the user engagement in social media for men and women politicians during an election campaign in Israel. This study found females generated more engagements in terms of likes and shares vs. male politicians, which led to the conclusion that the social media might help female politicians promote themselves and increase their social and political status.

On the other hand, there is a perception that men make better leaders than women in leadership research (Yarchi and Samuel-Azran, 2018). Hayat et al. (2017) indicated that leadership roles and conversations have been dominated by males in online social network discussions. Similarly, an analysis (Brandtzaeg, 2017) on Facebook concluded that males are more interested in political subjects while females are attracted to interpersonal issues.

Mertens et al. (2019) studied gender bias in digital communications during the German federal elections in 2017 and discovered that tweets in reply to female politicians were more personal than professional compared to tweets directed at males.

There is an increasing attention on the use of social media by the public and political election candidates. However, less is known about the existence of gender and position biases in the use of social media by political and public health leaders during emergency situations. Additionally, very few previous approaches combined sentiment analysis and engagement metrics to gain insight into biases toward health and political leaders on social media platforms.

The present study aimed to gain insight into the role of gender and the position of authorities in building users' trust and engagement through social media during the COVID19 pandemic in Canada and the United States. The main objectives were: (1) to quantify tweets sentiments and the measures of distrust and offense in tweets authored by and replied to leaders, and to further understand the role of gender and position in these measures; and, (2) to identify latent gender biases in terms of popularity metrics of leaders' accounts and communications by and directed at them. Previous studies indicated (Alrubaian et al., 2017; Arora et al., 2019) that sentiment and popularity-based features play a key role in identifying influential and credible users on social media platforms.

## MATERIALS AND METHODS

A flow of the methodological approach is shown in **Figure 1**, three types of data were collected from Twitter. Subsequently, we analyzed the collected data to extract or construct required features for comparing the groups of male/female or political/health officer authorities.

### Data Acquisition

The Twitter Premium Search API (Application Programming Interface) was used to collect English tweets containing COVID-19 related terms given in **Table 1**. Posts by 38 public health official and politician accounts from Canada and the US as well as replies to these posts were collected from January 1, 2020 to March 16, 2021.

In addition, we utilized a user lookup Twitter API to access engagement information of users, including the number of favorites, followers and friends. The number of favorites means the number of times each leader's account liked others' tweets. Followers of a user are Twitter users that follow a specific user while friends are Twitter users that a specific user follows.

In total, we collected 184 K tweets including direct posts (19 K) and replies (165 K) for 38 authorities from Canada and the US. Among these authorities, 17 were female and 21 were male, 13 were political leaders and 25 were health officials. Reply tweets were generated by 57,539 users. In the data table where we stored tweet, we specified different categories by adding several extra fields such as “gender,” “position,” “is reply,” and “is retweet.”

### Data Analysis

Male/Female and political/health leader groups were compared with regard to three sets of aspects including content-based, tweet-level and user-level features. We determined whether the feature samples fit a normal distribution using the “normaltest” function in the “Scipy” Python library *scipy* (Scipy, 2021). “normaltest” did not indicate a normal distribution for the samples. Hence, we chose to compare the groups of features using non-parametric MannWhitney U tests with a  $p$ -value  $< 0.05$  as statistically significant.

### Content Analysis

#### Trust/Distrust Classification

To automatically determine the class labels (trust/distrust) of unlabelled response tweets, we adopted an expectation-maximization (EM) based semisupervised classifier (Nigam et al., 2006; Karimpour et al., 2012). EM is an iterative algorithm to maximize a posteriori estimation in datasets with both labeled and unlabeled data (Nigam et al., 2000). To avoid over-fitting of the model due to imbalanced data, we oversampled the minority class (trust) in the initial dataset. This was done by adding random tweets that demonstrated trust toward leaders. Tweets indicating appreciation, respect and prayers were labeled with “trust” (1 K) and those showing disrespect and ingratitude were labeled with “distrust” (26 K). Examples of tweets indicating distrust are given in **Appendix Table 3**. The output variables of data instances containing “trust” and “distrust” tweets were

**TABLE 1 |** COVID-19 related terms used in Twitter API.

## Search terms

COVID, COVID-19, COVID19, coronavirus, SARACoV2, pandemic, vaccine, vaccinate, travel, treatment, testing, stay home, staying home, stay at home, stay-at-home, gathering, and mask

assigned with 0 and 1 values, respectively. To represent the text data in the learning model, we converted tweets into term frequency and inverse document frequency (TF-IDF) feature vectors.

The semi-supervised learning was performed using the Python “SKlearn” library (Scikit-Learn, 2021). The algorithm (EM) trained a classifier model with only labeled tweets, which then was used to assign labels to unlabeled tweets by calculating the expectation of missing values. We utilized the Naive Bayes model as the base classifier, which is fast and commonly used in text classification. Subsequently, in an iterative process, a

new classifier was trained using all tweets (originally labeled and unlabeled). To find the classifier parameters that maximize the likelihood of the data, EM uses hill-climbing optimization (Nigam et al., 2000). The average test performance was evaluated using 10-fold cross-validation, showing an accuracy of 74.34% and an F-score of 60.71%.

Finally, the proportion of distrust to total replies for each leader was calculated and used for comparisons. Subsequently, we constructed distrust measures by dividing the metrics of tweets with “distrust” labels by the total tweets.

### Insulting Content

A collection of 11 keywords and phrases were chosen to identify offense in comments. Keywords such as “crap,” “stupid,” “liar” and other insulting keywords can show disrespect and distrust toward leaders. For each individual leader, we divided the offensive replies by the total replies that they received, which was then used to compare different groups of leaders. The complete list of keywords is given in **Appendix Table 2**.

## Keyword Extraction

The Latent Dirichlet Allocation (Blei et al., 2003) topic model was adopted to find important keywords that the public have used in reply to leaders' tweets. The model assumes documents are a mixture of topics and a topic is a probability distribution of words. Considering only one topic in each group of leaders including male political, male health officer, female political and female health officer leaders, assuming one topic, the most probable words were found.

**Sentiment Analysis:** To understand how critical events such as vaccination rollout has influenced the sentiments of replies to administrators, the reply tweets were divided into two periods based on vaccination time for Canada and the US. The COVID-19 vaccination in Canada started from around January and for US around December. We performed data cleaning on the response tweets for about 3 months before and after the start of vaccination. For the cleaning process, we removed URLs, mentions, and non-UTF8 (UCS Transformation Format 8) characters, then we used VADER (Valence Aware Dictionary for Sentiment Reasoning) sentiment API (Hutto and Gilbert, 2014) to label tweets to positive, negative, and neutral classes.

## Tweet-Level Metrics

Engagement metrics can measure the influence of Twitter users and their connection with followers (Neiger et al., 2013). We extracted certain interaction metrics such as the number of tweets, favorites and the number of times a post was shared (re-tweeted) for both posts and replies authored over the duration of 1 year and 2 months. The present study considered only the direct tweets posted by leaders and did not include the posts that leaders re-tweeted.

## User-Level Metrics

In addition to the aforementioned features, the influence of a user can be assessed with other user-derived features such as the number of friends, followers and favorites. In the present study, the aforementioned user lookup data was used to pull out these features.

# RESULTS

## Content Analysis of Replies

No significant difference was found between males and females for replies indicating distrust while a significant difference between political and health officer leaders was detected for favorites (Table 2). The proportion of favorites in response to political leaders was higher compared to health officer leaders [ $\text{mean}_{\text{favorites}}(\text{health officers}) = 0.938$  and  $\text{mean}_{\text{favorites}}(\text{political leaders}) = 1.004$ ]. Moreover, the difference between the number of replies to tweets posted by health officers and political leaders was marginally significant [ $P\text{-value} = 0.087$ ;  $\text{mean}_{\text{\#posts}}(\text{health officers}) = 0.977$  and  $\text{mean}_{\text{\#posts}}(\text{political leaders}) = 0.992$ ].

In Table 3, the difference between the proportion of offensive replies to males and females was significant [ $\text{mean}_{\text{replies}}(\text{males}) = 0.084$ ,  $\text{mean}_{\text{replies}}(\text{females}) = 0.058$ ]. Moreover, the difference in offensive language toward political and health officer leaders

**TABLE 2 |** Distrust in replies of posts authored by health leaders.

Features	Group	Mean	Median	P-value
#Posts	Male leaders	0.983	0.9930	0.421
	Female leaders	0.981	0.991	
	Political leaders	0.992	0.994	0.087
	Health officers	0.977	0.990	
Favorites	Male leaders	0.999	0.999	
	Female leaders	0.916	0.999	
	Political leaders	1.004	1.000	0.048*
	Health officers	0.938	0.999	
Retweets	Male leaders	0.953	1.000	
	Female leaders	0.878	0.999	
	Political leaders	0.922	1.002	0.235
	Health officers	0.915	0.999	

\* $P < 0.05$ .

**TABLE 3 |** Offense in replies of posts authored by health leaders.

Features	Group	Mean	Median	P-value
#Posts	Male leaders	0.084	0.088	0.047*
	Female leaders	0.058	0.077	
	Political leaders	0.088	0.103	0.051
	Health officers	0.064	0.079	
Favorites	Male leaders	0.591	0.704	0.392
	Female leaders	0.590	0.816	
	Political leaders	0.530	0.600	0.360
	Health officers	0.621	0.766	
Retweets	Male leaders	0.660	0.685	0.294
	Females	0.762	0.807	
	Political leaders	0.540	0.685	0.223
	Health officers	0.787	0.799	

\* $P < 0.05$ .

was marginally significant ( $P\text{-value} = 0.051$ ). The measure of offensive language calculated by the number of replies to political leaders was higher than that to health officer leaders [ $\text{mean}_{\text{replies}}(\text{health officers}) = 0.064$  and  $\text{mean}_{\text{replies}}(\text{political leaders}) = 0.088$ ]. Engagement metrics of replies did not have any effects on the difference between male/female authorities or political/health officer leaders.

The most important keywords for each group of leaders are given in Table 4 in descending order. The public replies to male politicians included themes of restrictions, control measures and economy, while for male health officers the themes included restrictions, control measures and appreciation. On the other hand, female politicians received judgmental comments, while female health officers received comments about restrictions and appreciation.

**TABLE 4 |** Comparing important keywords in replies to leaders.

Group of leaders	Keywords
Male political leaders	Lockdown, government, essential, job, economy, better, plan, wearing, numbers, business
Male health officer leaders	Numbers, restrictions, wearing, positive, mandatory, thanks, social, better, great, gathering, essential order, hard
Female political leaders	Explain, residents, compliance, judgment, transparency, evading, supposed, essential, recommendations, difficult, seniors, graduate, students
Female health officer leaders	Government, PCR, numbers, positive, restrictions, social, quarantine, better, app, children, thanks, job

**TABLE 5 |** Comparing users' engagement of authorities' posts.

Features	Group	Mean	Median	P-value
#Posts	Male leaders	248.7	162.5	0.338
	Female leaders	576.357	172.5	
	Political leaders	273.416	173.0	
	Health officers	463.25	162.0	
Favorites	Male leaders	210.24	84.71	0.108
	Female leaders	101.92	42.23	
	Political leaders	240.95	76.549	
	Health officers	115.995	76.114	
Retweets	Male leaders	39.29	18.88	0.253
	Female leaders	26.84	14.34	
	Political leaders	41.617	12.643	
	Health officers	29.180	21.284	

## Sentiment Analysis

The results of comparing positive, negative, and neutral sentiments before and after vaccination in Canada and the US is given in **Figure 1**. Generally, neutral was the majority sentiment which is consistent with the results of a similar study in Japan (Niu et al., 2021). The negative sentiment was more in Canada and the positive sentiment was more in the US. In Canada, the number of positive and negative responses to leaders has decreased after vaccinations in January 2021 by a 1 and a 2%, respectively. However, the US has seen a 4% drop in negative and a 2% increase in positive responses. The difference between the periods was more considerable in the US and shows that after vaccination in December in the US, the comments in response to administrators tend to have more positive polarity.

## Tweet-Level Metrics

The average number of tweets posted by females was 576 compared to 248 tweets by males while the opposite case was true for replies to their posts where males received three times more replies than females. The number of posts/replies, likes and shares between compared groups did not show a significant difference (**Tables 5, 6**). This could be due to the relatively small sample sizes.

## User-Level Metrics

No significant difference was found between the number of followers of each group of authorities (**Table 7**). However, the difference in the number of friends and favorites was significant. The results show that male authorities have followed more Twitter accounts.

( $\text{mean}_{\text{friends}} = 6,624$ ) and have liked more posts ( $\text{mean}_{\text{favorites}} = 1.75$ ) than female authorities. Similarly, the number of friends and favorites for political leaders ( $\text{mean}_{\text{friends}} = 948$ ,  $\text{mean}_{\text{favorites}} = 5,328$ ) was higher compared to public health officials. Male and political leaders being more active on Twitter in terms of adding more friends and liking more posts can explain why male and political leaders' posts generated more user engagement in the aforementioned section.

**TABLE 6 |** Comparing users' engagement of replies to authorities' posts.

Features	Gender	Mean	Median	Statistic
#Posts	Male leaders	6,624.9	303.0	0.256
	Female leaders	1,903.7	141.0	
	Political leaders	10,701.0	325.5	
	Health officers	1,514.29	303.0	
Favorites	Male leaders	1.755	1.483	0.242
	Female leaders	1.507	1.39	
	Political leaders	1.869	1.483	
	Health officers	1.541	1.403	
Retweets	Male leaders	0.233	0.193	0.398
	Female leaders	0.208	0.201	
	Political leaders	0.257	0.209	
	Health officers	0.207	0.194	

**TABLE 7 |** Comparing accounts properties for male and female authorities.

Features	Group	Mean	Median	P-value
Friends	Male leaders	723.238	593.0	0.029*
	Female leaders	440.647	184.0	
	Political leaders	948.384	924.0	
	Health officers	414.0	195.0	
Favorites	Male leaders	3,783.809	1,572.0	0.014*
	Female leaders	1,296.529	456.0	
	Political leaders	5,328.53	1,749.0	
	Health officers	1,296.529	629.0	
Followers	Male leaders	63,451.095	13,371.0	0.075
	Female leaders	37,015.470	5,357.0	
	Political leaders	94,014.84	15,036.0	
	Health Officers	29,581.72	8,611.0	

\* $P < 0.05$ ; \*\* $P < 0.01$ .



One possible explanation for the patterns of male and political leaders being the same in the present study is that the majority of males were political leaders, and the majority of females were health officer leaders.

## DISCUSSION

One of the contributions of the present study is a joint consideration of engagement and content-based measures to reveal gender and position effects on Twitter discussions. Supervised or unsupervised models were commonly used in the literature (Castillo et al., 2011; Golbeck et al., 2011). However, there is a lack of labeled data in real-world problems. To tackle this issue, we used a semi-supervised model to identify tweets indicating “trust” and “distrust”.

### Trust in Sources of Crisis Communication

A survey of 2,000 Canadians showed the provincial response to COVID-19 was ranked highest compared to federal and municipal responses. This may be related to the large presence of provincial public health officials providing updated risk information on the pandemic daily in the Canadian media landscape, such as the Provincial Health Officer for British Columbia Dr. Bonnie Henry (Waddell, 2020). However, elected officials, such as premiers, are distrusted, often due to the perception they are motivated by political interests over public wellbeing (Gesser-Edelsburg et al., 2014). The current research saw higher distrust in replies to political leaders and higher offensive responses, which may be due to the underlying distrust in general for elected officials. Canadians also reported they most trust public health officials to provide credible information during the COVID-19 pandemic (Waddell, 2020), indicating they trust those with subject matter expertise to provide the most accurate information and effectively manage the risk. Similarly, a study in the United States of America found that federal and local public health were the most trusted sources of COVID-19 information compared to the White House officials (Fridman et al., 2020). Generally speaking, during infectious disease outbreaks, the public has higher trust in public health officials compared to elected officials and the media (Alsulaiman, 2018). Higher trust in public health leaders may account for less distrust and offense found in replies to their tweets.

### Trust in Male vs. Female Leaders

There has been much debate in research and the media regarding male vs. female leadership. Crises with low uncertainty in terms of long-term consequences have been found to benefit from female leaders with strong relational skills (Post et al., 2019). Relational skills, such as interpersonal communication, have been found to enhance trust and positively impact desired behaviors (Post et al., 2019). With regards to COVID-19, the debate has remained active. One study explored the relationship between COVID-19 related deaths and political gender leadership and found lower reported fatality rates in countries led by women, although not statistically significant (Windsor et al., 2020). The

study notes the countries with female leaders managing COVID-19 well are often economically advantaged and often represent countries that have advanced social cultural and political norms and values, which likely contributes to the lower death rate (Windsor et al., 2020). Similarly, a study found states in the U.S.A. with women governors had fewer deaths than those governed by males (Sergent and Stajkovic, 2020). Findings suggest that public health directives, such as stay-at-home orders, were also delivered by females with more compassion and empathy which is positively associated with trust (Sergent and Stajkovic, 2020). The success may also not only be about women handling the pandemic better, more that some male leaders are handling it poorly (Lewis, 2020).

The present research did not find any evidence of a difference in public trust toward male and female leaders, as seen in the distrust comparison. However, the findings indicated more offensive language in comments toward tweets authored by male leaders compared to female leaders. Aligned with this statement, in a recent study on incivility toward politicians on social media (Rheault et al., 2019), it was found that, in general, men were more targeted by uncivil messages.

### Social Media Engagement Differences

The effective use of social media for crisis communication requires engagement with followers to build relationships and trust with the public. Higher engagement with government and public authorities on social media is linked to the development of trust (Wendling et al., 2013). Transparent and timely crisis information delivered via social media is an important aspect of trust development and should guide how leaders develop strategic crisis communication plans (Wendling et al., 2013; Liao et al., 2020).

Our study found that male and political leaders followed back more accounts that followed them (i.e., friends) and liked more posts compared to females and health officer leaders. However, we did not find a significant difference between the engagement metrics of posts and replies of compared groups. Another COVID-related social media study found that engagement overall was low with government and public health related posts, even from the accounts that were active (Liao et al., 2020). The study found that the low engagement may be due to low levels of interest, trust, emotional appeal, and efficacy messages (Liao et al., 2020). The posts were mainly found to be a one-way dissemination of information about the COVID-19 situation rather than true engagement with followers (Liao et al., 2020). This is consistent with low engagement as defined in Neiger et al. (2013), where social media use is limited to information dissemination and is reported to be the stage where most public health accounts deteriorate (Neiger et al., 2013).

In the current study, we examined the effect of health authorities' gender and position on gaining trust and engagement on Twitter. However, there might be a number of confounding factors that affect the results. Extending the study in the future to consider other information such as age and location might help to explain the publics' behaviors toward health leaders more precisely. In addition, other factors such as individual



personalities and the activity of authorities' accounts are likely to bias the results.

## Limitations and Future Research

There might be some limitations in the present study. We collected Twitter posts and responses corresponding to 38 administrators involved in the COVID-19 pandemic. Since the premium Twitter API was used, we were limited in adding data from a wider range of administrators' accounts. Future studies might consider including additional accounts so that the distribution of accounts will be similar among male/female, politicians/health officials and the US/Canada categories. Moreover, future studies can collect tweets in reply to politicians of each state in the US and tag them by their political views and beliefs. Comparing the sentiments regarding political attitudes can help explore trust or distrust patterns in responses to political administrators during the pandemic.

Additionally, the current study covers the first 15 months of the pandemic. Here, we divided the period of study to before and after vaccination, but our data after vaccination covered between 3 and 4 months of the pandemic. Future studies could expand the dataset to include additional data around vaccination or other critical events of the pandemic.

Finally, the current research focused on quantitative methodologies. Further research could expand the focus to include mixed methods where qualitative methods such as critical discourse analysis or content analysis can further describe the power dynamics and structural inequalities at play.

## CONCLUSIONS

In conclusion, we found that Twitter provided an environment for male and political leaders to generate more user engagement. Twitter users trusted health leaders more than political leaders. Offensive language was more often used toward political leaders' posts compared with responses to health leaders' posts. On the other hand, appreciation keywords were more used toward health officials than politicians. The present study provides insights into biases toward a specific group of leaders during emergency

situations. As social media is gaining more popularity as an important source of information, it becomes critical to identify biases and combat them, in particular during important events such as the COVID-19 pandemic.

## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

Not applicable as this paper is secondary analysis of publicly available data. Research utilizing data that are both existing and public is not considered human participant research and does not require REB review (TCPS 2, Article 2.2). As long as there is no expectation of privacy, we do not require ethics approval.

## AUTHOR CONTRIBUTIONS

SY: investigation, methodology, conceptualization, and writing—original draft. RD: conceptualization, writing—review and editing, and supervision. MM and AP: conceptualization and writing—review and editing. SS: supervision, conceptualization, writing—review and editing, and funding acquisition. All authors contributed to the article and approved the submitted version.

## FUNDING

This research was supported in part by the University of Guelph's Food From Thought initiative.

## SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fsoc.2022.811589/full#supplementary-material>

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# Storm the Capitol: Linking Offline Political Speech and Online Twitter Extra-Representational Participation on QAnon and the January 6 Insurrection

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## OPEN ACCESS

### Edited by:

Pradeep Nair,  
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### Specialty section:

This article was submitted to  
Media Governance and the Public  
Sphere,  
a section of the journal  
Frontiers in Sociology

**Received:** 15 February 2022

**Accepted:** 19 April 2022

**Published:** 19 May 2022

### Citation:

Lee CS, Merizalde J, Colautti JD, An J  
and Kwak H (2022) Storm the Capitol:  
Linking Offline Political Speech and  
Online Twitter Extra-Representational  
Participation on QAnon and the  
January 6 Insurrection.  
Front. Sociol. 7:876070.  
doi: 10.3389/fsoc.2022.876070

The transfer of power stemming from the 2020 presidential election occurred during an unprecedented period in United States history. Uncertainty from the COVID-19 pandemic, ongoing societal tensions, and a fragile economy increased societal polarization, exacerbated by the outgoing president's offline rhetoric. As a result, online groups such as QAnon engaged in extra political participation beyond the traditional platforms. This research explores the link between offline political speech and online extra-representational participation by examining Twitter within the context of the January 6 insurrection. Using a mixed-methods approach of quantitative and qualitative thematic analyses, the study combines offline speech information with Twitter data during key speech addresses leading up to the date of the insurrection; exploring the link between Trump's offline speeches and QAnon's hashtags across a 3-day timeframe. We find that links between online extra-representational participation and offline political speech exist. This research illuminates this phenomenon and offers policy implications for the role of online messaging as a tool of political mobilization.

**Keywords:** political participation, online political participation, U.S. Capitol attack, insurrection, Twitter, speech

## INTRODUCTION

On January 6, 2021, the world watched as rioters stormed the U.S. Capitol—smashing windows, breaking down doors, and sending lawmakers running for their lives—the group intended to stop the count of electoral votes cast in the 2020 U.S. Presidential Election. The breach of the Capitol Building was a moment that revealed deep political divisions and public distrust in democratic institutions and exposed the willingness of some Americans to change the political system through violence forcefully. As law enforcement, politicians, and the media tried to make sense of the attack, images of the event show people displaying assorted insignias affiliated with far-right groups, including those of militias and conspiracy groups.

As of December 2021, more than 700 people from at least forty-four states were arrested for the January 6 insurrection (DOJ, 2021); these individuals vary in age group, gender, and originate from very different geographic communities. Of those arrested, over 300 individuals

are alleged to have been involved in violent crimes on Capitol grounds, with more than 200 being accused of assaulting police officers (Hymes et al., 2021); offenses range from weapons possession to kidnapping and murder. Approximately ninety-five percent of those involved are “one-off cases” (Hosenball and Lynch, 2021), which refers to individuals with no prior history of involvement in similar activity. Reflecting on the incident, questions remain regarding the mechanisms that motivated so many people to engage in political violence at the seat of the U.S. government. Given the overwhelming media coverage, we know that the mass of people was there in support of then-president Donald Trump, who previously made several incendiary speeches claiming the election was stolen. Moreover, President Trump publicly urged Vice President Mike Pence and Republican lawmakers not to certify the electoral ballots necessary to legally recognize Joe Biden’s election victory.

Based on this context, this current research examines online political discussions that connect the January 6 insurrection to Donald Trump’s offline rhetoric. This research is intended to explore the link between offline political language and online extra-representational participation using Twitter within the framework of the insurrection. Integration of a computational method with qualitative thematic analysis was used to understand the ways in which offline influences affect online political engagement. The research asks a set of the following questions: (1) To what extent and how offline speech of Trump is similar to online discourse? And (2) what salient topics were discussed in the online-offline corpora?

To answer these questions, we developed a mixed-methods of computationally informed similarity score and thematic analysis. First, we combined offline speech information with Twitter data during key speech addresses leading up to the Capitol attack. Given the significant size of the data collected and the importance of QAnon in the insurrection (Bond and Neville-Shepard, 2021; Camille, 2021; Crews et al., 2021), we focused on this group as one of the most influential online voices during the incident. Second, we explore the link between Trump’s offline speech and QAnon’s hashtags across a 3-day timeframe. Third, a similarity score was calculated using the natural language processing-based SentenceTransformer method (Reimers and Gurevych, 2019), a method measuring the parallels between the two sets of corpora and helps to clarify how these offline and online speeches are linked together. Lastly, we use qualitative thematic analysis to examine the topics/themes of the data further. The results demonstrate links between online extra-representational participation and offline political speech.

## **POLITICAL COMMUNICATION, EXTRA-POLITICAL PARTICIPATION, AND ONLINE PLATFORMS**

### **Extra-Political Participation and Political Movements**

Our theoretical framework is grounded on extra-representational participation (ERP), resulting from actual or perceived political blockage. Albeit the U.S. has traditionally maintained a clear split

between political ideologies, polarization has become far more salient in recent times (Fiorina and Abrams, 2008; Abramowitz and McCoy, 2019; Fermor and Holland, 2020). These friction points have concerned some to speculate about a far greater manifestation of political dissent. After a tumultuous year of protests across most major U.S. cities, Kilcullen (2005) presents a case for what can be considered an incipient American insurgency, defined as a collective movement seeking to overthrow the status quo through the use of subversive tactics, political mobilization, armed conflict, and terrorism (Kilcullen, 2005). To that end, anti-government sentiments and organizational ideologies are central to a wide range of far-right groups (Jones, 2018; Mudde, 2019) that perceive underrepresentation or the loss of power, which are more salient with militias groups (Levitas, 2004; Lyons, 2018; Berlet and Sunshine, 2019). More recent studies link an increase in political violence with the lack of representation in government processes (Daxecker, 2020) and, more specifically, when states accommodate the political elite (Raleigh et al., 2022). Distrust in the government and the sentiment of underrepresentation in the executive processes can lead individuals to engage in ERP. In the United States, specific populations may perceive this loss of power as inevitable, and as such, creating a political sanctuary may insulate themselves from sudden changes throughout the country.

Similarly, the lack of federal-level participation in traditional political processes can have adverse effects, leading to alternative forms of political engagement. Various studies have demonstrated when specific segments of a population are underrepresented in political systems, the likelihood of retribution or violence increases (Gurr, 1993, 2000; Cederman et al., 2010). In most cases, these societal cleavages emerge from ethnic differences and the struggle to gain control of the state. As such, how these segments of populations are represented in executive political systems matters. Whether real or perceived, exclusion from the decision-making processes increases the propensity for political violence or the support of non-state actors challenging the state by those seeking inclusion (Cederman et al., 2010). One example of this dichotomous exclusion condition is Tilly’s (1978) polity model, where the system of governance is divided into those who control the state and are privileged to be represented in the executive branch and the challengers seeking to gain political capacity. In order to reach political capacity parity, excluded populations may support ERP, which taps into sub-state networks and non-traditional forms of political mobilization. Kadivar and Ketchley (2018) find that these forms of collective movements are incredibly salient to democratic transitions.

ERP is a way of engaging in the political process that extends beyond traditional forums. For example, the Wall Street Occupy movements that sprung across the globe challenged the governing bodies by engaging in ERP by networking throughout social media platforms (Caren and Gaby, 2011; Adi, 2015). In terms of political capacity, the Occupy movement is well-defined and extends outside an online presence (Costanza-Chock, 2012). This movement challenges the traditional governing system that excluded many citizens from political participation



(Della Porta and Reiter, 2012). This form of activism mobilized large protests that criticized representative democratic systems, national infrastructure, or public works (Ramid et al., 2015). Moreover, the Occupy movement sought to engage a broader audience of voiceless individuals under a unified front that targeted political governing bodies. Halvorsen (2012) argues that the Occupy movement initially utilized a decentralized network approach or a do-it-yourself strategy to gain global traction within the youth.

Overall, these movements aim to give a voice to the politically underrepresented; however, it is essential to highlight some of the mechanisms that facilitate ERP. One critical aspect of engaging in ERP is trust in the political systems. Hooghe and Marien (2013) find political trust is positively associated with traditional forms of political participation such as campaign activity or contacting elected officials but negatively associated with ERP. As some early adopters of grievance theory, Craig and Maggiotto (1981) argue there is no reason to become politically active if there is no grievance with the political system. Braun and Hutter (2016) find political distrust and ERP are positively correlated, which aligns with more critical positions that distrust is a strong motivating factor for the underrepresented (Norris, 1999; Rosanvallon, 2008). Similarly, Sika (2020) also finds that countries with constant low political trust and a coercive political system increase ERP probability. The existing literature demonstrates that ERP and underrepresentation are occurrences that affect various political systems. In the same vein, the loss of power or control may also lead to negative feelings by the underrepresented. Petersen (2002) argues individual emotion may play a role in movements that challenge the state. The notion that losing representation in the executive may exacerbate feelings of being dominated by “the other side”. Kemper (1978) argues that social life dynamics of power and status are crucial to societies. Thus, a loss of power and (perceived or actual) representation may lead to a decline in social status and, as a result, a manifestation of negative emotions toward the governing bodies. Likewise, Ha (2017) found the power disparity within Egypt’s political representative system led many Coptic Christian populations to feel negatively toward the governing body and the religious majority. Egypt’s turmoil during the Arab Spring serves as a vivid example of the power of political mobilization through online mediums. Gerbaudo (2012) highlights the ERP phenomenon through the “choreography of assembly” theory, whereby social media platforms facilitate individuals to politically mobilize and establish “soft” leaders of the movement. Such actions are part of a broader concept of online-offline interactions intertwined within communicative and political spheres. Castells (2015) argues these movements can create “super counter powers” and manifest political accountability against the state.

## Online Communication as Political Participation

Defining interpersonal communication as political participation serves as a point of departure for the current study. Various analyses highlight the influential role of political communication on participatory behavior (Lazarsfeld et al., 1944; Berelson et al., 1954; Stamm, 1985; Viswanath et al., 1990). This

active participatory behavior is a fundamental principle of liberal democracies (Pateman, 1970; Schmitter, 1983; Bennett, 1986; Conway, 1991; Crotty, 1991). As a result, through institutionalized participation (i.e., voting or non-traditional processes such as attending a civic forum), local discourse helps reinvigorate democracy (McLeod et al., 1999). Eveland and Scheufele (2000) posit that an individual’s concept of the political landscape may be shaped by their mass media consumption and interpersonal communication with others. Similarly, Jung et al. (2011) find that understanding the political landscape and its efficacy are vital mediators for political participation. Carpini and Keeter (1996) argue citizenry depends on mass communication sources for political information that shapes their politics, while some say these interactions can lead to populists politics (KhosraviNik, 2018).

Subsequent studies have provided strong correlations between mass media consumption and political understanding (Chaffee et al., 1994; Weaver and Drew, 1995; Eveland and Scheufele, 2000). Thus, developing a clear picture of the political landscape translates into political participation (Klingemann, 1979; Neuman, 1986; Rosenstone and Hansen, 1993; Verba et al., 1995; Jennings, 1996; Sotirovic and McLeod, 2001; Kaid et al., 2007).

These aspects of interpersonal communication and political participation easily transfer into the online space. Tolbert and Mcneal (2003) found the internet is a powerful mobilizing force for political participation. Their results demonstrate that access to the internet and online political news increased political participation beyond just voting. Similarly, Di Gennaro and Dutton (2006) suggest online activity increases personal efficacy (the belief that they can influence government), and system efficacy (the belief the government is listening to their concerns) is positively significant to political engagement. The online space offers a wide range of platforms users can explore, such as forums, blogs, and social media networks. To that end, Gil De Zúñiga et al. (2009) echo similar findings that online consumption, more poignantly web blogs, is a significant determinant of political participation. Other studies have found online forums can be vital to political involvement. Valenzuela et al. (2012) use social network analysis to support the notion that online discourse is positively correlated with political participation; finding forums that attract like-minded individuals are positively associated with political participation.

Conversely, forums of individuals with different views have less impact on political participation. Finally, Yamamoto et al. (2015) demonstrate the role of social media and mobile platforms on political participation, finding young individuals who consume political information through social media platforms are more likely to engage in political participation—as such, messaging is exceptionally crucial to the mobilization of the underrepresented. Boudreau et al. (2020) argue that ineffective messaging can demobilize specific segments of the target population, and to improve participation, the messenger must strike the proper tone. Vinogradova et al. (2020) argue that some aspects of these communicative elements facilitate rapid and tactical deployment of messaging to generate political mobilization when done correctly. These manifestations of



effective communicative efforts can enable the development of political milieus (Krämer et al., 2021).

## THE PRESENCE OF QANON AND THE JANUARY 6 INSURRECTION

One of the most prominent groups capturing attention on January 6 was QAnon, a fringe online conspiracy movement the Federal Bureau of Investigation (FBI) previously labeled as a “dangerous extremist group” (Hughey, 2021; Rubin et al., 2021). The percentage of QAnon supporters charged increases as arrests continue, with estimates reporting QAnon representing more than 8% of arrestees linked to the insurrection (Farivar, 2021). This includes Jacob Anthony Chansley of Arizona (DOJ, 2021), who was famously photographed and became one of the dominant images representative of that day. Chansley wore a horned bearskin headdress, his face painted red, white, and blue, and carried around a flagpole bearing an American flag as he paraded through the Capitol Building; he would later be nicknamed the “QAnon Shaman”. According to court documents, the government alleges Chansley entered the Senate Chamber and left a threatening note for Vice President Pence that said, “It’s only a matter of time. Justice is coming.” Among the others arrested are married couples, siblings, parent-and-child(ren) teams, a geophysicist, and a two-time Olympic champion (Fennell, 2021; Feuer, 2021).

In a U.S. Justice Department complaint, the Munn family of Texas accuses a father, mother, and their three children of breaching the Capitol through a broken window. Prosecutors allege Thomas Munn posted on Facebook in late December 2020 he intended to go to Washington for a pro-Trump rally posting, “POTUS HAS REQUESTED YOUR ATTENDANCE WASHINGTON DC JANUARY 6TH 2021.” Later, on January 5, court papers indicate he posted another image showing a homemade sign reading “D.C. Bound We are Q,” referencing QAnon. Doug Jensen, a 41-year-old masonry worker from Des Moines was captured on film wearing a star-spangled “Q” shirt and leading a pack of protesters through the Ohio Clock Corridor threatening Capitol Police Officer Goodman. Jensen took a video of himself showing he was a Trump supporter and professed QAnon believer. Months later, Jensen would admit in court he was fully convinced of the QAnon narrative (Hsu, 2022). Jensen’s defense attorney described him as an “intelligent man” who merely “got taken”; asserting Jensen became a “true believer” and was convinced he was doing a noble service by becoming a digital soldier for “Q” (McClatchey, 2021). Although he told the FBI he was “all about the revolution,” there was no evidence supporting him in the planning. “It was a drug. It was absolutely a drug,” said Jitarth Jideja, a former QAnon believer who lost almost 2 years to the movement (Garrett, 2021). These are just a few examples demonstrating how online disinformation resulted in the January 6 offline mobilization.

Unlike many other conspiracy theories, the QAnon narratives gained legitimacy when public officials began to spread disinformation and amplify Q messaging. For example, during the November 2020 election, two QAnon supporters were

elected to Congress, Marjorie Taylor Greene won a House seat for Georgia, and Lauren Boebert won a House seat for Colorado. Greene and Boebert were among a dozen Republican candidates who had endorsed or given credibility to QAnon’s conspiracies (Tully-McManus, 2020). Later, Democrats would call for the expulsion of Congresswoman Greene for amplifying allegations of election fraud and not discrediting QAnon conspiracy theories (Garrett, 2021). Even President Trump avoided denouncing QAnon by claiming he knew little of the movement despite them being one of his strongest supporters. Coincidentally, Michael Flynn, Trump’s first national security advisor, posted a 53-s online video depicting oath-taking actions where he recites QAnon phrases and slogans (Cohen, 2020). The video was posted on July 4, 2020, and included the hashtag #TakeTheOath. In addition to these political figures, QAnon has received support from such celebrities as Alex Jones, Curt Schilling, Roseann Barr, Pete Evans, and Eddie Bravo (Crowley, 2020). The acknowledgment of QAnon by these influential public figures enhances the credibility of the conspiracy and appreciably increases the movement’s public legitimacy both online and offline.

## CURRENT STUDY

Social media, particularly Twitter, is an effective communication tool for political communication and mobilization (Gerbaudo, 2012; Enli and Skogerbo, 2013; Sandoval-Almazan and Gil-Garcia, 2013; Theocharis et al., 2015; Lee and Jang, 2021). In the age of Trump, Twitter emerged as his preferred platform to effectively communicate with his supporters and political opponents and convey diplomatic agendas (Ott, 2017; Stolee and Caton, 2018; Simunjak and Caliendo, 2019; Nacos et al., 2021). In addition, Twitter’s characteristics, such as brevity, reverse chronological order, and dissemination functionality, facilitated Trump’s usage of Twitter as his primary political communication method; which also encompasses Trump’s (mis)use of Twitter for delivering messages and mobilizing others after the 2020 election and, in particular, before and after the January 6, 2021 event. This proliferation of misinformation resulted in the closure of Trump’s official Twitter account (@realDonaldTrump) on January 8, 2021 (Twitter, 2021), 2 days after the insurrection.

As an exploratory study, this research investigates the link between offline political rhetoric and online ERP by examining Twitter within the context of the January 6 insurrection. This research is part of an ongoing project on political mobilization and the January 6 event. As mentioned earlier, QAnon has been one of the primary catalysts that helped shape extremist discourse and politically mobilize online platforms users. More importantly, the QAnon phenomenon bridged the gap between online and offline spaces, giving its social network non-hierarchical characteristics. Since QAnon is allegedly a loyal supporter of Trump (Bloom and Moskalenko, 2021), and Trump preferred Twitter for his political messaging, we viewed these information sources as a resource to better understand and trace the ERP phenomenon. To that end, we examined tweets and compared them to Donald J. Trump’s speech data within a 3-day

window by attaining a similarity score between texts through the state-of-the-art natural language processing (NLP) method. We selected a 3-day window to reflect continuity and changes in the dynamic social media discourse.

We hypothesize that online and offline speech are linked together; therefore, if a similarity score between the offline speech and the online corpus is significant, Trump's speech likely resonates well within the Twitter space.

## DATA AND METHODS

### Data Sources and Data Collection Strategy

This research uses a mixed-method framework to integrate computational analysis with qualitative thematic analysis (Braun and Clarke, 2006). As studied by Murthy (2017), a mixed-methods approach to Twitter data is highly beneficial as it allows for reductive research, a type of abductive method that approaches a sense of openness toward one's data and research questions. Murthy argues traditional approaches can be useful, but alternative approaches, such as reduction and grounded theory, have tremendous value to studies of Twitter (Murthy, 2017). Computationally calculated sentence similarity scores based on speech corpus and tweet similarity offer us a quantitative understanding of large-scale data. As text data is inherently qualitative, it is meaningful, and it is imperative to pay attention to its context to understand its meaning. Qualitative modes of inquiry and knowledge of the data are essential to have a more comprehensive understanding. The thematic analysis allows us to inductively derive and explore themes within a more significant event (Andreotta et al., 2019). This approach offers a more nuanced understanding of the underlying connection between offline political rhetoric and online extra-representational participation using Twitter in connection to the January 6 insurrection. This integrated approach assists us in realizing a profound and sophisticated understanding of text data that might not always be discovered purely by relying on calculated similarity scores. Thematic analysis can produce trustworthy and insightful findings (Braun and Clarke, 2006).

We utilized data sources derived from offline and online spaces to accomplish this task. The offline data was taken from our larger dataset focusing on Donald Trump's speeches emerging from rallies, debates, interviews, and significant political topics ranging from early voting to claims of a stolen election. This research focused exclusively on three speeches President Trump delivered shortly before the January 6 insurrection. The speeches in our analysis include January 4, 2021, producing 1,053 sentences; a rally speech at Capitol on January 6, 2021, producing 926 sentences; and a subsequent January 6, 2021, evening speech that produced 19 sentences.

Twitter is one of the most popular and essential online platforms to communicate with others, and as of the second quarter of 2021, it is estimated to have 206 million daily users on its platform, with 38 million emerging from the U.S. (Statista, 2021). Given its reach, Twitter is used to discuss ideas, shape individual behavior, and even mobilize people for a greater cause (Schill and Hendricks, 2016). In view of its communication role,

our online data was pooled from our larger dataset focusing on Twitter activity, a strategy to help us understand how different spaces (i.e., online and offline) may be related to each other.

Our research in this area was in place before the event on January 6, 2021. We had already employed a Twitter search API to collect tweets of certain groups between November 6, 2020, to January 21, 2021, refining our primary dataset to identify QAnon-related hashtags (see Table 1) for this study. Our pre-process of the data involved a restriction to English tweets, removing URLs, mentions, stop words, emoticons, symbols, and punctuations. As a result, the pre-processed data for all hashtags are 5,623,481 tweets (see Table 1A), and the three hashtags included in our study are 1,499,121 tweets (see Table 1).

### Analytical Strategy

Previous studies use speech/tweet data and found informative results on people's behaviors, specifically for political mobilization studies (Ayeomoni and Akinkuolere, 2012; Schill and Hendricks, 2016). Some researchers use sentence-level analysis in news and social media to find the meaning of sentences in the medium they were exploring (Almer et al., 2020; Asgari-Chenaghlu et al., 2020). Learning from the existing research, we compared speech data with tweets to obtain a sentence-level similarity score between a set of speech text and tweets. Given the online data's size and noisiness, we selected similarity scores to match the offline data. Each sentence of offline data was used as a unit of analysis for matching each tweet in our online data, a technique to measure a sentence-level similarity score. To that end, we used SentenceTransformer (Reimers and Gurevych, 2019) to map a sentence to a 1,024 dimensional dense vector in an embedding space. We then used the RoBERTa-large pre-trained model, showing state-of-the-art performance in multiple NLP tasks. Then, we computed the cosine similarity of the sentences' representations and considered it the similarity of sentences. Next, we compared the top 20 messages based on the similarity scores between each sentence in offline speeches and online tweets ( $N = 39,960$ ). We used an average similarity score of each dataset as a threshold value of twenty tweets. We focused on sentences with above-average scores among the identified data, identifying them as "key" sentences. Three authors read through the entire sample data and individually generated several themes. We then prepared the initial coding of sentence relevance indicators of online ERP. The themes were compared at speech and tweet levels to reach a list of final themes for further thematic analyses of our data. Subsequently, human coders analyzed the data by identifying the relevance of each speech sentence across all offline speeches to online definitions of ERP.

We then used qualitative thematic analysis to identify each speech's themes, matching them with tweets previously identified with sentence similarity scores. The qualitative thematic analysis employed the following steps: familiarizing with data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and producing the product/report (Braun and Clarke, 2006; Nowell et al., 2017). This method can generate trustworthy, reliable, and insightful results (Braun and Clarke, 2006; Nowell et al., 2017). Once the focus of the research/data was

**TABLE 1** | Descriptive statistics: similarity scores comparing offline speech and tweets.

Twitter hashtag	Offline speech								
	January 4			January 6, Rally			January 6, Evening		
	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min
#trump2020	0.535	0.823	0.346	0.543	0.804	0.312	0.594	0.804	0.488
#MAGA2020	0.461	0.662	0.268	0.471	0.665	0.271	0.511	0.595	0.434
#QAnon	0.438	0.680	0.281	0.472	0.707	0.318	0.512	0.597	0.388

This table is organized by the mean frequencies of January 4.

established, two authors individually read through each speech sentence and coded themes, comparing their results and deciding on the final themes. Inter-coder reliability of Cohen's Kappa was 0.79, which is highly moderate (McHugh, 2012).

Figure 1 presents the study's research procedures.

## Descriptive Statistics: Similarity Scores Between Offline Speech and Tweets

Table 1 presents descriptive statistics of three hashtags (#trump2020, #MAGA2020, and #QAnon) that is the current study's focus, while the table also shows the scope of our larger project with 15 different hashtags based on our keywords of specific political groups in the U.S. and their relationship with the speech data. Computationally informed similarity scores comparing offline speech and tweets of each hashtag were presented. The three hashtags were consistently featured as data with the top three averages across the 3 days. Consequently, we created three sub-datasets for the top averaged hashtags for further analyses.

## RESULTS

Qualitative thematic analysis is used to understand the various themes and topics in speech-tweet paired data, generating 3–4 themes and topics per day. In this section, we present core themes of speech-tweet pairs by day. We first identify themes within speech sentences, then use the information to juxtapose them against tweet data themes. On the speech front, Trump's speech throughout the 3-day timeframe before the insurrection has consistent themes such as praising Trump's presidency, persuading Mike Pence to correct the election results, and alleging the 2020 election was stolen. Examination of online tweets presented a more complicated analysis as some support Trump and/or QAnon sentences were positively correlated, while negative correlations took a critical perspective on how Trump has been misleading people. In what follows, we present results interweaving the speech data with three different core tweet datasets.

### January 4 (Rally) Speech and Twitter Data

1. In the #trump2020 data, three central themes connected to Trump, with specific reference to his legacy, were identified.

**Hashtag: #trump2020**

**Themes: The greatest president, Mike Pence, actionable support**

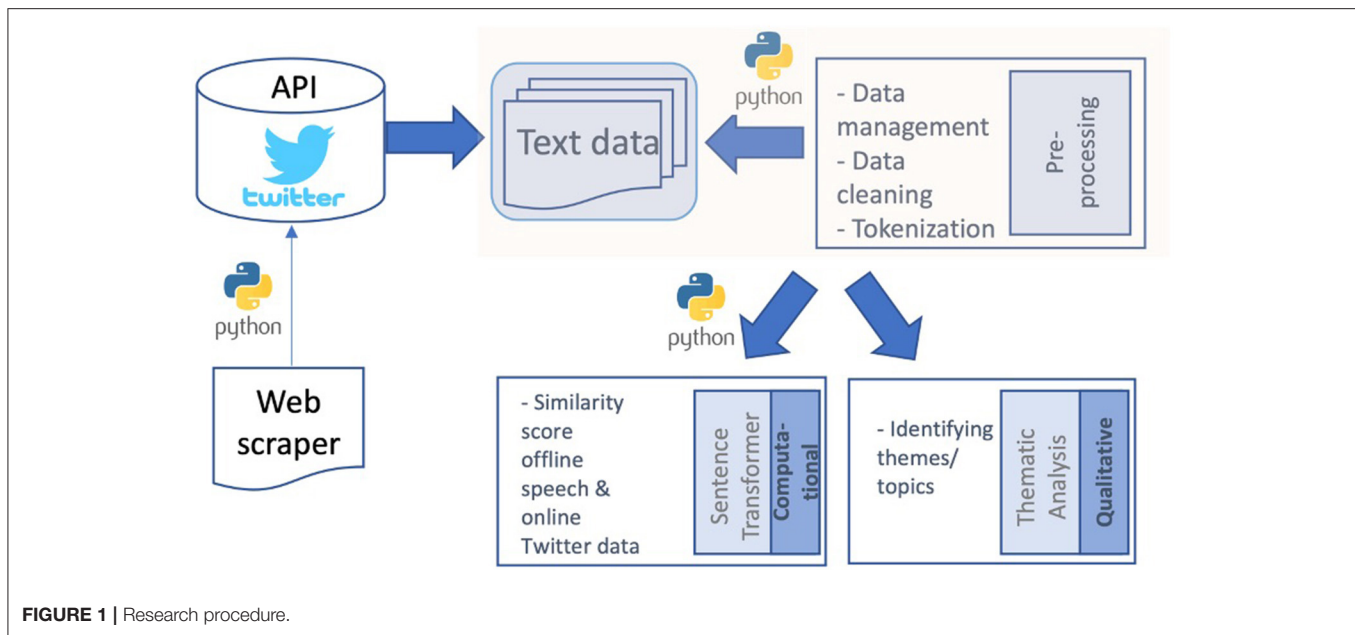
Theme one, "*Trump as the greatest president.*" This was a common phrase repeated across many of the hashtags supportive of the president. As the runoff election results began to be posted in Georgia, tweets emerged from the opposition, "*Now, when you win just a few bellwether counties, you always win the election (1/4 speech).*" In response, supporters of Trump posted on the day of the insurrection the following:

agrees that "is the GREATEST – President ever! \*\* DO NOT TRUST on JAN 5. \*\* Rather focus upon overturning the criminally RIGGED election on Jan 6." (Score: 0.4, Tweeted on 1/6/2021)<sup>1</sup>

This theme emphasizes Trump as the "greatest President" while referencing a narrative directed toward overturning the results of the perceived illegitimate election on January 6, a storyline that dominated many of Trump's public remarks leading up to this date. On January 6, tweets from both sides of the issue filled the virtual forum (reflective in the sentiment and the exponential increase in salience within the #trump2020 dataset), while those called to action were present on the ground in Washington, D.C.

2. The second theme identified within the January 4 speech analysis is specific references to Vice President, Mike Pence. A speech sentence demonstrative of this context included, "*They announced they don't want to do the America First policy (1/4 speech)*", Trump claimed that Congress, while also inferring Vice President Pence, does not support the idea of the America First policy, which was one of Trump's key campaign platforms in the runup to the election. The following tweet challenges where Pence's loyalty lies while implying he is not supportive of overturning the election result on January 6.

<sup>1</sup>Tweets are presented as original throughout this paper. In other words, typos, quotation marks, and capital letters are original. We present each tweet in a bracket (without italic), which indicates its similarity score and a published date that was made public, whereas speech sentences were presented as italic.



“Mike Pence not loyal to Trump, claims loyalty to ‘Jesus.’”  
(Score: 0.4, Tweeted on 1/6/2021).

- The third theme was rigorously calling for actionable support for Trump. In his January 4 speech, Trump references the success of his rallies and encourages his supporters to continue their support despite the election results. “We have a rally and thousands and thousands... Honestly, I’ll go out on the extreme, there’s never been anything like this in the history of our country. (1/4 speech).” Immediately following this speech, tweets of similar themes to Trump’s speech increased in frequency and were associated with a call for action. Tweets of individuals purporting to be “patriots” promoted the narrative of “saving” America by supporting the president during this divisive time, as demonstrated in this tweet:

“Patriots from around the world keep coming to support the Mr. President.” (Score: 0.43, Tweeted on 1/7/2021).

More importantly, a well-known powerful slogan emerged - “Storm the Capitol”, which has later become synonymous with the riotous actions of January 6.

“Storm the Capitol now” (Score: 0.34, Tweeted on 1/7/2021).

**Hashtag: #MAGA2020**  
**Theme: Mike Pence**

- Weeks following the 2020 election results and prior to the congressional certification, Trump contentiously argued he won the presidential election and referenced winning several

swing states, which was critical to his version of the election outcome. For example, in his January 4 speech, Trump said, “I won both of them (1/4 speech).” Tweets connected to the January 4 speech, under the #MAGA2020 hashtag and the Mike Pence theme, had high similarity scores comparable to the findings in the #trump2020 dataset. For example:

“We The People, Have Ur Back Cuz U Have Ours!” (Score: 0.5, Tweeted on 1/6/2021). ”

This includes the following sentence from Trump’s January 4 speech, “We’re not going to let it happen over the pass, and I hope Mike Pence comes through for us, I have to tell you (1/4 speech).” A matching tweet emphasizes,

“Electoral College Vote Count - Watch Mike Pence make history and secure our republic for!” (Score: 0.5, Tweeted on 1/7/2021).

This tweet highlights the importance of Mike Pence’s action not to recognize the electoral votes, a course of action promoted by Trump supporters to maintain the current presidency.

**Hashtag: #QAnon**  
**Theme: Critiques of Q, Mike Pence**

- In our #QAnon dataset, Trump January 4 speech states, “The radical Democrats are trying to capture Georgia’s Senate seats so they can wield unchecked, unrestrained, absolute power over every aspect of your lives (1/4 speech).” While the speech uses antagonistic language directed toward Democrats, subsequent tweets from the Trump opposition emerge, hoping



the insurrection participants get a serious illness, inferring the world would be relieved of these individuals.

“... American right wing fascist are storming the Capitol... These are the voter of the values party... Please catch covid, electors and elected, and rid the world of your idiocy...” (Score: 0.47, Tweeted on 1/7/2021).

2. Mike Pence themes resurfaced again in the #QAnon data. A previous speech we referenced earlier, *“We’re not going to let it happen over the pass, and I hope Mike Pence comes through for us, I have to tell you (1/4 speech)” generates the following response by those who oppose Trump:*

“Just found this on Parler<sup>2</sup> (which I monitor to keep abreast of and activity). It’s getting scary what these guys are willing to do, hope is prepared for tomorrow because it could get ugly...” (Score: 0.49, Tweeted on 1/6/2021).

## January 6 (Rally) Speech and Twitter Data

**Hashtag: #QAnon**

**Themes: Media, Stolen election, Mike Pence**

1. With the January 6 afternoon speech, we identified several themes. Theme one, corrupt media, fake news, and social media, *“as you know the media is constantly asserted the outrageous lie that there was no evidence of widespread fraud. No, we have a corrupt media. We’ve amassed overwhelming evidence about a fake election.”* In this regard, Trump mentions the idea of a shadowban (a method related to the deprioritizing of accounts). For example, *“And just like the radical left tries to blacklist you on social media, every time I put out a tweet, even if it’s totally correct, totally correct. I get a flag.”* However, some tweets do not support either Trump or QAnon but rather provide commentary about the January 6 insurrection. The following tweet, posted on January 7, the day after the insurrection, with a similarity score of 0.52, is an example:

“... has laid out this insurrection very clearly for literally months. No one listening?” (Score: 0.52, Tweeted on 1/7/2021).

Conversely, the following tweet links both a reference to a Trump speech and what QAnon stated online:

“Q did say President Trump would send Presidential text messages. Banning the President from social media is an excellent excuse to make that a reality. It says, National warning messages issued by the President. Can’t be turned off.” (Score: 0.52, Tweeted on 1/8/2021).

<sup>2</sup>Parler is an app which is arguably predominantly used by QAnon and Trump supporters (Nicas and Alba, 2021).

2. Theme two on illegal votes and the stolen election was one of the salient themes in both the January 6 rally and the January 4 speeches. In the January 6 rally speech, he said, *“They defrauded us out of a win in Georgia”*. This sentiment was picked up online and protracted in Twitter, for example:

“We remember! We will never forget” (Score: 0.44, Tweeted on 1/8/2021).

“These are your heroes too. ‘Our supporters are showing some balls about time rest of including the flakes did the same’” (Score: 0.5, Tweeted on 1/7/2021).

Theme two is linkable to Trump’s speech corpus, *“To use a favorite term that all of you people really came up with, we will stop the steal.”*

3. Theme three is on Mike Pence, which is one of the consistent themes throughout Trump’s three speeches. A tweet mentioning insurrection lays out an important issue. In a tweet,

“if he isn’t strongly held accountable more of the same will follow. His army is planning more insurrection on Parler as we speak (Score: 0.46, Tweeted on 1/8/2021).”

**Hashtag: #Trump2020**

**Themes: media, Stolen election, Mike Pence**

1. Concerning the media theme, allegedly, Trump followers support Trump’s idea that (social) media shares fake news while imposing a ban on him. In this regard, the following tweet resembles what the former president says:

“Twitter is suppressing free speech. Twitter has attacked conservatives while letting hate speech from the other side, the socialist (Score: 0.61, Tweeted on 1/7/2021).”

2. With regards to illegal votes/stolen election (in relation to the following sentence, *“To use a favorite term that all of you people really came up with, we will stop the steal.”*)

“rightful winner keep fighting the corrupt” (Score: 0.63, Tweeted on 1/6/2021).

“God is in control. All fraud will be exposed!” (Score: 0.59, Tweeted on 1/7/2021).

“We must HOLD THE LINE, the crimes have been committed and certified. It will [be (sic)] interesting what will come of this in the days ahead. Crooked!” (Score: 0.58, Tweeted on 1/7/2021).

“Yes! Stop the coup attempt! Stop The Steal!” (Score: 0.58, Tweeted on 1/7/2021).

These tweets are in line with Trump’s accusation that the November 2020 election results were fraudulent. This theme of stolen election was thoroughly presented among the three

hashtags in this paper. Using the phrase “hold the line” the Twitter user infers this act is a form of attack.

Despite a significant number of tweets supporting the Stop the Steal campaign, a number of opposing views were tweeted.

“Never been so proud of my country as today!!! They try to steal the election and we say NO!!! one day down and now only a few more to go” (Score: 0.59, Tweeted on 1/7/2021).

“Dear President, Truth must be prevail The Cheaters Must be expose And everyone will know everything And everyone will stand with truth Applied law and order Applied law and order Don’t sleep the thieves work at the night” (Score: 0.58, Tweeted on 1/8/2021).

4. Regarding Mike Pence, like other hashtags that were identified for having a Pence theme, the following tweets also demand the Vice President stand by the former President Trump’s side.

“I hope VP Pence comes through for Trump!” (Score: 0.75, Tweeted on 1/6/2021).

“I hope and pray that Trump wins this!! If not this world is going to pieces.....” (Score: 0.66, Tweeted on 1/7/2021).

“At this point I am praying that Mike Pence does the right thing and call an audit. If not... the our vote no longer will matter. It will be decided by Big Tech and Big Business who will just buy the electors.” (Score: 0.65, Tweeted on 1/6/2021).

Taken together, tweets with #Trump2020 had three emergent themes—media, stolen election, and Mike Pence. While these themes are identical to those identified in the #MAGA2020’s themes, #Trump2020 tweets, they also have slightly higher similarity scores and greater emphasis on Trump.

#### #MAGA2020

Themes: Media, Stolen election, Mike Pence

1. In the #MAGA2020 dataset, three themes were identified. This includes observations consisting of both support and opposition mobilization across tweets in response to these themes. The first theme focuses on the media and its relation to the former president. We also note that Twitter permanently suspended his account on January 8th. The former president made a point to target the media by stating, “*and just like the radical left tries to blacklist you on social media, every time I put out a tweet, even if it’s totally correct, totally correct.*” Subsequent tweets demonstrated high similarity scores and resonance.

“The truth will triumph.” (Score: 0.54, Tweeted on 1/7/2021).

Although the tweet may be vague and inconclusive as to which side the author resonates with, it remains an important theme to discuss. The Trump administration and re-election campaign

maintained several conspiracy theories at the ready whenever a situation required its use. As mentioned earlier, Twitter closed the former president’s account on January 8th, but according to their assessment, this decision was based on his action, inciting violence. The decision to permanently suspend his account comes after many other far-right accounts were permanently banned from Twitter.

However, the former president’s sentence also resonates with people who opposed this narrative, for example:

(A) “Hey,, and any other Trump cultists currently spreading lies about January 6th...you can’t blame this one on Anti-fascists. We’ve seen your tweets, Parler messages, F.B. posts, private messages, etc. So have the FBI, CIA and other members of the I.C.” (Score: 0.49, Tweeted on 1/8/2021).

Without question, the media played a significant role throughout the Trump presidency. Nonetheless, when Twitter suspended his account, other social networking channels became far more active in mobilization. As a result, Parler, among others, experienced an increase in traffic and also misinformation. Tweet A highlights that individuals are fully aware of such movements across far-right social media platforms, but more importantly, many are mobilizing against such false narratives.

2. The second theme identified within the #MAGA2020 dataset focuses on the consistent “stolen election” narrative. During his speech in Washington, D.C., Donald Trump stated, “*To use a favorite term that all of you people really came up with, we will stop the steal.*” As expected, the resonance and mobilization of this sentence permeated across the spectrum.

(A) “We won it by a lot. Stop stealing the election” (Score: 0.59, Tweeted on 1/6/2021).

(B) “You guys cant hide behind that statement anymore. What we saw was the perfect representation of. You psychos have been a stain on our country for years and now you are out. It is beautiful.” (Score: 0.51, Tweeted on 1/8/2021).

Tweet A’s resonance aligns with the support of the stolen election narrative. More specifically, the tweet reiterates a sentiment the Trump administration has mentioned since the election results in November. Using the same “we won it by a lot” not only echoes the former president’s own words but maintains the idea of an illegitimate election process. Conversely, tweet B’s opposition to the speech sentence illustrates how counter-mobilization occurs. The tweet carries a more complex message than just opposing the stolen election narrative. Indeed, it supports the election outcome by signaling “you guys are out” and the notion this period was a mark in American history.

3. The final theme observed within the #MAGA2020 dataset focuses on Mike Pence and his role in the electoral college vote count. During his speech, Trump stated, “*I hope so because if Mike Pence does the right thing, we win the election.*” The subsequent tweets represent the highest similarity scores that resonated exclusively in support of the statement.

(A) “Electoral College Vote Count - Watch Mike Pence make history and secure our republic for!” (Score: 0.54, Tweeted on 1/7/2021).

(B) “Come on MIKE were counting on you!” (Score: 0.53, Tweeted on 1/7/2021).

(C) “For the love of God and Country MIKE!! Grow some balls and do the right thing.” (Score: 0.50, Tweeted on 1/6/2021).

Tweet A and B overwhelmingly support the former president’s message that Mike Pence should “do the right thing” and not certify the electoral college count. This creates a misinformation problem that helps mobilize individuals who believe the message. Specifically, the vice president’s position over the electoral college is merely to preside over the Senate’s process but not intervene, which is outlined in the 12th Amendment. Tweet A, however, seems to expect the former vice president will somehow overturn the election and fall in line with Trump’s request. Tweet C, uses more forceful language and includes a quote with a historical, patriotic theme, “for god and country...” which was popularized by the radio call of the team leader of SEAL Team 6 in the Usama Bin Laden during a raid on 11 May 2011.

Additionally, the 1943 short film starring Ronald Reagan, “For God and Country,” depicts the story of army chaplains during the second World War. Tweet C demands Mike Pence overturn the election using volatile language connected to patriotic language. Threatening language and actions against the vice-president were observable and salient throughout that day.

## January 6 (Evening) Speech and Twitter

Hashtag: #trump2020

Theme: Stolen election

As expected, the speech given after the insurrection event on January 6 generated a large volume of resonance across the Twitter world. The theme of a stolen election was overwhelmingly identified across the #trump2020 dataset, which demonstrated salient resonance in support of the former president’s speech but also against the message. This sentence strongly resonated in our data as Trump exclaimed, “*It was a landslide election, and everyone knows it, especially the other side, but you have to go home now.*” The following are tweets in support of the message with the highest similarity scores.

(A) “THEY STOLE THE ELECTION BUT YOU GO HOME” (Score: 0.71, Tweeted on 1/7/2021).

(B) “is an old psyop to identify dangerous Theorists. It worked, people got whacked or had accidents. It’s over. The facts are steal of the” (Score: 0.61, Tweeted on 1/9/2021).

(C) “but on another level go home people” (Score: 0.60, Tweeted on 1/7/2021). (D) “Why we all voted for and you stole the election, you knew you didn’t have a chance in hell.” (Score: 0.60, Tweeted on 1/7/2021).

It is also essential to consider the idea of a stolen election was pushed by Trump’s re-election campaign early on and well-before the election. As a result, this idea was already in the minds of those in support of the former president. Tweets A and C underscore the notion of a stolen election and urge individuals at the Capitol to cease the violent response. B and D’s similarity scores demonstrate resonance but more specifically support the idea of a stolen election. Conversely, the sentence also generated opposition. The following tweets highlight the level of contradiction to the message.

(A) “It’s finally done. You’ve lost” (Score: 0.67, Tweeted on 1/7/2021).

(B) “You brainiacs forget that they just stop, once they are all counted...it never matters who is ahead, at any point other than when ALL the votes are counted & they just stop because there are simply no more to count. Come on simpleton!” (Score: 0.64, Tweeted on 1/6/2021).

(C) “..... I.T.’S TIME.. GAME OVER...” (Score: 0.61, Tweeted on 1/7/2021).

(D) “You’re already Fired Stop the mess” (Score: 0.60, Tweeted on 1/7/2021).

Tweets A through D acknowledges the election is complete and a new president has been elected. B underscores the fact that recounted votes all returned the same result in support of the new president. Overall, these high similarity tweets make it clear who the loser was. However, D asks that the former president step in and address the violent crowd of insurrectionists.

#MAGA2020

Theme: Dispersal, stolen election

1. Within the #MAGA2020 dataset, two glaring themes were identified. The first theme, which is in line with most of the data, addresses the notion of a stolen election. Even during the short speech given on the evening of the 6th, which aimed to reduce the violence, the former president reiterated, “*We had an election that was stolen from us.*” The following tweets outline the support for this message:

(A) “We won it by a lot. Stop stealing the election” (Score: 0.56, Tweeted on 1/6/2021).

(B) “It was ingenious when picked. He thereby forged a coalition & unified. Certifying the stolen election Pence now has broken this contract.” (Score: 0.50, Tweeted on 1/8/2021).

Tweet A solidifies the overarching theme of “the stolen election.” But, more importantly, the speech and the supporting tweet utilized “we” to establish othering. This was standard practice by the former president during his entire election campaign, political rallies while in office, and his re-election campaign. It is also important to note that othering is also observed across other state-level and county-level political systems. However, when we

consider the totality of the “stolen election” message, along with the consistent othering posture displayed over time, it is evident some individuals mobilized extra-politically.

Although lower in a similarity score, Tweet B adds another dimension to the stolen election theme. This message supplements the “stolen election” idea and focuses on the culpability of the former vice president to certify illegitimate results. Moreover, the tweet also exclaims that Pence broke a contract. While it is also documented that Trump demanded loyalty from his administration heads, the last portion of the tweet aligns with this framework.

2. The second theme focuses on dispersing violent crowds and evacuating the Capitol grounds. Hours after the insurrection and many pleas from various political figures, the former president finally addressed the violent mob. This sentence, “*But go home and go home at peace*” resonated within the Twitter world, and responses with higher similarity scores highlighted mixed sentiments.

- (A) “Screw screw, you incited this you piece of crap, just go away. Screw all you brainwashed, nut jobs.” (Score: 0.46, Tweeted on 1/7/2021).
- (B) “a message to and You let your lord down today due to your lack of follow-through. You just walked away. The streets of D.C. are now silent. The sun has set on DC. (Score: 0.45, Tweeted on 1/7/2021).
- (C) “I see all the ture patriotic Americans are going home before the police come and crack skulls.” (Score: 0.45, Tweeted on 1/7/2021).

Tweets A and C demonstrate discontent with the former president as the catalyst for the insurrections and the mob involved. Tweet A argues those involved were “brainwashed” into mobilizing for the outgoing president. From QAnon’s works, lines can be drawn to cultish behavior within such circles involving behavior modification. Tweet C is far more blatant in displaying their displeasure with the events, questioning the crowd’s patriotism, and hinting at cowardice when law enforcement began to regain control of the capitol grounds (McGahan, 2020; Badham, 2021; Rothschild, 2021). Conversely, the sentiment of Tweet B is mainly consistent with disappointment as it taps into the notion that the crowd’s inability to stay in the fight capitulated any chances to seize the momentum and overturn the election that day.

**Hashtag: #QAnon**

**Theme: Dispersal, stolen election**

Finally, the #QAnon dataset presents very similar themes as the #MAGA2020 dataset, where dispersal from the Capitol grounds and the idea of a stolen election remain salient. However, it is essential to note the higher similarity scores within this data demonstrate opposition rather than support of the speech.

1. The first theme focuses on the dispersal of insurrectionists from Capitol grounds. The sentence “*But go home and go*

*home at peace*” was instrumental in ending the violence on the Capitol grounds that day. However, unlike the #MAGA2020 data, which demonstrated more support for the spoken sentence, the higher similarity scores showed clear thematic opposition for the #QAnon data.

“I see all the true patriotic Americans are going home before the police come and crack skulls” (Score: 0.45, Tweeted on 1/7/2021).

This tweet was posted the next day and scored 0.45 in terms of similarity to the spoken sentence. Yet, it is evident from the message itself the author opposes the previous day’s events. Moreover, the language used defines the level of animosity and discontent against the perpetrators of the insurrection by calling them “true patriots” and, in some ways, cowards for not staying when the Capitol police were eventually reinforced.

2. The second theme focuses on the idea of a stolen election and the suspected casting of illegal votes. The former president argued, “*We had an election that was stolen from us.*” This sentence generated the following tweets with the highest similarity scores:

- (A) “Hey He used you to commit a coup! He TRIED to subvert DEMOCRACY! You THOUGHT you stormed for freedom, you stormed for a TREASONOUS COUP!!! HE PLAYED YOU!!!” (Score: 0.54, Tweeted on 1/8/2021).
- (B) “Hey, and folks: Is it starting to sink in that there never was a “plan”? This whole time, you got suckered.” (Score: 0.50, Tweeted on 1/9/2021).
- (C) “Where’s the evidence you promised! Is this like the electoral fraud “evidence?” Thus far all proffered (none by you) shows influencers and neo-nazis. Charges should be referred on you for inciting insurrection and obstruction of justice first!” (Score: 0.44, Tweeted on 1/8/2021).

Tweets A and C suggest the violent events that unfolded on January 6 were unlawful. Tweet A posted 2 days after the event, utilizes words such as coup and treason to cement the opposition to the “stolen election” idea. The tweet suggests the former president tricked or “played” those individuals into committing an insurrection more poignantly. Tweet C insists the “stolen election” narrative is unfounded and not supported by evidence of wrongdoing in the voting process. Similarly, the tweet charges that such conduct is unlawful and is punishable by law as an attempt to overthrow the government. Lastly, tweet C references neo-nazism (Nowell et al., 2017), which can be attributed to the abundance of far-right symbols observed within the insurrectionist crowd that included Confederacy flags, an assortment of far-right militia emblems such as the Oath Keepers, and Nazi symbols.

The January 6 evening speech has constellated with two themes—stolen election and dispersal. While the theme of stolen election was present in the earlier speech made at Trump’s rally on January 6, the theme of dispersal became more relevant after the January 6 (Evening) speech, in particular with #MAGA2020 and #QAnon.



**TABLE 2** | Summary of the findings.

	#trump2020	#MAGA2020	#QAnon
<b>January 4 speech</b>			
Mike Pence			
The greatest president			
Actionable support			
Critiques of Q			
<b>January 6 (Rally) speech</b>			
Media			
Stolen election			
Mike Pence			
<b>January 6 (evening) speech</b>			
Stolen election			
Dispersal			

Blue cells indicate a particular theme emerged in the datasets, while black cells indicate such a theme was not found in the datasets.

## DISCUSSION AND CONCLUSIONS

We combine offline key speech addresses comparing Twitter data leading up to the attack on the Capitol on January 6, 2021. We found links between online ERP and offline political rhetoric. In particular, offline political rhetoric contained in speech content was transposed contextually in online ERP.

The main findings of our study are summarized in **Table 2**. As themes were primarily identified using speech data, each speech contains a unique set of topics, while some themes recur throughout Trump's speech just before, during, and after the insurrection. Following the speech by Donald Trump on January 4, various hashtag datasets (#trump2020, #MAGA2020, #QAnon) emerged with a common subject of Mike Pence, topics which encouraged adherents of Trump and/or QAnon to post supportive tweets. January 6 (Rally) speech shows unified themes (e.g., media, illegal votes/stolen election, and Mike Pence) across all different hashtags. The "Mike Pence" theme appeared not only in the Tweet datasets concerning the January 4 speech, but its presence continued in the January 6 (Rally) speech. The theme of "stolen election" continues in all three hashtags regarding Trump's January 6 (evening) speech, while "dispersal" is emerging in the #MAGA2020 and #QAnon data.

These results confirm the importance of effective communicative efforts to mobilize individuals toward a political goal. Furthermore, the fact the same themes appear across various datasets and at different periods suggests political milieus were successfully developed and maintained throughout the 2020 campaign, which some studies have highlighted before (Krämer et al., 2021). Moreover, the themes unearthed by this study give credence to studies that highlight the effects of social media and online platforms consumption on political participation (Yamamoto et al., 2015) and the potential of increasing populist movements (KhosraviNik, 2018).

More specifically, this study highlights the importance of understanding the power of Twitter and any similar social media platforms as an expeditor and facilitator of ERP. The results also demonstrate the sincerity within the Twitter messages and

support of misinformation purported by QAnon conspiracies, which Trump regurgitated. The content similarity between the speeches and Twitter responses supports the consumption and propagation of misinformation across the online world, which ultimately manifests as offline political violence. Similar online themes and messages highlighted in this study were seen across the Capitol grounds and resulting in some vivid symbols like a makeshift noose.

Albeit some recent studies examine the events of January 6 (Perkins, 2021), or QAnon's conspiracy theories (Crews et al., 2021), the current study is arguably one of the earliest studies to explore the connection between QAnon, the January 6 insurrection, and political mobilization by using both online and offline corpus. More importantly, this research is a unique study that examines the link between Trump's speech and QAnon's influence on ERP online and across social media platforms in the context of the January 6 insurrection. This research innovatively uses "new" mixed methods of computational and qualitative analyses not common in terrorism, security studies, criminology, and sociology. In particular, the mixed methods were designed to combine computational methods of calculating a similarity between speech and large-scale tweets with thematic analysis to interpret underlying meanings and contexts that might not be feasible by only using the computational method.

This research is not without limitations. First, by exploring online and offline QAnon data patterns during the January 6 insurrection, this research—an exploratory study—provides an understanding of the phenomenon—qualitatively. Second, using human coders to identify and verify computer-assisted and compute-analyzed similarity scores between offline and online data provides a more nuanced context for each key sentence we included in our research; however, contextual information might not always be considered. Third, while SentenceTransformer is the state-of-the-art approach for obtaining a vector representation of a sentence, it is not perfect. Thus, our analytical framework and methodological approach helps to better interpret the text. Similarly, the advancement of the NLP enables us to identify more accurate "links" between offline speeches and online participation. Fourth, this study is primarily concerned with Twitter, one of the most popular public social media platforms, but focuses only on one media source. A more comprehensive study of offline speeches and online participation on other social media platforms can be conducted in the future.

This research provides implications for understanding offline and online political mobilization and the influence of online platforms. Using large-scale social media data to analyze offline-online political mobilization during the January 6 insurrection, this research hopes to advance the existing study of the online impact transferred into offline political violence and radicalization. Sentence-level similarity provides an innovative way of comparing offline political speech with online social media resonance in this study's tweets. This research can facilitate further exploration into how online messaging used on social media platforms are utilized by extremist and conspiracy groups (e.g., 4chan, Gab.ai, Parler) to accelerate individual and/or group real-world actions. Improved understanding of the dynamics and influences

between offline and online messaging can play a critical role in policy development and possibly, countering violent extremism strategies.

## DATA AVAILABILITY STATEMENT

The data without user identifiers that support the conclusions of this article will be made available by the authors upon request.

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## AUTHOR CONTRIBUTIONS

CL, JM, and JC contributed to conception and design of the study and wrote the first draft of the manuscript. JA and HK performed the data collection and the first part of the analysis, while CL, JM, and JC performed the second part of the analysis. All authors wrote sections of the manuscript and contributed to manuscript revision, read, and approved the submitted version.

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## APPENDIX

**TABLE 1A |** Descriptive statistics: similarity scores comparing offline speech and tweets (Full dataset).

Twitter hashtag	Offline speech								
	January 4			January 6, Rally			January 6, Evening		
	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min
#trump2020	<b>0.535</b>	0.823	0.346	<b>0.543</b>	0.804	0.312	<b>0.594</b>	0.804	0.488
#MAGA2020	<b>0.461</b>	0.662	0.268	<b>0.471</b>	0.665	0.271	<b>0.511</b>	0.595	0.434
#QAnon	<b>0.438</b>	0.680	0.281	<b>0.472</b>	0.707	0.318	<b>0.512</b>	0.597	0.388
#WWG1WGA	0.438	0.709	0.252	0.454	0.719	0.266	0.491	0.601	0.387
#War	0.416	0.709	0.249	0.422	0.664	0.265	0.453	0.520	0.366
#savethechild	0.411	0.681	0.256	0.383	0.587	0.219	0.428	0.520	0.310
#SaveOurChild	0.398	0.701	0.239	0.373	0.569	0.211	0.420	0.498	0.292
#Trumpinsurre	0.394	0.637	0.226	0.450	0.666	0.252	0.498	0.615	0.390
#Q	0.392	0.576	0.258	0.408	0.571	0.267	0.433	0.504	0.346
#QAnons	0.392	0.668	0.219	0.446	0.790	0.272	0.486	0.635	0.376
#thestorm	0.320	0.503	0.168	0.353	0.592	0.202	0.389	0.486	0.302
#Greatawakening	0.298	0.451	0.170	0.311	0.437	0.167	0.332	0.387	0.277
#StormIsUponU	0.215	0.426	0.061	0.309	0.451	0.149	0.336	0.410	0.282
#neonrevolt	0.124	0.241	0.013	0.136	0.235	0.036	0.146	0.223	0.088
#Commiebast	0.121	0.355	-0.101	0.135	0.313	-0.035	0.144	0.286	0.039

*This table is organized by the mean frequencies of January 4. This paper is only focused on the first three hashtags datasets (in yellow).*



## OPEN ACCESS

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## SPECIALTY SECTION

This article was submitted to  
Gender, Sex and Sexualities,  
a section of the journal  
Frontiers in Sociology

RECEIVED 11 June 2022

ACCEPTED 04 July 2022

PUBLISHED 28 July 2022

## CITATION

Dayrit JCS, Albao BT and Cleofas JV  
(2022) Savvy and woke: Gender, digital  
profile, social media competence, and  
political participation in gender issues  
among young Filipino netizens.  
*Front. Sociol.* 7:966878.  
doi: 10.3389/fsoc.2022.966878

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# Savvy and woke: Gender, digital profile, social media competence, and political participation in gender issues among young Filipino netizens

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Social media has become a viable platform for political participation in issues related to gender, especially among the youth. Evidence suggests that gender and sexual identities, digital access, and skills foster political participation in social media. This study sought to determine the predictive relationship of gender, digital profile, and social media competence with social media political participation in gender issues (SMPP-GI) among young Filipino netizens through the lenses of social identity theory and resource model of political participation. A total of 1,090 college netizens aged 18–30 years old participated in this cross-sectional study. An online survey was used to collect data. The respondents reported low to moderate levels of SMPP-GI. Females and non-cisheterosexual respondents report higher scores in certain types of SMPP-GI. Respondents using more social media sites have higher levels of latent and counter engagement SMPP-GI. Among the four domains of social media competence, content generation significantly predicted all types of SMPP-GI, while content interpretation and anticipatory reflection were significantly linked with at least one type of engagement.

## KEYWORDS

gender, political participation, social media, social media competence, youth activism

## Introduction

Like other aspects and events of life in the contemporary world, social movements toward social justice have also found their way into cyberspace. With around five billion people using the internet worldwide (Statista Research Department, 2021a), the pervasiveness of social media has shaped citizens' political participation regarding contemporary social issues (Murthy, 2018). We suspect that social media political participation (SMPP) would have increased during the time of the 2019 novel

coronavirus (COVID-19) pandemic, when lockdowns, and social distancing restrictions have shifted most social interactions online, causing an increased user growth rate in social media across the globe in 2020 (Statista Research Department, 2021a). A wealth of research has indicated the positive influence of social media use on political participation (Dimitrova and Bystrom, 2013; Kim and Khang, 2014; Boulianne, 2015; Lee and Xenos, 2020), especially among the youth (Ida and Saud, 2020). In terms of focus and context of SMPP, studies have examined generalized forms of online political participation (Shehzad et al., 2021), and specific issues such as election (Dimitrova and Bystrom, 2013; Yang and DeHart, 2016), racism (Ince et al., 2017) and gender inequality (Quan-Haase et al., 2021).

Our present study specifically focuses on social media participation in gender issues (SMPP-GI) in the Philippines. Based on the 2020–2021 summary report on the state of Sustainable Development Goals (SDGs) related to gender equality, the country appears to be in a good position among its Southeast Asian (ASEAN) counterparts. The Philippines is among the countries with a lower proportion of women involved in domestic violence, child marriage, and gender disparities in public positions (U. N. Women, 2021). However, the current regime has been characterized by misogynistic posturing, chauvinist populism, and sexist remarks by President Rodrigo Duterte, which could potentially undermine developmental efforts to achieve a more gender-equal nation (Go, 2019; Parmanand, 2020). The Philippines dropped from the 5th spot in 2013 to 16th in 2020 against other countries in the Global Gender Gap Index (Mercurio, 2019). This may be attributed to the lack of prioritization of women, children, and gender policies during the Duterte regime (Abad, 2020).

Social media has become a viable platform for Filipinos in terms of political participation in gender issues. The Philippines has been dubbed the “Social Media Capital of the World,” where an average internet user spends almost 4 h per day on social media during the pandemic year 2020 (Ichimura, 2020). Around 30 percent of these users are within the youth bracket (Statista Research Department, 2021b). Feminist movements have emerged on social media such as #BabaeAko (I am a Woman), which was a push back against President Duterte’s comment against a woman occupying the Chief Justice position (Haynes, 2018), and #HijaAko (I am a Daughter), which was a counter-movement against the prevalent victim-blaming of women who were raped and sexually harassed (Foundation for Media Alternatives, 2020). Likewise, lesbian, gay, bisexual, trans, queer, plus (LGBTQ+) movements have found an alternative space online, especially during the COVID-19 pandemic. Instead of in-person June Pride Marches in 2020 and 2021, LGBTQ+ groups have implemented social media-mediated campaigns, events, lectures, and performances for gender equality and LGBTQ+ rights (Adel, 2021).

Evidence has underscored the power of social media political participation in promoting offline political participation (Gil de Zúñiga et al., 2012; Strömbäck et al., 2018) and stimulating positive social change toward gender equality (Seibicke, 2017). Given the current status of gender and development in the Philippines, we assert the relevance of examining the factors influencing SMPP-GI among Filipino youth, who are currently underrepresented in this area of study. We appealed to the perspectives of social identity theory and resource model in identifying possible factors that influence SMPP-GI. This present study aims to test the predictive relationship of gender, digital profile, and social media competence, with social media political participation in gender issues among young Filipino netizens.

## Literature review and theoretical frameworks

### Conceptualizing social media political participation

Van Deth (2014) characterizes political participation as any of the following voluntary, non-professional activities: activities within the locus of politics, government, or state; activities that target politics, social problems, or communities; or non-political activities that have political motivations. A meta-analysis of earlier social-media-related studies (Boulianne, 2015) considered campaigning, protesting, civic engagement, and the combinations of any of the three as political participation. Other scholars argued that more passive behaviors such as slacktivism should be considered SMPP (Piat, 2019; Madison and Klang, 2020). In recent years, political participation on social media had been attributed to “wokeness,” which refers to awareness of and expressions against social injustices (Allen, 2020). Being woke (or “*mulat*” in Filipino) has been linked to positive (e.g., sociopolitical awareness; Caldera, 2018) and negative attributes (e.g., conflict-inducing and being un-Christian; Strachan, 2021). For this present study, we intend to cover more diverse forms of behaviors to signify SMPP, unlike many of the previous studies that examined only particular behaviors related to SMPP (Boulianne, 2015). Hence, we appeal to the social media political participation framework developed by Waeterloos et al. (2021), who forwarded a more encompassing understanding of SMPP, including passive and active forms of political engagement. Waeterloos et al. (2021) suggested four types of SMPP. First is *latent engagement*, which refers to the consumption of information on social or political issues, as demonstrated in previous studies (Gil de Zúñiga et al., 2012; Yamamoto and Nah, 2018). The second is *counter engagement*, which includes performing uncivil behaviors, such as misusing private information (George and Leidner, 2019) and negative commenting (Khan et al., 2019), for social and political causes.

The third is *follower engagement*, which involves participation and promotion of the content and activities of other social media users, also coined as *metavoicing* (Albu and Etter, 2018; George and Leidner, 2019). Fourth is *expressive engagement*, which refers to the social media actions and posts that were instigated by users themselves—constructs commonly explored by recent research on gender-related SMPP (Ciszek, 2017; Quan-Haase et al., 2021). Taking these dimensions together, this framework for SMPP would be able to cater to both positive and negative aspects of wokeness.

## Social identity theory, gender, and SMPP

Social identity theory posits that an aspect of an individual's self-concept is constituted by one's membership in groups, and such identity motivates political behavior (Kalin and Sambanis, 2018). Social media provides affordances for political participation and activism such as page following, group membership, and hashtags that allow people to signify their social identity (Zappavigna, 2015; George and Leidner, 2019). Individuals desire to improve their group's standing in society by maintaining the group's highly valued attributes and/or fighting to rectify the group's negative image (Tajfel and Turner, 1979). The dominance of patriarchy and cisheterosexism in society breeds conditions that marginalize women and lesbian, gay, bisexual, trans, queer, and other non-cisheterosexual (LGBTQ+) identifying persons (Cravens, 2020; Fitzgerald and Grossman, 2020). These conditions can stimulate political participation among members of these oppressed gender categories, which in turn, enhance the group's collective identity, and strengthen the members' sense of personal identity (Vestergren et al., 2017; Cravens, 2020; Foster et al., 2021). Since our present study examines SMPP specific to gender issues, we chose gender as our first explanatory variable of interest. The current body of research on the gendered differences in online political participation points more to males (Vochocová et al., 2016; Quaranta and Dotti Sani, 2018; Ahmed and Madrid-Morales, 2021) than females (Yang and DeHart, 2016). However, the context of the political participation measured in these studies was not specific to gender-issues. Studies that did examine SMPP related to gender issues did not, however, attempt to quantitatively differentiate females from males, and/or cisheterosexual identities from LGBTQ+ counterparts (Jones and Brewster, 2017; Foster et al., 2021; Quan-Haase et al., 2021; Thompson and Turnbull-Dugarte, 2021). Our first research objective attempts to test how SMPP-GI is influenced by gender, which covers sex assigned at birth, sexual orientation, and gender identity. Hence, we hypothesize:

***H<sub>1</sub>: Females and respondents who identify as LGBTQ+ will demonstrate higher SMPP-GI.***

## Resource model, digital profile, social media competence and SMPP

The resource model of political participation states that the extent of political participation is shaped by one's available resources, which may include time, money, and other assets (Brady et al., 1995). In the era of new media, access to social media has become an invaluable resource for various forms of political participation. Access to tangible digital tools is a prerequisite to maximizing the affordances of social media to facilitate political participation. We coined these prerequisites to SMPP as *digital profile*, which includes having active accounts on one or more social media sites (Effing et al., 2011; Abdu et al., 2017; Albu and Etter, 2018), ownership of one or more gadgets (Schradi, 2011; Kim et al., 2016; Lin and Chiang, 2017), and internet connection (Wang et al., 2018; Shehzad et al., 2021). For the second research objective of the study, we will determine how the respondents' digital profile influences their SMPP-GI. Therefore, we hypothesize:

***H<sub>2</sub>: Respondents who are active on more social media sites, own more gadgets, and have access to better internet quality will demonstrate higher SMPP-GI.***

The resource model also suggests that aside from tangible tools, skills are also resources that contribute to political participation (Brady et al., 1995). In the online realm, Internet skills have been indicated as facilitators of youth political participation (Wang et al., 2018). Various measures of social media ability have been linked to better political participation, such as social media self-efficacy (Omotayo and Folorunso, 2020; Hoffmann and Lutz, 2021), presumption, and information literacy (Yamamoto and Nah, 2018; Tugtekin and Koc, 2020; Yamamoto et al., 2020) and creative expressions (Yu and Oh, 2018; Zhu et al., 2019). For this present study, we operationalized SMPP-related skills and abilities as *social media competence* (Zhu et al., 2020), which includes four domains, such as technical usability, content interpretation, content generation, and anticipatory reflection. These attributes are aspects of being what is colloquially known as "social media savvy" (Miller, 2018). For our third research objective, we will test the predictive relationship between social media competence and SMPP-GI. Hence, hypothesize:

***H<sub>3</sub>: Respondents with higher social media competence will demonstrate higher SMPP-GI.***

## Methods

### Study design and participants

This study utilized a cross-sectional design. The target participants are Filipino netizens who are aged 18–30 years old, which is the bracket considered as "youth" by the National Youth Commission (2021). We were interested in college-based



Filipino youth as the sample for this study because despite being a large sector of the population, they face cultural barriers to offline political participation in the country; hence, the viability of social media as their main platform for political engagement (International IDEA, 2020). A total of 1,090 conveniently sampled respondents qualified for the study. Majority of the respondents are 21 years old ( $\mu = 20.108 \pm 1.802$ ), from North and Central Luzon ( $n = 550$ , 50.459%), and enrolled in STEM degree programs ( $n = 382$ , 35.046%).

## Data collection and ethical considerations

The protocol of the study adhered to the principles of the Declaration of Helsinki and has been granted administrative clearance for the ethical conduct of research by the host department of the University of the researchers. Our data was collected through a Google Forms survey. Upon approval, we created a Facebook Page where we posted the survey link, together with a poster that indicated a message of invitation and inclusion criteria. For greater reach, we boosted the post and targeted the accounts geolocated in the Philippines and with the age range of interest. The survey collected responses during the first 3 weeks of August 2021. Informed consent was secured digitally. The first page of the online survey presented the details of the study, the voluntary nature of participation, and the rights of the respondents. Privacy and confidentiality were observed in handling the data. The access to the digital data was restricted to us, the researchers.

## Measures

For this study, the predictor variables of interest are gender, digital profile, and social media competence, while the outcome variable is social media political participation in gender issues.

### Gender

Two sub-variables were used to describe the gender of the respondents. First, they were asked about their sex assigned at birth (male = 1, female = 0). Second, they were asked about their sexual orientation and gender identity (SOGI). For sexual orientation, they were asked whether they identify as heterosexual, lesbian, gay, bisexual, asexual, queer, and others. For gender identity, they were asked whether they identify as cisgender or transgender. A “prefer not to disclose” option was provided for both sexual orientation and gender identity. For purposes of categorizing SOGI for inferential analysis, those who identify as both cisgender and heterosexual were grouped as “cisheterosexual”; those who identify as lesbian, gay, bisexual

transgender, queer, and/or other non-cisheterosexual identities were grouped as “LGBTQ+”; and those who indicated “prefer not to disclose” in either of sexual orientation or gender identity were grouped as “non-disclosed SOGI.”

### Digital profile

Three sub-variables were measured to characterize the digital profile of the respondents. Through a checklist, they were asked about the different social media sites they used (e.g., Facebook, Twitter, Instagram, etc.), and the different gadgets they owned (e.g., smartphones, laptops, tablets, etc.). An option for “others” was provided for each. The ticks for both indicators were added; the sum of checked items, plus those which were included in “others,” were the values for each. The third sub-variable is internet quality, wherein they were asked to rate from 1 (very bad) to 7 (very good).

### Social media competency scale for college students

Developed by Zhu et al. (2020), SMCS-CS is a 28-item scale that measures social media competence through four domains: technical usability, content interpretation, content generation, and anticipatory reflection. It is measured through a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). This scale has been found to have an acceptable factor structure and internal consistency (Cronbach alpha = 0.97). A sample item is “I can develop original, visual and textual social media content.”

### Social media political participation scale

Developed by Waeterloos et al. (2021), SMPP is a 21-item scale that measures four types of political engagement: latent, counter, follower, and expressive engagement, each with acceptable Cronbach alpha values (0.80–0.91). The respondent answers through a six-point scale (1 = never; 5 = very often), with the time reference of within the last 6 months. The sociopolitical issue can be specified on the items of this scale. To examine the specific context of the outcome variable of the study present study, “political issues” were replaced with “gender issues,” thus our coining of SMPP-GI. This scale has an acceptable factor structure, item convergent validity, and overall internal consistency (Cronbach alpha = 0.88). A sample item is “I commented on something concerning gender issues in a way it was publicly visible.”

## Data analysis procedure

The dataset was rid of unqualified entries and coded accordingly before formal analysis. Mean and standard deviation was used to describe continuous variables and frequency and percentage for categorical variables. Multiple linear regression analysis (enter method) was used to determine the significant predictors of the four types of SMPP-GI. Bootstrapping ( $n = 5,000$ ) was used to address possible non-normality (Pek et al., 2018). The significance level was set at 0.05 level. JASP version 0.14.1 was used for the statistical analyses.

## Results

### Descriptive results

Table 1 shows the descriptive results of the key variables in the study. Majority of the respondents ( $N = 1,090$ ) are female ( $n = 663$ , 60.826%) and cisheterosexual ( $n = 825$ , 75.688%). There are 187 (17.156%) respondents who identify as LGBTQ+, while 78 (7.156%) did not disclose their sexual and/or gender identities. In terms of digital profile, the respondents used an average of four different social media sites ( $\mu = 4.017 \pm 1.676$ ), two gadgets ( $\mu = 1.979 \pm 0.952$ ), and reported having moderate level quality of internet ( $\mu = 4.747 \pm 1.198$  out of 7).

The respondents of the study reported high social media competence in terms of technical usability ( $\mu = 4.012 \pm 0.827$ ), content interpretation ( $\mu = 4.091 \pm 0.832$ ), and anticipatory reflection ( $\mu = 3.791 \pm 0.657$ ). On the other hand, the respondents demonstrated moderate competence in terms of content generation ( $\mu = 3.629 \pm 0.815$ ).

In terms of SMPP-GI, the respondents reported low levels of counter ( $\mu = 1.353 \pm 0.732$ ), follower ( $\mu = 1.952 \pm 1.004$ ), and expressive ( $\mu = 2.002 \pm 0.934$ ) engagement in gender issues. Meanwhile, the respondents exhibited moderate levels of latent engagement ( $3.095 \pm 0.904$ ).

### Multiple linear regression results

Table 2 shows the results of the multiple linear regression tests to determine the significant gender, digital, and social media competence predictors of social media participation in gender issues. Four bootstrapped models ( $n = 5,000$ ) were tested, one for each type of SMPP-GI. Model 1 significantly predicted latent engagement ( $F = 27.263$ ,  $p < 0.001$ ) and explained 20.3% of its variance. Specifically, variables that significantly predicted latent engagement were sex ( $B = -0.278$ ,  $p < 0.001$ ), LGBTQ+ identity ( $B = 0.628$ ,  $p < 0.001$ ), non-disclosed SOGI identity ( $B = 0.417$ ,  $p < 0.001$ ),

TABLE 1 Gender, digital profile, social media competence, and political participation in gender issues ( $N = 1,090$ )<sup>a</sup>.

Variables	<i>n</i> /mean	%/ <i>SD</i>
<b>Sex assigned at birth</b>		
Male	427	39.174%
Female	663	60.826%
<b>Sexual orientation and gender identity</b>		
Cisheterosexual	825	75.688%
LGBTQ+	187	17.156%
Non-disclosed	78	7.156%
<b>Number of social media sites used</b>	4.017	1.676
<b>Number of gadgets owned</b>	1.979	0.952
<b>Internet quality rating</b>	4.747	1.198
<b>Social media competence<sup>b</sup></b>		
Technical usability	4.012	0.827
Content interpretation	4.091	0.823
Content generation	3.629	0.815
Anticipatory reflection	3.791	0.657
<b>Social media political participation in gender issues<sup>b</sup></b>		
Latent engagement	3.095	0.904
Counter engagement	1.353	0.732
Follower engagement	1.952	1.004
Expressive engagement	2.002	0.934

<sup>a</sup>Frequency and percentage for categorical variables, Mean and SD for continuous variables.

<sup>b</sup>Low = 1.00–2.33, Moderate = 2.34–3.66, High = 3.67–5.00.

number of social media sites used ( $B = 0.059$ ,  $p < 0.001$ ), and content generation ( $B = 0.223$ ,  $p < 0.001$ ). Female respondents, with LGBTQ+ or non-disclosed SOGI identity, who use more social media sites and have higher scores in content generation demonstrate higher levels of latent engagement SMPP-GI.

Counter engagement was significantly predicted by Model 2 ( $F = 8.134$ ,  $p < 0.001$ ) and explained 7% of its variance. Determinants that yielded significant estimates include non-disclosed SOGI identity ( $B = 0.182$ ,  $p = 0.027$ ), number of social media sites ( $B = -0.029$ ,  $p = 0.041$ ), content interpretation ( $B = -0.143$ ,  $p = 0.006$ ), content generation ( $B = 0.237$ ,  $p < 0.001$ ) and anticipatory reflection ( $B = -0.150$ ,  $p = 0.005$ ). Higher counter engagement levels were observed among respondents with non-disclosed SOGI identity, lesser social media sites, content interpretation and anticipatory reflection, and higher content generation.

Model 3 significantly predicted follower engagement ( $F = 15.861$ ,  $p < 0.001$ ) and explained 12.8% of its variance. Significant predictors include sex ( $B = -0.187$ ,  $p < 0.002$ ), LGBTQ+ identity ( $B = 0.565$ ,  $p < 0.001$ ), non-disclosed SOGI identity ( $B = 0.327$ ,  $p = 0.004$ ), and content generation ( $B = 0.402$ ,  $p < 0.001$ ). Females with LGBTQ+ and/or non-disclosed

TABLE 2 Multiple regression tests for predictors of SMPP-GI ( $N = 1,090$ ).

Predictors	Model 1			Model 2			Model 3			Model 4		
	Latent engagement			Counter engagement			Follower engagement			Expressive engagement		
	$r^2 = 0.203, F = 27.263^{***}$			$r^2 = 0.070, F = 8.134^{***}$			$r^2 = 0.128, F = 15.861^{***}$			$r^2 = 0.120, F = 14.710^{***}$		
	B	SE	<i>p</i>	B	SE	<i>p</i>	B	SE	<i>p</i>	B	SE	<i>p</i>
<b>Gender</b>												
Sex assigned at birth (male = 1)	−0.278 <sup>***</sup>	0.050	<0.001	0.043	0.046	0.333	−0.187 <sup>**</sup>	0.059	0.002	−0.094	0.057	0.090
<b>Sexual orientation &amp; gender identity</b>												
(LGBTQ+ = 1)	0.628 <sup>***</sup>	0.073	<0.001	−0.086	0.058	0.151	0.565 <sup>***</sup>	0.093	<0.001	0.489 <sup>***</sup>	0.080	<0.001
(Non-Disclosed = 1)	0.417 <sup>***</sup>	0.084	<0.001	0.182 <sup>*</sup>	0.095	0.027	0.327 <sup>**</sup>	0.113	0.004	0.324 <sup>**</sup>	0.108	0.002
<b>Digital profile</b>												
Number of social media sites	0.059 <sup>***</sup>	0.017	<0.001	−0.029 <sup>*</sup>	0.014	0.041	0.019	0.018	0.296	0.016	0.017	0.349
Number of gadgets owned	0.030	0.029	0.300	0.032	0.027	0.190	0.046	0.035	0.167	0.044	0.031	0.169
Internet quality	0.025	0.023	0.248	−0.019	0.020	0.304	−0.014	0.026	0.578	−0.027	0.025	0.261
<b>Social media competence</b>												
Technical Usability	−0.058	0.056	0.312	−0.088	0.045	0.065	−0.125	0.063	0.050	−0.107	0.060	0.075
Content Interpretation	0.033	0.062	0.583	−0.143 <sup>**</sup>	0.053	0.006	−0.056	0.071	0.429	−0.065	0.067	0.306
Content Generation	0.223 <sup>***</sup>	0.052	<0.001	0.237 <sup>***</sup>	0.040	<0.001	0.402 <sup>***</sup>	0.052	<0.001	0.398 <sup>***</sup>	0.054	<0.001
Anticipatory Reflection	0.081	0.064	0.186	−0.150 <sup>**</sup>	0.045	0.005	−0.104	0.068	0.146	−0.161 <sup>*</sup>	0.066	0.016

Bootstrapping based on 5,000 replicates, <sup>\*</sup> $p < 0.05$ , <sup>\*\*</sup> $p < 0.01$ , <sup>\*\*\*</sup> $p < 0.001$ .

SOGI identities with higher scores in content generation demonstrated significantly higher follower engagement.

Finally, Model 4 significantly predicted expressive engagement ( $F = 14.710$ ,  $p < 0.001$ ) and explained 12% of its variance. Specific variables that yielded significant estimates include LGBTQ+ identity ( $B = 0.489$ ,  $p < 0.001$ ), non-disclosed SOGI identity ( $B = 0.324$ ,  $p = 0.002$ ), content generation ( $B = 0.398$ ,  $p < 0.001$ ), and anticipatory reflection ( $B = -0.161$ ,  $p = 0.016$ ). Expressive engagement was observed to be higher among respondents with LGBTQ+ and non-disclosed SOGI identities who have higher levels of content generation, and lower levels of anticipatory reflection.

## Discussion

Our present study sought to determine the predictive relationship between gender, digital profile, and social media competence, and SMPP-GI among young Filipino netizens. Our investigation contributes to online political participation scholarship by testing the potential of social identity and resource perspectives in understanding and predicting SMPP. To our knowledge, this is the first large-scale study conducted in ASEAN that quantitatively examined gender-related political participation among youth in the context of social media, and competencies related to its use. Our findings suggest that college netizens have low to moderate levels of SMPP-GI. Similarly, Bawan et al. (2017) had previously noted low online political and governance participation in a sample of Filipino professional students.

## Gender and SMPP-GI

Our findings suggest that females demonstrate higher latent and follower engagement SMPP-GI, which confirms previous research that women politically engage in gender issues to enact their gender identity (Chante-Tanksley, 2019; Foster et al., 2021). Meanwhile, LGBTQ+ individuals report higher latent, follower, and expressive engagement SMPP-GI. The present results show that social identity truly fosters political engagement, and supports earlier literature that demonstrates immersive involvement in various social media movements among females and/or LGBTQI+, who are detrimentally affected by patriarchal and cisheterosexist structures that maintain gender inequality (Shevtsova, 2017; Stornaiuolo and Thomas, 2017; Liao, 2019; Hou, 2020). These partially confirm the social identity hypothesis on SMPP-GI.

Interestingly, those who chose not to disclose their sexual and/or gender identities demonstrated higher levels in all

types of SMPP-GI, which contrasts with previous evidence demonstrating the active engagement of “out” individuals in gender-related activism (Swank and Fahs, 2013). This finding highlights the nuances of how social identity is enacted in political participation, which may not necessarily involve publicizing one’s identity. Concealment of one’s potentially marginalized SOGI may be a strategy to protect oneself from further stigmatization and othering (Goffman, 2009) when one engages in political activities online. Non-disclosure can influence the reporting of socially polarizing behaviors, as noted in previous research (e.g., Warner et al., 2020).

## Digital profile and SMPP-GI

Our resource model hypothesis specific to digital profile was partially confirmed, as only one of the indicators yielded significance. Number of social media sites used predicted certain types of SMPP-GI. Specifically, college netizens who use more social media sites report higher levels of latent engagement. This finding emphasizes how the increasingly multi-platform nature of activism can enhance visibility and information consumption of social issues, confirming previous evidence among civil society organizations (Albu and Etter, 2018).

On the other hand, our current findings suggest that college netizens who use lesser social media sites are more likely to practice counter engagement in the name of gender issues. Since the nature and audience of each social media site differ (Albu and Etter, 2018), being in only one site can increase the likelihood of forming an “echo chamber” type social network, which has been noted to exhibit destructive behaviors, such as rumor spreading (Choi et al., 2020).

## Social media competence and SMPP-GI

Our hypothesis on social media competence as a resource that facilitates SMPP-GI is partially confirmed as well, with some SMCS-CS domains demonstrating a significant relationship with certain types of political participation. Among the four domains of social media competence, content generation emerged to be a significant positive predictor of all types of SMPP-GI. Previous research has indicated the positive correlation of functional and critical prosumption to democratic tendencies in social media (Tugtekin and Koc, 2020). Many studies on social media political participation on various issues have highlighted the importance of content creation to engage more people in the cause (Yamamoto and Nah, 2018; Yu and Oh, 2018; Zhu et al., 2019; Tugtekin and Koc, 2020; Yamamoto et al., 2020).



Our findings suggest that anticipatory reflection negatively predicted counter engagement SMPP-GI. Related to this, [Zhu et al. \(2021\)](#) suggests that individuals with lower anticipatory reflection have lesser information society responsibility, which could be linked to counter engagement behaviors. Moreover, it is interesting to note that in our present study, college netizens with high anticipatory reflection are less likely to perform expressive engagement SMPP-GI. We suspect that these students who have increased anticipatory reflection, despite their passion for gender issues, could foresee the possible social consequences of being publicly vocal regarding these issues, such as backlash and loss of friendships, especially from those who have differing opinions about gender-related rights. This fear can make them reluctant to openly participating, as indicated in previous studies ([Gustafsson, 2012](#); [Chan, 2018](#)).

Lastly, college netizens who report lower levels of content interpretation have higher counter engagement SMPP-GI. Content interpretation has been linked to information literacy ([Zhu et al., 2021](#)). Related to this, [Tugtekin and Koc \(2020\)](#) have suggested that individuals with decreased critical consumption of social media have lower democratic tendencies, which we suspect may result in acts of counter engagement.

## Strengths and limitations of the study

Compared to earlier online political participation studies done among students in the Philippines (e.g., [Bawan et al., 2017](#)), our study has a larger sample size and a wider reach. However, it must be cautiously noted that ours is a convenient sample, and Visayas and Mindanao Island groups (South of the Philippines) are not adequately represented. Moreover, the cross-sectional design of the study may decrease the generalizability of the results. Some of the models we tested had quite modest explanatory power (7–20%). It must be noted that political participation is fluid and influenced by the gender issues that are existing during the time of data collection. Future studies can replicate the study on a randomized, representative sample, and include other possible explanatory variables based on other perspectives of political participation. Despite these limitations, our study remains to be the first of its kind in the country and can help stimulate further investigation on SMPP regarding gender and other social issues.

## Conclusions and implications

Our study highlights the current state of social media political participation in the context of gender issues among the Filipino youth, which we have noted to be low to moderate. Youths who are members of gender-disadvantaged categories, such as females and LGBTQ+, demonstrate higher engagement

in certain types of SMPP-GI. Truly, the personal is political, and those who are affected by gender-based concerns are more likely to be involved in movements related to them. We also highlight the nuanced nature of social identity in the context of political participation, wherein privatizing and concealing one's gender and/or sexual identity (arguably to protect oneself from stigmatization) can potentially promote higher political engagement in gender issues, as seen in the case of our respondents with non-disclosed SOGI. Hence, designing and implementing programs to elicit effective political participation for gender-related causes among the youth must consider all members across the gender and sexuality spectrum, and include initiatives to protect those who choose not to disclose their identities while they meaningfully engage in these online movements. Future studies can further explore these potential intertwined roles of gender identity and performativity in SMPP-GI.

This present study also identified specific digital affordances (number of active social media sites) and social media competencies that can serve as resources to facilitate SMPP-GI. Content generation emerged to be an important competence that bolsters all types of political engagement. We recommend the development of initiatives that build the capability of the youth in creating engaging content for different social media sites. Future studies can explore the influence of specific content generated on SMPP-GI. Also, campaigns to improve information literacy toward better anticipatory reflection and content interpretation may be implemented to translate counter engagement to less abrasive forms of political engagement. We hope the findings inform stakeholders in social media to promote a more critical, informative, inclusive, and healthier woke culture that advocates gender equality.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

The study protocol was granted administrative clearance for ethical conduct of research by the Department of Sociology and Behavioral Sciences of DLSU (2021-08-09). The respondents provided their written informed consent to participate in this study. National and local policies on data privacy were observed during data collection and storage.

## Author contributions

JD and BA: conceptualization, methodology, project administration, formal analysis, and writing—original draft.

JC: conceptualization, formal analysis, and writing—final draft. All authors contributed to the article and approved the submitted version.

## Funding

Open access publication will be paid through the publication grant of De La Salle University—Science Foundation.

## Acknowledgments

We would like to thank the college netizens who participated in this survey research.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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RECEIVED 13 July 2023

ACCEPTED 16 November 2023

PUBLISHED 06 December 2023

## CITATION

Zimmermann D, Klee A and Kaspar K (2023)  
Political news on Instagram: influencer versus  
traditional magazine and the role of their  
expertise in consumers' credibility perceptions  
and news engagement.  
*Front. Psychol.* 14:1257994.  
doi: 10.3389/fpsyg.2023.1257994

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# Political news on Instagram: influencer versus traditional magazine and the role of their expertise in consumers' credibility perceptions and news engagement

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**Introduction:** Social networking sites (SNS) are increasingly used by consumers to read and share political news. In this context, Instagram plays an important role due to its prevalence and visual characteristics. However, previous research has highlighted that consumers fail to identify the source of online news, though source characteristics were shown to be vital for news credibility perceptions. Nevertheless, research on whether and which source characteristics have an influence on Instagram consumers' credibility perceptions and news engagement intentions are lacking. The present study addresses this empirical gap by investigating potential effects of source expertise and source type on source credibility, message credibility, news engagement intentions, and personal involvement regarding political news on Instagram.

**Method:** We randomly presented participants with political news posts from one of four sources, either the Instagram representation of a fictional news magazine or influencer with or without political expertise. Participants assessed the perceived credibility of the source and the news, their news engagement intentions, and personal involvement.

**Results:** We analyzed data from 416 participants. Results showed significant main effects of source expertise on each of the dependent variables. Those were shown to be indirect effects through personal involvement. There were hardly any effects of source type.

**Discussion:** These results provide new insights into the role of source expertise on credibility perceptions and news engagement intentions, and provide insights into the comparison between influencers and Instagram representations of traditional news magazines. Theoretical implications for future research and practical implications for content creators, users, and SNS platforms are discussed.

## KEYWORDS

social networking sites, political news, Instagram, expertise, credibility, news engagement

## 1 Introduction

Despite being originally developed for social interaction, social networking sites (SNS) such as Instagram, YouTube, and Facebook contain a large amount of political communication and information that affects consumers' political opinions and perspectives (Johnson and Kaye, 2014). SNS have been shown to affect news engagement, i.e., reading and sharing news with

others (Lee and Ma, 2012; Ma et al., 2014). Furthermore, the consumption of news on SNS can affect political knowledge and political participation (Park and Kaye, 2018). In Germany, for example, SNS are already used as primary news sources with similar frequency as online news magazines (Hölig et al., 2020). However, the immense amount of accessible information online may overwhelm consumers with the selection of information and the assessment of its credibility, which in turn further increases the amount of online misinformation (Talwar et al., 2019; Laato et al., 2020; Apuke and Omar, 2021). One key problem in this regard is the lack of professional gatekeepers who verify, arrange, and filter online information before it gets published (e.g., Metzger, 2007; Johnson and Kaye, 2014), as anyone can spread and post news on SNS. Therefore, a check of the source and the producer's qualifications are proposed as a central factor for the evaluation of credibility of online information (Metzger, 2007), which is a vital criterion related to the behavior and attitudes of consumers regarding a message (Wathen and Burkell, 2002; Rieh and Danielson, 2007).

One of the most important sources of (political) news thereby are SNS representations of traditional news media (e.g., magazine, newspaper, TV news, radio). Consequently, traditional news media use SNS as a platform to distribute their news and (sometimes) redirect consumers from SNS to their own websites by providing links to them (Hille and Bakker, 2013). Indeed, traditional newspapers' SNS representations were found to have a strong effect on news distribution and consumer engagement (Welbers and Opgenhaffen, 2018). The SNS platform Instagram plays a special role in this context nowadays, as it is used especially by young people to share messages, show their own opinions, and draw the attention of other peers due to the simplicity of sharing posts and reaching their own peer group (Wang, 2021). Moreover, and analogously, Vázquez-Herrero et al. (2019) showed that the number of Instagram profiles of traditional news outlets is steadily increasing and adapting their messages to the specific format of the platform and to consumers' preferences (Vázquez-Herrero et al., 2019). Nevertheless, news consumption has so far been studied mainly for platforms such as online blogs (e.g., Yuan et al., 2019) and Facebook (e.g., Meinert and Krämer, 2020), while there is little research, especially experimental studies, on news consumption on Instagram. The present study closes this gap by examining news perceptions and engagement intentions in the context of Instagram.

Importantly, not only traditional news media use SNS to distribute news. So-called *political influencers* also gain an increasingly important role as a new generation of gatekeepers on SNS, as they report and share political information increasingly often and use their social reach to engage with politics and current affairs (Bause, 2021; Fischer et al., 2022). In fact, political influencers were shown to have a positive effect on consumers' response rate and the political agenda (Curiel, 2020) as well as on political interest (Schmuck et al., 2022). Though, critically, not only influencers with topic-related expertise distribute political information, but also those who have not (Trepte and Scherer, 2010). Therefore, the source's expertise, defined as "the level of skill or knowledge of the communicator individuals perceive" (Yuan et al., 2019, p. 272), is one of the key characteristics that influences whether people trust a producer's message or not (Pavličková, 2013). Expertise is a central heuristic that is used to make judgments about the credibility of a message's source (Metzger et al., 2010; Sterrett et al., 2019; Meinert and Krämer, 2022). This source credibility is in turn an

important factor in assessing the credibility of the message (Kang et al., 2011) and engaging with it (Keib and Wojdyski, 2019). The assessment of source credibility through its expertise might be particularly present on SNS where news is often consumed as snacks, i.e., rather incidentally, occasionally, quickly, and only in parts (Bergström and Jervelycke Belfrage, 2018; Keib et al., 2021). This forces consumers to assess the credibility of a news message in a short time by using heuristic ways of information processing (Flanagin and Metzger, 2000; Metzger et al., 2010), indicating that the perceived expertise of a source is a crucial factor in the credibility assessment of news messages on SNS.

Critically, though, consumers seem to have difficulties with recognizing the source and utilizing it to evaluate news on SNS. Pearson (2021) defines the problem of "*source blindness*" (p. 1182) on SNS as design features reducing the attention to the source, because they are the same for every source, meaning that the specific contextual and structural properties of SNS can lead to general source blindness. This suggests that the source and its characteristics, such as expertise, may not be considered appropriately when evaluating news messages on SNS. However, with respect to political news on SNS, it is still an empirically open question whether and, if so, to what extent consumers consider the source when evaluating their news messages. The present study tackles this question by examining the potential effects of the source type of political news distributed via SNS (i.e., SNS representation of traditional news magazine vs. influencer) and the topic-related expertise of the source (i.e., with political expertise vs. without political expertise) on consumers' perception of source credibility and message credibility, as well as on their engagement intentions with the news.

## 2 Literature review

In the following, based on theory and empirical evidence, we outline the role of source expertise and source type for perceived source credibility, message credibility, and news engagement intentions. Possible mediating roles of credibility and personal involvement are also outlined. The hypotheses of the present study are then derived accordingly.

### 2.1 The credibility of source and news message

In general, credibility is an essential criterion related to the behavior and attitudes of consumers regarding a message and its source, which has been examined in different disciplines like information science, communication, and psychology (Wathen and Burkell, 2002; Rieh and Danielson, 2007). A differentiation is thereby drawn between source credibility and message credibility. While message credibility is defined as "an individual's judgment of the veracity of the content of communication" (Appelman and Sundar, 2016, p. 63), source credibility is referred to as the credibility of the message's source (Pornpitakpan, 2004). In general, message credibility results from the interaction of characteristics of the source, characteristics of the message itself (e.g., content, plausibility, quality), and characteristics of the receiver (e.g., social background, beliefs, knowledge) (Wathen and Burkell, 2002). Accordingly, source

credibility and message credibility are shown to be positively connected. The message is perceived as more credible if the source itself is perceived as credible as well (Kang et al., 2011), and a source with high credibility was found to be more persuasive and therefore more likely to influence a person's attitudes and behavior (for a review, see Pornpitakpan, 2004). Furthermore, Keib and Wojdyski (2019) showed that consumers of TV news on Facebook were more willing to engage with this news (i.e., sharing, clicking through, and liking the news), when the news was perceived as credible. Thus, source credibility and message credibility seem to be important factors for consumers' news engagement intentions in the context of SNS.

## 2.2 The role of source expertise in assessing credibility and inducing news engagement

The perceived expertise of a source plays an important role in the evaluation of source credibility and message credibility. On the one hand, according to the Source Credibility Theory (cf. Lowry et al., 2014), expertise is one of the most important factors influencing the persuasiveness and perceived usefulness of a message. On the other hand, expertise also was identified as one of the underlining concepts in the evaluation of the source credibility (Ohanian, 1990). The role of the expertise of news sources on SNS for their credibility and their content has mainly been examined in the context of influencer marketing (e.g., Xiao et al., 2018; Lou and Yuan, 2019; Lee and Kim, 2020). For example, the more a source was perceived as knowledgeable or competent – e.g., through a brand name in the context of marketing – the higher the credibility of the source and, ultimately, the message were rated online (Choi and Stvilia, 2015; Jenkins et al., 2020). In the context of political news, the source's expertise is essential for the assessment of the credibility of SNS in general (for an overview, see Metzger and Flanagin, 2015). So, for example, Eastin (2001) showed that online health messages were perceived as more credible when the source of the message had high expertise and when it was knowledgeable about the content. Yuan et al. (2019) also found positive effects of the author's expertise on perceived message credibility in online blog posts. Meinert and Krämer (2020) showed that the expertise of politicians positively influenced the perceived credibility of their political statements on Facebook. These results from related research areas suggest that source expertise plays an important role in assessing source credibility and message credibility. Though, the role of perceived expertise of sources on SNS in assessing their credibility and the credibility of the messages they share has not, to our knowledge, been studied in the context of political news on SNS. This study fills this gap by examining the effect of the source's political expertise on the evaluation of perceived source credibility and perceived news message credibility. Additionally, due to previously found connections between message credibility and news engagement intentions (Keib and Wojdyski, 2019) we also explored a potential effect of source expertise on consumers' news engagement intentions:

*H1: In the context of Instagram, there is an effect of source expertise (with political expertise vs. without political expertise) on perceived source credibility (H1a), perceived message credibility (H1b), and consumers' news engagement intentions (H1c).*

## 2.3 The role of source type in assessing credibility and inducing news engagement

In addition to source expertise, there are indications that the source type may affect the perception of source credibility and, in turn, news engagement intentions. Traditional media including magazines, newspapers, TV, radio, and their online counterparts, is still perceived as more credible as a source compared to original SNS sources (Johnson and Kaye, 2014), and traditional media is more trusted than SNS, despite the prevalence of the latter (Li and Zhang, 2018). Accordingly, media credibility was only positively associated with the role conception of professional journalists, but not with the conception of citizen journalists, which emphasizes the importance of professionalism in journalism to enhance credibility (Nah and Chung, 2012). Furthermore, adolescents reported to perceive traditional news as more objective, credible, serious, and professional compared to political YouTube videos of influencers, whereas the latter were perceived as more subjective and manipulative, thus reflecting a higher trust in more traditional news media (Zimmermann et al., 2020). In addition, news articles shared by news organizations were perceived as more credible than the same articles shared by their SNS friends (Tandoc, 2019). Besalú and Pont-Sorribes (2021) also found that news presented in a traditional news format (digital newspaper and digital television) was perceived as more credible than the same news presented in a SNS format (Facebook and WhatsApp). Importantly, this also led to higher willingness to share the news presented in the more traditional format. So, previous studies suggest that the evaluation of source credibility may depend on the type of source sharing the news, namely more traditional news formats are still perceived as more credible than news distributed via SNS. Whether this also applies to representations of traditional news media on SNS remains to be shown. The present study thus tackled this issue by examining the effect of source type (SNS representation of traditional news magazine vs. influencer) on perceived source credibility, perceived message credibility, and news engagement intention in the context of Instagram:

*H2: In the context of Instagram, there is an effect of source type (SNS representation of traditional news magazine vs. influencer) on perceived source credibility (H2a), perceived message credibility (H2b), and consumers' news engagement intentions (H2c).*

## 2.4 The role of source expertise and source type in inducing personal involvement

Because individual people perceive information and its credibility differently, for example, because of different motivations (Armstrong and McAdams, 2009), the attributes of the receiver also are a crucial factor for the assessment of credibility (Wathen and Burkell, 2002). In the context of information processing and perceived credibility, dual-processing theories such as the Elaboration Likelihood Model (Petty and Cacioppo, 1986) and the Heuristic Systematic Model (Chaiken, 1980; Todorov et al., 2002) especially focus on the person's involvement. The models propose that people who are capable and motivated to analyze content more thoroughly (i.e., focus on

arguments, quality, and content) do so because they believe that their opinion has significant consequences (Chaiken, 1980; Petty and Cacioppo, 1986; Metzger, 2007). Low involvement, on the other hand, causes people to evaluate content less systematically, i.e., focus more on the likeability or reputation of the source (Chaiken, 1980; Petty and Cacioppo, 1986; Metzger, 2007; Kang et al., 2011; Xiao et al., 2018).

Importantly, previous research found positive associations between the perceived credibility of the source of information, the perceived credibility of the information itself, the person's involvement, and behavioral intentions (i.e., purchase decisions, electronic word of mouth) mainly in the context of marketing (e.g., Kautsar et al., 2012; Xiao et al., 2018). However, previous studies have rather focused on the moderating role of involvement by comparing the effects of source characteristics such as expertise (Wiedmann and Von Mettenheim, 2020) or source type (Chiu and Ho, 2023) on the effectiveness of influencer marketing for different levels of product involvement. The questions of whether consumer's involvement itself is also influenced by source characteristics such as source expertise and source type have been neglected. Ziegele et al. (2017) already showed that news context factors such as news value affect consumer's involvement in a news article. Thus, we transfer this account to news on Instagram by examining effects of source expertise and source type on consumers' involvement in political news. We extended H1 and H2 accordingly with the following additional expectations:

*H1d:* In the context of Instagram, there is an effect of source expertise (with political expertise vs. without political expertise) on consumers' involvement in news messages.

*H2d:* In the context of Instagram, there is an effect of source type (SNS representation of traditional news magazine vs. influencer) on consumers' involvement in news messages.

## 2.5 Potential interactions between source expertise and source type

As outlined above, there are good reasons to assume that source expertise and source type each have an effect in the context news messages distributed via SNS. In addition to these main effects, the impact of expertise may depend on the source type. Especially in the case of influencers, the role of expertise in assessing credibility could be even more incisive, as not only influencers who know the specific fields share information, but also those who have little knowledge about it (Trepte and Scherer, 2010). In contrast, more traditional media are rather seen as credible and professional *per se* (Zimmermann et al., 2020). Thus, perceived source credibility, perceived message credibility, consumers' news engagement intentions, and their involvement in news messages may be more dependent on expertise as a heuristic criterion in case of SNS influencers compared to the SNS representations of more traditional news outlets. Thus, we examined a possible interaction effect between source expertise and source type on those dependent variables:

*H3:* In the context of Instagram, there is an interaction effect between source expertise and source type on perceived source

credibility (H3a), perceived message credibility (H3b), consumers' news engagement intentions (H3c), and consumers' involvement in news messages (H3d).

## 2.6 The mediating role of perceived credibility and personal involvement on news engagement

Finally, credibility and involvement also seem to potentially mediate effects between news context factors and news engagement intentions. For example, Curry and Stroud (2021) found that the perception of the credibility of a news organization mediated the effect of journalistic transparency on news engagement intentions. Jiang et al. (2020) showed partial mediation effects of message credibility for the effect of news' framing on consumer's viewing behavior regarding health messages headlines. At last, indirect effects of the news value on the willingness to reply to a comment to a news article via the cognitive involvement with that news article could be found (Ziegele et al., 2017). Thus, we hypothesize that if there is an effect of source expertise and source type on news engagement intentions, there are indirect effects via perceived source credibility, perceived message credibility, and personal involvement (H4):

*H4:* If there are effects of source expertise and source type on news engagement intentions, these are indirect effects via perceived source credibility, perceived message credibility, and consumers' involvement.

Since we do not manipulate the mediators experimentally and since a specific order of a causal effect cannot be derived from current theory and empirical findings, we include the mediator variables as equivalent parallel mediators rather than sequential mediators in the model, avoiding an arbitrary and guessed order, as proposed by Hayes (2012). To conclude, Figure 1 provides a graphical overview of the research model and all hypotheses of the present study.

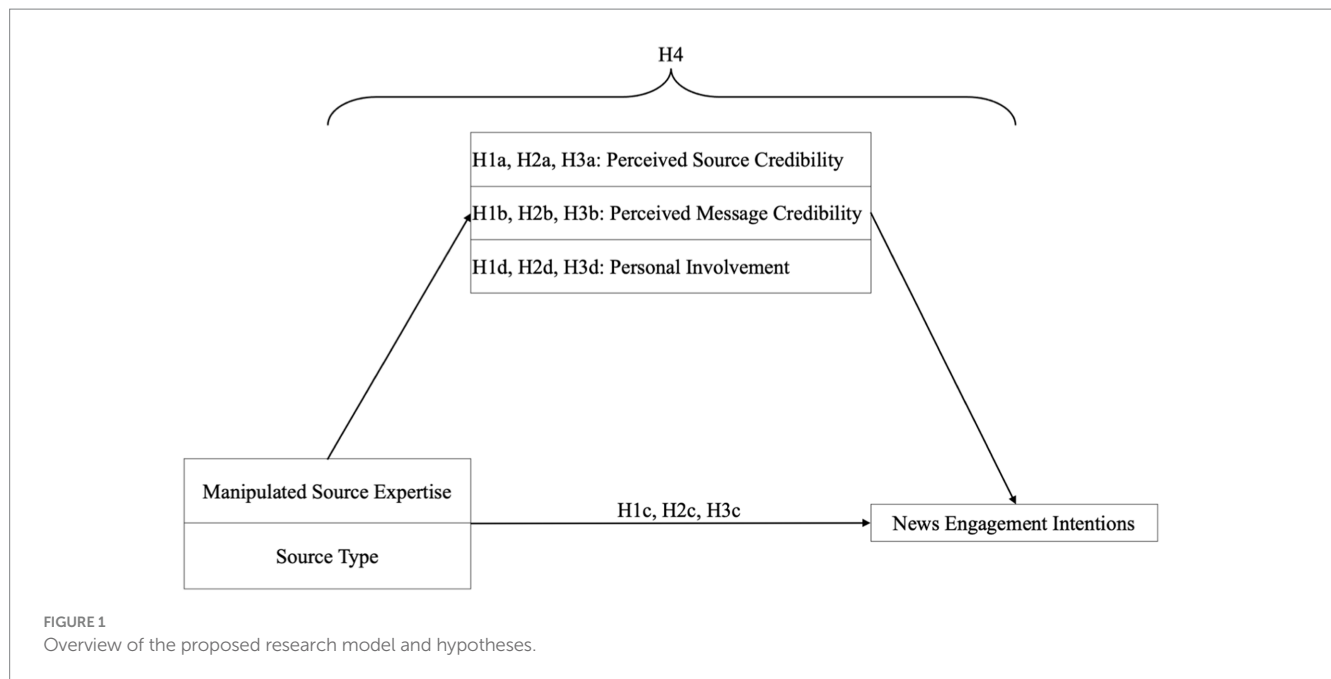
## 3 Methods

### 3.1 Sample

We implemented an online experiment in German language with the software Unipark (Tivian, 2017). Participants were recruited via social media, flyers, and email distribution lists of various German universities. The minimum age required for participation was 18 years, and all participants gave informed consent. No personal identifying data was collected, and we offered no incentives for participation.

An *a priori* power analysis was conducted via G\*Power 3.1 (Faul et al., 2009) to assess the required minimum sample size regarding the targeted 2 (manipulated source expertise: with political expertise vs. without political expertise)  $\times$  2 (source type: SNS representation of traditional news magazine vs. influencer) ANOVA based on a medium effect ( $f=0.25$ ), a significance level of  $\alpha=0.05$ , and a test power of 0.95. The minimum sample size was  $n=210$ . A sample of 431 participants took part in this online experiment. We excluded 14 participants because they paused the experiment in the mid-term or had an





implausibly long completion time, which both counteracted the experimental manipulation, and one participant was excluded as they were under the age of 18. So, the data of 416 participants were finally included in the analyses (75.2% female, 23.8% male, 1.0% diverse,  $M_{\text{age}} = 29.72$ ,  $SD_{\text{age}} = 12.09$ ; 75.5% having an own Instagram account). The most mentioned highest academic qualifications achieved by the participants were general matriculation standard (Abitur) (35.1%) and a bachelor's degree (32.0%), followed by a master's degree (25.5%), vocational training (6.7%), modern secondary school certificate (Realschule) (0.5%), and general secondary school certificate (Hauptschule) (0.2%).

## 3.2 Procedure

After providing informed consent, participants were randomly assigned to one of the following four experimental conditions by the software: (1) magazine with political expertise ( $n = 100$ ), (2) magazine without political expertise ( $n = 102$ ), (3) influencer with political expertise ( $n = 108$ ), and (4) influencer without political expertise ( $n = 106$ ). We delivered a short description of the SNS Instagram. Then, we explained that the Instagram profile “TONI” has created news posts about political topics which should now be evaluated to get a better idea of the impressions potential subscribers get of TONI and the socio-political Instagram posts. Depending on the experimental condition, TONI was introduced as either (1) a news magazine that reports daily online on current political events and keeps its followers updated on political news, (2) a fitness magazine that reports daily online on current fitness and exercise trends and keeps its followers updated on fitness news, (3) a political influencer who reports daily online on current political events and keeps their followers up to date on political news, or (4) a fitness influencer who reports daily online on current fitness and workout trends and keeps their followers up to date on fitness news. We then informed the participants that they would see the profile and the three different

news posts, which were identical in all four conditions. We explained that these would be displayed for 70 s each and would proceed automatically. We also asked the participants to look at TONI's profile and the Instagram posts as carefully as possible, as questions about TONI, the news posts, and the topic itself would be asked afterward (all instructions can be found in the [Supplementary Information File](#)).

Afterward, the Instagram profile and the three political news posts were automatically presented to the participants for 70 s each. Source credibility, message credibility, news engagement intentions, and personal involvement served as dependent variables. Accordingly, the participants gave their evaluation of the perceived profile's (source) credibility, they rated the perceived message credibility, their news engagement intentions, and their personal involvement. Each dependent variable was assessed as a summative evaluation after all three news posts had been read.

As media trust is a strong predictor of credibility judgments for political information (Kim and Johnson, 2009) and knowledge about a topic influences the processing of content (Lucassen et al., 2013), the present study also considered participants' prior topic-related knowledge (self-assessment) and social media trust as covariates. Finally, participants indicated their demographics and were dismissed.

## 3.3 Materials

### 3.3.1 Profiles

We created four different profiles of the fictitious magazine or influencer TONI, respectively, via the smartphone app Instagram. Both the magazine and the influencer had their non-working link to a respective website to increase the authenticity of their profile (cf. Johnson and Wiedenbeck, 2009). The profile's look was based on existing German magazines and influencers for news and fitness topics on Instagram. They included a neutral profile picture which was the same for all four experimental conditions. Likewise, the total number of posts, followers, and following

people were held constant. A plausible number within the range of a micro-influencer (up to 99 thousand followers) was chosen as these make up the largest group of social media influencers (Ruiz-Gomez, 2019). This number was same across all conditions and participants. The profiles indicated whether they had political expertise or not: First, the profile description hinted toward a focus either on politics or fitness. Second, the “highlight stories” were visible on the outline of the profile and included topics like “climate” and “national election” for the political profile, and “strength training” and “yoga” for the fitness profile. Third, the profile’s previous nine posts were shown at the bottom of the profile overview. We additionally created these previous posts which all included a headline and a corresponding image. For the political profile, the posts presented current political topics in Germany such as “Measures against COVID-19,” “The national election,” and “Digitalisation in schools.” These posts were the same for the influencer and the news magazine with political expertise. For the profiles without political expertise, we presented posts about fitness and workouts such as “Healthy nutrition,” “How to reach a perfect beach body,” and “Fitness studio alternatives.” These posts were identical for the influencer and the news magazine. We presented screenshots of these Instagram profiles to the participants. Figure 2 shows the schematic layout of these profiles. The Instagram profile thereby was the first page of a total of four Instagram pages shown. The participants received one of four Instagram profiles analog to the experimental condition they were assigned, which they viewed for 70 s. After these 70 s, they automatically moved on to the news posts.

### 3.3.2 Targets (political news posts)

We created a total of three news posts on socio-political topics based on actual news and news articles that were up-to-date in Germany at the time of the study. These posts included the topics of an unconditional basic income, children’s rights in the Basic Law, and unemployment benefits. The news posts each consisted of a corresponding image, a headline, the news text, and four keywords in the form of hashtags. We presented screenshots of these Instagram posts to the participants. Figure 3 shows the schematic layout of these news posts. After seeing the Instagram profile, the participants received all three news posts one after the other, which they viewed for 70 s each. The switch between the news posts was automatic.

### 3.3.3 Pre-study

Beforehand, we tested the assumption that the profiles and news posts could be assigned as intended to the topics of politics or fitness, respectively. Therefore, nine participants from the same population, and who did not take part in the main study, rated each Instagram profile and news post on a 5-point scale (from 1 = “not at all” to 5 = “very much”) regarding the extent to which it could be assigned to eleven different categories (e.g., travel & holidays, food & cooking, politics & business, sports & fitness). The results showed that all profiles and news posts were assigned to the intended categories ( $M = 5.00$ ,  $SD = 0$  for the respective categories). In addition, the average time it took the participants in the pre-test to view the posts and the profiles was 70 s. Therefore, we chose this period as presentation time of the profiles and political news posts in the main study.

## 3.4 Measures

Detailed descriptive statistics for each of the following dependent variables and covariates, as well as the Cronbach’s  $\alpha$  of the respective scales, can be found in Table 1.

### 3.4.1 Manipulation check

To ensure that profiles with political expertise are also perceived as such, we assessed the perceived expertise using the expertise subscale of Ohanian’s (1990) Source Credibility Scale. This subscale consists of a total of five bipolar word pairs (not an expert – expert, inexperienced – experienced, unknowledgeable – knowledgeable, unqualified – qualified, unskilled – skilled) which were rated on a 7-point scale ranging from 1 to 7 (Cronbach’s  $\alpha = 0.926$ ). We computed the arithmetic mean score across the five ratings to obtain a single score to be used in the analyses.

### 3.4.2 Perceived source credibility

We measured perceived source credibility of the Instagram profiles in terms of perceived trustworthiness, as it is one of the underlying concepts of source credibility besides of expertise (Ohanian, 1990; Ismagilova et al., 2020). We used the trustworthiness subscale of the Source Credibility Scale by Ohanian (1990). This subscale consists of five bipolar word pairs (undependable – dependable, dishonest – honest, unreliable – reliable, insincere – sincere, untrustworthy – trustworthy) which were rated on a 7-point scale ranging from 1 to 7. The arithmetic mean across the five scores was calculated as a single score to be included in the analyses.

### 3.4.3 Perceived message credibility

To measure consumers’ perception of message credibility, we adapted the message credibility scale created by Appelman and Sundar (2016). Participants indicated how well the adjectives “accurate,” “authentic,” and “believable” describe the political news posts they just read. All items were rated on a 7-point scale ranging from 1 (“describes it very poorly”) to 7 (“describes it very well”). We computed the arithmetic mean score across the three ratings to obtain a single score to be used in the analyses.

### 3.4.4 News engagement intentions

We operationalized participants’ intention to engage with news by means of three different facets: anticipated news engagement, present news sharing intention, and sharing intention of future news from TONI.

To assess anticipated news engagement, we adapted the anticipated news engagement scale by Scacco and Muddiman (2020). Participants indicated how much they agreed with the statements that they could imagine reading the articles, giving the articles a ‘like’ on Instagram, leaving a comment in the comment section, talking to someone about the articles, and paying a small fee for the full article (i.e., “I could imagine leaving a comment in the comment section of the posts”). All five items were rated on a 5-point scale ranging from 1 (“do not agree at all”) to 5 (“agree very much”). We calculated the mean score across the five ratings which we then used in the analyses.

To assess participants’ present news sharing intention, we adopted a single item by Bobkowski (2015). We asked participants “how likely would it be for you to share the Instagram posts you just saw from TONI on the topic of politics with others via social media.” Participants

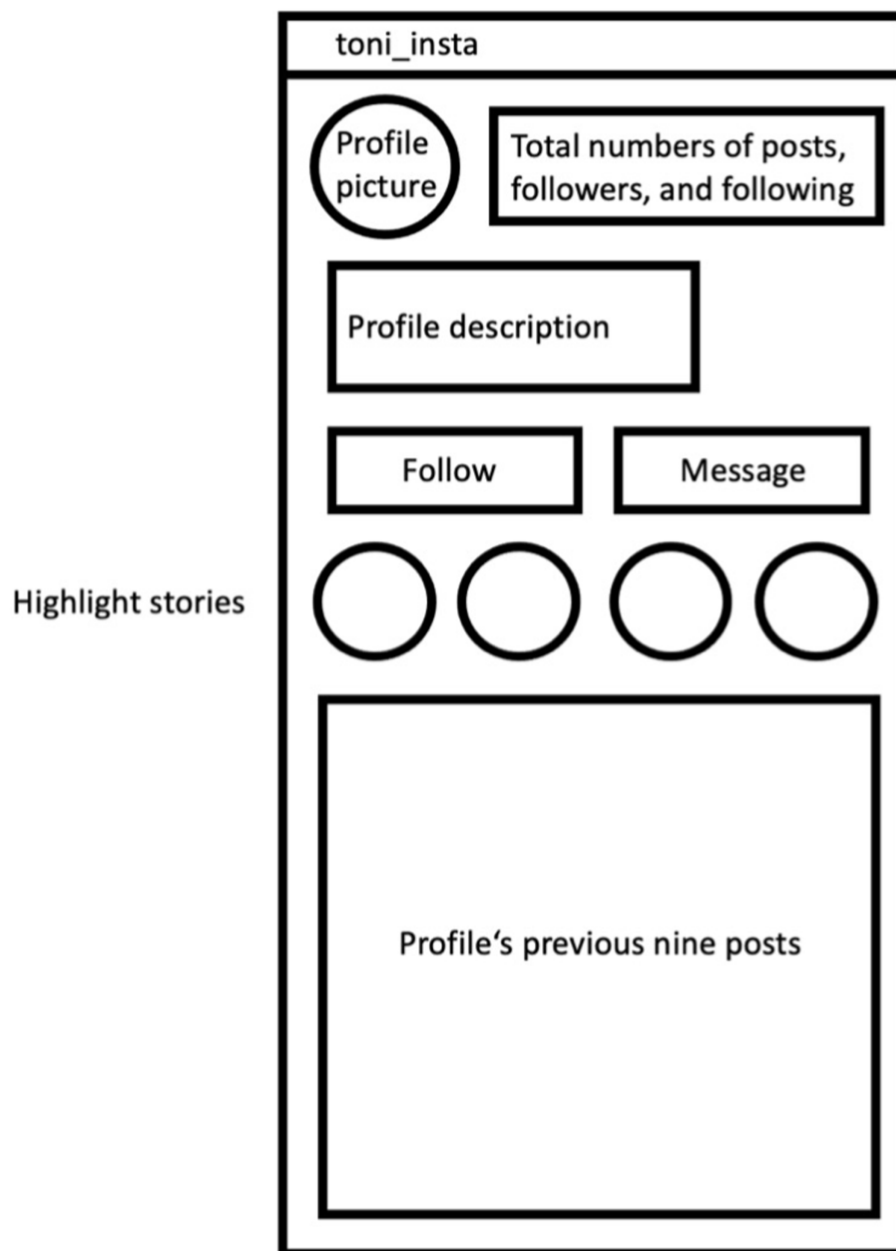


FIGURE 2

Schematic illustration of the presented Instagram profiles of the news source. The participants received one of four Instagram profiles according to the experimental condition they were assigned to. It was displayed for 70 s before showing the three Instagram news posts.

indicated the likelihood on a 7-point scale ranging from 1 (“very unlikely”) to 7 (“very likely”).

To assess participants’ future news sharing intention, another single item was created based on [Lee and Ma \(2012\)](#). We asked participants “how likely would it be for you to share future Instagram by TONI on the topic of politics with others via social media.” Participants indicated the likelihood on a 7-point scale ranging from 1 (“very unlikely”) to 7 (“very likely”).

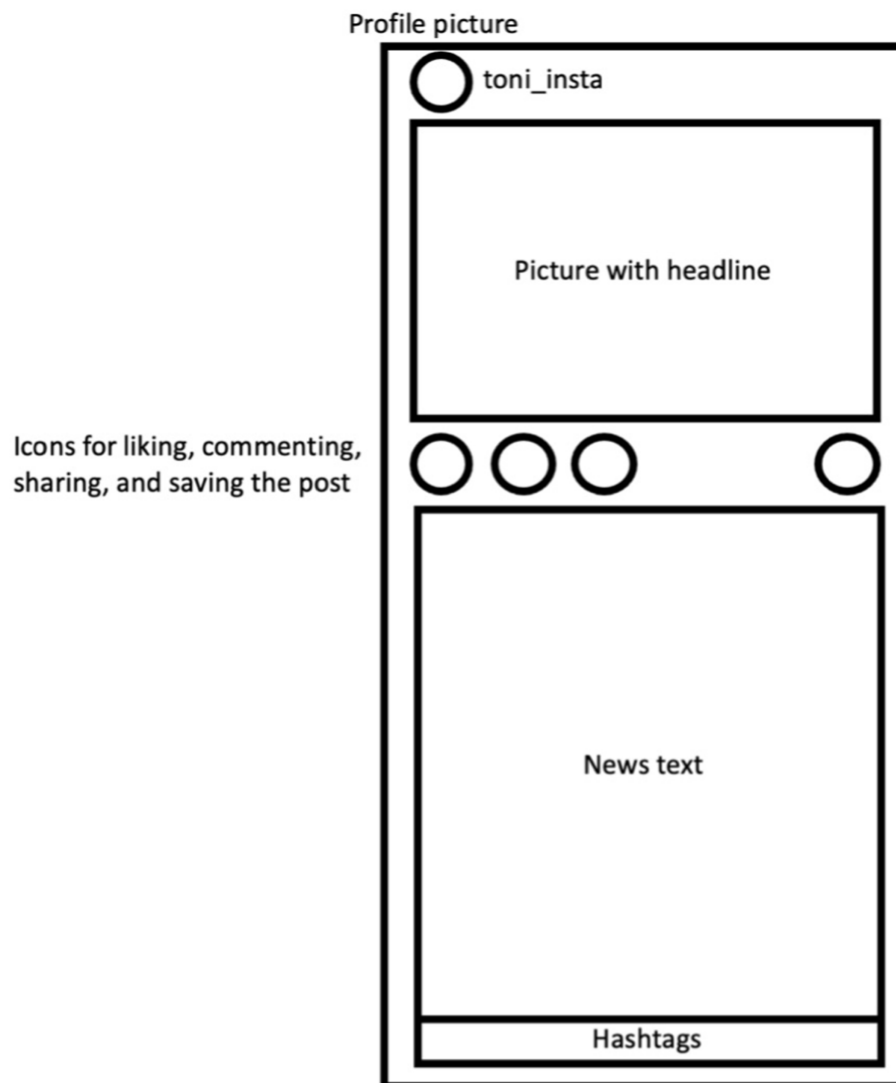
### 3.4.5 Personal involvement

To measure participants’ involvement with the news posts, we used the revision of the personal involvement scale by [Zaichkowsky](#)

(1994). Participants rated the news posts by means of ten bipolar adjective pairs (unimportant – important, boring – interesting, relevant – irrelevant, exciting – unexciting, means nothing – means a lot to me, unappealing – appealing, mundane – fascinating, worthless – valuable, uninvolved – involving, not needed – needed) on a 7-point scale ranging from 1 to 7. The mean score across these items served as dependent variables in the analyses.

### 3.4.6 Covariates

We captured self-assessed prior knowledge about politics by using a modified version of the subjective knowledge scale by [Flynn and Goldsmith \(1999\)](#). Participants indicated how much they agreed with



**FIGURE 3**  
Schematic illustration of the presented Instagram posts with identical layout in all four experimental conditions.

the following statements: “I know pretty much about politics”; “I do not feel very knowledgeable about politics”; “Among my circle of friends, I’m one of the ‘experts’ on politics”; and “When it comes to politics, I really do not know a lot.” All items were rated on a 7-point scale ranging from 1 (“do not agree at all”) to 7 (“agree very much”). The arithmetic mean score across the four items was used as single score in the analyses.

In addition, we assessed participants’ general reliance on social media for political use. Based on previous studies on credibility on social media and surveys about political information-seeking behavior (Johnson and Kaye, 2014, 2016; Sterrett et al., 2019; Hölig et al., 2020), we asked the participants if they agree with the following two statements: “I often read political news on social media, e.g., on Facebook, Instagram, etc.” and “I rely on the political news that I find on social media.” Both items were rated on a 5-point Likert-like scale ranging from 1 (“do not agree at all”) to 5 (“agree very much”). We computed the mean score across the two items and used it as dependent variable in the analyses.

### 3.5 Analyses

We ran all analyses using SPSS 28. All analyses were conducted with and without the covariates of political knowledge and social media reliance. Due to methodological reasons like the danger of Type 1 error inflation (Wang et al., 2017) and inadequate modeling when testing for interactions (Yzerbyt et al., 2004), and as covariates are not part of the main model we postulated, we focus on reporting and discussing the findings of the analyses without covariates. For consistency, the results of the main analyses (ANCOVAs and tests for indirect effects) with covariates can be found in the [Supplementary Tables S2, S3](#). Importantly, adding the covariates did not change any of the main results reported in the next sections.

To perform the manipulation check, we calculated a *t*-test for independent samples with manipulated source expertise as the independent variable and perceived expertise as the dependent variable.



**TABLE 1** Descriptive statistics for perceived source credibility, perceived message credibility, anticipated news engagement, present news sharing intention, future news sharing intention, personal involvement, political knowledge, and social media reliance.

	Total ( <i>N</i> = 416)		Magazine with political expertise ( <i>n</i> = 100)		Magazine without political expertise ( <i>n</i> = 102)		Influencer with political expertise ( <i>n</i> = 108)		Influencer without political expertise ( <i>n</i> = 106)		Cronbach's $\alpha$
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Perceived Source Credibility	4.89	1.21	5.18	1.12	4.42	1.15	5.40	1.02	4.56	1.26	0.93
Perceived Message Credibility	4.66	1.29	4.88	1.26	4.31	1.24	5.10	1.12	4.31	1.35	0.86
Anticipated News Engagement	2.28	0.76	2.51	0.72	2.03	0.67	2.34	0.71	2.26	0.84	0.70
Present News Sharing Intention	2.56	1.55	2.83	1.51	2.14	1.34	2.85	1.62	2.42	1.62	n.a.
Future News Sharing Intention	2.57	1.55	2.89	1.51	2.09	1.34	2.92	1.66	2.38	1.52	n.a.
Personal Involvement	4.71	1.25	5.02	1.16	4.50	1.14	4.88	1.20	4.46	1.39	0.94
Political Knowledge	4.41	1.21	4.41	1.11	4.46	1.24	4.31	1.22	4.46	2.76	0.82
Social Media Reliance	2.72	1.12	2.77	1.04	2.50	1.11	2.85	1.13	1.24	1.18	0.74

n.a., not applicable. Cronbach's  $\alpha$  was not calculated for Present News Sharing Intention and Future News Sharing Intention, as both are single-item scales.

We performed  $2 \times 2$  ANOVAs with the manipulated source expertise and source type as independent variables to test H1, H2, and H3 for each of the dependent variables: perceived source credibility, perceived message credibility, news engagement intentions (i.e., anticipated news engagement, present news sharing intention, and future news sharing intention), and personal involvement. Given multiple testing, significance level was set to  $p = 0.008$  (Bonferroni correction). In case of a significant interaction effect, we scrutinized simple main effects via  $t$ -tests for independent samples.

In the event of a significant main effect of manipulated source expertise/source type on news engagement intentions (anticipated news engagement, present news sharing intention, and future news sharing intention), we examined whether these effects are indirect effects via perceived source credibility, perceived message credibility, and the personal involvement (H4). For this purpose, we performed tests for indirect effects using Model 4 of the PROCESS v4.0 macro by Hayes (2017), with perceived source credibility, perceived message credibility, and personal involvement as three parallel mediator variables (bootstrapping method with 10,000 samples). We considered the indirect effects as significant when the 95% confidence interval did not include zero.

## 4 Results

### 4.1 Manipulation check

The  $t$ -test revealed a significant difference in the perceived expertise between the profile with versus without manipulated political expertise,  $t(414) = 9.86$ ,  $p < 0.001$ ,  $d = 0.97$ . As intended, the participants rated the perceived expertise of the profile with manipulated political expertise ( $M = 4.81$ ,  $SD = 1.18$ ) higher than that of the profile without political expertise ( $M = 3.64$ ,  $SD = 1.23$ ).

### 4.2 Effects of manipulated source expertise and source type (H1, H2, H3)

For each dependent variable, we calculated  $2 \times 2$  ANOVAs with the manipulated source expertise and source type as independent variables. Perceived source credibility, perceived message credibility, anticipated news engagement, present news sharing intention, future news sharing intention, and personal involvement served as dependent variable. Table 2 shows the detailed results.

We found main effects of the manipulated source expertise on all dependent variables, all  $F(1, 412) \geq 13.96$ , all  $p$ s  $< 0.001$ , all

TABLE 2 Results of the 2 (manipulated source expertise)  $\times$  2 (source type) ANOVAs on all dependent variables.

DV	Manipulated source expertise			Source type			Manipulated source expertise $\times$ Source type		
	<i>F</i>	<i>p</i>	$\eta_p^2$	<i>F</i>	<i>p</i>	$\eta_p^2$	<i>F</i>	<i>p</i>	$\eta_p^2$
Perceived Source Credibility	51.54***	< 0.001	0.111	2.54	0.112	0.006	0.12	0.725	< 0.001
Perceived Message Credibility	31.27***	< 0.001	0.071	0.81	0.369	0.002	0.84	0.359	0.002
Anticipated News Engagement	14.83***	< 0.001	0.035	0.22	0.641	0.001	7.82**	0.005	0.019
Present News Sharing Intention	13.96***	< 0.001	0.033	1.06	0.303	0.003	0.78	0.376	0.002
Future News Sharing Intention	20.41***	< 0.001	0.047	1.13	0.288	0.003	0.78	0.377	0.002
Personal Involvement	15.43***	< 0.001	0.036	0.58	0.449	0.001	0.17	0.679	< 0.001

DV, dependent variable. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

$\eta_p^2 \geq 0.033$ , supporting H1. The presence of political expertise led to a higher perception of source credibility, perceived message credibility, anticipated news engagement, present news sharing intention, future news sharing intention, and personal involvement. In contrast, there were no significant effects of the source type on any of the dependent variables, all  $F(1, 412) \leq 2.54$ , all  $ps \geq 0.112$ , all  $\eta_p^2 \leq 0.006$ , contradicting H2. Furthermore, there was an interaction effect between manipulated source expertise and source type on the anticipated news engagement,  $F(1, 412) = 7.82$ ,  $p = 0.005$ ,  $\eta_p^2 = 0.019$ , partly supporting H3c. The post-hoc *t*-test revealed that manipulated source expertise had a significant effect on anticipated news engagement for the news magazine,  $t(200) = 4.92$ ,  $p < 0.001$ ,  $d = 0.69$ , but not for the influencer,  $t(212) = 0.72$ ,  $p = 0.472$ ,  $d = 0.10$ . While there was no difference between the influencer with versus without political expertise, the anticipated news engagement was higher for the magazine with political expertise than for the magazine without political expertise (see Table 1). There were no other significant interaction effects, all  $F(1, 412) \leq 0.84$ , all  $ps \geq 0.359$ , all  $\eta_p^2 \leq 0.002$ , contradicting H3a, H3b, and H3d.

### 4.3 Tests for direct and indirect effects of manipulated source expertise (H4)

As there was a significant main effect of manipulated source expertise on all of the news engagement intentions, we computed mediation analyses to test for indirect effects of manipulated source expertise (dummy-coded: 0 = with political expertise, 1 = without political expertise) on each of the dependent variables “anticipated news engagement,” “present news sharing intention,” and “future news sharing intention” through the parallel mediator variables “perceived source credibility,” “perceived message credibility,” and “personal involvement.” The detailed results of the analyses can be found in the [Supplementary Information File](#).

Figure 4 shows three models for the direct and indirect effects of manipulated source expertise, differing only regarding the

independent variable, namely anticipated news engagement (A), present news sharing intention (B), and future news sharing intention (C). The models show the same result pattern for each of the dependent variables: First, we found significant negative total effects of the manipulated source expertise on all dependent variables, with  $c$  ranging from  $-0.27$  to  $-0.67$ , all  $ps < 0.001$ . Second, the analyses revealed significant negative effects of the manipulated source expertise on each of the mediator variables, namely perceived source credibility,  $a_1 = -0.81$ ,  $p < 0.001$ , perceived message credibility,  $a_2 = -0.69$ ,  $p < 0.001$ , and personal involvement,  $a_3 = -0.47$ ,  $p < 0.001$ . In turn, there were positive direct effects of the mediator variable “personal involvement” on each of the dependant variable, with  $b_3$  ranging from 0.35 to 0.53, all  $ps < 0.001$ . There were no positive direct effects of the mediator variables “perceived source credibility,” with  $b_1$  ranging from 0.07 to 0.15, all  $ps \geq 0.051$ , and “perceived message credibility,” with  $b_2$  ranging from 0.02 to 0.12, all  $ps \geq 0.147$ . The analyses also revealed significant negative indirect effects of the manipulated source expertise on all dependent variables through “personal involvement,” with effects ranging from  $-0.25$  to  $-0.17$ , 95%-CIs =  $[-0.40$  to  $-0.26$ ;  $-0.12$  to  $-0.08]$ , but not through “perceived source credibility,” with effects ranging from  $-0.12$  to  $-0.06$ , 95%-CIs =  $[-0.26$  to  $-0.12$ ;  $0.00$  to  $0.04]$ , and “perceived message credibility,” with effects ranging from  $-0.08$  to  $-0.01$ , 95%-CIs =  $[-0.19$  to  $-0.06$ ;  $0.02$ – $0.05]$ . At last, there were no direct effects of manipulated source expertise on any of the dependent variables when considering the indirect effects, with  $c'$  ranging from  $-0.04$  to  $-0.24$ , all  $ps \geq 0.069$ . These results therefore only partly support H4.

## 5 Discussion

In the context of political news on Instagram, this study investigated the potential effects of source expertise and source type on perceived message credibility, perceived source credibility, news

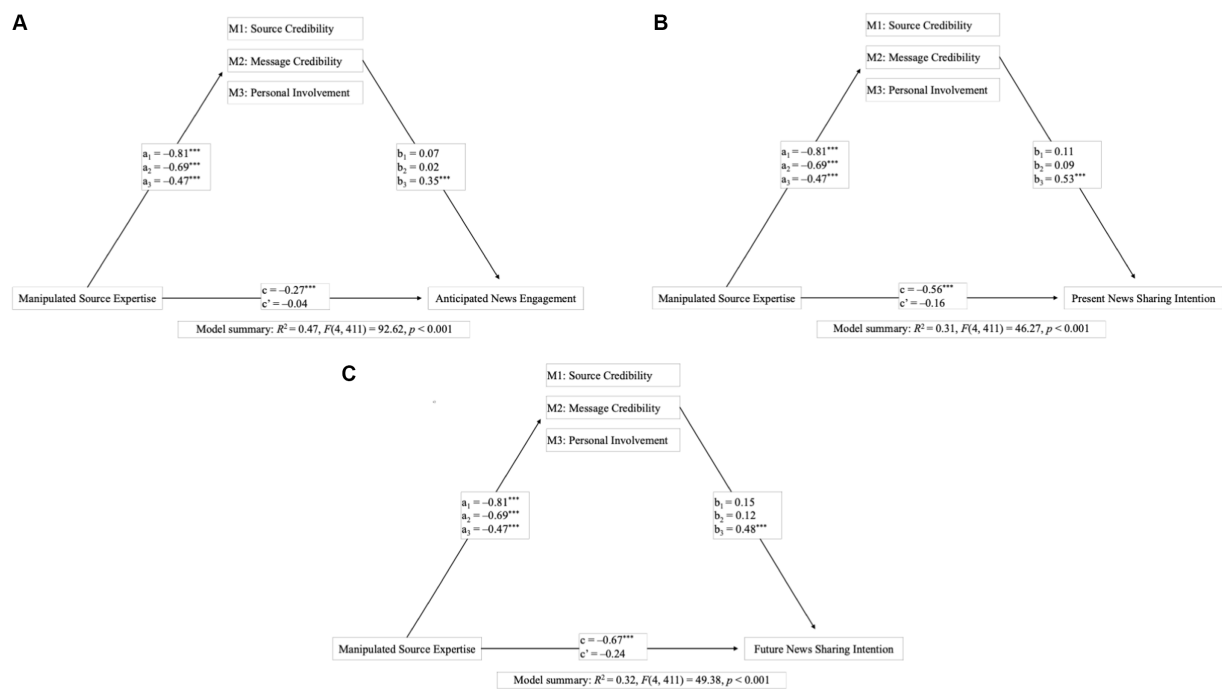


FIGURE 4

Results of the test for indirect effects of the manipulated source expertise on (A) anticipated news engagement, (B) present news sharing intention, and (C) future news sharing intention through perceived source credibility, perceived message credibility, and personal involvement. Manipulated source expertise was dummy-coded (0 = with political expertise; 1 = without political expertise). \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

engagement intentions, and personal involvement. In addition, we explored potential indirect effects of source expertise and source type on news engagement intentions.

## 5.1 Effects of manipulated source expertise on perceived source credibility and message credibility

We consistently found main effects of the manipulated source expertise on perceived source credibility and perceived message credibility (H1a, H1b). There were neither significant main effects of source type nor significant interaction effect between manipulated source expertise and source type on perceived source credibility and perceived message credibility (H2a, H2b, H3a, H3b). So, sources and the news they share on Instagram are perceived as more credible when source expertise is present, regardless of whether the source was the Instagram representation of more traditional news media or an influencer.

On the one hand, these results underline the importance of source expertise as a vital heuristic for assessing the credibility of a message's source (Metzger et al., 2010; Sterrett et al., 2019; Meinert and Krämer, 2022) and as a central concept of source credibility (Ohanian, 1990). Accordingly, our results are in line with previous findings showing that the source expertise positively influences the perceived credibility of a message in online contexts (Kang et al., 2011; Yuan et al., 2019; Meinert and Krämer, 2020). The Instagram profile that appears to focus on political news and reports seems to be perceived as more credible in the context of political news. Thus, expertise is an essential precondition for credibility. However, it is often unclear how

consumers recognize highly knowledgeable sources, especially on Instagram and, more broadly, on different SNS (Choi and Stvilja, 2015). This could be in a variety of ways: through previous news posts, which is also suggested by the results of the present study, their reputation, brand name, objectivity, popularity, or simply who they choose to trust (Sundar, 2008). Information on SNS is spread and discussed within seconds, so a lengthy process of verifying a person's expertise often does not take place (Schäfer, 2020). As SNS influencers do not necessarily have political expertise (Trepte and Scherer, 2010) and their reporting is usually linked to political causes (Bause, 2021), the distribution of fake news may be facilitated. This calls for more research on heuristics that are used in credibility assessments to better understand the role of expertise in the context of SNS and the production and distribution of news.

On the other hand, our results contrast with previous findings showing traditional media and their news are still rated as more credible than SNS (Chung and Nah, 2009; Johnson and Kaye, 2016; Tandoc, 2019), as we found no significant differences between source types, namely the news magazine and the influencer. One possible explanation could be the important role of reputation in assessing the credibility of news media, especially more traditional media (Herbig and Milewicz, 1993; Brown et al., 2007; Metzger et al., 2010; Haas and Unkel, 2017). Several studies have used existing traditional newspaper names that are already reputable and well-known among people (Flanagin and Metzger, 2007; Chung et al., 2012; Chung and Nah, 2013; Johnson and Kaye, 2016). In this study, we created a fictitious news magazine and influencer, thus being unknown to the participants. Like expertise, reputation is also considered one of the cognitive heuristics for assessing credibility though (Metzger et al., 2010). Since an established reputation of the source is often missing

in the SNS context (Flanagin and Metzger, 2000; Metzger, 2007), the fact that a more traditional news magazine has shared political information might not be important if the consumer is not familiar with this specific source. This suggests that especially unfamiliar sources do not differ in perceived credibility, regardless of whether the source is an influencer or the representation of a more traditional magazine. Another explanation may be the occurrence of source blindness (Pearson, 2021). Participants might not pay attention to the source and thus do not recognize the source as a more traditional news magazine or an influencer. This interpretation would be compatible with the consistent effect of manipulated source expertise that has been expressed by pictures and accompanying headlines on the Instagram profiles. Consumers mainly rely on contextual and design properties (instead of individual source characteristics) of SNS websites when evaluating the credibility of online information (Flanagin and Metzger, 2007; Pearson and Knobloch-Westerwick, 2018). Thus, the pictures could have been especially salient for the assessment of the source's expertise and the source's credibility in the present study. Since we manipulated the source type textually, this may have not been sufficiently salient to be considered in the evaluation of the source and the message. This assumption would be in line with the assumptions of the MAIN Model (Sundar, 2008), postulating that pictures are trusted more than textual descriptions due to the increased informative nature of visual cues, which in turn also affects the perception of credibility. This could even be more important on Instagram because of the emphasis of visual features (Vázquez-Herrero et al., 2019).

So, on the one hand, these results underline the importance of images and design features in conveying characteristics of a source. On the other hand, our findings support the need for future research about the characteristics of SNS platforms and profiles which convey important attributes like actual expertise and credibility. In this context, it is important to mention that we examined Instagram representations of traditional news media and compared them to influencers. In contrast, previous research comparing the credibility of traditional media and influencers has mainly focused on traditional media formats, including their traditional layouts, showing that traditional media are considered more credible than SNS in general (i.e., Zimmermann et al., 2020; Besalú and Pont-Sorribes, 2021). We could not find this difference for the SNS representations of traditional media. It is possible that further distinctions are made between traditional media formats and their SNS representations, leading to different consumer perceptions. One reason for this could also be layout factors, so news on SNS is only assessed as one category due to the uniform layout, regardless of whether it was shared by a SNS representation of traditional news media or an influencer. So, the examination of potential differences in perceived source credibility and message credibility between traditional news media formats and their SNS representation can be an interesting direction for future research.

Nevertheless, the results also indicate that influencers seem to be an acceptable source for political news on Instagram, as influencers are rated with the same credibility as the Instagram representation of a news magazine. In line with Xiao et al. (2018), consumers seem to accept influencers as people with knowledge and expertise. Influencers need to be considered as a new way of gathering political news and supporting their role as new gatekeepers for political news on SNS. This could lead to positive effects like an increase in political engagement as proposed by Riedl et al. (2021). Influencers often lack

political focus (Bause, 2021) though, so their content might be altered (Metzger and Flanagin, 2015). Furthermore, influencers were found to rather sensationalize mainstream news and thus represent more extreme and reactionary political standpoints (Lewis, 2020), which in turn could result in the reinforcement of radical ideologies, or conspiracy theories (Riedl et al., 2021). These dangers and the growing relevance of influencers as gatekeepers indicate that opportunities for source identification and their competencies on SNS should be strengthened to avoid source blindness among consumers. In addition, approaches to educate about the credibility and potential negative impact of influencers' political content should be developed to strengthen the ability to recognize misinformation.

## 5.2 Effects of manipulated source expertise on news engagement intentions and personal involvement

We consistently found main effects of manipulated source expertise on the three facets of news engagement intention (anticipated news engagement, present news sharing intention, and future news sharing intention) as well as on personal involvement with the news (H1c, H1d). There were no main effects of the source type on any of these variables though (H2c, H2d). Thus, the intention to engage with the news and to share the present and future political news, as well as how involved the participants felt with the news, were higher for the sources with political expertise compared to the sources without political expertise. We also found a significant interaction effect between manipulated source expertise and source type, but only regarding anticipated news engagement (H3c): there was no difference between the sources with high versus low political expertise when an influencer shared the news. However, when a news magazine shared the news, high political expertise led to significantly higher anticipated news engagement than low political expertise. This result seems somewhat surprising considering that traditional media are perceived as more credible (Johnson and Kaye, 2014) and are trusted more than SNS sources (Li and Zhang, 2018), while the expertise of influencers is often questioned (Trepte and Scherer, 2010), so thematic expertise should play a more important role for influencers. Our results may be explained by the fact that influencers are perceived as on equal terms with their followers (Bause, 2021). They act as peers to consumers and therefore often function as inspiration and advisors (Chopra et al., 2021). Therefore, they can engage their followers regardless of their expertise more easily than SNS representations of traditional news media. In contrast, the present interaction effect highlights the importance of having and conveying political expertise for SNS representations of traditional news magazines to encourage engagement with political news. The results show that professional journalists with high expertise have the chance to mobilize and motivate news consumers interacting with their news, as Nah and Chung (2012) already discussed, underlining the role of professionalism for traditional news magazines.

Importantly, the effects of manipulated source expertise on the three news engagement intention variables (anticipated news engagement, present news sharing intention, and future news sharing intention) were indirect effects mediated through personal involvement, but not mediated through perceived source credibility and perceived message credibility (H4). When considering the indirect effects, the direct effects of the manipulated source expertise



on the three facets of news engagement intention disappeared. Our results thus suggest that the expertise of a news source determines how much people are involved with the news, which then may lead to news engagement intentions. We therefore propose this model to better understand how the influence of an SNS account's expertise affects consumers' intention to engage with that account's political news. Expertise has a positive effect on news engagement intentions but does so only indirectly via the personal involvement of the consumers in the news. Our results once again underline the key role of personal involvement (Meinert and Krämer, 2020) for news engagement intentions, which surprisingly seems to be more important than the perceived credibility of the source and the perceived credibility of the message. This again highlights the importance of conveying one's expertise to get consumers to interact with news on SNS. SNS representations of traditional media that indicate thematic expertise can drive consumers to their websites to read the full news article, which was shown to be a goal of traditional news outlets on SNS (Hille and Bakker, 2013). Similarly, influencers can use this knowledge to actively work with their expertise on their profiles to heighten involvement with their posted news, as well as engage, mobilize, and activate their followers. The influencer's expertise is often a reason why a consumer follows that influencer in the first place (Chopra et al., 2021). So, influencers might have a chance to get people excited about politics who do not have much knowledge about or are not interested in it, as SNS could be an important news source for people who do not consume political news on other channels (Bode, 2016). In fact, previous research already showed that political influencers can have a positive effect on consumers' response rate, political agenda (Curiel, 2020), and political interest (Schmuck et al., 2022). The results of the present study thereby suggest that having and conveying political expertise plays a key role in these positive effects of political influencers. Reversely, however, influencers who may be good at faking expertise and thus credibility, or who may have expertise but an extreme political position, can lead their consumers to engage with misinformation or radicalizing opinions and re-share them. Thus, an identification of the background of the source sharing a message and the developing of guidelines to do so seem to be essential to preventing (the distribution of) misinformation and radicalization.

### 5.3 Strengths and limitations

The present study has several strengths. First, the analysis included a broad sample, which is also associated with a corresponding test power with which relevant effects could be found. Second, we were one of the first to investigate the effects of source expertise and to compare Instagram representations of more traditional news media with influencers regarding political Instagram messaging in an experimental way, thus broadening the field of research. Similarly, to the best of our knowledge, the effects of source characteristics on personal involvement in the context of political SNS news have not yet been studied, so our results are completely new in this regard. Third, we focused on the platform Instagram which is the most relevant SNS platform for young people in Germany (ARD and ZDF, 2022), and which is especially relevant and popular due to its visual characteristics (Vázquez-Herrero et al., 2019). So far, the credibility of influencers and posts were mainly examined in the context of Facebook or online

blogs (Yuan et al., 2019; Meinert and Krämer, 2020). Finally, we additionally investigated the mediating role of perceived source credibility, perceived message credibility, and personal involvement for the effects of source expertise on news engagement intentions, giving new indications for the relation between those variables.

In terms of limitations, the results of this study need to be considered in their social and cultural context, which can influence credibility judgments (i.e., Fogg, 2003). This study was carried out in a German setting only, which limits the generalizability of the results. Due to different values, perceptions, and habits, the results could be different in different social and cultural settings (Yang et al., 2013; Balaban and Mustăţea, 2019). Second, we only examined news in the layout of the SNS Instagram which is characterized by its focus on expression and reporting through images and videos rather than text (Chen, 2018). Since it could be shown that consumers may rely on design and contextual properties more than on properties of the source (Pearson and Knobloch-Westerwick, 2018; Pearson, 2021), it could be assumed that the focus on images could be an advantage in conveying source properties such as expertise. In this context, it should also be noted that we implied the expertise of the profiles through previous posts that contained images and a headline, without the actual expertise of the source being verified by the users. How salient such properties then are on platforms that focus on text rather than images, like X (former Twitter), and how generalizable our results are across other SNS platforms remain an open question and could be a subject for future research. Third, we did not make a distinction between SNS representations of quality and tabloid newspaper. There may be a difference in the results when quality and tabloid newspapers are distinctively compared to influencers. Some influencers may be more like tabloid newspapers because of their way of presenting and editing the news. If the participants additionally perceived the SNS representation of the news magazine in this study more as a tabloid newspaper, this could explain the lack of effect of the source type. However, this is only speculative and should be further investigated in future research. Nevertheless, it should also be noted that a so-called tabloidization of news in SNS could be observed. Thus, quality newspapers online are also adopting more and more characteristics of tabloids in the presentation style of their news (Otto et al., 2017), so that this distinction blurs on SNSs. This trend would make an explicit distinction unnecessary and underlines again the importance of source expertise as heuristic for the evaluation of the source. Fourth, political information is often consumed passively as a secondary outcome of the use of the SNS feed (Bode, 2016; Schäfer, 2020), thus news is often consumed incidentally and quickly (Bergström & Belfrage, 2018; Keib et al., 2021). In the present study, we directly instructed the participants to look at the source profile and news posts thoroughly and gave them enough time to do so. In a field situation, this would not necessarily be the case when consuming the news feed. Thus, only the news post may be consumed incidentally and briefly while scrolling through the news feed, and the profile of the source is not displayed. This makes it difficult to identify the source and their expertise, so the results could change in terms of the impact of the source's expertise. So how this plays out under field conditions remains to be seen and would be an exciting question for future research. In this context, it would also be interesting to examine actual behavior. In the present study, we were able to assess news engagement intentions due to the nature of the study. How this relates to actual news engagement remains open. Finally, we emphasize that

we investigated and found indirect effects of expertise on news engagement intentions via personal involvement. Therefore, it must be noted that our proposed model is based on the examination of indirect effects and not on the study of actual (causal) mediation. Investigating causal mediation processes with an experimental manipulation of source credibility, message credibility, and personal involvement may therefore be a prospect of future research to extend our proposed model. A lack of experimental manipulation of the mediators as well as empirical evidence for the order of a causal relationship between them was also the reason why we tested the mediators in the model only as parallel mediators (Hayes, 2012). However, sequential and hierarchical mediation is conceivable and may be prospects of future research. Nevertheless, our model already provides a first basis for understanding the effect of source expertise on news engagement intentions on SNS, and the role personal involvement plays in this process.

## 5.4 General conclusion

All in all, the results of the present study contribute to our understanding of the impact of source characteristics, namely source type and source expertise, on credibility perceptions, personal involvement, and news engagement intentions in the context of political news distributed via Instagram. The present study suggests that influencers are perceived as credible as Instagram representations of more traditional news magazines. Furthermore, the different types of news sources do not seem to differently affect personal engagement or behavioral intentions. This could be since news providers are mainly judged by their reputation (Metzger et al., 2010), which was not realized and examined in this study. This, in turn, suggests that consumers (sometimes) ascribe the same credibility to both magazines and influencers, especially when they are still unknown. The study thus underscores that influencers play a relevant role in online political coverage on Instagram. However, influencers belong to the citizen journalists and thus offer a different way of spreading political news. The questions about the actual credibility and expertise of influencers as well as their level of research they do before sharing news remain open and may be a prospect for future research.

Importantly, the level of political expertise causally affect credibility perceptions, involvement, and news engagement intentions. Accordingly, it is particularly important to review the political content in relation to the expertise of the reporter. In general, influencers and their function in political and policy reporting are still little researched, which could be a prospect for future research. Deuze (2019) even believes it is important to prepare everyone to be journalists and develop SNS skills, as we are all our own reporters on SNS. Against this background, guidelines for identifying credible influencers should be developed, as they represent an important new source of information alongside traditional media. Also, guidelines for critical media research and journalistic skills should be accessible and taught early on to ensure political literacy on SNS.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

Ethics board approval was not required for this study on human participants in accordance with the local legislation and institutional requirements. In Germany, as stated by the German Research Association (DFG, [https://www.dfg.de/foerderung/faq/geistes\\_sozialwissenschaften/index.html](https://www.dfg.de/foerderung/faq/geistes_sozialwissenschaften/index.html)), ethics committee approval was not required for the present survey study, because the research did not pose any threats or risks to the respondents, it was not associated with high physical or emotional stress, and the respondents were informed about the objectives of the survey in advance. At the beginning of the study, participants were informed that the data of this study will be used for research purposes only and that all data are collected anonymously. Thus, no identifying information was collected. Participants who prematurely stopped the survey were not included in the analyses and all of their data were deleted from the dataset. Informed consent to participate in this study was provided by all participants via clicking a corresponding box and all participants voluntarily participated. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

## Author contributions

DZ: Conceptualization, Formal analysis, Methodology, Investigation, Data curation, Visualization, Writing – original draft, Writing – review & editing. AK: Conceptualization, Methodology, Investigation, Visualization, Writing – review & editing. KK: Conceptualization, Methodology, Formal analysis, Project administration, Supervision, Resources, Writing – review & editing.

## Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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## Supplementary material

The Supplementary material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1257994/full#supplementary-material>

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RECEIVED 06 August 2023

ACCEPTED 29 December 2023

PUBLISHED 02 February 2024

## CITATION

Al Hadeed AY, Maysari I, Aldroubi MM,  
Attar RW, Al Olaimat F and Habes M (2024)  
Role of public relations practices in content  
management: the mediating role of new  
media platforms.  
*Front. Sociol.* 8:1273371.  
doi: 10.3389/fsoc.2023.1273371

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# Role of public relations practices in content management: the mediating role of new media platforms

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Public relations practices are widely accompanied by communication and persuasion. Especially today, when new media platforms provide direct accessibility, communication through PR has become more improved. This research focused on media organizations in the UAE, with a special consideration given to their audience content management. The researchers applied the case study method and selected a sample of  $n = 280$  individuals from  $n = 12$  media houses currently working in the UAE. The results obtained by structural equation modeling (SEM) revealed that media organizations in the UAE pay significant consideration to public relations practices ( $p > 0.000$ ) and new media adoption ( $p > 0.000$ ). Moreover, both these public relations practices ( $p > 0.000$ ) and new media adoption were also found to significantly focus on two-way communication. Consequently, this two-way communication is significantly affecting content management among these organizations ( $p > 0.000$ ), leading to the design, evaluation, and alteration of content that is acceptable and liked by their audiences. Thus, it has been concluded that media content and its management is not a simple task. Audience and communication are two basic factors that play an important role in this regard. Furthermore, the role of public relations practices also enhances communication and content management practices, leading to even more constructive outcomes.

## KEYWORDS

public relations, new media, two-way communication, audience, content management, media organizations

## 1 Introduction

Public relations practices are keenly focused on creating and sustaining relationships with customers and clients through communication processes. This communication is positive, and constructive and contains persuasive tactics that are appealing to listeners (Ahmad and Benazirabad, 2018). Notably, Edwards and Pieczka (2018) consider public relations experts to be creative and emotionally intelligent in different ways. The purpose is not only to communicate and send messages to their listeners but also to acquire favorable feedback from

them. As a result, public relations experts in different organizations are considered highly important, having different functions with client-focused approaches (Qruni and Qrunig, 2017). Bashir and Aldaihani (2017) further described the function of public relations experts in a media organization as helping to maintain, foster, and improve relations with other organizations and audience members. PR practices in media organizations are focused on keeping an eye on the current trends being followed by other organizations and what the audience wants to see, read, and follow. All these functions are made possible through PR practices that are enriched with the communication process. As argued by Tworzydło et al. (2020), communication is the key process to increase understanding and achieve goals accordingly. As a result, when public relations practices are focused on audiences, they significantly foster the value of the media content. However, while researchers and critics sometimes differentiate between public relations and communication, they are intertwined and work hand in hand (Guidry et al., 2017). Sometimes, public relations also works as a one-way channel, especially when the information or content is imposed, and the focus is to have a positive public image. Nonetheless, in media organizations, public relations practices are mostly two-way, equally prioritizing audience feedback to further proceed with the production and dissemination of likeable media content (Gimaliev et al., 2020).

Similarly, public relations practices are significantly updated today (Gallicano et al., 2021). According to Savič (2016), the more organizations are focused on communication, the more they are likely to improve their PR practices. Thus, they perform more strategically and effectively to meet their goals (Al Olaimat et al., 2022). More specifically, media organizations across the globe are searching for and adopting new approaches to enhance their practices. Here, Michael (2021) cited an example of new media platforms being more effective, direct, and efficient in accessing audiences and obtaining their feedback. As noted, public relations scholars, experts, and critics have widely agreed that new media has changed the landscape of public relations practices (Elareshi et al., 2022). In addition to their ease of use, accessibility, and usefulness, new media platforms are justified resources to be used for public relations practices. In this regard, the empirical evidence on new media in public relations also attests to its role in transforming organizational functioning and content production systems (Rashid et al., 2019; Ureña et al., 2019; Radwan et al., 2021; Singh Apte and Upadhyay, 2022). As noted by Abdalli and Hassan (2019), the role of new media in public relations practices cannot be underscored or denied. Today, many media organizations rely on digital resources for their public relations practices. This dependency indicates several reasons that accelerate new media usage for PR purposes. Particularly, this trend seems more followed by media organizations, where content production and dissemination primarily depend on audience response and feedback (Ahmad and Benazirabad, 2018). To establish a better understanding of the subject of new media, it is important to explore the impact of digital platforms on public relations practices in content management and the advances in social media research. Subsequently, the current study highlights the impact and promise of new technologies and aims to understand how the digital transition can be harnessed to develop and enhance local public relations practices. Similarly, the study of the advances in public relations research has identified multiple emergent themes in the existing corpus, thereby furthering our understanding of advances in new media platforms (Dacko-Pikiewicz, 2021).

## 1.1 Study aims and objectives

It is notable that public relations has long been addressed by researchers in the UAE. However, their focus remained on other factors such as issues in PR practices (Al-Jenaibi, 2015), PR in crisis management (Kamil, 2020), and PR practices in the Emirati banking sector (Muhammad et al., 2019), among others. Yet no study has examined PR in media content management, indicating a primary empirical gap. Thus, to fill this existing gap, this study focused on examining the role of new media platforms in the media content management process. No study has examined public relations in media content management in the Emirati context; rather, most studies have dealt with reputation management and the effects of multimedia in the Arab region, specifically in the Emirates, but they provide valuable insights into the communications landscape and the role of social media in shaping public opinion and guiding consumer behavior. Therefore, in the current study, the researchers focused on public relations practices experts in Emirati media houses who communicate through new media to manage their content according to their audience needs and demands. To provide systematic and empirical evidence of the phenomenon under study, the researchers divided this research into six different sections as the purpose was to provide systematic and empirical evidence. The first section involves an introduction to the topic, problem of the study, objectives, and a brief overview of mass media in the United Arab Emirates. The second section involves a review of the literature, and the third section involves the theoretical support that further assisted in designing the conceptual model of the current research. The fourth section involves the methodological approaches, and the fifth section involves the data analysis and findings of the current study. Finally, in the sixth section, the researchers have discussed the results, and conclusions are made.

## 1.2 Media in the United Arab Emirates

After the British occupation ended in 1971, the mass media landscape in the United Arab Emirates started to evolve. Since then, media platforms have been working under governmental control, being equally controlled and regulated by the National Media Council. Today, there are a total of 19 newspaper organizations, out of which 7 are published in Arabic and the remaining 12 in English (Addi et al., 2021). Furthermore, there are 14 independent radio stations also working in the country, and the rest are government owned. Regarding television, the first TV station in the United Arab Emirates, called “Abu Dhabi Television,” was established in 1969, which led to the beginning of the television era in the 1990s (Aleisaei, 2019). However, currently, the trend of chain ownership is also being followed by the Emirati media organizations. The major media organizations include the MBC Group (UAE), Arab Media Group, Dubai Media Incorporated, Sharjah Media Corporation, and Abu Dhabi Media Incorporated. Dubai Media Incorporated, also known as Emirati Media Incorporated, is owned by the government (Del Chiappa, 2017). It is also notable that these media organizations acknowledge online platforms as equally important for their visibility, content production, dissemination, and interaction with their audiences. As a result, when the COVID-19 outbreak emergency happened, Emirati mass media platforms not only worked to send their content through conventional resources but also resorted to new media platforms for

content dissemination and interaction purposes (Myrzabekova, 2021). The UAE is witnessing continuous development in new media as the government seeks to develop national media content to keep pace with developments and changes in the media landscape. These developments include the use of artificial intelligence and future new media in creating media and technological content (Radwan et al., 2021). The UAE is considered a leading destination for media scene makers as it hosts many major media companies and international media forums. New forms of media in the UAE include social media and the Internet; indeed, the UAE has a high Internet penetration rate and ranks first in the world in the use of social media. The UAE government is working to develop a comprehensive media system that includes modern mechanisms, tools, and content that keep pace with the developments and changes taking place in the media landscape. The UAE is also witnessing growth in the new media sector, with many radio and television stations that transmit news and information (Radwan et al., 2021).

## 2 Literature review

### 2.1 Online platforms and media content

An online platform is defined as a means of communication through which the user creates an account that enables them to communicate via the Internet with other people electronically. Online platforms and social networking include many different applications and tools (Wang et al., 2023) that are formed into Internet apps, which are classified as social media. Social media technology takes many forms, including blogging, forums, photo sharing, video blogging, and music and audio sharing via the social networking protocol (Al Jwaniat et al., 2023). It can connect many types of software that enable the use of online platforms and online media content to improve online communication between social media users (Facebook, Tik Tok, YouTube). The term “media content” refers to information and experiences disseminated in specific contexts, via digital and traditional media, for the benefit of end users and audiences in various fields (Tawafak et al., 2023). Media content can include many forms, including newspaper articles, books, video and audio clips, photos, graphics, graphs, charts, animation, games, applications, educational platforms, content management, and public relations. Internet and social media platforms can be used to publish and manage media content and interact with the public (Hatamleh et al., 2023).

### 2.2 Public relations in media organizations

According to Dacko-Pikiewicz (2021), with an abundance of information available through mass media platforms, organizations focus on constant communication with their clients and audiences. In particular, media organizations pay keen attention to their audiences with the aim of creating and sharing content that is mutually acceptable and liked by their audiences. Lingel (2020) considers interaction and communication with the audience as one of the key considerations for media organizations. For this purpose, public relations departments and experts are among the crucial factors that ensure continuous communication with audiences at different levels. Referring more specifically to the role of public relations, Berg and Blomqvist (2019) argued that PR practices are creating a culture of dialogue and

communication between organizations and individuals. Earlier, the role of public relations was to inform the public, but today, this role has been transformed and enhanced to communication. The focus on clients and their feedback is comparatively increased. As a result, communication is two-way, where clients are not only listening to what organizations have, but organizations must also listen to what their clients expect from them (Valentini et al., 2018). Although many researchers consider the role of public relations as like that of advertising and promotion, prioritizing audience feedback is an important element that differentiates between PR and advertising in organizations, especially media-based organizations (Navarro et al., 2017). Therefore, media organizations are considered a major means of communicating with the public, and the field of public relations depends greatly on effective communication. The media can be a means of conveying brand or institution messages effectively, and it can be said that there is a close interaction between media organizations and the field of public relations; indeed, media organizations present a powerful means that can support public relations strategies and contribute to achieving their goals (Berg and Blomqvist, 2019).

*H1: Media organizations have a significant effect on public relations.*

### 2.3 Organizations preferring new media

Today, organizations search for new approaches to increase their accessibility to both other organizations and individuals. However, this access depends on the organizational objectives and their business requirements (Radwan et al., 2021). According to Allagui and Breslow (2017), when organizations are client centric, they aim to reach the masses, interact with them, and gather their feedback to improve existing services and adopt new ones according to their needs and demands. For this purpose, Toledano and Avidar (2019) cited an example of surveys and older ways of gathering feedback and responses through postal services. In this regard, organizations would reach their clients and gather their responses in handwritten forms. However, today, trends have changed due to new media resources and platforms.

According to Lee et al. (2015), new media have tremendously increased access to clients and consumers. Traditional methods of response gathering are widely altered as organizations prefer virtual digital platforms to communicate. This is further validated by Valentini et al. (2018), who consider new media as facilitating maximum communication and interactivity. These platforms not only facilitate access to the audience but also provide the audience with access to the organizations they want. Here, Habes et al. (2023) cited an example of public awareness and messages sent to the Pakistani audience during the COVID-19 outbreak. According to the researchers, the relevant campaigns were effective yet required audience feedback as to their adoption of the measures to mitigate the virus transmission process. Consequently, the messages being circulated through conventional platforms were also disseminated through new media resources, which further helped to observe the audience behavior as the feedback to the relevant messages, leading officials to improve and even change the strategies as per the requirements (Iqbal and Khan, 2021).

H2: Media organizations have a significant effect on new media.

## 2.4 New media in public relations

According to [Edwards and Pieczka \(2018\)](#), every organization has strategies for their public relations. Whether promoting or selling products or promoting an idea, public relations practices are of greater concern to them. If organizations lack effective communication, it means their public relations practices have a weak strategy. As noted by [Bashir and Aldaihani \(2017\)](#), a strong public relations plan that is built with close attention to clients' details is more likely to be strategically organized. However, [Gimaliev et al. \(2020\)](#) have considered a strategically organized plan to be focused on the clients with the aim of gathering maximum feedback and details about their needs, which can be later fulfilled by the improved service quality.

Similarly, [Froment et al. \(2017\)](#) emphasized selecting the right media type for PR practices. In this regard, new media is considered as comparatively more useful, with its potential to obtain and coordinate all the necessary information from both clients' feedback and observing their behavior online. [Hall \(2020\)](#) has considered new media for public relations as "online media relations" that can be time consuming yet more value to an organization by improving its communication practices. Here, [Bergstrom and Poor \(2022\)](#) cited an example of interaction through Facebook, LinkedIn, Twitter, and other virtual resources by many multinational national organizations. According to [Valentini et al. \(2018\)](#), a crucial difference between digitalized public relations and conventional public relations is all-time availability. New media enhances this availability, and communication is feasible whenever the communicators want it.

H3: Public relations has a significant effect on new media.

## 2.5 Two-way communication in public relations

The two-symmetrical model of communication and public relations provide theoretical support to the current research. According to Matthee ([Matthee, 2011](#)), two-way symmetrical model is considered as one of the most ethical and practical approach of communication today ([Kent et al., 2020](#)). As noted earlier, communication is an effective way to share and receive information between communicators. Through communication, it is easy to send a message and monitor what others respond about it ([Rodriguez, 2016](#)). As noted by [Navarro et al. \(2017\)](#), feedback is an integral part of communication. In particular, when communication is goal oriented and focused on responses, communicators necessarily follow the rules of two-way communication. As noted by [Tankosic et al. \(2016\)](#), two-way communication is key to creating and sustaining great mutual understanding. It is an important communication pattern as it not only builds trust but also improve the free flow of ideas at every level. Here, [Toledano and Avidar \(2019\)](#) cited an example of an advertising company introducing and promoting products to attract audiences. The type of message was focused on attracting the audience's interest and their buying behavior as the feedback or response to the communication process. Similarly, in terms of public relations practices, [Lane \(2018\)](#) has considered the role of PR practitioners as not only sending the message but also adopting

problem-solving approaches. As audiences can have queries or confusions, two-way communication patterns in public relations can help to answer them all in an effective and efficient manner. [Toledano and Avidar \(2019\)](#) further noted that encouraging two-way communication can help an organization to flourish at its maximum. When PR practices bolster two-way communication, external communication with clients and audiences improves, helping an organization to reach its goals. When the audience or clients are more vocal about their needs and demands, an organization can work accordingly and fulfill their expectation in a better possible manner ([Michael, 2021](#)).

H4: Public relations has a significant effect on two-way communication.

## 2.6 New media and two-way communication

Although humans and language are considered the basic components of communication, this proposition seems upgraded by certain components today. This era is characterized by informing, with the concept of information communication technology (ICT) having transformed the landscape of communication processes ([Tankosic et al., 2016](#)). [Yuan \(2017\)](#) has considered ICT to comprise powerful tools of communication where both one-way and two-communication are followed at both the micro and macro levels. In particular, in organizations where public relations practices are focused on two-way communication approaches, the role of technology is of greater significance.

In this regard, [Macnamara \(2017\)](#) has considered new media an important source of improving public relations practices across the globe so that it may flourish. Organizations where public relations experts resort to new media continuously monitor and evaluate a company's performance through client feedback. According to [Ertürk \(2019\)](#), viewing relations with clients and audiences as a crucial factor is a key management consideration for public relations experts. Moreover, using new media platforms also contributes to a company's reputation at many levels. Thus, [Roberts-Bowman \(2017\)](#) has considered the presence of new media as an important approach for public relations that helps to maintain a constant voice across different communication platforms and increase the market presence of an organization.

H5: New media has a significant effect on two-way communication.

## 2.7 Two-way communication and content management

In discussing the technological transformation and new media as a part of public relations practices, it is important to highlight their role in facilitating communication at every level ([Radwan et al., 2021](#)). For example, during political events, media organizations and campaigns creators strongly consider the ongoing trends at the social and political levels. These trends help to brainstorm and highlight not only new campaigning ideas but also what people like and pay attention to [Alturas and Oliveira \(2019\)](#). According to [Radwan et al. \(2021\)](#), media content design, production, and management are all



performed when audience feedback is carefully obtained. It is important to design and shape content in accordance with the audiences' interests. In this regard, the researchers consider media content as designed and managed by resorting to two-way communication patterns.

Although audience feedback is not a new phenomenon, it is of much importance due to new policies and strategies. In particular, when online communication helps to access audiences, content management is feasible with just a single click (Bergstrom and Poor, 2022). According to Froment et al. (2017), despite the communication and media focus on audience engagement, it primarily depends on the type of communication. For example, one-way communication is declarative and mostly undermines an audience's critical thinking and opinion sharing capabilities. Two-way communication, on the other hand, is considered more motivating, magnifying the importance of audience feedback and increasing an audience's critical thinking and opinion sharing capabilities (Yuan, 2017). Similar patterns of two-way communication were seen during the SARS outbreak in the Middle East. Local governments not only provided information about measures but also conducted several online surveys, monitored social media profiles, and designed healthcare content accordingly (Valentini et al., 2018).

*H6: Two-way communication has a significant effect on media content management.*

### 3 Theoretical framework

#### 3.1 New media theories approach

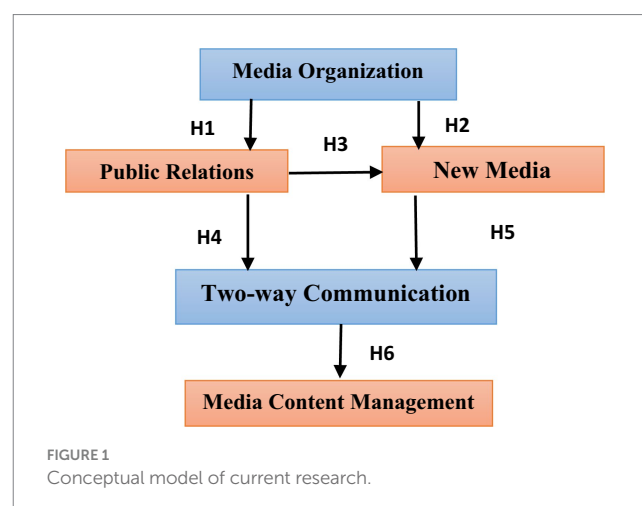
The approach of new media theories lies in understanding and analyzing the impact of technology and modern media on society and culture (Yuan, 2017). According to Matthee (2011), new media theories provide a framework for understanding how technological development affects change in values and culture and help explain how social behavior and cultural interaction develop under technologies. New media theories also provide a framework for understanding how media content spreads through digital media, which contributes to studying its impact on society and culture (Sarwar et al., 2023). Likewise, these theories highlight how digital media influences the formation of individuals' identities through their participation in digital content and social media. New media theories explain how the economic structure of the media affects the quality and quantity of media content produced and how it is distributed in society (Yuan, 2017). The theories also focus on the role of the consumer as an active actor in the process of consuming media content, which helps in analyzing how the individual shapes their media experiences (Radwan et al., 2021). Thus, the new media theory approach contributes to opening new windows of understanding of the social and cultural transformations that occur as a result of technology and digital media. New media theories also focus on the role of the audience as an active actor and participant in the media process (Pasha et al., 2022). In content management in public relations, audience interaction with content is vital as content is designed and managed in a way that encourages interaction and participation (Radwan et al., 2021).

#### 3.2 Two-way symmetrical model of communication and public relations

The two-way symmetrical model of communication and public relations provides theoretical support to the current research. According to Matthee (2011), the two-way symmetrical model is considered one of the most ethical and practical approaches of communication today. It is focused on communication, which should be built on mutual understanding and an equal opportunity to share and receive the message between both the organization and other parties. As validated by Gruing (2001), the two-way symmetrical model follows a greater social responsibility. An organization following the two-way symmetrical model of communication and public relations strongly prioritizes its workers and audiences to gather their opinion and, thus, work accordingly. In a similar context, this study applies and follows the relevant model, assuming that media organizations in the United Arab Emirates are giving potential importance to communicate with their audiences (Amin et al., 2019). This communication helps them to create and disseminate desirable content that will be accepted by their audiences (feedback). However, compared to the traditional approaches to communicate with audiences, these media houses have their official pages on new media platforms, which are marked by their ease of use and increased accessibility. As a result, greater accessibility to the public facilitates access to their opinion, which further helps them to gather their opinion and shape their content accordingly. Abdalli and Hassan (2019) also consider new media as facilitating communication between PR experts and audiences. As noted, new media not only increases access to audiences but also helps to gather their feedback. Once the audience feedback is gathered, PR experts determine their needs and demands, which further helps organizations in their media content management and production process (Figure 1).

### 4 Research methods

This research involved the case study method. As noted by Crowe et al. (2011), the case study approach is a multifaceted and complex method that helps to assess a phenomenon in a real-life situation. The researchers applied structured questionnaires for the data gathering



purposes (Habes et al., 2021b). The scale and items of the questionnaires were adopted from existing research that is summarized in Table 1. Notably, the questionnaire was designed on a five-point Likert scale (Pasha et al., 2021), with  $n=4$  items for each variable. The data gathering was performed from 21st April 2022 to 15th June 2022. After the data gathering (Pasha et al., 2022), the researchers manipulated and coded data for the analysis purposes. As the current research involved structural equation modeling, both Statistical Package for Social Sciences and Amos Ver. 26 were employed.

## 4.1 Sample selection technique

The population of the current research was composed of public relations practitioners currently working in media houses in the United Arab Emirates. However, as per the research rules, the researchers had to select a subgroup of individuals (Elbasir et al., 2020); thus, the researchers selected  $n=12$  media houses (their regional offices) currently working in the four states of the United Arab Emirates. Furthermore, the researchers selected a sample of  $n=280$  individuals as the study requirements and design. According to Howard (2016), studies that are based on structural equation modeling should contain a minimum sample size of  $n=200$  individuals to ensure the reliability and generalizability of the results. In this regard, the sample size of  $n=280$  was ideal for this research. Finally, the researchers performed data collection by personally visiting the media houses in the selected locations. As the study was focused on public relations practices, the researchers used convenience sampling techniques and only selected PR practitioners operating in the selected organizations. According to Taherdoost (2018), despite convenience sampling having received much criticism from the researchers, it is one of the most preferred sampling methods. However, the relevant techniques help researchers to select and gather data from the most suitable respondents that have a direct and real-life experience of the phenomenon under study (Habes et al., 2021a). Thus, after the data collection process, the researchers collected the

questionnaires and carefully checked them before the coding and data analysis. Out of the  $n=280$  questionnaires,  $n=271$  were finalized for the further proceedings, indicating a response rate of 96.7, and  $n=9$  questionnaires were either incompletely filled out or missing.

## 4.2 Ethical considerations

The researchers first took a written permission, signed by the branch managers of the relevant offices regarding the data collection process. Furthermore, the researchers provided the respondents with informed consent as an important consideration suggested by Gov (2013). The respondents were briefed about the research problem, purposes, and the usefulness of the study results. The researchers also assured the respondents that their personal data would be kept confidential and not be used for any personal or commercial purposes.

## 4.3 Common method bias

According to Apuke (2017), common method bias (CMB) occurs when the variation in the gathered data is caused by the research tool instead of the actual responses that it aims to obtain. In simple words, common method bias (CMB) is caused by the tools rather than the data. In this research, the researchers tested the common method bias (CMB) by using Harman's single factor score (Kock, 2021). The results revealed the total bias at 36.1%, which is smaller than the threshold value of 0.50, indicating that the CMB did not affect the gathered data.

# 5 Analysis and results

## 5.1 Convergent validity

Hussain et al. consider convergent validity as determining the extent to which the scale items are related to other scales of the same construct (Hussain et al., 2018). Precisely speaking, convergent validity provides a pathway to determine the pathway to assess the internal consistency of the measurement model (Nawanir et al., 2018). Examining the internal consistency of the measurement model indicated most of the factor loading as surpassing the threshold value of 0.05. Moreover, the average variance extracted values (0.814–0.923) also remained higher than the relevant threshold value of 0.5. Regarding construct reliability, the analysis revealed the composite reliability values as ranging from 0.761 to 0.829 and the Cronbach alpha values as ranging from 0.754 to 0.873, thus surpassing the threshold value of 0.7. Thus, the convergent validity analysis was established, indicating the questionnaire items as internally consistent (Koonce and Kelly, 2014). Table 2 summarizes the convergent validity calculations.

## 5.2 Discriminant validity

This research further involved discriminant validity to determine whether the research constructs were not highly correlated. As the constructs were weakly correlated, the higher the discriminant validity therefore was (Samuels, 2016). The researchers further examined the

TABLE 1 Sources of the survey items.

SR	Scales	Sources	No of items
1.	Media organization	Berg and Blomqvist (2019)	04
2.	Public relations	Ahmad and Benazirabad (2018) and Macnamara (2017)	04
3.	New media	Alturas and Oliveira (2019) and Radwan et al. (2021)	04
4.	Two-way communication	Chen et al. (2021) and Rabarison et al. (2017)	04
5.	Media content management	Cunningham et al. (2017) and Fairley and Amherst (2003)	04

TABLE 2 Summary of convergent validity analysis.

Constructs	Items	FL	AVE	CA	CR
Media organization	MED1	0.782	0.861	0.756	0.761
	MED2	0.622			
	MED3	0.809			
	MED4	0.992			
Public relations	PR1	−0.164	0.833	0.789	0.788
	PR2	0.885			
	PR3	0.827			
	PR4	0.788			
New media	NMED1	0.809	0.840	0.754	0.801
	NMED2	0.787			
	NMED3	0.852			
	NMED4	0.859			
Two-way communication	COM1	0.869	0.926	0.760	0.799
	COM2	0.920			
	COM3	0.990			
	COM4	0.722			
Content management	MNG1	0.783	0.814	0.873	0.821
	MNG2	0.451			
	MNG3	0.783			
	MNG	0.877			

TABLE 3 Heterotrait–monotrait ratio scale.

	MED	PR	NMD	COM	MNG
MED					
PR	−0.086				
NMD	−0.313	−0.137			
COM	−0.057	0.069	0.061		
MNG	−0.465	−0.067	−0.304	−0.276	

MED, media organization; PR, public relations; NMD, new media; COM, two-way communication; MNG, content management.

discriminant validity by applying the standard two-criterion approach including the heterotrait–monotrait (HTMT) ratio and Fornell–Larcker criterion (Howard, 2016). The researchers first utilized the HTMT ratio and manually calculated it. The results revealed the HTMT value at 0.081, which is lower than the threshold value of 0.90 suggested by Henseler et al. (2015). Furthermore, the Fornell–Larcker criterion revealed that all the squares of the average variance extracted values were greater (0.662–0.857) and had a relatively weaker correlation with each other (Wang et al., 2015). Thus, the findings indicated that the discriminant validity of measurement model was affirmed (see Tables 3, 4).

### 5.3 Goodness of fit

Narsky considers goodness of fit an important component of measurement model analysis in structural equation modeling (SEM) as it determines the extent to which the observed data fit with the

expected data under the study model (Narsky, 2004). The goodness of fit in this study revealed the Chi-square value at  $\chi^2 = 0.066$  (10) and probability value at 0.002. Moreover, the non-fit indices value remained at 0.201 and standardized root mean square (RMSEA) value at 0.370, thus lower than the threshold value of 0.085, indicating that the observed data fit the expected observations with the normal distributions. Figure 2 illustrates the goodness of fit.

### 5.4 $R^2$ analysis of variance

$R^2$  analysis, also known as coefficients of determination  $R^2$ , determines the extent to which the exogenous variables can predict the research outcomes (Figueiredo Filho et al., 2011). Primarily, it is based on a number between 0 and 1, indicating the predictive power of the independent construct(s) (Dastres and Soori, 2021).  $R^2$  analysis in the current study (see Table 5) revealed 41.1% variance in media organization, 52.9% in new media, 50.1% in two-way communication, and 29.9% variance in content management. Thus, variance ranged from moderate to strong among the latent variables.

### 5.5 Hypotheses testing

Finally, the researchers examined the causal relationships between the proposed study variables by using the path analysis in the structural equation modeling (Mazouz, 2019). Although regression analysis can also determine the strength and nature of relationships between variables, path analysis provides relatively more details about the paths of relationships in a better possible way (Hair et al., 2021). Thus, the path analysis in this study also contained path values, regression weights, and significance values (see Table 6). Consequently, it was revealed that the effect of media organizations on public relations remained significant, with the path value at 0.188 and significance value at  $p > 0.000$ . The validation of  $H1$  indicates its consistency with the study conducted by Toledano and Avidar (2019), who consider media organizations as actively incorporating public relations and communication practices as a part of their strategic functioning and development. Furthermore,  $H2$  of the current research was focused on the significant effect of media organizations on new media. The relevant hypothesis was adopted from the notion that media organizations are focusing on their new media usage and presence. These organizations use new media to access the public and interact with them for different purposes (Valentini et al., 2018). Analysis revealed that the relevant hypothesis is valid, with the path value at 0.132 and significance value at  $p > 0.006$ .

Furthermore,  $H3$  in this research proposed a significant effect of public relations and two-way communication. The relevant hypothesis is based on the primary assumption about the role of public relations in creating and sustaining communication under the symmetric model of communication and PR (Tankosic et al., 2016). However,  $H4$  remained insignificant, with the path value at  $-0.053$  and significance value at  $p > 0.683$ , indicating that the results remained inconsistent with assumptions where PR practices in Emirati media houses follow two-way communication (Roberts-Bowman, 2017).

Furthermore, the effect of new media on two-way communication ( $H5$ ) was consistent with the fact that existing literature on new media and communication considers it as facilitating two-way interactivity

TABLE 4 Fornell–Larcker criterion.

	MED	PR	NMD	COM	MNG
MED	<b>0.741</b>				
PR	0.264	<b>0.693</b>			
NMD	0.591	0.284	<b>0.705</b>		
COM	0.271	0.026	0.173	<b>0.857</b>	
MNG	0.677	0.248	0.584	0.371	<b>0.662</b>

MED, media organization; PR, public relations; NMD, new media; COM, two-way communication; MNG, content management.  
Bold indicates the term Media.

TABLE 5  $R^2$  analysis of the endogenous variables.

Variables	$R^2$	Strength
Media organization	0.411	Strong
New media	0.529	Strong
Two-way communication	0.501	Strong
Content management	0.299	Moderate

among users (Sembor, 2017). The results revealed the path value at 0.388 and significance value at  $p > 0.004$ , indicating compatibility with the proposition regarding new media for two-way communication. Finally, the researchers assumed a significant effect of two-way communication on media content management (H6). As noted by Aydin et al. (2021), interaction with audience is an important way to design, choose, and display the desirable media content. Organizations that focus on interaction with the audience are more likely to generate suitable content, therefore leading to improved reputation and acceptance among the public. Thus, the analysis revealed the path value at 0.251 and significance value at  $p > 0.000$ , indicating consistency with the arguments of Ahmad et al. (2019).

5.6 Importance performance map analysis

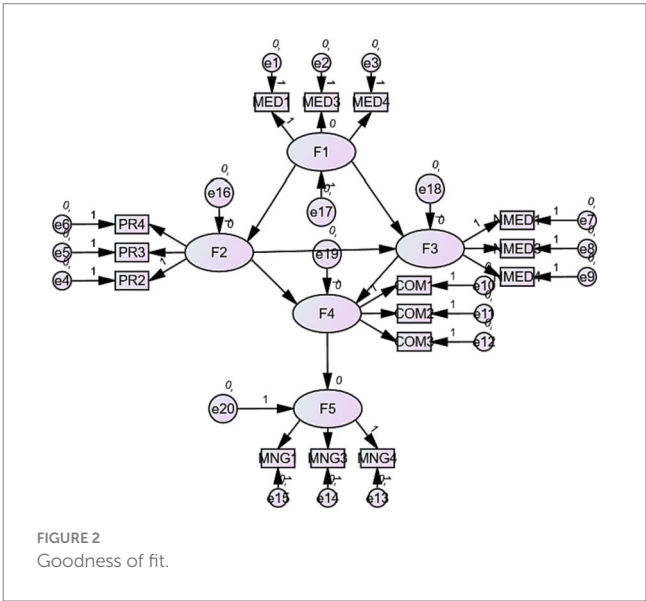
Importance performance map analysis (IPMA) is an additional step in structural equation modelling that provides an overview of the causal relationships between study variables (Aprilia et al., 2022). IPMA graphically illustrates the performance of latent variables in a graphical form, also known as a “map” (Henseler et al., 2015). Importance performance map analysis (IPMA) in the current research (see Figure 3) indicated public relations (PR) as the highest scoring variable (3.929), while content management (MNG) remained the second highest scoring variable (M 3.921). Followed by media organization (3.88), two-way communication remained the lowest scoring variable.

6 Discussion

The two-way symmetrical model of communication proposed by James Gruing’s Excellence Theory aims to examine organizations as focusing on attaining mutual benefits. In other words, this model implies that organizations ensure mutual benefits for themselves and their audiences (Valentini et al., 2018). The basic conceptualization of the Gruing model relies on communication as a primary negotiation

TABLE 6 Path analysis of study hypotheses.

Hypotheses	Relationships	Path	$t$	$p$
H1.	Media organizations → Public relations	0.188	4.502	***
H2.	Media Organizations → New media	0.132	2.747	0.006
H3.	Public relations→ New media	0.377	11.032	***
H4.	Public relations→ Two-way communication	−0.053	−0.408	0.683
H5.	New media→ Two- way communication	0.388	2.879	0.004
H6.	Two-way communication→ Content management	0.251	6.565	***



between the organization and their public, further fostering mutual understanding and interest (Ahmad and Benazirabad, 2018). A similar approach has been further modified in terms of new media providing different platforms through which people can voice their opinions and organizations can obtain maximum benefit from their feedback (Rahi and Ghani, 2017). According to Aleisaei (2019), the two-way model of communication shows a greater consistency with the propositions about the role of new media in audience feedback and content management. Despite the role of new media, in general terms, remaining prominent, its relevance with PR practices for content management is debatable in many regions, including the United Arab Emirates. As noted by Yuan (2019), the two-way model of communication is very different from the stereotypical perception of the role of public relations of persuading by using deceptive, one-way practices. Rather, public relations experts ensure transparency and equal communication opportunities for all, which further indicates the relevance and significance of two-way communication



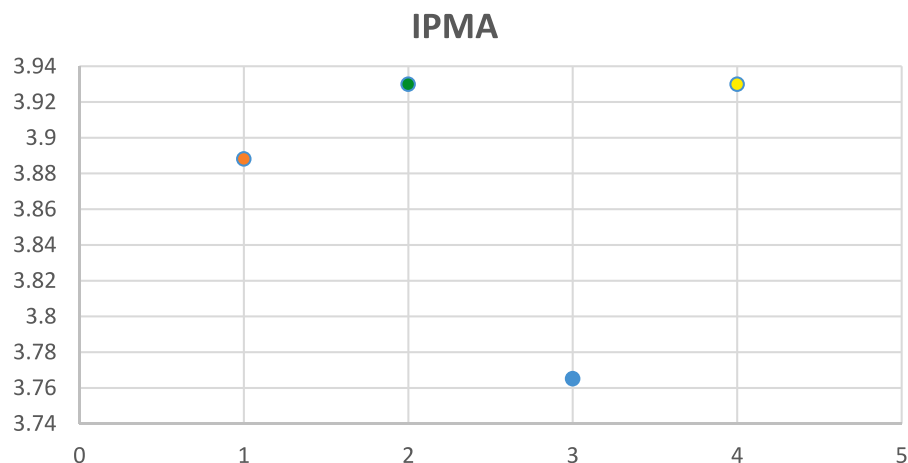


FIGURE 3  
Importance performance map analysis (IPMA).

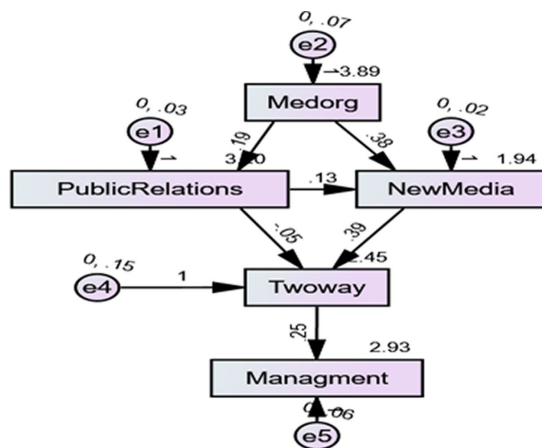


FIGURE 4  
Path coefficient of the model (significant at  $p^{**} < 0.01$ ,  $p^* < 0.05$ ).

among them (Tankosic et al., 2016). Public relations practitioners also believe that organizations, individuals, and the public should use communication to modify behavior instead of controlling how others should think and behave (Lee et al., 2015; Figure 4).

Similarly, the focus of this study also remained on public relations practices among Emirati media organizations. Although there are both private and public sector media organizations, the researchers selected the relatively suitable ones to assess their content management. Notably, the first theme of the questionnaire was followed by further root questions, overall investigating the communication patterns and approaches used by the relevant media organizations (see Table 7 for descriptives). Our respondents revealed a democratic communication approach that further helps PR professionals to boost their confidence and provide them with more opportunities to think of and apply creative communication practices (Berg and Blomqvist, 2019). Regarding the second theme and root questions, the focus remained on examining the respondents' answers about their organizations and public relations practices. The

respondents widely agreed with the fact that their organization put a social focus on public relations practices and continuously apply, evaluate, and monitor their PR practices (Abdelrahman Alawaad, 2021). The respondents also addressed and agreed with their organizations' preferences for new media platforms as providing effective, direct, and efficient communication opportunities. These services, as they indicated, are widely accompanied by ease of access and useful outcomes that further accelerate new media adoption among their organizations (Alghizzawi et al., 2023).

Furthermore, the respondents also indicated that their public relations practices through new media follow two-way communication patterns. The relevant two-way communication, according to the respondents, is focused on obtaining audience feedback on certain media content. Their feedback is used to evaluate content and design new content accordingly (Froment et al., 2017). Finally, the respondents agreed that content management, being a strong consideration for their organization, is influenced by two-way communication. As also argued by Ahmed and Khan (2019), the audience as receivers of media content can evaluate well its quality and appropriateness. When dealing with media content, two-way communication can also help content designers and creators to think with more creativity and vigilance.

## 7 Implications and conclusions

This research has some implications. Firstly, it underlines the importance of building enhanced relationships between PR practitioners and media outlets. Trust and collaboration can be strengthened by fostering two-way interactions, resulting in more accurate and reliable media content. Furthermore, embracing the two-way communication model improves the accuracy of information shared in media content. PR professionals actively engage with journalists, providing accurate and timely information, reducing the chances of disseminating misinformation and rumors, and ensuring that the media has access to reliable sources and verified information. Furthermore, the two-way communication model allows effective crisis communication. PR practitioners can establish a collaborative

TABLE 7 Descriptives of study responses.

Constructs	Statistics	Descriptives	95% Confidence interval	
			Lower	Upper
Media organization	Minimum	3.00		
	Maximum	4.00		
	Mean	3.8881	3.8524	3.9188
	SD	0.27250	0.23162	0.30911
Public relations	Minimum	3.00		
	Maximum	4.00		
	Mean	3.9299	3.9053	3.9520
	SD	0.19353	0.15368	0.23051
New media	Minimum	3.00		
	Maximum	4.00		
	Mean	3.9287	3.9053	3.9496
	SD	0.18547	0.15206	0.21534
Two-way communication	Minimum	2.67		
	Maximum	4.00		
	Mean	3.7651	3.7171	3.8118
	SD	0.39979	0.35094	0.44565
Media content management	Minimum	2.67		
	Maximum	4.00		
	Mean	3.8807	3.8462	3.9090
	SD	0.27086	0.23166	0.30807

relationship with media professionals, permitting the dissemination of accurate information and addressing concerns. Through open and transparent communication during times of crisis, organizations can control the narrative and minimize the spread of rumors or false information. Moreover, it is notable that implementing the two-way communication model contributes to public perception and trust. Organizations can build trust, credibility, and transparency by engaging in meaningful conversations with the public through the media (Michael, 2021). This fosters a positive perception among the public as they perceive the organization as responsive, open, and willing to engage in dialogue. Finally, the two-way communication model aligns well with the interactive nature of social media platforms. PR practitioners can integrate social media into their strategies, leveraging it to engage in conversations, receive feedback, and share information, therefore enabling broader engagement with the public, improving media content management, and encouraging two-way communication. Thus, it is concluded that managing media content is not a simple task (Froment et al., 2017). Audience and communication are two basic factors that play an important role in this regard. Furthermore, the role of public relations practices also enhances communication and content management practices, leading to even more constructive outcomes. Organizations that understand the importance of symmetrical communication readily adopt new media as providing an important communication pathway. As two-way communication provides access to audiences, it also means that determining and measuring their preferences is not a difficult task anymore. Moreover, online public relations practices contribute to the digital ecosystem and artificial intelligence by using modern

technologies and digital means to improve communication and interaction with the public and customers. Artificial intelligence can help public relations teams analyze data and identify specific segments within their audience, improve the user experience, and provide appropriate digital services. It can also be used in crisis management and communicating with the public in emergencies through digital content management. Strategic collaboration between public relations and digital technology is vital to achieving success in the digital age. It means that public relations are based on bilateral communication and effective listening as it seeks to understand the needs and expectations of the public and interact with them continuously.

## 7.1 Limitations

This study has some primary limitations. First, this study only presents data from the employees of some selected media organizations, mainly privately owned, in the United Arab Emirates, which puts its applicability to state-owned media into question. Second, the study hypothesis also remained insignificant, which further limits the scope. Finally, the third limitation involves the convenience sampling technique, which has received much criticism due to the nature of its selection criteria. However, more studies, especially on state-owned media in the United Arab Emirates, can further highlight these significant findings. In particular, by using the proposed conceptual model, content management can be explored in the context of private media platforms.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

The studies involving humans were approved by IRB-2023-199-Yarmouk University. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

## Author contributions

AA: Writing – review & editing, Writing – original draft. IM: Investigation, Writing – review & editing, Formal analysis. MA: Methodology, Writing – original draft. RA: Conceptualization, Writing – original draft. FA: Supervision, Visualization, Writing – original draft. MH: Project administration, Writing – review & editing.

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## Funding

The author(s) declare financial support was received for the research, authorship, and/or publication of this article. This work was funded by Princess Nourah Bint Abdulrahman University Researchers Supporting Project number (PNURSP2024R343), Princess Nourah Bint Abdulrahman University, Riyadh, Saudi Arabia.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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RECEIVED 26 January 2024

ACCEPTED 03 April 2024

PUBLISHED 22 April 2024

## CITATION

Elareshi M, Habes M, Ali S and Waheeb  
Attar R (2024) Public engagement through  
public service advertisements for health care  
awareness during early COVID-19 in Pakistan.  
*Front. Commun.* 9:1376717.  
doi: 10.3389/fcomm.2024.1376717

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# Public engagement through public service advertisements for health care awareness during early COVID-19 in Pakistan

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The way information disseminated in the early period of COVID-19 led the world to confusion and an unprecedented public health crisis. This paper examines the relationships between public engagement through public service advertisements (PSA) and the effectiveness of health care awareness during early COVID-19. To explore such a relationship and mainly public perceptions, we conducted a very early survey ( $n = 200$ ) using an online convenience sampling procedure with different age groups in Sahiwal, Pakistan. Data were analyzed using the PLS-SEM software to measure such a relationship. We find that PSA were perceived as a vital platform, which has an impact on public perceptions towards taking precautionary measures during the early pandemic. Importantly, PSA have a strong impact on spreading health awareness in Pakistan. Policymakers and health care professionals should grasp and acknowledge the significance of media content influence to enhance health awareness including the role of PSAs in health care. This comprehension may motivate the adoption of practices and policies in the health sector, contributing to the known 'new normal', ensuring their continuity even beyond the COVID-19 era.

## KEYWORDS

pandemic, health care awareness, public service advertisements, attitudinal changes, university students, health care campaigns

## 1 Introduction

When COVID-19 started, Pakistan had few diagnostic and treatment facilities. The local authorities were sending the samples to international laboratories as they were incapable of testing the suspicious case; meanwhile, they also received helps from other countries (Khalid and Ali, 2020; Rehman et al., 2021). The increase in the number of local cases created severe health care concerns, revealing the vulnerability and incapacity of the local health care system (Din et al., 2020; Qureshi et al., 2020). However, regional authorities worked on multiple occasions to address health challenges. In the early stages of COVID-19, a primary task of the National Institute of Health (NIH) involved formulating guidelines and establishing services to care for individuals identified with symptoms of COVID. The government acknowledged the importance of disseminating accurate / official messages to ensure public awareness of the pandemic through the NIH. The latter used several media platforms (e.g., official media,

websites, and social networks) (Figure 1). Most of these platforms were used to run health advertising campaigns and programs (in different languages), including working with health providers, policymakers, journalists, advertisers and doctors to increase Covid-19 health awareness among the public (Khalid and Ali, 2020; Roy et al., 2020), especially information disseminated through public service advertisements (hereafter, PSA).

Noticeably, the role of PSA during the previous endemic have remained highly influential globally. In this time, health care policymakers and stakeholders consider PSA as an important platform for social wellbeing and awareness campaigns, see for, e.g., (Gralinski and Menachery, 2020; Van Asbroeck et al., 2021). For example, research has shown the role of PSA in spreading HIV, Swine flu, Malaria, etc. awareness campaigns and information about preventive measures (Datta and Choudhury, 2019; Hamid and Sule, 2021; Kudrati et al., 2021). PSA through both electronic and print media remained highly influential during the HIV campaigns globally (Shepperson, 2000). Such campaigns aimed at bringing social change, which is much recognized through advertising campaigns that raise health care awareness. Studies also confirmed that health-based attitudes can be changed due to PSA campaigns (especially social media) influencing campaigns and exposure (Melki and Kozman, 2021; Lu and Sun, 2022). These advertisements are usually published through the PSA, and as media platforms are highly accessible for large audiences who exposure to these advertisements (Saraf and Balamurugan, 2018).

Despite PSA being part of government efforts to promote health awareness and information (Tait et al., 2022; Habes et al., 2023), empirical and theoretical gaps are still excited when considering their effectiveness during and after COVID-19 in Pakistan. Most officials and wellness-based institutions usually link closely to different media platforms when it comes to raising health awareness campaigns (Naveena, 2015; Subica et al., 2016; Kim and Diwas, 2020). In Pakistan, hospitals usually resort to different media platforms to reach the

public for awareness of health care through promoting their services and containing rational argumentation, advocating a healthy lifestyle as a strong necessity (Kumar and Bano, 2017; Rehman et al., 2021). For example, health institutions and centers often use social networks to advertise their services and convey their messages, indicating the fundamental role of new media in our daily practices (Lu and Sun, 2022).

Due to the unexpected circumstances of the COVID-19 period (Khalid and Ali, 2020; Ali et al., 2022), there has been little research on the impact of PSA campaigns in health communication and awareness, particularly within health care in Pakistan. In fact, up to the time of writing this study, little was known about strategic health communication in Pakistan post-COVID-19. Studies have argued about the scale of change needed post-COVID-19 in different organizations and sectors to cope with the new environment called “the new normal” (Widodo et al., 2020; Cancelas-Ouviña, 2021; Nguyen and Tran, 2022). In the health sector, for example, health companies are meant to play a key role in serving their communities by updating them with new information on COVID-19 measures (Zakar et al., 2021), and PSA campaigns can be used to improve the relationships between media advertisements and health care awareness (Reidenberg and Berman, 2022).

Given the above discussion, the role of health information during the public health emergencies can also be understood through the Risk Communication Theory (RCT) (Covello, 1992). However, there is a difference between public engagement through public service advertisements (PSA) and their effectiveness in such a crisis and awareness of health care during early COVID-19. This investigation is vital, as previous research advocates that understanding such a relationship would help both public relations professionals in crafting and disseminating effective PSA campaigns to ensure having a strategic communication when delivering health care messages to targeted audience (Elareshi and Bajnaid, 2019), as well as media advertisements and health care companies promote social and



wellness health awareness issues, health literacy (Zakar et al., 2021), especially post-COVID-19. We test the following principle of PSA and their use in dealing with COVID-19 information in Pakistan in terms of:

- The link between PSA campaigns and health care awareness.
- The effectiveness of PSA campaigns on the awareness of COVID-19.
- Whether the COVID-19 campaigns have an impact on the attitudes of the respondents.

The study is supported by these three hypotheses by assessing respondents who reside in Sahiwal City, Pakistan. Such an analysis is important and relevant, as few studies have examined this phenomenon during COVID-19 (Datta et al., 2020). Thus, for both practical and theoretical aspects, this study aims to understand the adoption and change of certain attitudinal behaviors among the public as a result of PSA health care awareness (Reidenberg and Berman, 2022) and digital health literacy (Zakar et al., 2021). It evaluates these attitudes and strategically provides health professionals and policymakers with information to develop positive attitudinal change as Harinie et al. (2017) state. Theoretically, this study contributes to the importance of developing PSA messages to increase awareness and attitudes about health care, especially intentions to change behaviors' attitudes (Reidenberg and Berman, 2022), in the era of digital communication technologies as Goodwill (2020) indicate.

## 2 Literature review and theoretical framework

### 2.1 Rick communication theory

The Communication Theory (RCT), introduced by Covello (1992), support the conceptual model of the current research, the relationships between public engagement through public service advertisements (PSA) and their effectiveness in such health crisis and awareness of health care during early COVID-19 (Human Rights Commission Pakistan, 2020; Almansoori et al., 2021). Although, there is a plethora of literature examining the public engagement with information through PSA, rapidly evolving the importance of effectively communication in uncertainties time such as during COVID-19 that needs more validation and new findings for theoretical background. As known, COVID-19 was described as a novel infectious disease first identified in December 2019 in Wuhan City, China and leading to a pandemic declaration by the WHO in March 2020 (World Health Organization, 2022). As mentioned earlier, the RCT emphasizes on the importance of communication to facilitate informed decision-making, enhance public understanding (in both ways), and promote appropriate behavioral responses. The RCT suggests five principles for any effectively communication in crisis (COVID-19) such as transparency that considers disseminating clear, accurate and timely information to the public during early COVID-19 (Saling et al., 2021; Awan et al., 2022). Trustworthiness, where building trust with the public through honest and open communication, acknowledging unforeseen and addressing concerns (Tong, 2023). Audience understanding by tailoring communication strategies to the needs and literacy levels of diverse audiences to ensure comprehension

and relevance (Zakar et al., 2021). Empowerment by enhancing the ability of the public to take appropriate actions to protect themselves such as taking vaccination (Khan et al., 2020), stay home, follow PSA promotion guidance etc. Public engagement through encouraging two-way communication and dialog with stakeholders, health care providers, and policymakers (Gralinski and Menachery, 2020; Van Asbroeck et al., 2021) to address COVID-19 issues and spread health awareness and measures through PSA.

### 2.2 Public service advertisements / announcements

PSA are defined as nonchargeable announcement to promote program (s), activities or services which are provided by state or local government regarding serving a community interest (Tait et al., 2022). It is a message / communication produced by the media for public benefit without any cost (Goodwill, 2020). However, PSA can be paid or unpaid (Jones, 2012). PSA are commonly used to communicate information on topics or concerns relevant to the public (Datta and Choudhury, 2019), reflecting the social wellbeing in any given community. Historically, it goes back to a few centuries ago, but it was more recognized and played a vital part in wartime, especially WWI and WWII when it became more formalized. After the war, the media continues to offer free space for good causes such as health awareness (e.g., drugs, smoking) and social wellbeing (feeling good, being happy) and environmental issues (e.g., flooding).

These PSA are broadcast on TV, radio, and appears in print media as well. For their ease of use and usefulness, local governments often use the Internet for their PSA (Singh and Singh, 2017; Tait et al., 2022). These advertisements may change public sentiments by increasing awareness of specific matters (e.g., COVID-19) (Azer and Alexander, 2022). The local government (as part of public relations dues, and this implies through persuasive communication on behavior change) is often responsible for sponsoring and running more PSA campaigns. Other organizations such as trade associations, (non-)profit institutions can also lead on informing the public about health issues. Park et al. (2008) evaluated the function of advertisements in enlisting individuals with physical disabilities for the Special Olympics. The study demonstrated that the advertisements predominantly employed rational arguments, emphasizing the effects of participation on the mental and physical well-being of individuals with special needs, encouraging their participation in the international event.

PSA are highly used to reinforce healthy behaviors and the adoption of physical and mental health care lifestyles (Datta and Choudhury, 2019). It also addresses other issues such as basic human rights, empowerment, and others. Jones (2012), examined the influence of PSA on the social well-being of youth / teens regarding organ donation and drug abuse awareness campaigns among college students in Florida, US, and found that the campaigns highly affected the participants. Hence, the individuals expressed a strong inclination to abstain from drugs and to view organ donation as a component of social well-being. In Pakistan, Jin et al. (2021) found that public service announcements that incorporate fear-based messages are considered an effective communication strategy in addressing vaccine hesitancy (Khan et al., 2020). As a result, PSA have the potential to elicit a positive response from the public. This elucidates why most health campaigns use advertisements to convey cognitive and



emotional signals, aiming to achieve the desired outcomes, specifically attitudinal changes (Krishen and Bui, 2015; Jin et al., 2021).

**H1:** PSA campaigns have an impact on health care awareness (HAW).

## 2.3 PSA in health care awareness campaigns and attitudinal change

From old to new media, health care awareness campaigns use them to promote health issues (for their ease of access and availability to everyone). In addition to traditional media, social networks also support different health promotion campaigns such as smoking awareness, HIV awareness, cancer awareness, etc. (Hamid and Sule, 2021; Kudrati et al., 2021). This is to aid the public interest (Masoni et al., 2011). Even in addition to advertisements, talk shows regarding health care are also trending in mainstream media to raise health care awareness (Naveena, 2015).

To obtain positive constructive outcomes, PSA messages sometimes are built on fear-based framed messages (Krishen and Bui, 2015). Krishen and Bui (2015) further examined the use of fear appeal in US-based health care advertisements. The use of the case study method showed that the 'consequence message' greatly helped advertisers capture audience attention, which further convinced them to adopt a healthy lifestyle and attitudinal change towards health care. Therefore, as indicated by Radu et al. (2018) PSA play an important role in creating a communication bridge between advertisers and viewers, especially in health care issues such as awareness of COVID-19. The study assumed the following.

**H2:** PSA campaigns have an impact on COVID-19 awareness (COA).

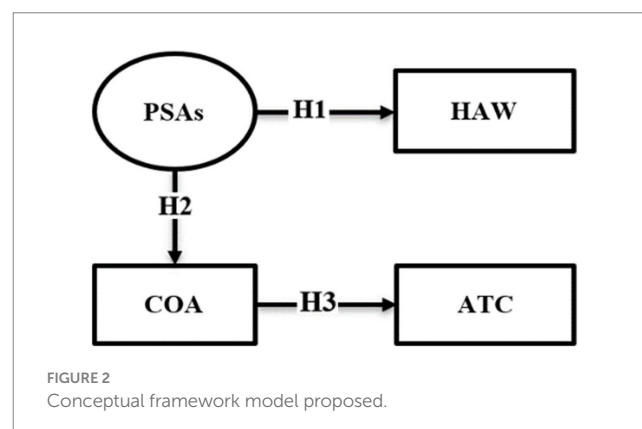
In terms of attitudinal change, as mentioned earlier, the health communication literature has examined PSA in health care for some times after WWII, especially to raise awareness or change public attitudes towards a health and social issue. To change attitudes, PSA campaigns have found different ways to convey their messages to spectators with shorter attention spans, video platforms (e.g., YouTube, Facebook), or uses celebrities to garner attention (Ftanou et al., 2021). Others may use it to appeal to interact with the public by portraying risks and issues (e.g., protection against COVID-19) (Damewood, 2022). In this regard, awareness of health care has worked efficiently to spread information regarding various diseases such as HIV/AIDS (Hamid and Sule, 2021), Ebola (Abramowitz et al., 2017; Sell et al., 2020), Black Death, Influenza, Cholera (Riha et al., 2021), etc. These media advertisements remained highly effective for the public engagement (Durkin et al., 2012) and provide an opportunity to change attitudes towards a specific issue and improve 'help-seeking behavior' as Ftanou et al. (2021, p. 830) indicate.

Rabar (2009) examined the influence of TV ads for HIV/AIDS campaigns aired between 2005 and 2007 in Kenya and found that the most effective ads (in terms of attitudes change) are those that provide precise and accurate communication. Respondents indicated their positive influence on attitudinal changes. Similarly, Utulu (2011) examined the impact of HIV / AIDS-based ads on the mass media in

Nigeria. Participants revealed that exposure to these advertisements has greatly informed them about the threat of AIDS, which further helped them to adopt the measures regarding disease prevention. Relatively, very few studies have examined the impact of PSA in health care during COVID-19 campaigns, especially in Pakistan, and whether PSA campaigns have the capacity to change attitudes and behaviors towards protection against COVID-19 using different media platforms. Concerning awareness of COVID-19, research has scrutinized the efficacy of such awareness efforts, revealing a correlation with various physical and mental health concerns such as loneliness, anxiety, stress and depression (Arafa et al., 2021; Bakioglu et al., 2021; Bendau et al., 2021; Demirtaş-Madran, 2021). These studies also highlight the impact of PSA in media advertisements, encouraging the adoption of preventive measures and vaccination, as Reinhardt et al. (2022) mention. Regarding COVID-19 awareness, studies examined the effectiveness of COVID-19 awareness, which has caused several physical and mental health problems such as anxiety, depressive, loneliness and stress (Arafa et al., 2021; Bakioglu et al., 2021; Bendau et al., 2021; Demirtaş-Madran, 2021). These studies also highlight the role of PSA through media ads, leading to the adoption of preventive measures / vaccination (Reinhardt et al., 2022).

During the COVID-19 era, although certain countries demonstrated relative success in curbing infection rates through various media channels, not all COVID-19 campaigns resulted in significant improvements in effective preventive health behaviors (Demirtaş-Madran, 2021). Studies suggest that individuals responded variably-positively or negatively-to lockdown restrictions and social distancing measures, influenced by factors that encompass personal, social, mental, and economic dimensions. Gerhold (2020) found a gender-based correlation, revealing that women exhibited a higher likelihood of expressing concern about the outbreak compared to men. Therefore, there is a need for a more comprehensive understanding of how the changes of public attitude and behavior towards COVID-19-related advertisements influence their overall attitudinal changes. Consequently, PSA play a crucial role in instigating favorable attitudinal transformations among the public regarding COVID-19 campaigns in Pakistan. This study aims to assess the relationship between PSA and health care awareness during early COVID-19 and its correlation with attitudinal changes among the Pakistani population (Figure 2).

**H3:** Awareness of COVID-19 (COA) has influence on attitudinal change (ATC).



### 3 Methodology

#### 3.1 Study design, population and settings

Following the guidelines of the Pakistani government for the public to reduce face-to-face communication, this study used an online convenience sampling procedure to collect data from the 21st largest populous city in Pakistan, Sahiwal. Due to lockdown restrictions, specific criteria were applied to conduct our data, e.g., participation must be (1) 18 years old and over, (2) well prepared to participate in a timeframe, (3) had seen or understood the PSA campaign (s) in relation to the COVID-19 campaigns. After reviewing early research (see, e.g., Kim and Diwas, 2020), data were gathered through a developed and semi-structured, and distributed through a local researcher. Table 1 summarizes the demographic features of the respondents (Figure 3).

Convenience sampling was employed due to its practicality and efficiency in accessing respondents during a challenging period of strict lockdown measures and social distancing protocols. With limited physical access to potential participants, a random number of 200 respondents was initially selected. However, a total of 178 questionnaires were received during the given timeframe by the residents of Sahiwal. This method expedited the data collection process, aligning with the urgency of understanding public engagement and health care awareness during pandemic and health crises.

#### 3.2 Data gathering

Before starting the survey, the study obtained the ethical approval of Allama Iqbal Open University Islamabad (BASAR 12–00-16), and participants received detailed information about the research objectives and procedures. They willingly and voluntarily agreed to participate without any form of coercion and were explicitly informed of their right to withdraw from the study at any point without facing repercussions. Additionally, the importance of confidentiality was

TABLE 1 Demographic characteristics of the respondents to the online survey.

Variables	Frequency (N = 178)	Percentage (%)
Gender		
Female	124	69.7%
Male	54	30.3%
Age (year)		
18–25	84	47.2%
26–35	60	33.7%
36–45	20	11.2%
46+	14	7.9%
Education		
High school	28	15.8%
University	43	24.2%
Graduation	107	60.0%

emphasized. Note that the generalization of our results is relatively directed to those participated in this research. Participants were invited to complete the survey during March 2021. The study was able to collect a total of 200 responses. The participants were thanked for and appreciated their time to participate in the study. After filtering the responses, 22 responses were excluded for being incompletely filled.

The questionnaire obtained details about the personal demographic attributes of the respondents, study details, and reported COVID-19 awareness and campaigns in Pakistan. A variety of other questions were asked about the awareness of the health care of the respondents and the materials from the PSA, the authors developed 15 scale items, asking the respondents to evaluate such perceptions. Cronbach's Alpha ( $\alpha$ ) scores were calculated for all 15 items. For example, PSA were measured with three items ( $\alpha=0.800$ ); health care awareness (HAW) was measured with four items ( $\alpha=0.780$ ); COVID-19 awareness (COA) was measured with four items ( $\alpha=0.732$ ); and attitudinal change (ATC) was measured with four items ( $\alpha=0.811$ ). These items were measured on a five-point Likert scale with 1 = "strongly agree" and 5 = "strongly disagree". Table 2 provides details of the questionnaire items and their sources.

Furthermore, a pilot sample ( $n=15$ ) was run to improve the language and clarity of expression and to identify any potential problems in the investigation. It helped to adjust and rephrase the items for greater clarity and coherence. Four constructs were used to measure and represent the attitudinal changes of the respondents to better understand the role / relationship between PSA and health care awareness during the COVID-19 outbreak.

### 4 Results

#### 4.1 Reliability and validity

Reliability and validity are run to understand how well a method measures something. Two tests measure the reliability of the measurement (construct) and the validity (convergent and discriminant) and assess the model measurement using composite reliability, factor loadings, average variance extracted (Table 2). For the reliability assessment, composite reliability was run to test the reliability of the four constructs. Based on the PLS-SEM, the criterion was used to conduct the reliability was a minimum of 0.60%. All constructs on the path analyzes had composite reliability values that exceeded the minimum acceptable measure, indicating an appropriate construct reliability.

For the validity assessment, the convergence validity and discriminant were run using factor loading and average variance extracted, which evaluated how the related components of each construct were significantly correlated. The criterion used to conduct the validity assessment was a minimum of 0.70% in both FL and AVE values. With the threshold values for FL being above 0.70 and the common threshold for the AVE values being above 0.70, the level of convergent validity of the 15-item was acceptable to be used in the study.

Furthermore, the research conducted the Fornell-Larker criterion test to assess the discriminant validity of our research model, as illustrated in Table 3. This test aimed to determine whether the constructs were distinct from each other, essentially evaluating whether the constructs that theoretically should not be closely related

TABLE 2 Confirmatory factor analysis (convergent validity testing).

Variable	Code	Items	Factor loading	Average variance extracted	Composite reliability
Public service advertisements (PSA)	PSA1	PSA messages effectively shared information about COVID-19 preventive measures and healthcare practices	0.934	0.915	0.745
	PSA2	The PSA campaigns expanded my awareness of the importance of seeking timely medical help during the early stages of COVID-19	0.848		
	PSA3	The PSA campaigns positively affected my attitudes toward adopting healthier behaviors and precautions to avert the spread of COVID-19	0.964		
Health care awareness (HAW)	HAW1	I am well-informed about the symptoms of COVID-19 and the essential steps to take if I or someone I know shows these symptoms	0.971	0.918	0.851
	HAW2	I know the importance of proper hygiene measures to reduce the risk of contracting and spreading COVID-19	0.740		
	HAW3	I know the availability of healthcare facilities and resources in my locality to address COVID-19-related concerns	0.982		
	HAW4	I am aware of the significance of seeking medical assistance promptly if I experience any symptoms or suspect exposure to COVID-19 to prevent further transmission and ensure timely treatment	0.979		
COVID-19 awareness (COA)	COA1	I am familiar with the transmission routes of COVID-19 and how it spreads within communities	0.927	0.935	0.776
	COA2	I understand the significance of social distancing and limiting social gatherings to deter the spread of COVID-19	0.954		
	COA3	I know the symptoms associated with COVID-19 and when to seek medical advice or testing	0.950		
	COA4	I have information about the government regulations and guidelines regarding COVID-19 preventive measures, such as lockdowns or curfews	0.909		
Attitudinal change (ATC)	ATC1	Since the COVID-19 started, I have become more conscious of my health habits and hygiene practices	0.695	0.792	0.751
	ATC2	My attitude towards seeking medical assistance promptly when experiencing COVID-19 symptoms has changed positively compared to before the pandemic	0.648		
	ATC3	I am more inclined to follow recommended health guidelines and precautions to protect myself and others from COVID-19 than before the pandemic	0.880		
	ATC4	The COVID-19 pandemic has prompted me to reevaluate the importance of public health measures and healthcare access	0.948		

exhibited low correlations. Table 3 indicated that the AVE values (highlighted in bold) exceeded the provided correlation values.

were above 0.8 (for example PSA = 0.801; HAW = 0.883; ATC = 0.877), indicating that the research model contains strong predictive power.

## 4.2 Coefficient of determination $R^2$

To further validate the research model, the coefficient of determination  $R^2$  was run using the structural equation modeling (SEM) (Turney, 2022). The R-squared ( $R^2$ ) is a number between 0 (the lowest possible value) and 1 (the highest possible value) that measures the accuracy with which a statistical model predicts an outcome. Simply, the higher the value (close to 1), the greater the predictive precision of a model (Hair et al., 2019). The values of  $R^2$  in this study

## 4.3 Structural model and hypotheses testing

An additional phase was executed using the partial least squares (PLS) method to perform the structural equation modeling (SEM). This was used to examine our research hypotheses through path analysis and regression analysis. This analytical approach facilitates the evaluation of relationships between a single independent variable and three dependent variables. The level of path coefficients of the inner

model was tested with a resampling bootstrapping of 1,000 iterations. This analysis required performing *t*-values, Beta values ( $\beta$ ),  $R^2$  values, significant direction, and decision, as summarized in Table 3. In general, the data revealed that all three hypotheses were supported (see Figure 3).

For our H1, we predict the relationship between public service advertisements (PSA) and health care awareness (HAW). PSA have a significantly positive impact on HAW, indicating that H1 has been supported ( $\beta=0.518$ ,  $t=8.027$ ,  $p<0.000$ , 2-tailed). Similarly, H2 anticipates that PSA have associated with awareness of COVID-19 (COA). The data also showed that PSA have a significantly positive impact on COA ( $\beta=0.473$ ,  $t=7.439$ ,  $p<0.000$ , 2-tailed). Accordingly, both the H1 and H2 postulations were supported. Finally, H3 predicts that awareness of COA is associated with attitudinal change. The data revealed a significant impact of COA on ATC. Hence, H3 was supported ( $\beta=0.444$ ,  $t=6.422$ ,  $p<0.000$ , 2-tailed).

### 5 Discussion and conclusion

The onset of the COVID-19 pandemic impacted the contagion rate and transmission patterns, posing a threat to our feelings of security, safety precautions, and practices of social distancing (Alshahrani and Babour, 2021; Topf and Williams, 2021; Karakose et al., 2022). It has changed what inherently human is doing in communicating with others. Simultaneously, both the public and private health care sectors in Pakistan suffered and faced several problems such as lack of adequate services and physical infrastructure, paramedical personnel, etc., especially in urban areas

TABLE 3 Discriminant validity results.

	PSA	HAW	COA	ATC
PSA	0.837			
HAW	0.614	0.842		
COA	0.666	0.369	0.874	
ATC	543	0.212	0.521	0.627

compared to rural areas, highlighting health care as a major social concern in Pakistan (Kumar and Bano, 2017; Rehman et al., 2021).

Given that this study examines the relationships between public engagement through public service advertisements (PSA) and their effectiveness in addressing health care awareness during the earlier COVID-19 in Pakistan. It primarily focused on how viewers perceived PSA to spread health care awareness to address health care challenges during the COVID-19 pandemic. This study, therefore, contributes to our understanding of the role of communication in public health crises. The study was based on three hypotheses that examined the relationship between PSA campaigns and health care awareness (H1); the effectiveness of PSA in COVID-19 awareness campaigns (H2); and whether COVID-19 advertisements have an impact on respondents' behavioral attitudes (H3). The use of PSA emerged a crucial tool in disseminating health care information and promoting behavioral changes among the public (see Figure 1).

Our analysis provides evidence on the role of PSA in awareness of health care and change in behavior during COVID-19. Our hypotheses statistically were supported the relationship between the use of PSA as a public engagement tool and awareness of health care. Drawing upon the RCT which emphasizes the importance of transparent, timely, and trustworthy communication during crises, our study explores the impact of PSA information on health care awareness and behavioral attitudes in Pakistan. As expected, PSA has played a significant role in raising public awareness of health care issues during COVID-19. It has contributed to public awareness of health care in general in Pakistan, educating their users by sharing transparency of accurate and timely information, with trustworthiness and public engagement (Ejaz et al., 2021; Jin et al., 2021). PSA also helps to raise public awareness through their understanding of the pandemic and empowering the public to take appropriate actions to protect their communities (Khan et al., 2020) through actionable guidance using PSA during COVID-19 (Datta et al., 2020). Scholars, medical practitioners, and policy makers would acknowledge the role of PSA in raising disease awareness and behavioral changes elsewhere; e.g., in China (Puppin, 2020), India (Sharma et al., 2022), Turkey

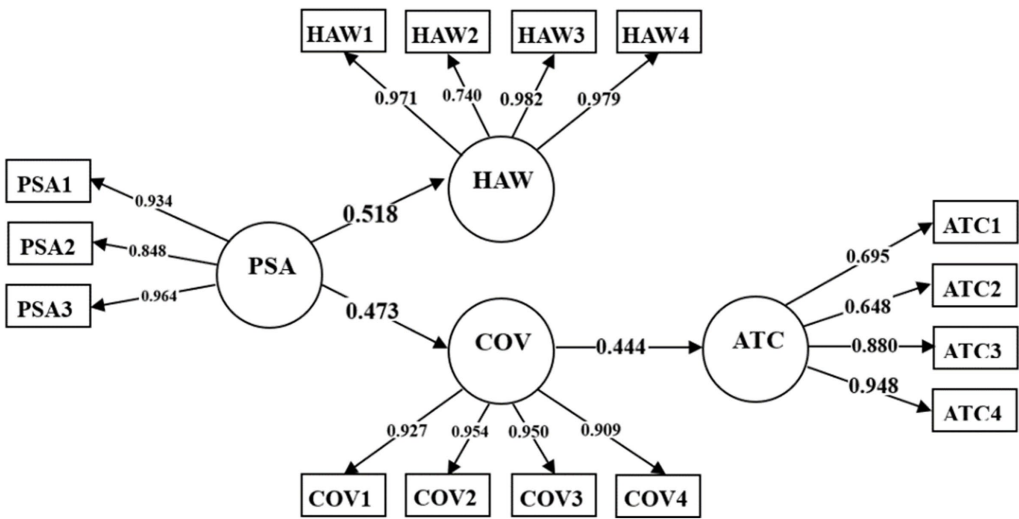


FIGURE 3  
Path analysis results.



(Bakioğlu et al., 2021; Demirtaş-Madran, 2021), the United Kingdom (Deng et al., 2022), the United States (Taylor et al., 2020), and Saudi Arabia (Barry et al., 2020), South Africa (Shepperson, 2000), and Egypt (Arafa et al., 2021).

Furthermore, our findings fill the literature gap regarding such a role and relationship. It significantly contributes to understanding how PSA are used to promote successful health care campaigns, especially after COVID-19, and the possibility of normalizing the changes that have major implications on different organizations (e.g., health care) (Perreault and Ferrucci, 2020; Widodo et al., 2020; Cancelas-Ouviña, 2021). This study supports the literature on the relation between public engagement and public health care and change in behavior of people in Pakistan COVID-19 (Rehman et al., 2021).

There are significant implications from our results for governmental health bodies and public engagement in Pakistan, e.g., NIH, health care professionals and practitioners. These bodies should consider more PSA in health care awareness campaigns and behavioral health care change to adequately protect people from such virus and diseases (Abuhashes et al., 2021). This is because some of the information regarding COVID-19 came through the PSA platform. Given the ripped changes in the media landscape and platforms communication in Pakistan, people do change based on information received from these platforms, as the mentioned media can reflect and create reality (Jarynowski et al., 2020). Therefore, people obtain these changes by observing the environmental changes (e.g., PSA campaigns) and adopting them (attitude change). As we want to make use of the 'desired outcomes' by resorting to attitudinal changes, our cognition here allows us to evaluate and adopt these attitudes through the observational learning process (Brady, 2017). Continuous observation eventually helps individuals adopt the relevant behavior (e.g., to cope with restrictions during COVID-19 and adopt the new normal environment post-COVID-19). Additionally, people would adapt these behaviors to receive rewards attributed to attitudinal change. The role of PSA in health care communication is the same (Harinie et al., 2017). Today, when media platforms facilitate us with easy and convincing use of these platforms, developing positive attitudinal change is not difficult. Although there can be several internal and external barriers, the modeled behavior is highly adaptable for the audiences (Topf and Williams, 2021).

In summary, optimistically, media content through PSA directly can enable policymakers and health care practitioners to access and engage with the public and keep them updated. Also, PSA can strongly influence the public to adopt measures (e.g., during COVID-19) to save lives. However, major social institutions must accelerate their efforts to cope with the global health care emergency (Saqlain et al., 2020), not only during the pandemic, but also afterward, in which the new normal or change becomes more adaptable. Building on the COVID-19 crisis, our research could help health policymakers identify and adapt interventions that increase health care awareness (Krammer, 2022) including vaccine confidence and public health services communications (Khan et al., 2020).

## 6 Limitations and future research

Some limitations can be highlighted. First, we used the convenience sampling method; therefore, the findings represented the only population from the Sahiwal city that

further questions its generalisability in other cities and even countries. Second, data were collected during the peak time COVID-19, and we believe respondents could be under uncertainly / confused period which could affect their answers. To minimize the effect of this, findings cannot guarantee representativeness of the study population. Therefore, we suggest more studies to re-examine the role of PSA in health care awareness in a large population and longitudinal studies to determine whether the findings are transient or enduring. Third, the study focused only on PSA, yet there are many other programs, materials designed by the NIH for public engagement, health care awareness and information, that further narrow down the scope of this study. Thus, we recommend more studies to individually examine PSA post COVID-19 and attitudinal change using different data collection and methods, such as the qualitative approach.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## Ethics statement

This study was reviewed and approved by the IRB Allama Iqbal Open University in accordance with the local legislation and institutional requirements. Written informed consent was not required for participation in the study in accordance with the local legislation and institutional requirements. Participants were fully informed about the study and their contributions will only be used for research purposes.

## Author contributions

ME: Investigation, Software, Writing – review & editing. MH: Conceptualization, Writing – original draft. SA: Data curation, Investigation, Methodology, Writing – original draft, Writing – review & editing. RW: Conceptualization, Formal analysis, Visualization, Writing – original draft.

## Acknowledgments

This work was supported by Princess Nourah bint Abdulrahman University Researchers Supporting Project number (PNURSP2024R 343), Princess Nourah bint Abdulrahman University, Riyadh, Saudi Arabia.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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RECEIVED 10 February 2024

ACCEPTED 10 April 2024

PUBLISHED 29 April 2024

## CITATION

Steinfeld N and Lev-on A (2024) Exposure to diverse political views in contemporary media environments.  
*Front. Commun.* 9:1384706.  
doi: 10.3389/fcomm.2024.1384706

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# Exposure to diverse political views in contemporary media environments

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Exploring the nexus between digital media and citizens' exposure to diverse political views is imperative for understanding contemporary democratic engagement. This study builds upon Mutz and Martin's (2001) seminal research, integrating digital communication channels previously unexamined. Our findings suggest that the interpersonal character of media interactions, rather than the mere distinction between offline and online platforms, significantly influences the diversity of political views to which individuals are exposed. Contrary to the prevalent theories of "echo chambers" and "filter bubbles," our analysis reveals a nuanced media landscape where digital platforms facilitate both homogeneous and heterogeneous political exposures, depending on their specific affordances. This study contributes to the political communication literature by offering a comprehensive overview of exposure dynamics in the digital age.

## KEYWORDS

political communication, political discourse, diverse political views, selective exposure, echo chambers, filter bubbles, online social media

## Introduction

Exposure to diverse political views is fundamental to the functioning of democratic systems, fostering the exchange of heterogeneous ideas within public discourse and facilitating political participation. Such participation is integral to democratic societies, as citizens engage in processes that inform collective political decisions impacting their lives (Jun, 2014). Exposure to different opinions can lead to decreased levels of polarization (Levendusky and Stecula, 2021) and partisan divide (Levendusky, 2023). Exposure to diverse political views is necessary for citizens to form opinions while also considering the opinions and perspectives of others. Diverse opinions often strengthen people's sense of legitimacy regarding their own opinions after receiving a broad perspective (Mutz and Martin, 2001).

Many studies have examined the level of exposure to diverse political views through specific media or platforms (e.g., Wojcieszak and Mutz, 2009; Kim, 2011; Guidetti et al., 2016; Cowan and Baldassarri, 2018; González-Bailón et al., 2023; Nyhan et al., 2023), or compared the frequency or extent of encountering diverse political views between some media (e.g., Baek et al., 2012; Anspach, 2017). However, to the best of our knowledge, a systematic, comprehensive comparison of perceived exposure to diverse political views across the range of sources of political information, including mass, personal, offline, and online media channels, has not been conducted.

This study is a follow-up to Mutz and Martin (2001), who examined the degree of exposure to diverse political views in various media that constitute key sources of political information. The aim of Mutz and Martin's research was to examine the contribution of sources of political information to exposure to diverse political views, and to compare the degree of exposure to



diverse views between interpersonal media and the mass media (Mutz and Martin, 2001).

The study was published in 2001 and was based on data collected in 1995; therefore, over two decades have passed since the data were collected, during which many changes took place in the communication landscape, such as the rise of the internet and the age of online social media, which has gained momentum in the last decade. Mutz and Martin found that different media lead to different degrees of exposure to diverse political opinions. Therefore, we saw a need to re-examine the question while updating existing sources of information that serve as a central source of political information for citizens.

The aim of this study is to investigate diversity in the current political media landscape using Israel as a case study, bearing in mind the importance of exposure to diverse opinions as an essential part of a healthy, functioning democracy (Jun, 2014).

## Literature review

### Selective exposure and the importance of exposure to diverse opinions

Diversity of opinions is an important precondition for making informed decisions (Wurff, 2011). Studies show that there is a positive effect of exposure to diverse political views because it expands citizens' political knowledge, contributes to more complex, sophisticated opinion formation, and increases political efficacy (Guidetti et al., 2016; Harell et al., 2019). Exposure to diverse political views is critical in a democracy because when citizens are exposed to opinions that differ from their own, they develop understanding, tolerance, and critical thinking (Author; Min and Wohn, 2018).

Despite the importance of exposure to diverse opinions, people seek harmonious relationships with others; therefore, when two or more people hold common beliefs, they tend to connect with each other (Echterhoff et al., 2009). Seeking information from other like-minded people can provide the basic need for connection, so most people tend to gather around opinions similar to their own, to examine, interpret, and remember information that confirms their existing opinions in advance. In contrast, relationships characterized by conflicting beliefs and opinions can undermine this basic need (Frimer et al., 2017), create cognitive dissonance that conflicts with existing beliefs or opinions, and cause feelings of personal discomfort (Festinger, 1957).

When people consume media content, they tend to consume content that is consistent with their existing positions. As early as the 1940s, Lazarsfeld et al. (1944) identified that people selectively remember certain political media messages while avoiding others, and that there is a connection between people's opinions and their choices of what to listen to, watch, or read. The Selective Exposure theory examines how useful information is for citizens in forming an opinion (Knobloch-Westerwick and Kleinman, 2012; Wagner, 2016). Many people are selectively exposed for convenience – it is easier to be exposed to people with similar views. In this regard, selective exposure is a form of self-defence against a sense of threat (Hart et al., 2009).

In the case of online social media, people are also accidentally exposed to political information that they did not necessarily actively

seek, including different political opinions or challenges to existing political positions. This incidental exposure may also be a critical factor in reducing gaps in political involvement, as even people with low political involvement often participate in political discussions online, such as sharing political information (Weeks et al., 2017). Still, a computational study of the news consumption patterns of 14 million Facebook users across 5 years found that users, independent of the activity or the time they spend online, persistently tend to interact with a very limited number of news outlets with which they identify (Cinelli et al., 2020; see also González-Bailón et al., 2023; Nyhan et al., 2023).

Although people do not actively avoid online information they disagree with, the Internet allows users to easily search for and consume political news with similar views to theirs, and this selective exposure may occur more frequently when people strongly identify with a particular political party (Weeks et al., 2017; Tyler et al., 2022). For example, a recent study found that supporters of conspiracy theories about COVID-19 were more likely to selectively choose and consume conservative media (which often supported conspiratorial claims), and that conservative media use positively correlated with beliefs in COVID-19 conspiracies (Romer and Jamieson, 2021). Similarly, participants who have a negative attitude towards vaccination tended to consume and recall more accurately attitude-consistent information (Li et al., 2022).

### Exposure to diverse views in the mass media

This study is a follow-up to the classic study by Mutz and Martin (2001) and replicates the original research method while updating the sources of political information included in the original study. Their study compared different interpersonal and mass media, and examined whether and to what extent these media expose those who consume them to different and diverse political opinions. The study was based on two representative national surveys conducted in the United States and in the United Kingdom (Mutz and Martin, 2001).

In both countries, it was found that exposure to opinions through interpersonal interaction is often homogeneous and that there is room for selection in interpersonal communication. Most people tend to avoid talking about political issues with people who hold contradicting opinions, and moreover, people deliberately choose those with whom they are comfortable connecting and with whom they feel comfortable having a political discussion. These patterns cause people to not encounter disagreements, and even when they encounter them, they tend to avoid confrontation.

The second finding from Mutz and Martin's study is that mass media, led by newspapers and television news, are the main sources through which people are exposed to different opinions. Television is a major source of exposure to heterogeneous views. Television programs, especially current affairs and news programs, are committed to journalistic ethics – objective reporting and the presentation of a variety of opinions and responses (Bennett and Serrin, 2005). A recent study also showed that respondents who consume TV and radio news show less tendency for selective exposure to news items (Steppat et al., 2022). In addition to television, the researchers examined communication with acquaintances in the

workplace as a source of exposure to heterogeneous views, and found that these connections were located midway between homogeneous interpersonal sources and heterogeneous mass media. The workplace has also been explored in [Mutz and Mondak \(2006\)](#) and similar follow-up studies ([Jian and Jeffres, 2008](#); [Yeoman, 2014](#)).

Mutz and Martin's research provided important and relevant information about the sources through which people are exposed to diverse political views; however, since the study was conducted more than 20 years ago, it did not include online sources. Due to the significant changes that the media environment has undergone in recent years, as will be detailed below, there is room to update the study and reexamine it today.

Recent studies demonstrate that online platforms and social media emerged as the second-largest sources of news consumption, while television maintained significant viewership, particularly in political coverage ([Gottfried and Shearer, 2017](#); [Newman et al., 2018](#); [Yanatma, 2018](#)). Notably, during the 2016 US presidential elections, television served as the primary source for news on election results ([Gottfried and Shearer, 2017](#)). However, there is a shift, with a decline in television news consumption and a corresponding rise in social media usage for news consumption. A recent report suggests that these two sources of news consumption now stand as nearly equal primary sources for news. Additionally, the report highlights that, despite evolving media landscapes, television anchors and presenters remain the most recognized journalists in many countries ([Newman et al., 2022](#)).

A study investigating media influences on political positions revealed nuanced effects based on viewing behaviors. Unlike commercial television, engaging with current affairs programs on public channels has been associated with positive outcomes such as enhanced cognition, increased efficiency, and higher voter turnout in elections ([Aarts and Semetko, 2003](#)).

Despite the decline in the consumption of printed newspapers, traditional print media continues to play a vital role in enriching and deepening knowledge on political, social, and general issues. Research indicates that printed newspapers are particularly effective in broadening the scope of both general and political topics, surpassing online newspapers in this regard. However, this efficacy is contingent upon readers' interest in and reliance on information from printed sources ([Waal and Schoenbach, 2008](#)). Moreover, compared to online news platforms, which offer a plethora of headlines for users to select from, print newspapers encourage a more structured consumption of stories, potentially fostering a deeper engagement with the content ([Pearson and Knobloch-Westerwick, 2018](#)).

In recent years, politics has made its way into the realm of reality television. A study examining viewer reactions to the UK general election within the context of the reality show "Big Brother" revealed that the program successfully engaged young individuals who may otherwise feel excluded from traditional political processes. Remarkably, this engagement was achieved through the lens of pleasure rather than a sense of duty or inherent interest in politics ([Coleman, 2006](#)). Furthermore, reality shows often leverage diversity in casting to attract audiences, intentionally creating tensions and conflicts among participants from various backgrounds. This deliberate representation of diverse social groups on screen frequently leads to clashes of values, adding an additional layer of intrigue to the programming ([Kushin and Yamamoto, 2010](#)).

## Exposure to diverse views through interpersonal communication

According to a 2016 survey, friends and family are important sources of news, but respondents rely more on institutionalized media. Respondents testified that they trust the information they receive from official news sources, as well as information from family and friends, although trust in news from family and friends was lower than from official sources ([Mitchell, 2016](#)).

In contrast, political dialogue with co-workers is less likely to occur. A study that examined the conditions under which people would talk and reveal their political views found that there was a higher chance that people would share their views with friends and family than with co-workers. Moreover, people avoid talking about their political views, specifically with people they disagree with, to avoid conflict. It produces an experience of highly homogeneous social contexts, in which only liberal or conservative views are heard ([Cowan and Baldassarri, 2018](#)). Nevertheless, Mutz's follow-up study of co-workers found that the workplace provides the most comfortable social context to encourage people to engage in political discourse. Moreover, because political discourse at work involves a large number of people, exposure to diverse opinions is commonplace ([Mutz and Mondak, 2006](#)).

## Exposure to diverse views online

Numerous studies have explored the expansive nature of the Internet, which enables significant exposure to diverse individuals and opinions by facilitating connections across different societies and even among individuals residing in adversarial countries. This exposure to varied perspectives is facilitated through Internet platforms that attract individuals with a wide array of viewpoints. Notably, non-political discussion groups, such as those centered around hobbies and sports, often draw participants with divergent political beliefs ([Wojcieszak and Mutz, 2009](#); [Munson and Resnick, 2021](#)). However, some studies cast doubt on the Internet's efficacy as a tool for fostering exposure to a broad range of views and facilitating discussions among individuals and groups with contrasting perspectives (Author). Despite the importance of exposure to differing viewpoints and engaging in discussions with individuals holding diverse beliefs, empirical evidence suggests that people tend to avoid such discussions in practice ([Mutz, 2006](#)).

However, it's crucial to recognize that the Internet is not a monolithic entity; rather, it comprises diverse digital spaces with distinct characteristics. When analyzing news consumption and the spectrum of political positions within digital realms, it becomes imperative to differentiate between various types of online spaces. These include news websites, email applications, social media platforms, content aggregators, blogs, and more. Each of these digital environments offers unique features and dynamics that shape the ways in which information is disseminated, consumed, and interacted with by users. Therefore, understanding the nuances of these digital spaces is essential for comprehensively examining the landscape of online news consumption and political discourse.

A survey conducted in 2016 revealed that online news has surpassed print newspapers in popularity, ranking second only to television ([Mitchell et al., 2016](#)). Furthermore, another survey

indicated that printed newspapers ranked lowest in terms of political news consumption, with only 36% of adults in the U.S. reporting that they learned about political campaigns from local or national print newspapers. Importantly, this survey specifically inquired about the printed versions of newspapers and did not include digital formats, suggesting a significant gap in understanding: nearly half of U.S. adults (48%) obtained political news from news websites or apps. This distinction is crucial, highlighting the evolving landscape of media consumption and the increasing prominence of online news as one of the top ten new forms of digital media. This trend underscores the rise of new media platforms in comparison to traditional media outlets (Gottfried et al., 2016).

In the current era dominated by social media, research indicates contrasting dynamics regarding the content encountered on these platforms. On one hand, studies suggest that the composition of our social network plays a pivotal role in shaping the content we encounter, a phenomenon known as “selective exposure” (Bakshy et al., 2015). This suggests that individuals are more likely to come across content that aligns with the viewpoints of their social circle. Conversely, there is a claim that individuals who utilize social media for news consumption seek out diverse opinions and actively desire exposure to viewpoints that differ from their own (Beam et al., 2018). This suggests a motivation for seeking out diverse perspectives and challenging one’s own beliefs within the realm of social media news consumption. These contrasting findings underscore the complexity of individuals’ interactions with social media platforms and their motivations for engaging with diverse content.

Online social media platforms have emerged as crucial sources of political information, particularly during election campaigns (Sobaci et al., 2016; Lin et al., 2017). A significant portion of US adults, approximately half, now obtain news from social media platforms at least occasionally (Forman-Katz and Matsa, 2022). These platforms possess the potential to expose citizens to a multitude of perspectives and diverse political information (Kim, 2011; Bakshy et al., 2015; Barberá et al., 2015), potentially surpassing the reach of traditional mass media outlets (Anspach, 2017). Moreover, the utilization of targeting and personalization practices allows political candidates to tailor their messages to specific audiences (Mohamed and Manan, 2020). Concurrently, users leverage social media platforms to disseminate messages from campaigns and political organizations, recognizing the accessibility of these platforms to a broad and diverse audience (Vendemia et al., 2019).

On social media platforms, individuals have the opportunity to engage in online discussions and express their political opinions, effectively simulating face-to-face deliberations on political matters. Through these interactions, other users can read and evaluate public sentiment on specific topics (Walther and Jang, 2012; Anspach, 2017), potentially reinforcing their own opinions (Metzger et al., 2010). The diverse range of political perspectives evident in social media responses plays a crucial role in fostering public deliberation (Price et al., 2002; Mutz, 2006; Fishkin, 2009).

There is a prevalent argument suggesting that social media has fundamentally transformed the landscape of news consumption, offering a platform for exposure to diverse and heterogeneous viewpoints, often emphasizing social values over political affiliations (Messing and Westwood, 2014). In the era of social media dominance, individuals find themselves more susceptible than ever to the influence of others’ opinions, as these platforms have become primary sources

of information for many (Jahng, 2018). Moreover, research indicates a positive correlation between the frequency and extent of social media usage and the likelihood of incidental exposure to diverse political perspectives and information (Lu and Lee, 2019).

Facebook stands out as a prominent source of news consumption among various social media platforms, with approximately 36% of US adults reporting regular news consumption on the platform (Shearer and Mitchell, 2021). Research from 2018 indicates that individuals who use Facebook for news consumption often encounter opinions that challenge their existing worldview (Beam et al., 2018). However, contrasting findings exist, with another study suggesting that Facebook may expose users to a more limited range of news content. Nonetheless, this study also proposes that prolonged use of Facebook may reduce the necessity for acquiring up-to-date information from alternative platforms (Boukes, 2019).

WhatsApp serves as another significant social media tool, offering users a platform characterized by intimacy, convenience, privacy, and trust, distinct from other social media applications. Within this environment, users can engage in the sharing of news and political discussions among their close contacts (Cheng et al., 2023).

Limited research has been conducted on email as a source of political knowledge. A study from 2016 examining political news sources during the US election campaign revealed that mailing lists were the least utilized source, accounting for only 1% of political news consumption compared to other sources (Gottfried et al., 2016). This indicates a decline in the use of email for political discussions compared to an earlier study, which found that 14% of Internet users reported sending emails to discuss politics through mailing lists comprised of family, friends, or relatives (Rainie et al., 2005).

In conclusion, the contemporary media landscape has undergone significant transformation with the widespread adoption of social media platforms, altering the role and relevance of traditional media outlets. These shifts have brought about important changes in how individuals encounter, search for, and engage with news and political information. The proliferation of social media has diversified the sources of information available to the public and facilitated broader participation in political discourse.

## Challenges of democratizing information: navigating misinformation, polarization, and inequality in the digital age

The democratization of online information poses significant challenges, notably due to the absence of supervision and regulation, leading to concerns over the proliferation of misinformation, biases, misperceptions, and incitement. Furthermore, mere access to information does not necessarily guarantee the advancement of a stable and desired democratic model. In recent years, democratic systems in Western capitalist countries have experienced profound transformations. Political parties have drifted apart from the populace and “the people” (Mair, 2023), while political structures tend to represent specific societal layers, excluding marginalized groups and perpetuating inequality (Fraser, 2014). Concurrently, democracy’s substance has been hollowed out, replaced by authoritarian power structures under the guise of ostensibly democratic “rule of law” mechanisms (Slobodian, 2023). Scholars often attribute these concerning trends to the ascendancy of social media. Disinformation



campaigns undermine political discourse's quality and erode trust in democratic institutions (Hunter, 2023). Echo chambers, where users predominantly encounter viewpoints aligning with their own, foster political polarization as individuals entrench in their beliefs, disinclined to engage with dissenting perspectives (Barberá, 2020). While exposure to diverse political views is imperative, it alone is insufficient to bolster robust, representative democracy. Understanding these dynamics is essential for navigating the complexities of the contemporary media landscape and fostering informed civic engagement in an increasingly digital era.

## A note about the definition and boundaries of political diversity

When discussing media diversity, it's crucial to acknowledge its inherently political character, as extensively examined by sociologists and political scientists. Pierre Bourdieu's insights offer a critical perspective on media diversity, framing it within the dynamics of symbolic power and authority. He emphasizes the interplay between power dynamics and communication, highlighting how media production is influenced by symbolic power, shaping both audience reception and media practice (Park, 2010). Bourdieu underscores the impact of political and economic forces on media, delineating its boundaries. Media diversity, as valued within market constraints, often perpetuates symbolic violence by sensationalizing and portraying "the other" within predetermined boundaries that do not challenge existing political structures (Marlière, 1998).

Moreover, the complexities of media markets challenge the assumption that solely catering to audience preferences benefits society. This tension between meeting audience expectations and upholding broader societal standards is evident globally. In Israel, critiques of media diversity reveal underrepresentation and stereotypical portrayals of minorities such as Israeli Arabs and Ultra-Orthodox Jews, perpetuating marginalization (Laor and Galily, 2022; Schejter et al., 2023).

Regarding political perspectives, mainstream media has historically leaned leftward, but recent shifts in the political landscape and government policies aimed at amplifying right-wing voices have led to increased representation of conservative opinions in television and print media (Shwartz Altshuler, 2014). This trend aligns closely with Bourdieu's assertions, highlighting the intricate relationship between media representation and political power dynamics.

## Novelty of the study

Mutz and Martin (2001) examined the extent to which sources of political information expose people to different political views. They included the following media in their research: the three people with whom respondents talked the most about politics, voluntary organizations, "Talk Show" programs, workplace acquaintances, newspapers, TV news, and magazines. This study followed the same methodology as the original study and revisited the same question. However, in light of the changes in the current political media landscape, we updated the sources under investigation, mainly adding relevant digital communication venues where political discussions occur, such as WhatsApp, Facebook (distinguishing between general feed and direct

communication with Facebook friends with whom respondents talk about politics), e-mail, news websites, and reality TV shows.

As reviewed above, many recent studies have addressed the issue of exposure to diverse opinions across media. However, to the best of our knowledge, no previous study has compared all sources of political information in contemporary media in terms of the diversity of political views. Therefore, it is important to revisit the comprehensive 2001 research by Mutz and Martin to answer this question, as it is expressed in today's field of communication.

We investigated the diversity of opinions within Israeli media as perceived by media consumers. Israel operates as a parliamentary democracy, where the Prime Minister leads a multi-party coalition government. Despite certain limitations in its balancing mechanisms—such as national elections and a single house of representatives—the country maintains a separation of powers, encompassing executive, legislative, and judicial branches (The Israeli Political System, n.d.).

Regarding media regulation, Israel employs a complex framework of laws and regulatory bodies. In contrast to centralized authorities like the UK's OFCOM and France's CSA, Israel's media regulation system is more decentralized. While the print and online press operate without direct regulation, they are subject to various *ad hoc* regulations outlined in the penal and civil codes (Israel, n.d.). Furthermore, Israel's media landscape is characterized by greater diversity and complexity, featuring a multitude of media outlets and a heightened level of political polarization.

## Research hypotheses

### Sources of political information and exposure to diverse political views

*H1:* In line with Mutz and Martin (2001), the degree of exposure to diverse political views varies among sources of political information. Political information originating from interpersonal relationships with friends and close acquaintances is characterized by the most homogeneous exposure (similar views), whereas political information originating from the mass media is characterized by the most heterogeneous exposure (diverse political views).

*H2:* Differences will be found between online sources of political information, such that interpersonal sources of information will be characterized by more homogeneous exposure, and mass sources of information will be characterized by heterogeneous exposure to political opinions (Mitchell, 2016).

## Methodology

An online survey was conducted among adult internet users in Israel. The survey was distributed by a leading Israeli online panel service.<sup>1</sup>

<sup>1</sup> <https://www.ipanel.co.il/en/>



Our methodology employs self-reported measures to investigate participants' exposure to diverse political views across various media. This approach was intentionally chosen due to the inherent limitations of digital data scraping in capturing the nuances of offline interactions and the subjective nature of media perception. Self-reports enable the examination of individuals' perceptions, offering insights into the perceived diversity of political discourse they encounter. This method acknowledges the complexity of measuring exposure in both digital and non-digital environments and prioritizes the subjective experience of media consumers, aligning with our study's focus on perceived, rather than objective, exposure to political diversity.

While acknowledging existing literature that points to potential inaccuracies in individuals' perceptions of their social circles' political views (c.f. [Levendusky and Malhotra, 2016](#)), our study minimizes this concern by focusing on respondents' evaluations of *political discussions with specific individuals*. By concentrating on dialogues about political matters, we argue that our respondents provide more accurate assessments of the political diversity they are exposed to, compared to their assessment of the political diversity of their broader social network.

## Participants

In total, 514 respondents, 51% of whom were male, ages 18–70 ( $M = 40.72$ ,  $SD = 14.55$ ), participated in the survey, which repeated the methodology used by [Mutz and Martin \(2001\)](#) as much as possible. 49% of the respondents considered themselves right-wingers (right or very right), 31% centrist, and 20% left-wingers (left or very left).

## Questionnaire

Digital sources of information that did not exist in Mutz and Martin's study were added to the survey, and the types of television programs in which political positions are heard were also updated. To characterize the main sources of information for media consumers today, a pilot study was conducted among students, in which the respondents were asked to indicate all the sources of political information to which they were exposed. Ultimately, 12 information channels were selected for the survey.

1. The person the respondent talks to the most about politics (closest person)
2. Apart from this person, the person the respondent talks to the most about politics (second closest person)
3. Acquaintances from the current/last workplace
4. Print newspaper
5. Television news programs
6. Current affairs programs on television
7. Television reality shows
8. News content websites
9. WhatsApp
10. Email
11. Facebook Feed
12. Facebook friend the respondent talks to the most about politics (on Facebook).

Except for the first three sources, which constitute daily interpersonal relationships, for each of the other sources of information, the respondents were asked about their exposure to political information during the week prior to the survey.

Instead of "Talk Show" programs, a very popular genre in the United States that was included in the original study, we chose to review reality shows, a popular genre among Israelis with high ratings ([Tucker, 2015](#)).

In questions concerning mass media – newspapers, news content sites, and television – respondents were asked about what information channels they use (choosing from the leading channels, e.g., major newspapers and major TV channels, with the option to mark "other" and indicate the name of a channel not mentioned in the list). If the respondents stated that they do not use any communication channel, questions regarding this channel were not presented to them.

In the second part of the questionnaire, each of the information sources indicated by respondents were presented with three questions related to the political information they were exposed to through that channel:

1. To what extent is their political view similar or different from the political view expressed by the source of the information or the view to which they were exposed through the source of the information?
2. The extent to which their political preferences are similar or different from the political preferences of the source of information, or the preferences to which they have been exposed through the source of information.
3. The extent to which their opinions on issues on the agenda are similar or different from the opinions of the source of information, or the opinions to which they have been exposed through the source of information.

The answers to each of these questions, for each of the relevant sources, were on a 5-point scale, with points 1–2 denoting very different or different positions, point 3 denoting equally similar and different, and points 4–5 signifying similar and very similar positions.

For each of the sources of information, a "mean of similarity" index was compiled which consisted of the mean of these three questions, the reliability of which was extremely high in each case. [Table 1](#) summarizes the means of the variables and scales. It should be noted that the numbers ( $N$ ) for each source of information pertain to the number of respondents who testified that they were exposed to political information through the source of the information, and do not indicate the extent to which one or another source of media information is used.

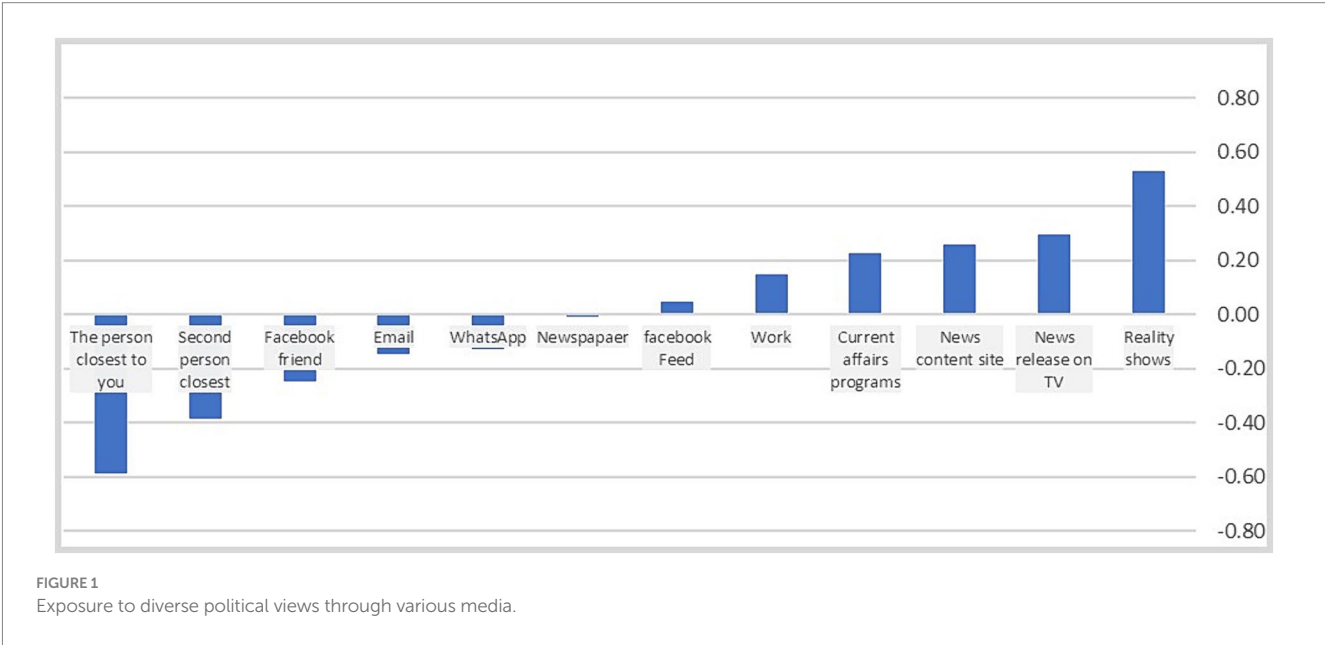
## Results

### Sources of political information and exposure to diverse political views

[Figure 1](#) shows the exposure indices for diverse opinions, on the axis between the most homogeneous exposure and the most heterogeneous exposure relative to the average of all indices. The "zero" point in the graph is the average of all sources, that is, neither

TABLE 1 Mean similarity indices and average scores for the indices and for the items composing them.

Index	Political view similarity	Political preference similarity	Political opinion similarity	Index (combined)
Mean similarity- closest person	$N = 514, M = 3.55, SD = 1.25$	$N = 514, M = 3.63, SD = 1.16$	$N = 514, M = 3.58, SD = 1.24$	$\alpha = 0.95$ $N = 514, M = 3.59, SD = 1.16$
Mean similarity- second closest person	$N = 514, M = 3.33, SD = 1.23$	$N = 514, M = 3.44, SD = 1.15$	$N = 514, M = 3.37, SD = 1.21$	$\alpha = 0.94$ $N = 514, M = 3.38, SD = 1.13$
Mean similarity- workplace acquaintance	$N = 461, M = 2.82, SD = 1.08$	$N = 461, M = 2.89, SD = 1.01$	$N = 461, M = 2.84, SD = 1.05$	$\alpha = 0.90$ $N = 461, M = 2.85, SD = .95$
mean similarity- print newspaper	$N = 384, M = 3.02, SD = 1.12$	$N = 384, M = 3.02, SD = 1.07$	$N = 384, M = 2.98, SD = 1.10$	$\alpha = 0.94$ $N = 384, M = 3.01, SD = 1.03$
Mean similarity- TV news programs	$N = 391, M = 2.72, SD = 1.01$	$N = 391, M = 2.73, SD = .97$	$N = 391, M = 2.66, SD = .96$	$\alpha = 0.90$ $N = 391, M = 2.70, SD = .90$
Mean similarity-TV current affairs programs	$N = 154, M = 2.79, SD = 1.04$	$N = 154, M = 2.77, SD = 1.06$	$N = 154, M = 2.75, SD = 1.05$	$\alpha = 0.93$ $N = 154, M = 2.77, SD = .98$
Mean similarity-TV reality shows	$N = 230, M = 2.44, SD = 1.01$	$N = 230, M = 2.52, SD = .97$	$N = 230, M = 2.44, SD = .96$	$\alpha = 0.93$ $N = 230, M = 2.47, SD = .92$
Mean similarity-WhatsApp discussions	$N = 67, M = 3.16, SD = 1.04$	$N = 67, M = 3.03, SD = 1.03$	$N = 67, M = 3.18, SD = 1.06$	$\alpha = 0.85$ $N = 67, M = 3.12, SD = .91$
Mean similarity-email	$N = 64, M = 3.17, SD = 1.14$	$N = 64, M = 3.20, SD = 1.06$	$N = 64, M = 3.06, SD = 1.15$	$\alpha = 0.95$ $N = 64, M = 3.15, SD = 1.06$
Mean similarity-news websites	$N = 457, M = 2.73, SD = 1.01$	$N = 457, M = 2.77, SD = 1.00$	$N = 457, M = 2.72, SD = .98$	$\alpha = 0.93$ $N = 457, M = 2.74, SD = .93$
Mean similarity-Facebook feed	$N = 238, M = 2.96, SD = .96$	$N = 238, M = 2.97, SD = .96$	$N = 238, M = 2.91, SD = .95$	$\alpha = 0.88$ $N = 238, M = 2.95, SD = .86$
Mean similarity-Facebook friend	$N = 312, M = 3.25, SD = 1.28$	$N = 312, M = 3.30, SD = 1.21$	$N = 312, M = 3.19, SD = 1.24$	$\alpha = 0.95$ $N = 312, M = 3.25, SD = 1.18$



homogeneous nor heterogeneous. The indices below this point are more homogeneous, and the indices above it are more heterogeneous. The findings demonstrate that information sources can be roughly divided into three groups in terms of heterogeneous exposure to political opinions. In the first, most homogeneous group, we find the interpersonal sources of information: the closest person, the second closest person, and a Facebook friend with whom the respondents talk about politics. The middle group mainly includes sources of

information that are not mass but less interpersonal: email, WhatsApp, Facebook Feed, and workplace acquaintances. Newspapers also fall into this category, perhaps due to the existence of politically identifiable newspapers, as well as the practice of consuming information in newspapers that allows for a relatively high degree of selective exposure.

The group featuring the most heterogeneous political information sources includes television programs and news websites. It is interesting to note here that, of all the sources of information, it was the reality shows that respondents think exposed them to the most diverse political views.

These results confirm H1: Interpersonal relationships are the most homogeneous sources of political information and views, whereas mass media are the most heterogeneous.

H2 was also confirmed. It is apparent that digital information sources are not unified. These were divided according to the type of connection/communication. Computer-mediated interpersonal communication (e.g., Facebook friends) is more homogeneous and similar to interpersonal communication in general. Content websites, however, are more heterogeneous, similar to mass media.

Respondents were also asked about their frequency of exposure to political information from various sources. Three questions were posed for this purpose: each time the respondents were asked about the source through which they were most exposed to political information of all sources of information. Once they made their choice, they were presented with the sources of information in the next question, without the already selected source. This way the study mapped the three most frequent sources of political information, in order of frequency, per respondent.

The analysis revealed that the most common source of exposure to political information by most people is the closest person, who was indicated in the three questions by 308 respondents, followed by the second closest person, which was indicated by 204 respondents. Then, TV news, chosen by 242 respondents and content websites were chosen by 227 respondents.

It is interesting to note that these are two types of sources positioned at the opposite end points of the diverse views graph. Interpersonal relationships – the first person and the second person – are characterized by exposure to the most homogeneous opinions and, on the other hand, news on television and content websites that respondents perceive as the most heterogeneous political sources.

## Discussion and conclusions

The dynamic and rapidly evolving nature of the media landscape necessitates periodic revisitation and validation of previous research findings, particularly when comparing media in relation to their social applications or implications. In our study, we revisited the research conducted by [Mutz and Martin \(2001\)](#) with several updates and modifications to reflect the present-day media landscape. This involved incorporating additional and diverse means of communication not considered in the original study, such as TV reality shows and various online sources. Simultaneously, we excluded less relevant sources included in the original study, such as talk shows that hold lesser popularity in certain regions like Israel.

These adjustments were made to align the study with the current media environment and to reassess which sources of political

information provide media consumers with the most heterogeneous political views. While the findings of our study largely mirrored those of the original research, several new insights emerged. This underscores the importance of continuously adapting research methodologies to account for the dynamic nature of media consumption patterns and technological advancements.

Consistent with the findings of the original study, our research reaffirmed that television programs remain significant sources of heterogeneous political information, exposing media consumers to a variety of political views. Television news programs, in particular, emerged as the second most heterogeneous source of political information in both studies. Additionally, workplace acquaintances were identified as heterogeneous sources of political information, ranking closely behind television in terms of diversity.

Furthermore, akin to the original study, our research revealed that interpersonal relationships heavily influence political discourse. We found that individuals tend to engage in political discussions with those who share similar political views, resulting in homogeneous political interactions. This consistency underscores the enduring influence of personal networks on shaping individuals' political beliefs and the limited exposure to diverse viewpoints within these social circles.

Unlike the original study, which identified print newspapers as the most heterogeneous source of political information, our findings suggest that newspapers now fall between interpersonal relationships and television in terms of diversity. This shift may reflect changes in the print industry, with newspapers increasingly aligning themselves with specific political ideologies, thereby attracting readers who share those views ([Hart et al., 2009](#)).

Regarding the sources added in our study, we observed variations in the degree of exposure to diverse opinions. Reality shows emerged as the most heterogeneous source, followed by TV news programs, news websites, and current affairs programs. In contrast, WhatsApp and email exhibited more homogeneous exposure. Notably, Facebook friends and offline interpersonal relationships were among the most homogeneous sources, aligning with the theory of selective exposure ([Lazarsfeld et al., 1944](#)) and individuals' tendency to engage with like-minded individuals.

We can categorize sources of political information into three groups based on their heterogeneous exposure to political opinions. The first group consists of the most homogeneous sources, primarily interpersonal relationships. The middle group includes less mass sources such as email, WhatsApp, and newspapers, which have become more politically identified in recent years. The most heterogeneous group comprises mass media sources like television programs and news websites, providing diverse political views.

Interestingly, respondents perceived reality shows as the source exposing them to the most diverse political views. This may be attributed to the format of reality shows, which integrates individuals from diverse backgrounds and social groups, fostering conflicts and generating diverse perspectives for entertainment purposes. Here, one might question whether the exposure to diverse political views provided by reality TV, which often showcases extravagant individuals in extreme conditions, genuinely serves the goal of fostering understanding, tolerance, and critical thinking—qualities essential for sustaining a vibrant public sphere in a democracy.

Habermas distinguishes between public opinion and public mood by underscoring that public opinion involves the expression of beliefs and sentiments within a citizenry regarding human affairs. It emerges from critical-rational discourse, where citizens engage in reasoned debate and discussion to form collective opinions on political issues—an ideal manifestation of the public sphere. Conversely, public mood denotes the collective emotional state of a group, capable of influencing thoughts and actions, reflecting shared experiences. Public moods are reactive and lack inherent rationality. While public opinion is shaped by stable and consistent aggregate-level views over time, public mood is more dynamic, uncertain, and diverse. Habermas perceives the transition from public opinion to public mood as a troubling modern development, as it undermines the critical-rational deliberation central to his ideal public sphere.

The media, particularly the widespread commercialization of news and the proliferation of advertising and manipulation techniques, play a pivotal role in shaping and amplifying public moods rather than facilitating public opinion (Calhoun, 1993; Habermas, 2012; Gerbaudo, 2022). Indeed, the often sensational portrayal of social groups may evoke moods rather than encourage opinion formation or challenge existing beliefs. Nevertheless, even within the constraints of ratings and provocation, some viewers—particularly younger audiences—encounter diverse social groups, opinions, and cultures through these media contents, serving as their initial exposure. Furthermore, such content sparks political discussions among young, less politically involved citizens, who may not have otherwise engaged with such topics (Coleman, 2006; Graham and Hajru, 2011).

Furthermore, our study reaffirmed the importance of interpersonal interactions as the primary source of exposure to political information, followed by television news programs and news websites. This aligns with previous research emphasizing the significance of interpersonal communication and mass media in shaping political exposure (Gottfried and Shearer, 2017; Newman et al., 2018, 2022; Yanatma, 2018).

In conclusion, our study advances our understanding of the role of digital media in facilitating exposure to diverse political views, challenging the dichotomy of online versus offline media influence. By highlighting the critical role of interpersonal interactions alongside digital platforms, our findings underscore the complexity of political exposure in the digital age. Future research should continue to explore the evolving nature of digital platforms and their impact on political discourse, considering rapid technological advancements and their implications for democratic engagement. An examination of how citizens in other democracies perceive the diversity of opinions across

media and platforms would be invaluable, enabling profound comparative insights into the nature of different media sources in various democratic systems and how they are perceived by media consumers.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Author contributions

NS: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. AL-o: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

## Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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RECEIVED 22 March 2024

ACCEPTED 30 July 2024

PUBLISHED 30 August 2024

## CITATION

Li M and Li X (2024) The influence of multimodal connectedness on political participation in China: an empirical study of the O-S-R-O-R model based on the life span perspective.

*Front. Commun.* 9:1399722.

doi: 10.3389/fcomm.2024.1399722

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# The influence of multimodal connectedness on political participation in China: an empirical study of the O-S-R-O-R model based on the life span perspective

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Promoting the construction of Internet democratic politics in China requires an understanding of how multimodal connectedness can enhance citizens' political participation. This study introduces the Orientations-Stimuli-Reasoning-Orientations-Responses (O-S-R-O-R) model, explaining the pathway from multimodal connectedness to political participation through "multimodal connectedness—political news attention/political news use—interpersonal political discussion—political trust—political participation." Analyzing data from 2,379 participants in the context of Internet democratic politics, the study finds that the mediating variables fully mediate the relationship between multimodal connectedness and political participation. While political news attention promotes political participation, political trust has a significant negative impact. The study also compares the model across three age groups: young (18–29 years), middle-aged (30–39 years), and elderly (40–60 years). For the young and middle-aged groups, political news attention negatively impacts political participation, likely due to the fragmentation and distraction caused by real-time messages. Among the elderly, political trust negatively affects political participation, indicating a complex scenario where they are passionate about politics but lack adequate participation channels.

## KEYWORDS

multimodal connectedness, political participation, O-S-R-O-R model, life span, political trust

## Introduction

The prosperity of the Internet has changed the citizens' political participation habits. How to use new media to encourage citizens' political participation to establish an efficient communication mechanism between the government and the people and how to promote the construction of Internet democratic politics in China have always been the focus of academic research. The formation of such research focus is due to the rapid development of multimodal media technology, which enables citizens to use media selectively to understand political knowledge, observe political activities, internalize political beliefs (Zhang, 2014), then participate in political activities, and engage in political discussions

and expressions. Political participation was mainly mobilized participation in China and then gradually showed more diverse political participation (Zeng, 2014). This process has shaped new forms of citizens' political participation, making research in this field an important cornerstone for guiding media integration and publicity in the Internet era.

However, the present research studies follow the traditional dualistic research perspective, which lacks consideration of the Chinese characteristic of democratic political participation and does not establish a coherent frame between multimodal connectedness and political participation. The study utilizes the O-S-R-O-R model, which was developed to explain the mediating role of political discussion and political attitudes (Shah et al., 2007), a well-established integrative framework that details the process of multimodal connectedness effect.

In addition to the application of the O-S-R-O-R model, this study also pays attention to the characteristics of populations. In many research studies on the factors influencing political participation, the sample populations are subjected to additional restrictions, such as age, sex, and urban or rural area (Xiao and Wang, 2012; Qiu et al., 2014; Jin and Nie, 2017; Huang, 2018). Based on this classification, researchers conduct descriptions of certain groups or make comparisons. These studies reveal the differences due to various combinations of classification restrictions. For example, a study of the factors influencing the political trust of the young middle class in China found that the political trust of the young middle class is no longer influenced by factors of material level, such as performance evaluation; it is more likely to be dominated by multiple social interests and government's action on the related heated issue (Peng, 2016). Therefore, it is necessary to study different groups such as groups of different ages and explore the relationship between the technical background of multimodal connectedness and their political participation behavior.

In today's digital society, communication has added many new forms, such as social media, online platforms, and live streaming. These diversified platforms present political messages through diverse multimedia formats, enhancing the information to be more engaging and easily consumable (Wolfsfeld, 2022), significantly influencing citizen's political participation. Although it is generally accepted that the use of multimodal connectedness has some influence on users' daily lives, how does the chain reaction happen between media and behavior? What are the specific mechanisms through which it is formed? Studies focusing on the specific behavior of civic political participation are worth exploring in China. This study combined the previous literature and related research and integrated it into a cohesive model, from the perspective of communication to make up for some of the gaps in the previous research.

Therefore, based on the life span perspective, this study aims to compare and explore the possible mediating factors between multimodal connectedness and political participation in the O-S-R-O-R model among different age groups. This study also tries to integrate the research tradition ignored in the two previous models: the influence of multimodal connectedness habits on behavior and the individual reaction difference due to their internalization process related to multimodal connectedness. In addition, this study can also test the applicability of the O-S-R-O-R model in the context of Chinese culture.

## Literature review

### Multimodal connectedness and political participation

Media use has been regarded as an important variable influencing political participation in many studies of different cultural backgrounds. The research on the relationship between media use and political participation focused on measuring media use for diverse political participation (Bimber et al., 2015; Halim et al., 2021) and the impact of online (Waeterloos et al., 2021) and offline channels (Pinkleton et al., 1998) on political participation. The use of multimodal media use or multimodal connectedness is based on the definition by Schroeder (2010): "the various modalities through which people maintain their connections with each other," manifesting the fact that individual actors have a repertoire of communication channels (i.e., text, voice, and images) for social interaction. Since the invention of the Internet, multimodal connectedness has become an integral part of our daily lives, with exponential increases in speed and connectivity (Rainie and Wellman, 2012). At the same time, multimodal connectedness offers different interests and gratifications to the audience (Blumler and Katz, 1974). For example, in the comparison between text-based long messages and short messages, researchers found that long messages sent by e-mail and short messages sent by chat software were the most popular ones (Church and De Oliveira, 2013). In the study of human-computer interaction (Norman, 1999), these "operability" concepts are also attributed to "affordances" (Gibson, 1977), such as visually adding the users' content generation interface and application interface. We can find that to convey intended messages, multiple forms have become daily parts of citizens' lives. Therefore, the reality of citizens' media use habits includes multimodal connectedness, allowing them to meet their common political participation needs through various media channels.

However, despite this social reality, the current research on media use and political participation has not paid systematic attention to multimodal media use or multimodal connectedness. Most media use studies of political participation have focused on specific apps (Lu, 2016), comparison of new media versus traditional media (Zhang, 2017), and social media (Nabi et al., 2013; Wang, 2017), such as the online social platform: Twitter and Facebook (Valenzuela et al., 2020) and even particularly mobile phones (Hall and Baym, 2012). Although these studies provide ideas and paradigms for the study of multimodal connectedness, they still ignore the influence of the integrity of the communication system and the comprehensiveness of media use on political participation. Only a small number of researchers mentioned the importance of multimodal media. For example, a study based on the selection of multiple online news platforms measured the online political expression of youth on customized media platforms, official media, and social media and pointed out that in such a new Internet environment, the diversification of media platform selection will interact with users' media practice, thus shaping a new overall picture of online political expression (Yan, 2020). Moreover, a study has found that multimodal connectedness affects political participation directly and indirectly through interpersonal discussion, political knowledge, and political efficacy (Chen, 2021). Thus, the use of multimodal connectedness cannot only objectively construct the picture of political participation in the new media landscape but also shape the practical relationship between individuals, media, and political



participation under the new media ecological environment. Multimodal connectedness, based on this media ecology and media use patterns, should be considered when we study media and political participation.

## O-S-R-O-R model (orientations-stimuli-reasoning-orientations-responses model)

Research on multimodal connectedness has examined the influence on political participation from many aspects, but the possible mechanism to explain the key variables is still lacking. At present, social capital is used as an intermediary variable (Zeng, 2014; Chan, 2018) to study the influence of media use on political participation, and the following research added variables, such as political knowledge (Alami, 2017), political discussion (Chan et al., 2017), political learning (Ida et al., 2020), and political efficacy (Bruce, 2018). These key variables are important for exploring possible internal mechanisms. However, how to understand the relationships between these key variables and how to test the mediating effect of these key variables with a robust mediation model are still an urgent issue. Therefore, this study integrates these key variables into political news uses, political news attention, interpersonal political discussion, and political trust. By applying the O-S-R-O-R model and introducing mediating variables, this study attempts to explain the influence of multimodal connectedness on political participation from a more systematic perspective.

The O-S-R-O-R model was first established in the framework of the O-S-O-R model (Markus and Zajonc, 1985). In this paradigm, several truncated models emerged. These models included the Campaign Communication Mediation Model (McLeod et al., 2001), Cognitive Mediated Model (Eveland et al., 2003), and Citizen Communication Mediation Model (Shah et al., 2005), demonstrating and examining different social structures, cultures, and motivational factors (McLeod et al., 1999) that influence political participation by influencing communication (Shah et al., 2005). In the basic O-S-O-R

model, the first “O” refers to the set of characteristics that the audience gives to the social structure, culture, cognition, and motivation inherent in the given situation; the “S” refers to the influence of these characteristics on the reception of information or stimuli; the second “O” refers to what is likely to happen between the reception of the information and the subsequent reaction; and “R” refers to reaction and action (McLeod et al., 1994). The initial orientations (O) is an important variable selection framework, which can stimulate (S) and affect other subsequent orientations (O) and reaction behavior (R), but it does not show a coherent chain of cause and effect. It does not adequately capture the mediation process of the mutual concepts presented in these models (Shah et al., 2007). For example, in the cognitive mediation model, the researchers identified two pathways for individual knowledge acquisition: (1) the direct path from motivation to attention and then to knowledge and (2) the indirect path mediated by elaboration of the news (Eveland, 2001). The importance of motivation toward individual cognition and the audience’s motivation in the process of knowledge acquisition is emphasized (Ho et al., 2017). The cognition and attitudes generated in the basic process of S-O do not represent the comprehensive sense of stimulation in nowadays media environment but tend to relate the result with the contact with mass media, which should be further explored. These perceptions and attitudes are intermediate between stimuli and oriented results, forming the subsequent understanding and reasoning (R) through the ideas encountered in the information stimuli. Therefore, the researchers add an important variable, “Reasoning,” to this basis, and a new O-S-R-O-R model is constructed to emphasize cognitive and reasoning processes. This process is defined as generalized mental elaboration and collective reasoning (Shah et al., 2007).

Based on previous studies and the definition of the O-S-R-O-R model, this study defines O<sub>1</sub> as multimodal connectedness (multimodal media use, Chan, 2018), O<sub>2</sub> as political trust, S as political news uses and political news attention, R<sub>1</sub> as interpersonal political discussion, and R<sub>2</sub> as political participation, as shown in Figure 1.

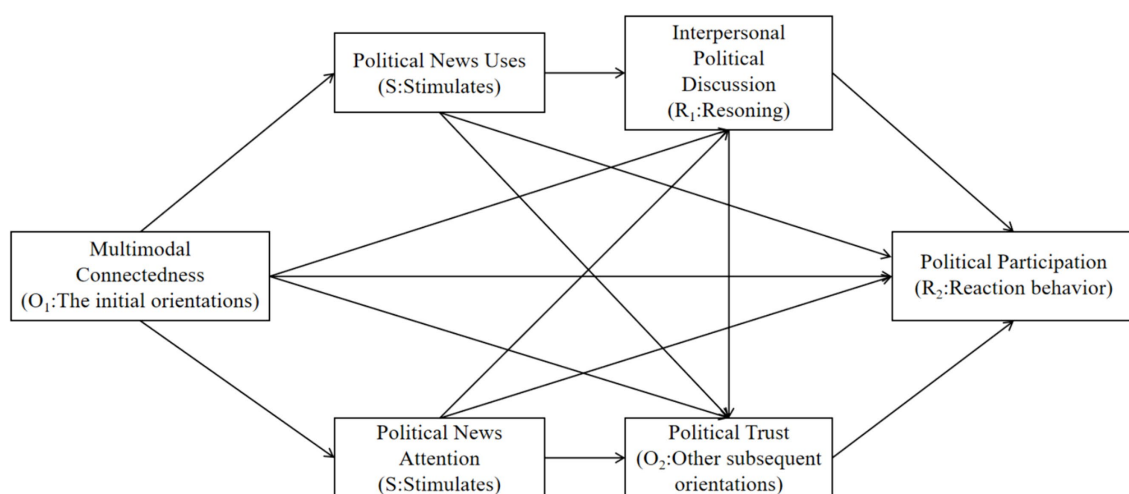


FIGURE 1  
Intermediary model from multimodal connectedness to political participation.

Each component of the model is structured as follows:

*Multimodal connectedness (O1):* The initial orientation of citizens is based on cultural traditions within the framework of society as a whole. It appears in many studies as an existing, persistent, long-term phenomenon or inherent characteristic. For example, McLeod et al. (1999) used demographic variables, community integration, and political interest as the first O to examine the relationship between television news use and local political participation and found no direct link between the two variables, even though interpersonal communication was found to indicate an indirect link in mediating these two variables (McLeod et al., 1999). Based on McLeod's research, researchers began to pay attention to the important role of media use and took the Internet, especially online news based on this platform, as a research variable, exploring the role of political messages shaped by this platform in the field of public expression and finding that online media can complement the messages of traditional media, thus facilitating political discussion, offering citizens more information, and influencing citizens' political participation (Shah et al., 2005). The rise of emerging Internet-based social platforms, especially TikTok, not only has the production and consumption of multimodal content been transformed but also has user interactions and cultural practices on the platform (Zulli and Zulli, 2022). The powerful short video and live streaming capabilities of the platform enable political figures and institutions to connect more directly with younger audiences, leveraging the platform's algorithmic advantages for targeted dissemination. For instance, Cervi (2023) highlights TikTok's significant role in local elections. It allows candidates to become political influencers, interact directly with voters, and showcase their personalities and policy positions, transforming traditional election communication models. This shift alters the dissemination of political information and impacts public political engagement and perception. In addition, the selective use of multimodal media also reflects the characteristics of citizens' media literacy (Jiang and Gu, 2022), and the level of media literacy has a positive relationship with political participation; the more media literacy citizens gain, the more they can understand the political, cultural, and social contexts behind media messages, recognize the values and meanings that these messages guide, and thus are more willing and able to practice political participation (Wang, 2017). As a result, not only all citizens are interested in politics or have the literacy to recognize and understand the messages' information but also everyone will have their own unique multimodal media use pattern and multimodal connectedness because of their inherent culture, value, and meaning orientations.

*Political news attention, political news uses (S), and interpersonal political discussion (R1):* S is generally regarded as a media variable and R as a behavioral variable in the model (Chan, 2016). This media stimulus can involve a series of dynamic processes: exposure, attention, and priming (Shah et al., 2007), culminating in clarity of thought and individual inner expression, reflection on media content (Mutz, 2006), anticipation of conversation (Eveland et al., 2005), and expression of ideas (Pingree, 2007). Previously, attention-related stimuli were mainly applied to the cognitive mediator model (CMM), influencing the direct path from motivation to knowledge acquisition (Eveland, 2001). A branch of studies has applied it to different media channels and media platforms. For example, some studies have shown a correlation between audiences' attention to traditional and new media platforms and reflection on their media content, and all media

platforms showed a positive correlation with interpersonal discussion as a media channel (Yang et al., 2017). This effect can be extended in the study of the audiences' attention and the content of different media platforms (Kim, 2016). The investigation of news attention on this basis will increase the sense of political participation and encourage participation in general (Zhou, 2011). At the same time, some psychology effect research indicated that it does not matter whether a person tries to learn, it matters how he or she searches for material in the process of learning, which suggests the transition from cognition to action. In addition to the motivation for the behavior, the process of searching for information is ultimately dominant. The use of political news, including receiving channels and frequency of use, will naturally more or less give the public incentives for political participation. Therefore, in addition to news attention, the real use of political news can also be regarded as an "S" variable. This study emphasizes two mediating variables for the "S" process: political news attention and political news uses. In the selection of the "R1" variable, this study subdivides political discussion into interpersonal political discussion. First of all, interpersonal discussion is the process of evaluating media information and understanding, through which the audience can better understand information and disseminate information (Robinson and Levy, 1986). Katz (1940) also argued in his two-step flow of communication that information flows from the broadcast and print media to opinion leaders and then from opinion leaders to less active groups. Second, in several recent empirical studies, the relationship between media attention and interpersonal discussion is positively correlated (Lee et al., 2016; Kwon et al., 2021) and strongly correlated in individual social networks (Morgan, 2009; Zou et al., 2021). From the perspective of interpersonal discussion, it can be better explained that political discussion is an important part of interpersonal communication. In this process, people can learn about the knowledge and ideas of others and think collectively (Cho et al., 2009), and via engaging in this dialogue, individuals are provided with an opportunity to organize and articulate ideas coherently (Eveland, 2004).

*Political trust (O2) and political participation (R2):* The second O and R both extend the meaning of the previous O-S-O-R model: what is likely to happen between the receiving of information and subsequent behavior (Responses) (McLeod et al., 1994). Political trust, unlike variables such as political knowledge, political interest, and political efficacy having positive impacts on media use that is consistent with civic political participation (Bimber et al., 2015), includes different forms of trust, such as media trust and interpersonal trust (Wang, 2013). Political trust is a mixed term showing diverse effects: On the one hand, it represents the influence of political socialization on citizens; on the other hand, it is the guarantee of the establishment of government institutions and the legitimacy of governance (Mishler and Rose, 2001). Thus, the direct impact of political trust on political participation is widely debated. Some studies initially suggested that reduced voter turn as a result of trust loss (Verba et al., 1971), while other studies found that political distrust motivated people to engage in political activities, such as demonstrations, marches, and petitions (Levi and Stoker, 2000). According to the current research in Chinese literature, citizens have high political trust; meanwhile, there is only a weak correlation with political participation (Hu, 2010).

Therefore, to study political trust, we must put it in the whole social environment and explore the paths systematically with other relevant variables. For example, Zhang (2014) found that media use has a positive effect on political trust and through social capital as mediation. Based on the above model, political trust can be connected with political participation in many ways, such as multimodal connectedness—political trust—political participation and interpersonal political discussion—political trust—political participation, which reveals a more comprehensive form of connection exceeding a single connected path. In this study, political participation includes online political participation and offline political participation.

To sum up, this study proposes a systematic approach to the research question, including assumptions about each group of direct and indirect relationships.

*Research Question 1: In the relationship between multimodal connectedness (O1) and political participation (R2), what effect do political news attention (S), political news uses (S), interpersonal political discussion (R1) and political trust (O2) have?*

## Multimodal connectedness and political participation from the perspective of lifespan

To test the relationship between multimodal connectedness (multimodal media use) and political participation and ensure the results are more empirical, this study aims to introduce the life span perspective and divide the population into different age groups. Therefore, the common and different paths and coefficients of connection among different age groups could be studied in detail. Life span theory has been used to study how “Social Change Changes People’s lives” (Elder, 1994) using longitudinal data to study the impact of decisions and actions people made at different points in life on their subsequent lives. Examples include whether to take safety precautions after having sex for the first time, whether to become pregnant, whether to have children, and whether to get married as a result of a series of life-changing events (Elder, 1998). For citizens who have gone through different social stages, the use of various media will inevitably be affected by a series of factors, such as the young, middle, and old stages of life, and this tendency will also affect the way and frequency of political participation more or less. As Paul Learfield found in a large field study of Erie County, there were more older citizens showing a higher level of interest in the election than younger citizens with the same educational background, and this interest and tendency to vote can then spread based on the intimate context of the family, thus influencing young generations who were not interested in the election. In addition, researchers have found that Internet media use declines with age, while teenagers form the majority of active users of social networking sites (Lenhart et al., 2010). Moreover, this age-based use pattern and repertoire have a significant impact on citizens’ political reception and political interest, and thus on political participation (Holt et al., 2013). As observed, age is an important variable that shapes citizens’ multimodal connectedness and has an indirect impact on political participation. Based on the above research, this study raises the following question:

*Research Question 2: How does the hypothetical model in Research Question 1 differ among different age groups?*

## Method

### Sampling

The data are from an open-source national survey in China targeted at Internet users. The survey started in 2012, and to date, more than 10 large-scale surveys have been conducted. In the 2017 survey, a total of 2,379 samples were collected, mainly from users of a Chinese website that offers a questionnaire distribution service and has a national sampling database. Among the whole sample, there were 51.2% males and 48.8% females. Moreover, the effective percentage by age group was 18–24 years (24.2%), 25–29 years old (19.8%), 30–34 years old (14.7%), 35–39 years (13.5%), 40–44 years (12.6%), 45–49 years (8.4%), 50–54 years (3.7%), 55–59 years (1.5%), and older than 60 years (1.7%). It includes mainly young people and middle-aged respondents due to the landscape of Internet users. Based on the data, the sample can be divided by age into three groups: 18–29 years old ( $N=1,046$ ), 30–39 years old ( $N=669$ ), and over 40 years old and above ( $N=664$ ).

## Measures

### Independent variables

Tables 1–3 summarize the independent and intermediate variables and their descriptive data. In response to the question about media uses, respondents selected the media they were using. When they choose one particular medium, the score of multimodal connectedness would count “1”; otherwise, it will count “0.” The sum of this score indicates different levels of multimodal connectedness. Among the media channels, there are platforms such as “Sina, Tencent, and other business portals,” and “WeChat Circle of friends, QQ groups, and other circles of acquaintances.” It indicates that today no matter whether young or old, citizens are increasingly using online platforms to find information and integrate real-world social networks with the Internet.

### Dependent variables

For political participation as a dependent variable, this study used the 1–4 Likert scale: “1” = never participated and “4” = frequently participated. Participation activities included (1) chatting with friends or holding seminars offline; (2) posting comments on the Internet; (3) writing articles and submitting them to the media; (4) speaking on one’s own micro-blog, WeChat, or blog; (5) participating in the discussion of Internet QQ group and WeChat group; (6) communicating privately through e-mail and chat tools; (7) expressing oneself through taking part in practical actions such as parades, demonstrations, letters and visits, petitioning, and voting ( $M=2.13$ ,  $SD=0.66$ ,  $\alpha=0.86$ ). The answers were summed up and then divided by 7.

TABLE 1 Measures of key variables.

Variables	Items	18–29			30–39			40 and above			Total		
		N = 1,046			N = 669			N = 664			N = 2,379		
		M	SD	Alpha	M	SD	Alpha	M	SD	Alpha	M	SD	Alpha
Multimodal connectedness	What channels do you use to obtain information?	3.84	1.84		3.59	1.76		3.41	1.77		3.65	1.81	
Watching television; Buy newspapers; Listen to the radio; Read professional magazines; Classroom information; Chatting face to face with friends, classmates, teachers, etc. Commercial portals such as <a href="#">Sina.com</a> and <a href="#">Qq.com</a> ; Unofficial WeChat official account, Sina Weibo, and other we-media platforms; WeChat circle of friends, QQ group, and other acquaintance circles; Tianya community, Kaidi community, and other professional forums or websites; Twitter, Facebook, BBC, and other information gained through the wall or foreign media channels													
Political news uses	What channels do you use to get political news and comments? What's the frequency? (especially political news and comments)	2.33	0.50	0.81	2.52	0.57	0.87	2.37	0.51	0.83	2.39	0.53	0.84
Current political news on commercial portals such as <a href="#">Ifeng.com</a> , <a href="#">Sina.com</a> , and Tencent; Current political news shared by acquaintances and friends in WeChat moments and QQ groups; Information obtained through Twitter, Facebook, BBC, Duowei, or other foreign media channels; Buy newspapers to read current political news; Watch the current political news programs on local TV stations; Read reports and analysis of current political and social issues in professional magazines (such as South Window); Current political analysis reports of CCTV, Xinhua News Agency, and People's Daily (including Weibo and WeChat official accounts); Tianya community, Kaidi community, Tiexue community, and other professional forums or websites of political posts; Current political news on news aggregation client, such as Toutiao and a bit of information; Sina Weibo, unofficial WeChat official account, Litchi Radio, and other we-media platform news; Political tips or information obtained through the grapevine or chatting with friends; News from government affairs portals, Weibo or WeChat official accounts (such as the ccDI website)													
Political news attention	In general, are you interested in current political information?	3.51	0.90		3.58	0.91		3.63	0.89		3.57	0.90	

(Continued)



TABLE 1 (Continued)

		18–29			30–39			40 and above			Total		
		N = 1,046			N = 669			N = 664			N = 2,379		
Variables	Items	M	SD	Alpha	M	SD	Alpha	M	SD	Alpha	M	SD	Alpha
Interpersonal political discussion	Do you often discuss domestic and foreign political, economic and social issues with others?	2.73	0.72		2.81	0.74		2.86	0.70		2.79	0.72	
Political trust	For the following groups or organizations, please use “very trust,” “somewhat trust,” “not much trust,” “not at all trust,” “do not know (or do not want to say)” to indicate your attitude.	2.84	0.63	0.82	2.79	0.72	0.85	2.68	0.72	0.87	2.78	0.68	0.85
The court; The police; The Party Central Committee and the Central Government; Provincial government; Township government; The village committee													

TABLE 2 Key variables partial correlation.

	Multimodal connectedness	Political news uses	Political news attention	Interpersonal political discussion	Political trust	Political participation
Multimodal connectedness	–					
Political news uses	0.32***	–				
Political news attention	0.22***	0.30***	–			
Interpersonal political discussion	0.22***	0.32***	0.42***	–		
Political trust	0.06**	0.08***	0.04*	–0.04	–	
Political participation	0.19***	0.62***	0.21***	0.35***	–0.04*	–

\*\*\* $p < 0.001$ , \*\* $p < 0.01$ , and \* $p < 0.05$ .  
Control variables: gender, age, education, family income, region of residence, and political status.

Intermediate variables

Political news use (*S*) was measured by the average score of the frequency of citizens’ use of different channels to get political news and comments. Political news attention (*S*) was measured by the scaled answers to the question “In general, are you interested in current political information?” Interpersonal political discussion (*R1*) was measured by the question “Do you often discuss domestic and foreign political, economic, and social issues with others?” The measurement of political trust (*O2*) listed several political organizations and groups to test citizen’s trust toward them and finally get an average score.

news and have interpersonal political discussions, with lower political trust.

According to the observation of the whole sample, the total score of multimodal connectedness is 11 and the average is 3.65, which indicates that the media use of the respondents’ group is extremely biased, and they tend to vary by age group. Combined with observation of other variables: political news uses with a mean score of 2.39 out of 4, political news attention with a mean score of 3.57 out of 5, and interpersonal political discussion with a mean score of 2.79 out of 4, in general, the respondents are more concerned about the current political information. Overall, the political trust of the whole sample is on considerate high level.

Results

Descriptive statistics

As shown in Table 1, both the capacity and the demand for multimodal connectedness decline with age. The 18- to 29-year-old groups are more pronounced than the remaining two age groups. It is consistent with the age and technical acceptability perspectives. In the use of political news, there is almost no difference between the age groups of 18- to 29-year-old and older than 40 years, while the use of political news of the 30- to 39-year-old group is obviously higher. Moreover, the attention of political news is the highest for the group of 40-year-old and above. One possible explanation is that age may be negatively correlated with information-searching ability under certain circumstances. The result of interpersonal political discussions is consistent with political news attention: It increases as people get older, and there may be a significant positive link between the two variables. In the case of political trust, the result is opposite to interpersonal political discussion and political news attention. The younger the group is, the higher the political trust is; on the contrary, the older the group, the more they are likely to follow the political

Model testing and revision

To examine the various variables and many paths in this study, structural equation modeling software (AMOS) is used to establish the overall model, and the PROCESS (Model 6) in SPSS is used to evaluate the data to double check the fitness with the proposed theoretical model, especially the direct and indirect influencing paths. To test the above questions, the partial correlation analysis between the key variables was conducted first while controlling the demographic factors, and the results are shown in Table 2. While the relationship between political trust and interpersonal political discussion is not significant, the relationship between political trust and political participation is significantly negative; other variables show significantly positive relationships. Thus, the overall model setting was approximately supported and can be further tested.

The full sample model is then drawn according to the specified path, as shown in Figure 1. Because the model was saturated, the data are presented as  $X^2(0) = 0$ ,  $p < 0.001$ ,  $NFI/CFI/IFI = 1$ ,  $RMSEA = 0.267$ , and  $RMR = 0$ . To further optimize the model fitting, all the non-significant paths ( $p > 0.05$ ) were removed: multimodal connectedness → political participation; political news attention →

political trust. The final revised model is shown in Figure 2 with excellent fitness:  $X^2(2)=0.761$ ,  $p<0.001$ ,  $CFI/TLI=1.00$ ,  $RMSEA=0.00$ ,  $RMR=0.004$ .

Figure 2 shows all 2,379 samples using a two-side confidence interval and a 95% confidence level, controlling for gender, age, education, family income, region of residence, and political status. As shown in Figure 2, the partial correlation results are similar to those in Table 2, except that the path coefficients of multimodal connectedness toward political participation and political news attention toward political trust are not significant. It shows that all the variables selected by the model have a mediating effect, and the relationship between multimodal connectedness and political participation can indeed be completely mediated by the four sets of mediating variables proposed by the model. As observed from the direct effect in the graph, political news attention is negatively correlated with political participation, and political trust is negatively correlated with political participation, that is, in the use of multimodal media, the more attention to political news, the higher the degree of political trust, the less political participation behavior, which is consistent with the above-mentioned part of the literature. There seems no need to draw extra effort to participate. The indirect effect test of Table 3 shows that except for the sequent path of multimodal connectedness  $\rightarrow$  political news attention  $\rightarrow$  political Trust  $\rightarrow$  political participation, other paths in the model are significant.

## Comparison among age groups

The model testing was carried out for each of the three age groups as for the full sample above. The results are shown in Figures 3–5. Table 3 summarizes the paths and coefficients of the four models from multimodal connectedness to political participation from the PROCESS analysis. The results show that among 18- to 29-year-old and 30- to 39-year-old groups, five indirect effects are significant: There are three variables mediating the relationship between multimodal connectedness and political participation: political news uses, political news attention, and interpersonal political discussion; other two paths were through political news uses  $\rightarrow$  interpersonal political discussion and through political news attention  $\rightarrow$  interpersonal political discussion. Moreover, the largest indirect effect path is through the political news uses to political participation. In addition, through the political news attention, the path shows a significant negative effect. Among people aged 40 years and above, seven indirect effects are significant, two of which are the relationship between the multimodal connectedness and political participation through political news uses and interpersonal political discussion; two indirect paths are through political news uses or political news attention playing a significant role through interpersonal political discussion; and the remaining three are through political trust. Meanwhile, the path with the largest indirect effect is the same as the above two groups; and the path with the smallest indirect effect is through political news uses  $\rightarrow$  interpersonal political discussion  $\rightarrow$  political trust. The two paths from interpersonal political discussion to political trust and political trust to political participation are negatively correlated.

On the whole, we can find that political news use is the most significant positive mediation path between multimodal connectedness and political participation. The attention of political news shows the negative influence of multimodal connectedness on political participation in the groups of young people and middle-aged people. In the middle-aged group, the negative effect appears in the two paths of interpersonal political discussion and political trust, which are interpersonal political discussion  $\rightarrow$  political trust, and political trust  $\rightarrow$  political participation. Moreover, political trust became the node with the most significant impact for the age 40 and above group.

## Conclusion and discussion

By exploring and extending the relationships between multimodal connectedness and political participation, this study also focuses on the mediation mechanism: political news attention, political news use, interpersonal political discussion, and political trust. This multimodal communication not only has a clear impact on the political practice of citizens but also has a certain advanced impact on the intermediary variables (Research Question 1). The results show that the direct relationship between multimodal connectedness and political participation is not significant when the above-mentioned mediating variables are added; it is further shown that the above-mentioned intermediate variables have important theoretical and practical significance and should be included in future model construction.

This study also discusses the different embodiment of the O-S-R-O-R model in different age ranges from the perspective of the life course; many nuances were observed in the multi-channel political participation of different age groups (Research Question 2). One particular concern is the significant negative impact of political news attention on the political participation of the young and middle-aged (18–39 years old) groups. This suggests that real-time, short-lived, graphic messages are distracting young people from political participation and influencing the formation of political values, a variable that is less pronounced in the older age group (40–60 years and above). In combination with other variables, it is likely to be attributed to the fact that older people are more likely to have sustained, long-term implications for the willingness and manner in which they accepted political participation in a social culture based on kinship and grass-root organization. For example, senior citizens' associations play an important role in organizing senior citizens to participate in the discussion of important issues in the community and resolving conflicts in villages. In addition, the traditional sense of "nation" still affects the political participation enthusiasm of the elderly. The elderly are supposed to be more willing to participate in a limited time with limited media use platform to gain a national identity or political identity. The "national" identity emphasizes the individual's identification, maintenance, and love of the community and can function as a process of communication and conflict resolution. Consanguineous identification is the natural foundation of the national identity, and this identification of the nation maintains the tension between private feelings and public values (Zhang, 2018). Moreover, the traditional sense of kinship and political identity with the nation has a profound impact on the willingness of political participation for

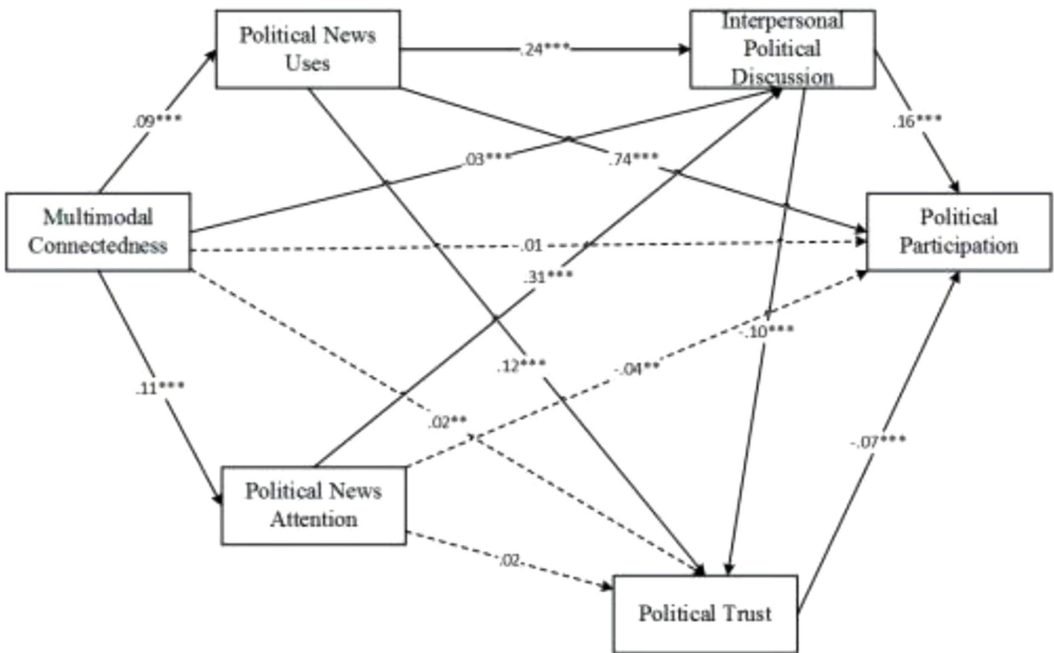


FIGURE 2  
Final revised model for all samples. \*\*\* $p < 0.001$ , \*\* $p < 0.01$ , and \* $p < 0.05$ .

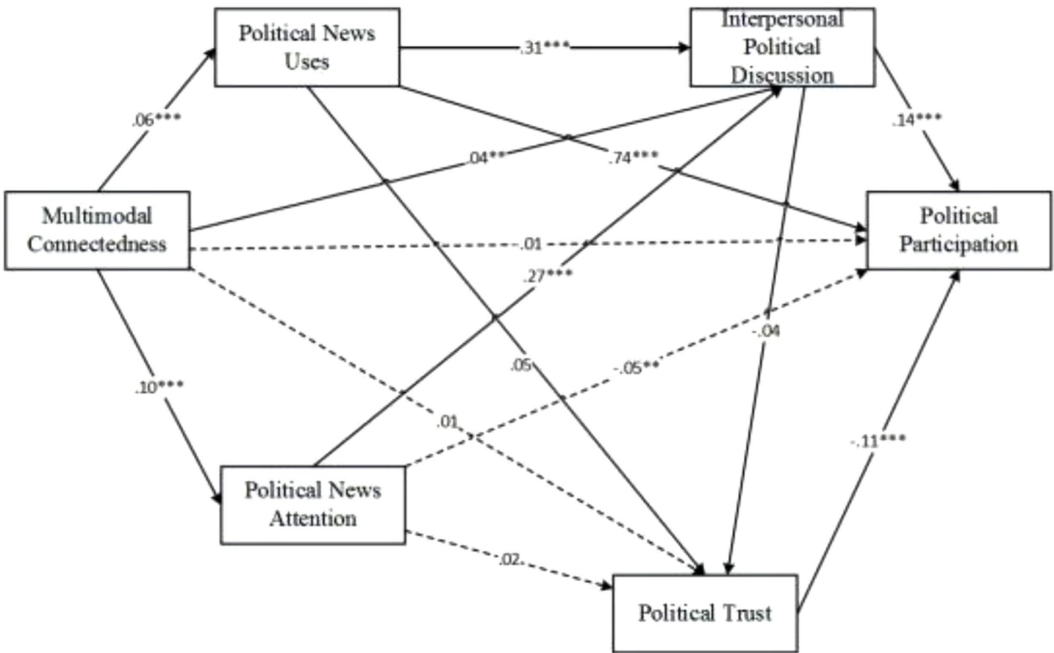


FIGURE 3  
Model for 18- to 29-year-old group.

elder citizens. It is also found that the political trust of the middle-aged and the elderly is an important node in multimodal connectedness and political participation. This could be complemented by the above-mentioned willingness to engage politically. Based on the disconnection of traditional consanguineous culture and the discomfort and spatial displacement brought by the multimedia network era, political trust remains in the traditional family discussion in the offline space but rarely translates into political participation on the network. In addition,



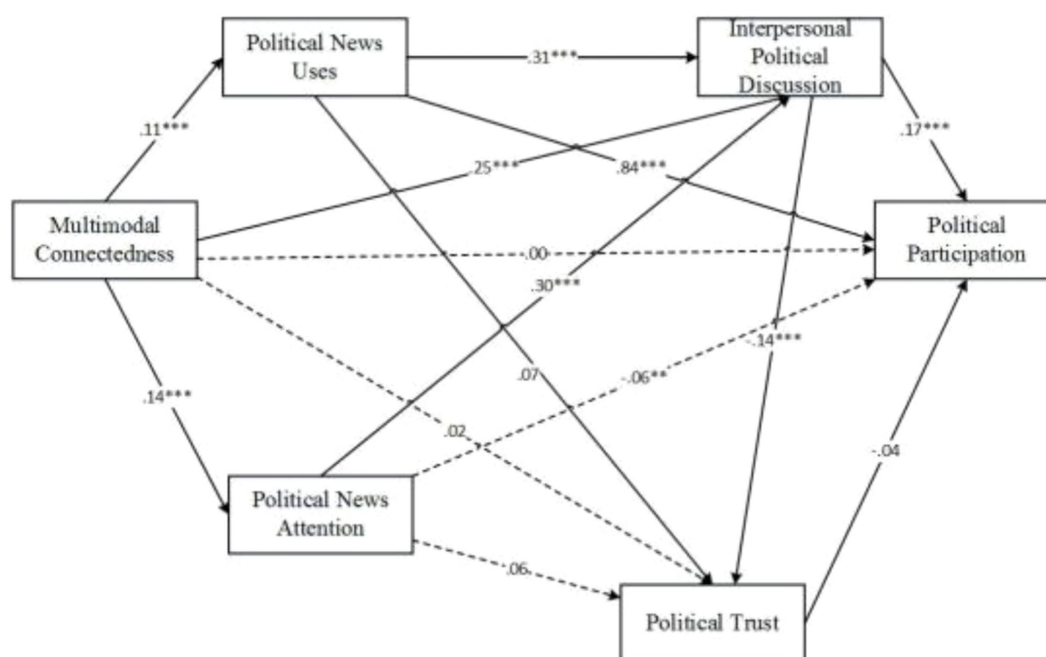


FIGURE 4  
Model for 30- to 39-year-old group.

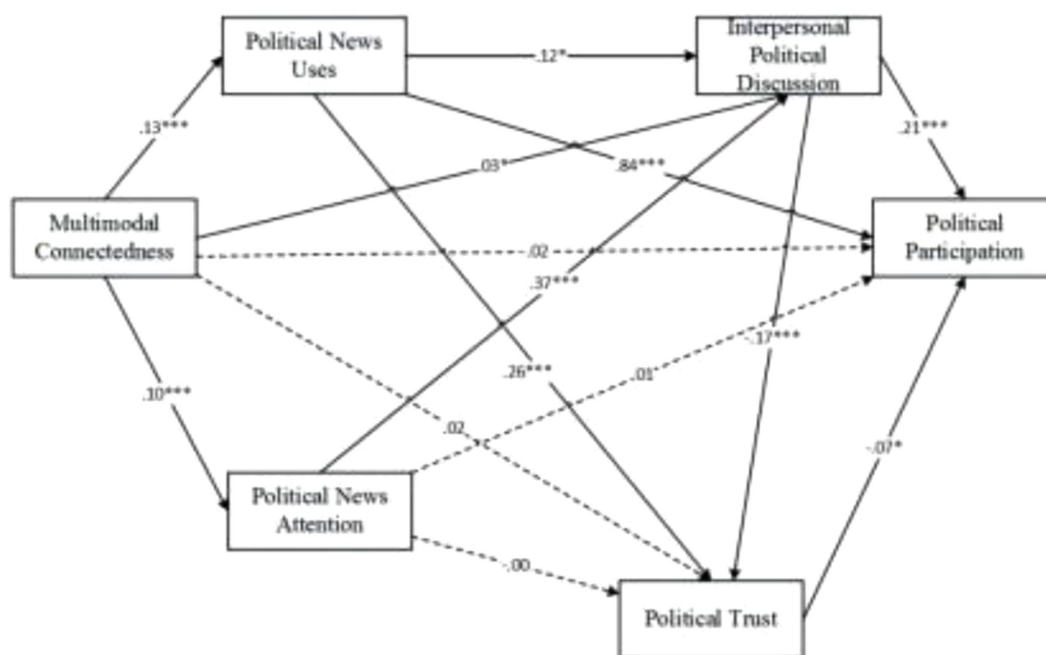


FIGURE 5  
Model for 40-year-old and above group.

self-reinforcement of national identity transforms political trust into a sense of political security, entrusting political participation to trustworthy grass-root authorities.

Influenced by the life span factors in the study, the motivations of individual or group's multimodal connectedness

are differentiated, and different motivations drive individuals or groups to form different political participation practices in the further process of transformation. Evolution, the intersection of knowledge and technology, is the driving force of human existence (Levinson, 2003). If technology is the subject of the

TABLE 3 Direct and indirect effects of multipath.

	Age 18–29	Age 30–39	Age 40 and above	Total sample
Direct Effect (Multimodal Connectedness→ Political Participation)	–0.0055	0.0045	–0.0162	–0.0093
Total Indirect Effect	0.0576	0.1034	0.0969	0.0802
Multimodal Connectedness→ Political News Attention→ Political Participation	–0.0053*	–0.0088*	0.0017	–0.0036*
Multimodal Connectedness→ Political News Uses→ Political Participation	0.0449*	0.0707*	0.0730*	0.0587*
Multimodal Connectedness→ Interpersonal Political Discussion→ Political Participation	0.0038*	0.0060*	0.0067*	0.0054*
Multimodal Connectedness→ Political Trust→ Political Participation	–0.0015	–0.0008	–0.0013	–0.0014*
Multimodal Connectedness→ Political News Attention→ Interpersonal Political Discussion→ Political Participation	0.0040*	0.0069*	0.0076*	0.0056*
Multimodal Connectedness→ Political News Attention→ Political Trust→ Political Participation	–0.0002	–0.0003	0.0000	–0.0002
Multimodal Connectedness→ Political News Uses→ Interpersonal Political Discussion→ Political Participation	0.0029*	0.0035*	0.0025*	0.0030*
Multimodal Connectedness→ Political News Uses→ Political Trust→ Political Participation	–0.0003	–0.0002	–0.0019	–0.0007*
Multimodal Connectedness→ Interpersonal Political Discussion→ Political Trust→ Political Participation	0.0001	0.0002	0.0004*	0.0003*
Multimodal Connectedness→ Political News Attention→ Interpersonal Political Discussion→ Political Trust→ Political Participation	0.0001	0.0002	0.0004*	0.0003*
Multimodal Connectedness→ Political News Uses→ Interpersonal Political Discussion→ Political Trust→ Political Participation	0.0001	0.0001	0.0001*	0.0002*

\*95% confidential level, effect≠0.

Data from analysis of SPSS PROCESS (Model 6).

times, evolution is the direction of knowledge, and man is the yardstick of media development, with the progress and development of science and technology.

Based on the above research, the technological environment for the use of multimedia does provide a broader channel and platform for citizens' political participation through the path of "multimodal connectedness—political news attention/political news uses—interpersonal political discussion—political trust—political participation," a social action network covering the public and private sphere, and connecting online and offline domains was established. The use of multimodal media promotes the change of the identity of political participants, and the people's expression through the use of multimodal media also promotes the whole process efficiency. It enhances the openness and knowability of democratic political activities. It also makes the construction of network democracy more transparent and convenient. By extending information getting on the Internet, citizens can enjoy the right to know about politics, contributing to the foundation for the following democratic elections, democratic decision-making, democratic management, and democratic supervision of the government and the whole society.

## Data availability statement

Publicly available datasets were analyzed in this study. The data are from an open-source national survey in China targeted at Internet users and can be found here: <http://www.cnsda.org/index.php?r=projects/view&id=69084413>.

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LM: Writing – original draft, Writing – review & editing. LX: Writing – review & editing.

## Funding

The author(s) declare that financial support was received for the research, authorship, and/or publication of this article. This work was supported by 2024 Shenzhen Social Sciences Academy Special Research Project "Research on the Practice of Common Prosperity in Spiritual Life Led by Xi Jinping's Cultural Thought in Shenzhen". Project Number: 2024AB005.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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RECEIVED 31 March 2024

ACCEPTED 13 August 2024

PUBLISHED 17 September 2024

## CITATION

Maroto-González I, Fieiras-Ceide C and  
Vaz-Álvarez M (2024) Informing vs.  
promoting. The use of TikTok on France TV,  
BBC, and SVT. *Front. Commun.* 9:1410306.  
doi: 10.3389/fcomm.2024.1410306

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# Informing vs. promoting. The use of TikTok on France TV, BBC, and SVT

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This study explores the use of TikTok by public broadcasters France TV, BBC and SVT to measure its informational and promotional relevance on the platform, and to identify the types of videos that generate the highest levels of engagement among users. By examining the news profile associated with the information and the corporate profile of each of the selected broadcasters, 120 publications were analyzed, counting the number of users and interactions, including likes and levels of engagement of the content. In addition, a content analysis was carried out focusing on the formal, promotional and informative characteristics of the posts. The findings revealed an interest in both promotional and informational content shared by the platforms on TikTok. In the case of SVT, higher levels of engagement are observed in comparison to the BBC and France TV profiles. Among the contents with the highest engagement, those of an informative kind with a focus on social issues stand out, highlighting proximity and immediacy. In the promotional domain, videos about events and cultural content stand out. From a structural point of view, content designed specifically for the platform predominates, as opposed to adaptations and with a duration of <1 min.

## KEYWORDS

TikTok, information, promotion, France Tv, BBC, SVT, disinformation, verification

## 1 Introduction

Convergence, the emergence of the Internet and the new agents involved in communication have led to the transformation of the international media context, which is reflected in new audience demands and the development of internal and external innovation processes in organizations. Public service media (PSM), in the search for rapprochement and seduction of their audiences, have initiated a process known as platformization in which content and work processes are integrated, coexisting in form and content with social media platforms (Bonini Baldini et al., 2021).

Organizations, political groups, brands and public service media adapt their communication objectives to the format offered by this social network to get their message across to the different stakeholders that constitute their community within TikTok. To this end, the contents, in their different informative natures, are adapted in time and format to the characteristics offered by the social network.

In this way, social media take a leading role in their integration as a communicative element in public service media. The TikTok platform stands out from other platforms due to its rapid growth and acceptance by society, especially by young audiences. In relation to the youth audience, its rewards program, TikTok lite was deactivated in France and Spain by the end of April 2024 due to concerns about its addictive potential and failure to conduct

risk analyses, as warned by the [European Commission \(2025\)](#). They reported that TikTok could be violating the law of the Digital Services Act (DSA). In addition, several countries had banned their workers from public affairs using TikTok because of the risk of espionage. However, European public media accounts remain active while issues related to the use of this social network are being addressed.

## 1.1 Adaptive processes on public service media

In the emerging communication paradigm faced by public media, they seek to assert its relevance in the presence of the rise of international video-on-demand (VOD) platforms. This situation implies a deep reconfiguration that concerns both organizational structure and content creation strategies ([Sehl et al., 2022](#); [Clegg and Burdon, 2021](#)). This adaptive process is complex, as it involves a change in the internal operations of organizations and also in the interaction with audiences, within a social context including the political, financial, legislative and social actors that manage public entities.

Social media platforms led by conglomerates such as Meta, TikTok, or Google have brought about a paradigm shift called the *platformization* of society ([Van Dijck et al., 2018](#)). This transformation is reflected in the way people consume information and entertainment, and also in the process of information creation itself, affecting the very nature of social communication.

The growing influence of these platforms in everyday communication leads to a rethinking of traditional models of information transmission. The capability of international VOD platforms to capture and retain the attention of large segments of the population ([Srnicsek, 2018](#)) puts pressure on public media to adapt to these new communication environments, which in turn affects working practices and creative development ([Duffy et al., 2019](#)).

Faced with this situation, public media are challenged to retain audiences and attract viewers' attention by offering attractive and organic environments to maintain their competitive ability in the media environment ([Reviglio, 2019](#)). To do so, they are creating digital interaction spaces and exploring methods to monetize the data generated by their users ([Van Dijck et al., 2018](#)). This means embarking on a dynamic process of platforming, which is necessary to sustain their legitimacy and the role of public media in the current social and media context ([Bonini Baldini et al., 2021](#)).

This process of platforming is not just a response to a trend, but a necessary strategic transformation that affects public media and raises several challenges in their governance, communication and engagement with their audiences. The sovereignty and independence of the media may collide with the symbiosis they establish with social media platforms, compromising the values that represent and define public media ([Van Dijck et al., 2018](#)).

## 1.2 Impact of public media platforms on social networks

Public communication platforms demonstrate the need to incorporate social networks into their strategic communication frameworks. The digital environment is established as a determining factor to enhance visibility and strengthen links with audiences, enabling not only the promotion and establishment of dialogical exchanges, but also the development of interactive experiences that enrich the receptor. Such approach proves to be an efficient tactic to foster engagement and strengthen trust between media entities and their audiences ([Urse and Tasençe, 2023](#)).

The incorporation of social networks within communication strategies requires the adoption of holistic approaches that articulate multiple media and platforms in a coordinated, complementary and experiential way. This perspective encourages the creation of communication ecosystems that are based on transmedia strategies ([Jenkins, 2008](#); [Scolari, 2013](#)). The methodology highlights the importance of planning communication as an interconnected element, where each component contributes to the expansion of the message, thus facilitating a multidimensional user experience.

Consequently, informational and promotional experiences are structured due to each social media platform plays a specific role within the communication process, enhancing the reach of the content and encouraging the use of the content platform to offer a complete informational experience ([Fieiras Ceide et al., 2022](#)). In this context, the synergy established between the different digital channels becomes an element of dissemination and promotion that enhance interaction with the audience.

In the current communicational paradigm, public broadcasters confront the challenge of devising content strategies that are simultaneously attractive and adaptable ([Navarro et al., 2022](#)), while maintaining and enhancing their journalistic integrity ([Ferrell-Lowe and Stavitsky, 2016](#)). This entails avoiding the drawbacks associated with social media platforms, such as the spread of misinformation or the fragility in the protection of users' personal data ([Horowitz et al., 2022](#)), in order to defend the public value that defines its essence as a public organization ([Es and Poell, 2020](#)).

The incorporation of social media in the context of public media demands a careful balance between innovation and the preservation of ethical principles, ensuring that the public service mission remains unchanged in the face of the changing dynamics of the media ecosystem.

## 1.3 TikTok, the social network to be in

TikTok, a social media platform developed in China, has seen exponential expansion since its launch in 2016. In 2024, TikTok is positioned as one of the main social networks, although it does not reach the pre-eminence of YouTube or Meta (Facebook, Instagram, WhatsApp), it shows a higher growth rate in the recent period

(Data Reportal, 2023). Additionally, there is a trend of migration of active users from YouTube to TikTok (Pera and Aiello, 2024).

The TikTok platform makes it easy for users to create and broadcast short videos, enriched with music, visual effects, and filters. Throughout 2024, it has undergone a significant evolution by incorporating new functionalities and extending the maximum length limit of its videos from 15 s to 30 min.

According to Statista (2024), TikTok has a global base of users of 1.218 million users. This platform is distinguished by its ability to capture the interest of users by converting it into substantially higher engagement rates compared to other social networks. The level of engagement on TikTok is revealed as an indicator that reflects an effective and favorable interaction between viewers and the proposed content, which enhances the digital presence and amplifies the visibility of both brands and individuals.

However, TikTok has not been far from controversy. In 2024, the European Commission initiates sanctioning procedures against TikTok with the aim of assessing possible breaches of the Digital Services Law (DSL) such as the protection of minors, advertising transparency, deficiencies in the availability of data for researchers, as well as the management of risks related to its potentially addictive design and the dissemination of harmful content in the app. TikTok voluntarily blocked its TikTok lite rewards programme after these warnings from the European Commission (Ordiz, 2024). Despite these problems, TikTok continues to grow by adding among its users not only individuals, but also brands, entities and media. As Vázquez-Herrero et al. (2021) points out, in this scenario, the media have shown a growing interest in this social network, initiating a process of progressive adaptation for journalistic purposes.

From an informative perspective, this adaptation aims to achieve journalistic objectives, and in certain cases, the news turns toward aspects of entertainment (Peña-Fernández et al., 2022). However, it is also oriented for promotional purposes, seeking the positioning of brands or the dissemination of programmes (Vázquez-Herrero et al., 2021). This approach takes advantage of the capacity to go viral of the network from an advertising perspective (Agrawal, 2023).

The platform exhibits a remarkable attractiveness for users that is reflected in engagement rates higher than those of other social networks. This engagement indicator is of particular relevance in TikTok, as it signals an effective and beneficial interaction between the audience and the content offered, thus contributing to the improvement of the digital presence and the increase of visibility of brands or individuals. However, the multiple dimensions of engagement (Simon et al., 2011) means that quantitative measurement may be too simple without being able to reflect the full complexity of the broad concept of the term (Steensen et al., 2020). Nevertheless, its application remains feasible, in professional contexts, and it is proposed as an indicator of social network interaction quality.

In summary, TikTok is emerging as a social networking platform that, due to its particularities and impact, is of interest to public media platforms. European public media are consolidating their presence in this video network by adapting their existing content and creating original material specifically designed for this environment (Negreira-Rey et al., 2022; Vázquez-Herrero et al., 2022).

## 2 Methods and materials

The following study analyses the presence of public broadcasters on TikTok. This social network awakens interest in public media organizations due to the growing incorporation of the media into this and other social networks that are gradually emerging. Therefore, the research provides a media landscape where the interaction and relevance of content is a trend of incorporation for the adaptation of the contents to new formats that are currently in force.

Consequently, the research aims to identify the objectives of the main profiles of public platforms, examining the quantitative results of each one of them, as well as the elements that structure the format of the contents that show the most commitment and relevance in their audiences. In this way, both the promotional nature of the profiles and the informative aspect of the profiles can be identified.

1. What are the main objectives of public broadcasters when using TikTok—do they primarily seek to inform, entertain, educate, or promote audience interaction?
2. Does the clear identification of the TV product or program in TikTok content enhance brand recognition and fan loyalty?
3. How do the news topics and the visual presence of journalists along with the style of storytelling influence the engagement of content on TikTok?
4. In what ways do the use of hashtags, the length of content and the distinctive TikTok style as structural elements of the format influence audience engagement?

Having concluded the review of the scientific literature on TikTok and public media, it is worth noting that, despite the variety of existing research on this social network, there is a notable absence of specific studies on the strategic use of TikTok by European public television platforms. In response to this gap, a descriptive, hypothesis-blinded exploratory study is proposed to ensure objectivity of analysis. This approach includes both qualitative and quantitative analyses, aimed at mapping the TikTok profiles of these platforms and examining the content that generates the most interaction.

Using the classification proposed by Hallin and Mancini as a benchmark, the study collected a representative sample of the most prominent groups in their categorization. This selection has a propositional character. The BBC is internationally recognized for its independence and quality of content, positioning itself alongside France TV as a major public sector player in the European audiovisual industry (European Audiovisual Observatory, 2024). SVT, for its part, is a reference because of its commitment to impartial coverage and high community trust (Reuters Institute Digital News Report, 2020).

Media are influenced not only by market demands, but also by political pressures derived of the structure of the platform, among others. Likewise, the corporatist-democratic model, which also demonstrates state intervention, although it is legally delimited. On the other hand, the liberal model, where the dynamism of market mechanisms and the pre-eminence of commercial media companies predominate, with minimal state intervention. The representative choice of Hallin and Mancini's (2004) model

Platform	Description	Total number likes	Followers	Playlists	Total number post
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FIGURE 1  
Platform profile analysis sheet. Source: own elaboration.

User profile	Numer of posts	Likes	ER	Number of days	Time period
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FIGURE 2  
Analysis sheet for posts published in scheduled time period. Source: own elaboration.

for the France TV (France), SVT (Sweden), and BBC (Great Britain) platforms, as shown in Table 1, is based on their use of the TikTok social network using an informative profile and the corporate profile used by the platforms in the TikTok social network. This analysis, informed by Hallin and Mancini’s (2004, p. 5) observations, allows for a richer understanding of how media are configured and operate within different political and social contexts.

This research proposes to use the online social media analysis tool Popsters which facilitates the automated collection of data from the selected platforms. This tool allows defining a specific time interval for analysis and collecting profile data, as well as establishing accurate metrics such as the interaction rate per post (ERpost). This metric is calculated by adding up the interactions—likes, shares and comments on each post and dividing the total by the number of followers.

$$\text{ERpost} = \frac{\text{likes} + \text{share} + \text{comments} + \text{followers}}{\text{no followers}}$$

In the initial methodological phase, focusing on data collection, a mapping of the corporate and news profiles of the platforms under study is carried out, focusing on the first quarter of 2024, with a date range from 16 January to 16 March. This analysis includes not only profile data but also posting frequency and other relevant identifiers.

Regarding the methodology design is suggested the creation of several tables for a structured analysis. Firstly, a table collecting the data of each Tiktok profile with general information. The table includes the numerical variables of followers, followed, likes, among other relevant indicators, as shown in Figure 1.

After the first gathering, is carried out an analysis of the total publications during an established time period from January 16th to March 16th of 2024, where the information on the number of publications, likes and the average engagement rate is compiled, as shown in Figure 2.

Having collected all the publications, a selection of the 20 publications from each profile with the highest engagement rate (ER) was made, totalling 120 publications, and a content analysis was carried out using the form shown in Table 2.

Based on the content analysis forms created by Bernal and Carvajal (2020) for the informative analysis of journalistic YouTube

TABLE 1 Selected sample from Hallin & Mancini model.

Polarized pluralistic	Democratic corporatist	Liberal democratic
FRANCE TV (France)	SVT (Sweden)	BBC (UK)
RAI (Italy) RTP (Portugal) RTVE (Spain)	ARD (Germany) DR (Denmark) NPO (Netherlands) ORF (Austria) RTBF (Belgium) RTS (Switzerland) VRT (Belgium) YLE (Finland) ZDF (Germany)	RTÉ (Ireland) Canada Unites States of America

Source: own elaboration.

TABLE 2 Publications sheet for selected time.

Identificative elements	#profile, #link #post
Post data	#likes, #ER, #length
Promotional approach	#CTA, #product/programmidentification, #programme crop, #channel reference
Informational approach	#topic, #journalist, #classical narrative rhythm
Format structure	#integrated headings, #descriptive text, #identified sender, #native edition for TikTok, #subtitles #TVlogo
Audio	#original #edited #music

Source: own elaboration.

videos, it has been adapted to the needs of the research, orienting it toward the contents of TikTok. To this end, an analysis sheet was designed to address various aspects of the content, such as the promotional or informative nature of the publications, the presence of calls to action, the identification of products or programs, the style and presentation (specific references to the channel, integrated graphic headlines, among others), audio characteristics (diegetic, edited, music) and interaction metrics such as interaction rate, followers, real views (RV), shares and likes.



These tables will help to organize and analyze the data collected, allowing for a clearer and more detailed interpretation of the TikTok strategies implemented by European public television platforms during the chosen period.

### 3 Results

The analysis covers six TikTok profiles comprising the corporate and news profiles of each of the UK, Swedish and French public television platforms. This study includes not only data collected from the profiles themselves, but also a content analysis of 120 posts with the highest engagement rates from January to March 2024.

Preliminary results suggest a typology of these profiles based on the descriptive details of each, as shown in Table 3. Corporate accounts, such as @bbc, are distinguished as official entities. In contrast, @svt offers guidance on accessing content through its app, and @france.tv invites its audience to choose from a catalog of programming options.

In particular, the playlists of these profiles differ considerably. @france.tv and @svt produce succinct selections, covering a range of genres in six and eight categories, respectively. @bbc, however, expands its offerings to some 99 categories, presenting a wide range of programming in a variety of genres.

The information-focused profiles showcase each organization's dedication to information dissemination, reflecting its underlying ethos. @bbc emphasizes audience appreciation, @svt focuses on relevant news with a commitment to local journalism, encapsulated by the tagline "Always close to the news you care about", and @franceinfo, under the slogan "inform, explain and decipher", outlines its communication objectives to make content more accessible, highlighting various facets of public value to engage its audience.

In the field of news playlists, @bbcnews is distinguished by a wide range of 54 categories, selected to accentuate specific news within a thematic scope. In contrast, @france.info opts for a more streamlined approach with 15 categories, highlighting news selected by journalists, current affairs, sports analysis, etc., with a notable emphasis on its news verification role. @svtnyheter is an atypical case, as it forgoes a playlist altogether.

Digging deeper into the quantitative metrics of the profiles, a clear divergence emerges in the number of followers. The @bbc profile is pre-eminent, with around five million followers, while @bbcnews follows with around three million, outnumbering its counterparts. France TV's partner profiles have around 600,000 followers, while SVT's is around 110,000. These figures reflect a hierarchy of popularity and engagement: BBC at the top, followed by France TV and SVT.

This stratification indicates that the BBC and SVT corporate profiles have more followers than the news profiles. Interestingly, this is not the case for France TV, where the news profile slightly outnumbers the corporate profile. This data underlines the critical role of the nature of content and its interaction with reach, engagement and follower engagement in TikTok's dynamic social media landscape.

Within the framework of the study period established for the first 60 days of the initial quarter of 2024, in accordance with the methodology described above, the content generated during

this period was collected and analyzed. This methodology makes it possible to evaluate the average engagement per publication, particularly of video content, and the average of the content analyzed, as shown in Table 3.

The analysis presented in Figure 3 demonstrates that, despite the lower number of users and posts from SVT (192 for @svt and 151 for @svtnyheter) compared with other profiles on the platforms examined, the interaction their content generates among users shows a higher level of engagement. In other words, despite differences in the volume of postings, SVT's content achieves a deeper and more effective connection with its audience, placing them in a prominent position in terms of engagement, significantly above the other profiles under study.

This finding emphasizes the importance of content quality in the dynamics of social media interaction, beyond the mere quantification of followers or posts. Therefore, the following section analyses twenty videos from each profile with the highest engagement rate, examining different variables regarding the format and content of the posts.

The initial phase of the content analysis focuses on the promotional dimension, highlighting the significance of the corporate profiles of the platforms. These profiles display a pronounced interest in promoting their main program offerings by integrating snippets of these programs into their virtual spaces. Accompanying these snippets, the user is provided with a clear identification of the content in the post's description, including the name of the program and the broadcast channel. Specifically, on the SVT profiles, text is added over the image to preview the content, and additionally, an indication at the end of the video that points to the name of the program and the platform where it can be viewed.

#### 3.1 Promotional approach

In the promotional communication strategy adopted by the SVT profiles (@svt and @svtnyheter), the platform aims to encourage viewers to associate the content with the channel, sometimes urging the audience to access the content through the platform itself. As illustrated in Figure 4, the British platform prioritizes its promotional efforts primarily through its corporate profile (@bbc). In contrast, the profile dedicated to information (@bbcnews) is more inclined toward an informative aspect, placing emphasis on the corporate graphic identity to aid viewer recognition. Regarding the profiles of France.tv, a notable feature is the absence of direct calls to action; however, most of their content is indeed associated with the respective programs. Simultaneously, the corporate profile of the French television follows the trend of using programme snippets to populate its feed.

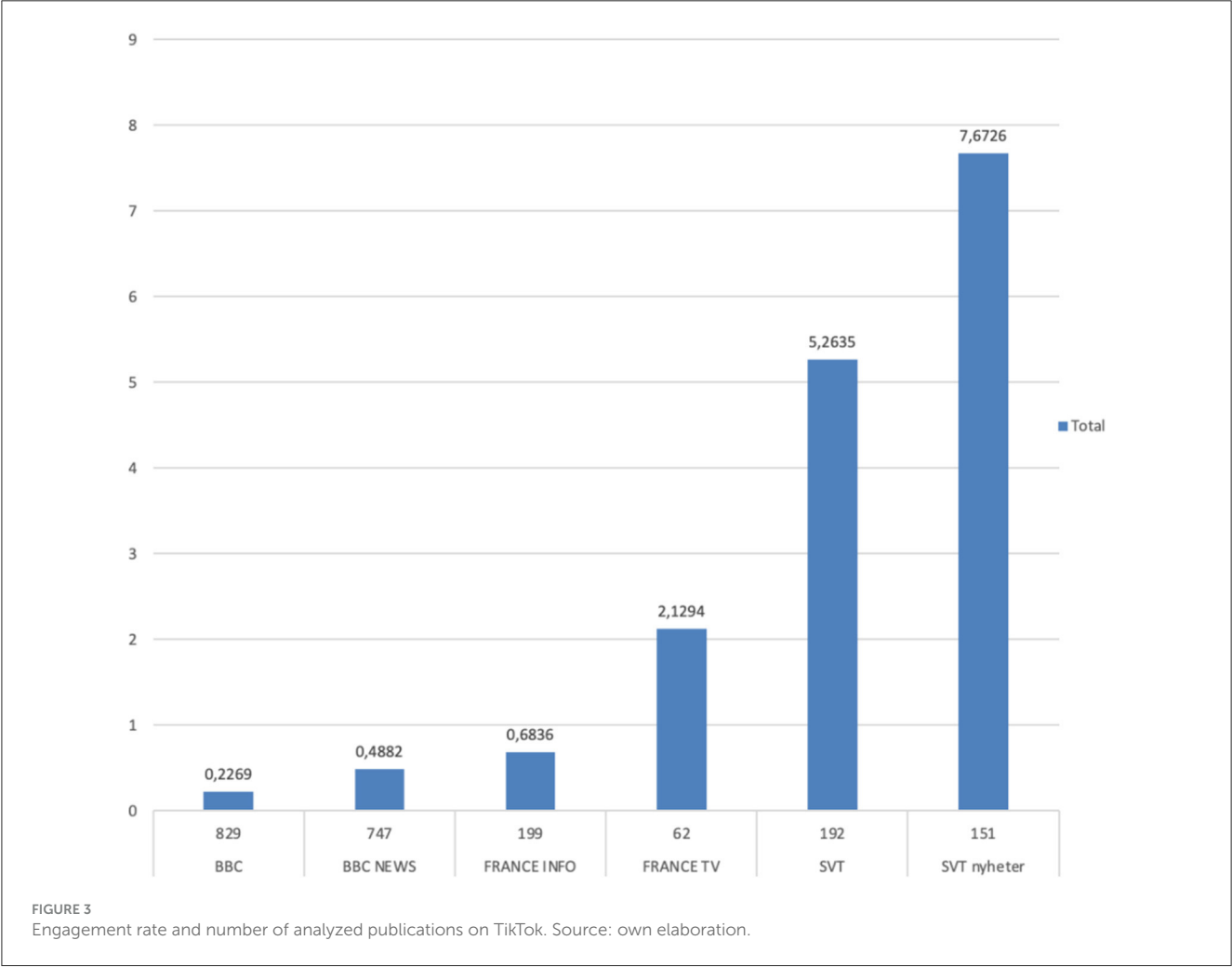
#### 3.2 Informational approach

From an information perspective, as illustrated in Figure 5, the prominence of journalists in the content broadcasted through the profiles is underlined, which is indispensable for conveying information. Although the journalist's physical presence is not always prominent, as their participation occasionally is restricted to voice-over, their authorship is evidenced by subtitles crediting

TABLE 3 Results of analysis of TikTok profiles.

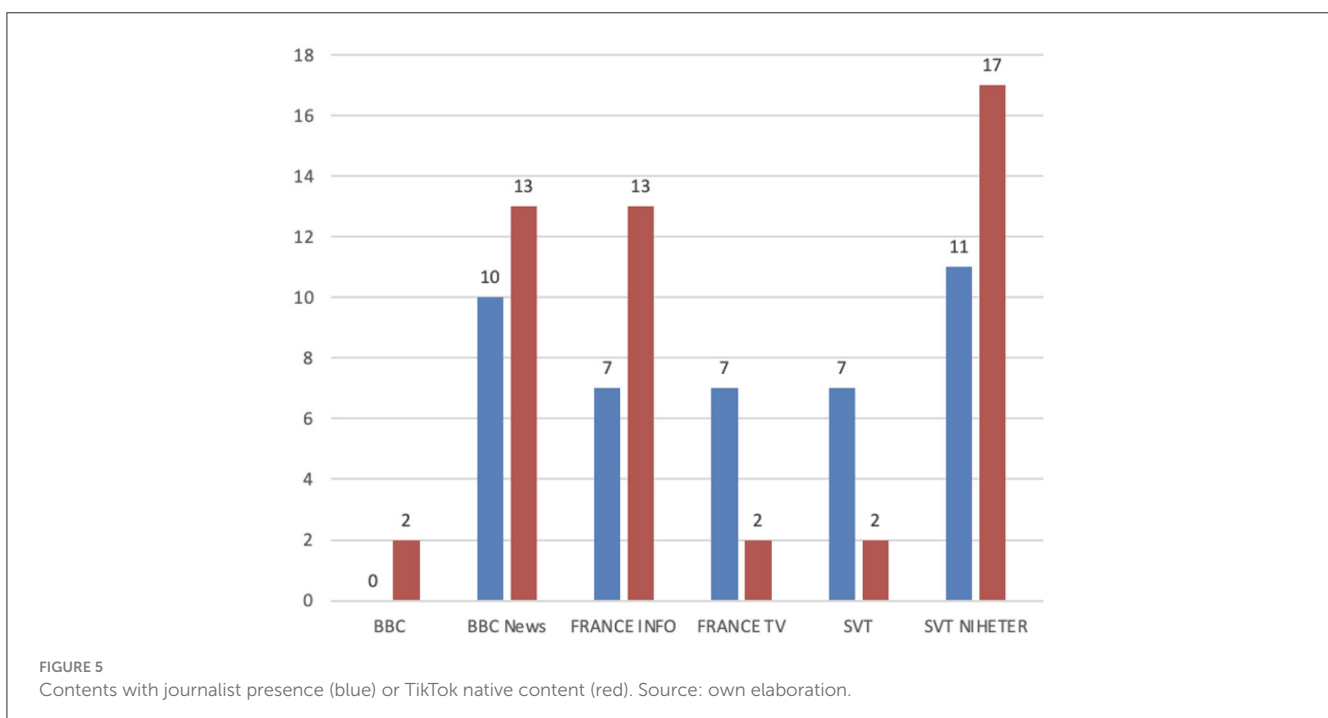
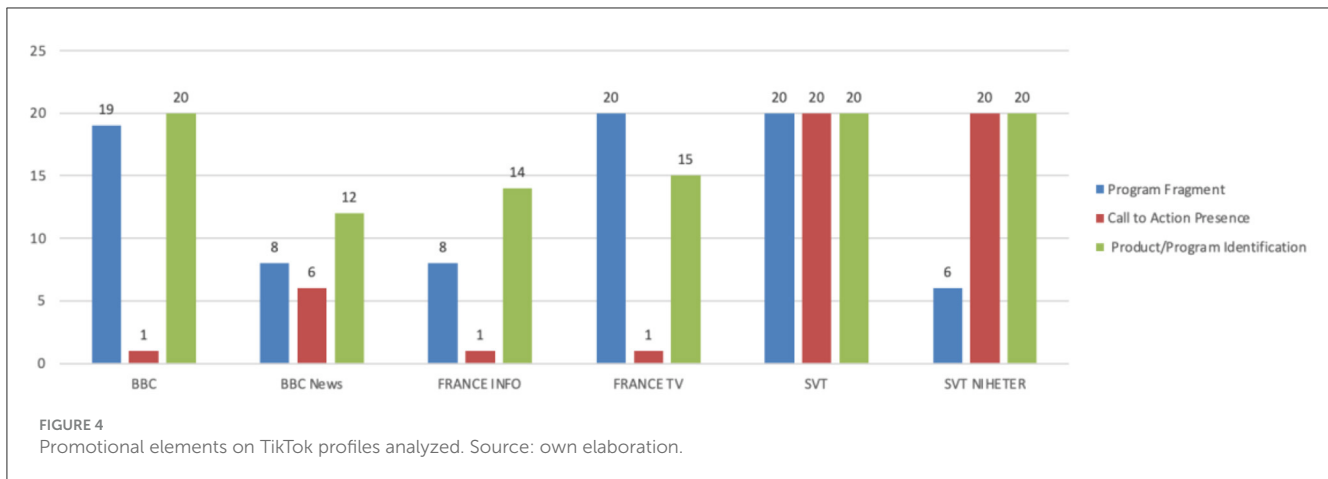
Platform	Description	Likes	Followers	Feed playlist	Total post
@bbcnews	The stories that matter to you	86,710,416	3,159,650	52	2,128
@bbc	Official BBC TikTok	159.882.391	5.071.109	99	2,910
@franceinfo	Informer. Expliquer. Décrypter. franceinfo (radio, canal 27, web)	12,496,114	600,550	15	1,623
@france tv	On regarde quoi aujourd'hui sur la plateforme france.tv?	14,496,095	553,549	6	1,623
@svtnyheter	Alltid nära till nyheterna du bryr dig om.	6,763,793	108,875	–	822
@svt	Officiellt konto för SVT, Sveriges Television. Du ser våra program på SVT Play!	7,096,880	117,528	8	1,268

Source: own elaboration.



the content to the journalist. Moreover, the format for delivering news and television programming often employs a narrative style, positioning a media professional as the central figure in disseminating information, whether in guest features or cultural event coverage. Quantitatively, within the Swedish news profile (@svt nyheter), 11 pieces of the content analyzed incorporate either the audible or visual presence of a journalist. The @bbnews profile contributes 10 pieces with such presence, and france.info offers seven videos of this nature.

Furthermore, it is observed that content specifically tailored for TikTok is characterized by its succinct and engaging nature, mirroring the unique attributes of the platform, and is



predominantly presented by journalists. Profiles like the Swedish news channel (@svt nyheter) are particularly notable, with nearly all posts reviewed (17) being bespoke TikTok content. The BBC news profile (@bbcnews) and its French equivalent (@france.info) follow with approximately 13 videos each. These numbers showcase the creation of informative content for TikTok, embracing the speed and vibrancy that define the platform.

In the realm of informational content, as depicted in Figure 6. Concerning predominant themes, it is observed that the content which establishes a stronger connection with audiences is that which reflects current concerns of social relevance, covering areas such as health and education, in addition to political issues and contextually significant news that holds civic interest. Similarly, there is evident interest in content with a national scope for inclusion in a scientific article.

In relation to genres that excel in their capacity to foster engagement, as delineated in Figure 7, within the French and

English corporate profiles, culture holds a prominent position. This is evidenced by a preference for clips from notable cultural events, such as speeches on the BBC, Melodifestivalen on SVT, or the Gala des Pièces on France.tv. Specifically, within the SVT profile, there is a tendency toward publishing interview segments from certain programs, such as those conducted by the Carina Bergfeldt show, to give an example. On the other hand, the analysis of content on the corporate profile of the French platform (@france tv) reveals a balanced selection by the audience, where despite a predilection for cultural content, the significance of fiction and documentary content is also emphasized.

Understanding the average engagement rate outcome of the profiles of the platforms studied relates to different aspects of the structure and format of the posts. This is exemplified by the average duration of the content as demonstrated in Table 4, where it is noted that those belonging to the SVT profiles (which exhibit the highest engagement rate according to Figure 3) tend to be

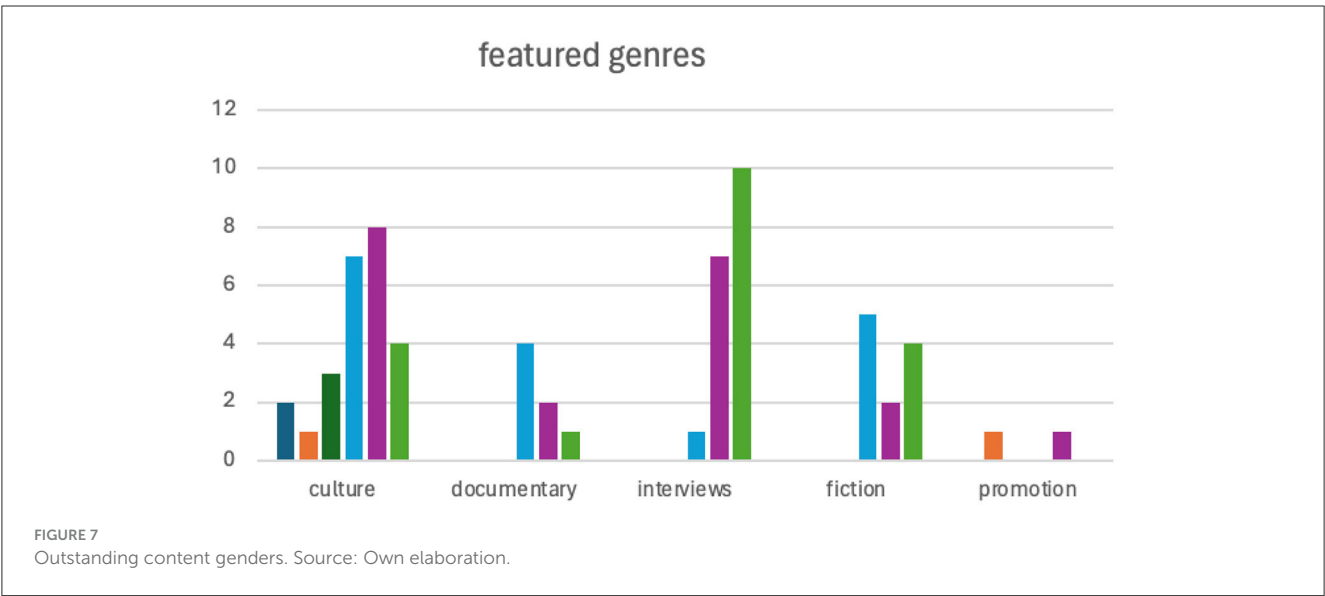
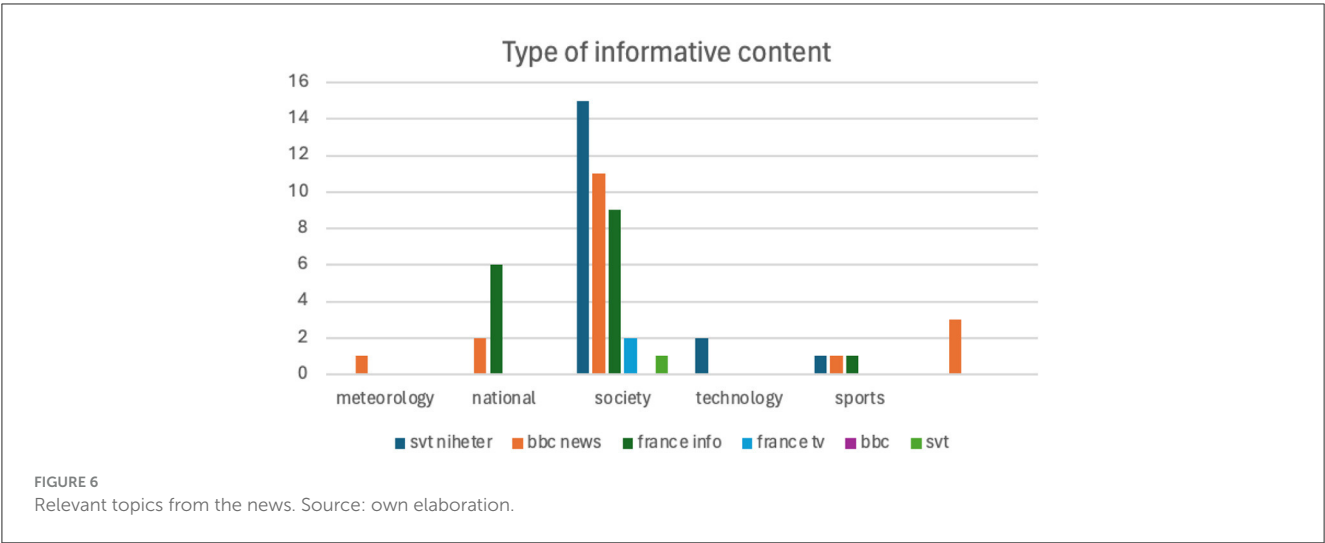


TABLE 4 Average length of videos in the selected profiles.

BBC	2:12:09
BBC News	0:48:39
FRANCE INFO	1:33:57
FRANCE TV	1:21:09
SVT	0:47:12
SVT NIHETER	0:42:27

Source: own elaboration.

shorter, generally not exceeding 50 s. This duration is consistent with the average length of content from the informational profile of the British public television (@bbcnews). In contrast, the corporate profile @bbc shows the longest average duration among the evaluated content. The profiles @francetv and @france.info occupy an intermediate level, albeit high when considering TikTok's standards.

Other variables focused on structure and format, as illustrated in Figure 8, highlight the use of hashtags as a significant feature, where the number of these tags' garners particular interest. The SVT and @bbcnews profiles lead in the use of hashtags, incorporating between 8 and 13 tags in their posts. These tags not only categorize the content but also aid in its identification and reference the issuer and the platform of origin. The other profiles analyzed show a marked reduction in the inclusion of hashtags, with up to a total of 37 in the case of France.Info for a scientific text.

Within the distinctive features of TikTok, the implementation of subtitles is emphasized, a field in which the @svtnyheter profile excels, followed by the BBC's corporate profile. The latter presents a stark contrast to the strategy of @BBCnews, which prioritizes auditory information, downplaying the informative value that subtitles can provide. Meanwhile, SVT's corporate profile does not systematically adopt the use of subtitles, opting to maintain a content fragmentation strategy without incorporating this readability tool.



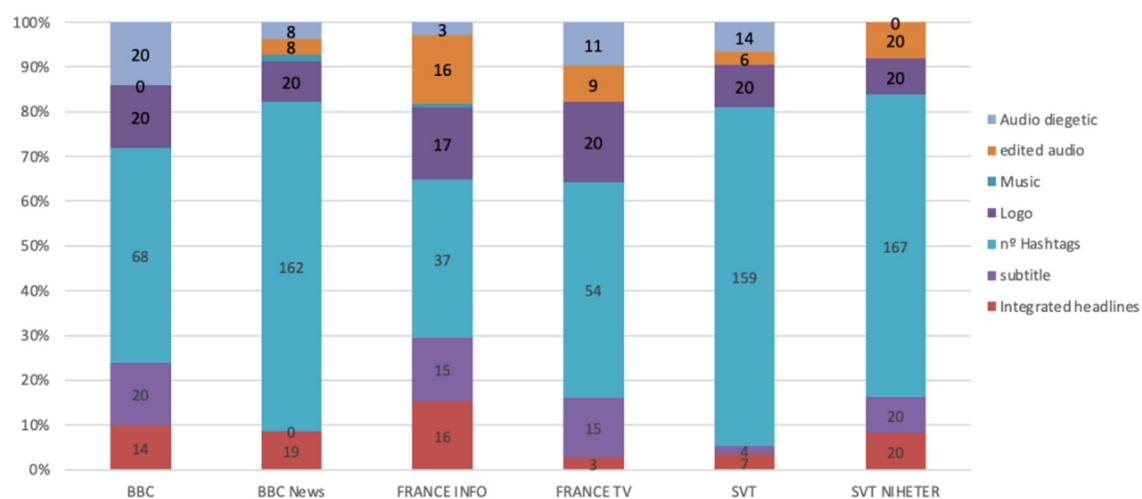


FIGURE 8  
Structure and format of posts. Source: own elaboration.

The inclusion of titles in posts is a crucial element for associating content with the platform, with the use of colors and fonts being decisive for the recognition of formats. While all the informational profiles consider this aspect, France.info adopts a different approach by employing generic titles that do not establish a direct connection with the corporate identity, opting for black typography on white backgrounds, which contrasts with the more integrated visual strategies of other profiles.

Furthering the analysis prompted by Figure 8, regarding parameters related to the use of audio in posts, there is a significant presence of original real-time audio in corporate profiles. This type of audio is recorded in a range spanning from half to all of the content within a given profile. For informational profiles, the use of diegetic audio occurs more sporadically.

Moreover, the utilization of edited audio is primarily associated with informational profiles, with the Swedish news profile (@svtnyheter) notably including this type of audio in all of its content. It is followed by the @france.info profile, which incorporates it in a significant proportion of its posts, while the profiles of @france.tv, @bbcnews, and @svt use it more sparingly. The use of music is exceptionally specific and is mainly limited to the profiles of @bbcnews and @france.info, where it is occasionally employed to accompany photographic animations enhanced by musical segments, adding an auditory dimension that complements the visual information.

## 4 Discussion and conclusions

In the context of “platformization” (Bonini Baldini et al., 2021), public media find themselves in a phase of adaptation and embracing of emerging social networks within the current communicative landscape. TikTok, as one of these burgeoning platforms, has become a focal point for public media. An analysis of their presence on this social network, through their respective

profiles, reveals an intent to promote recognition of their content through the affirmation of their corporate identity. This is clearly manifested in the headlines accompanying news stories, which are readily identifiable across all the platforms studied, except for France.tv, whose profiles opt for neutral text in black letters on a white background.

Primarily, an analysis of preferred content in the information sphere illustrates how audiences tend to favor content that offers proximity and responds to their immediate interests. These interests encompass current issues, advice, and socially relevant information in areas such as health and education, as well as news related to timely events, which are valued even above national topics. This preference may, in certain cases, lean toward newsworthy content with an entertainment focus (Peña-Fernández et al., 2022).

However, if there is a strategic transmedia communication approach from public media platforms (Jenkins, 2008; Scolari, 2013), where each social network fulfills a specific function that defines its character, the content developed on TikTok would not compromise the journalistic integrity of the platform. On the contrary, such content would aim to meet the needs of diverse audiences, in line with the values of participation, diversity, plurality, and innovation. These principles are framed within the public value that constitutes the essence of public media, thus ensuring a media offering that responds to both the informational demands and entertainment expectations of the audience.

Furthermore, the formal aspects of content maintain an intrinsic relationship with the type of consumption and the device through which users access them on the social network. In this regard, the presence of subtitles transcends the role of a mere complementary informational element to become an essential component, especially in contexts of mobile consumption. Since the audio of the content is not always activated by users, those fragmented or edited contents that include voiceovers or audios without transcription in the

form of subtitles experience a significant reduction in their informational potential. This fact is particularly significant, as demonstrated by the informational profiles of SVT (@svtnyheter) and the BBC's corporate profile, which appear to recognize and adapt to this reality, as observed in the results presented in Figure 8.

The use of audio solidifies as a decisive factor in the communicative strategy of each platform toward its target audience. Such application is closely linked to various variables, including the fragmentation of content, its specific typology, or the implementation of subtitles. In posts composed of excerpts from pre-existing programs, where the auditory component remains fundamentally unchanged, diegetic audios are generated, particularly when sharing segments of events. This phenomenon justifies the frequency of this practice in corporate profiles.

In contrast, in scenarios where content is subject to editing, either by adapting television material or by creating content exclusive to TikTok, the inclusion of music is confined to exceptional situations, taking on an almost anecdotal nature. The underlying reason is that, in such contexts, the selection of music and sound effects follows highly selective criteria, aimed at maximizing the impact and resonance of the content within the platform's dynamics.

From the interpretation of the data collected, it can be deduced that the communicational objectives of public platforms on TikTok pursue a dual purpose: on one hand, to promote and consolidate brand image, and on the other, to meet the informational needs of users on this social network. This strategic approach seeks to captivate and engage an audience characterized by its dynamism and interactivity, which exhibits a particular interest in the most prominent content that public media can offer in concise formats. This strategy is supported by the observed correlation between the level of engagement and the brief average duration of the content, particularly evident in the SVT profiles, which register a higher degree of interaction in videos not exceeding 1 min in length.

Measuring engagement in public media is important as an indicator of its impact on the society to which it owes and from which it draws and as a tool to encourage informed debate with citizens and to enable effective feedback to benefit the community. Ultimately, the evaluation of engagement acts as an indicator that enables other aspects of public media communication quality and public value to be nuanced, thus deserves appropriate and continuous attention.

In conclusion, from the analysis conducted, it can be affirmed that the content generating the highest degree of engagement is characterized by addressing notable excerpts from events and programs, which provide relevant and up-to-date information to the citizenry. This content is distinguished by editing tailored specifically for the social network in the case of news, and by a fragmented structure in those intended for promoting platform programs. The appeal of this content lies in a contextual, social, and human component that, while its spontaneous nature precludes precise prediction, can

guide the interests of the public interacting with the TikTok social network.

The process of incorporating social networks by platforms is in a state of constant evolution, which demands agile and flexible adaptation by public media. Such adaptation must not compromise their essence as communication mediums, capable of understanding the diversity of their audiences without renouncing the values that define them.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Author contributions

IM-G: Writing – original draft, Writing – review & editing. CF-C: Writing – original draft, Writing – review & editing. MV-Á: Writing – original draft, Writing – review & editing.

## Funding

The author(s) declare financial support was received for the research, authorship, and/or publication of this article. This publication is part of the project titled “Mapa de la desinformación en las comunidades autónomas y entidades locales de España y su ecosistema digital (FAKELOCAL)” (PID2021-124293OB-I00), funded by MCIN/AEI and the Fondo Europeo de Desarrollo Regional (FEDER), as well as the project “Creación de una plataforma generadora de chatbots mediante IA para la comunicación del valor público del PSM VALUEbot” (PDC2023-145885-I00), funded by MCIN/AEI/10.13039/501100011033 and by the Union Europea NextGeneration EU/PRTR. The author César Fieiras-Ceide has an FPI contract from the Spanish Ministry of Science and Innovation under reference (PRE2022-103954).

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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