Review Article

A systematic literature review of the motivations to share fake news on social media platforms and how to fight them

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Abstract

This review aims (a) to investigate the motivations to share fake news on Social Media Platforms (SMPs) according to the Self-Determination Theory (SDT); (b) to identify the solutions to fight these motivations and the agents in charge of implementing them; and (c) the user's role in this process. We reviewed 64 journal articles published up to April 2022. Misinformation belief and entertainment stood out as the most cited intrinsic motivations, while self-promotion, conspiracy theory, and political ideology were the most cited extrinsic motivations in the reviewed literature. The main solutions to fight fake news spreading on SMPs are improving users' digital literacy, refining interventions, rating headlines, and sources, and promoting users' engagement to consume content sustainably. These interventions should be adopted by four agents: governments, SMPs, civil society, and private health organizations. However, the role of SMP users themselves is critical in this process.

Keywords

Disinformation, fake news, misinformation, motivations to share, self-determination theory, sharing, social media, social network

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Introduction

The development of Social Media Platforms (SMPs) revolutionized the way people socialize and facilitated communication between users. Through the SMPs, users share information, connect with each other, and keep abreast of trends and major news. Nevertheless, much news on SMPs is dubious and, in some cases, intended to mislead. Such content is frequently called fake news (Zhang and Ghorbani, 2020).

SMPs represent a relevant part of the social lives of many users (Beckerle et al., 2020); however, as the amount of fake news content on SMP increases, it is becoming increasingly problematic to distinguish fake news from real news (Apuke and Omar, 2021b) mainly in health area (Peng et al., 2022). By mimicking real news, fake news becomes more shareable despite users sometimes knowing or suspecting it is false (Duffy et al., 2020). Moreover, it is difficult to distinguish between fake news content and real content available on SMP exclusively by content or linguistic analysis because fake news may be produced intentionally by malicious users to seem and sound like real information (Shu et al., 2017).

In this context, it is crucial to understand the motivations behind fake news sharing on SMPs (Bordia and DiFonzo, 2005). A person is said to be motivated when they are willing to do something by feeling impetus or inspiration to act (Ryan and Deci, 2000). Motivation is the energy that compels someone to perform a task. The motivation often stems from some reason that makes sense in the personal context. According to the Self-Determination Theory (SDT), motivations may be classified into different types: intrinsic motivation, in which the motivation stems from characteristics of the task itself because it is interesting or enjoyable, for example; and extrinsic motivation, in which the motivation stems from a different outcome than that of the task itself, such as a financial incentive (Ryan and Deci, 1985).

Hence, the current research found that the reasons that lead users to share fake news sharing include naiveness and laziness of users, lack of information verification skills and self-regulation, trust in untrustworthy sources of information, and desire for social engagement and enjoyment (Balakrishnan et al., 2021; Chua and Banerjee, 2017; Lu et al., 2022; Oh, 2012; Shahid et al., 2022). Some information is shared to be the "first messenger," to educate, gain followers or due emotional narrative, or even to create chaos and panic (Mahamad et al., 2021; Rosas and Serrano-Puche, 2018).

Beyond the act of sharing fake news, it is necessary to understand why SMPs users believe in fake news. This belief is boosted mainly by two reasons: (1) the lack of digital literacy skills, which renders users unable to discern between fake and real information, and (2) users believe in what they want to believe, mostly because the content mirrors their life experiences or their worldviews (Szebeni et al., 2021). Moreover, the SMPs' algorithms themselves make the problem worse as they create social bubbles by targeting content and influencing users into believing that all their friends have the same opinions as theirs (Agências Reuters, 2020; Corbu et al., 2021). Therefore, users tend to accept and believe in information aligned with their ideology (Kim and Dennis, 2019; Szebeni et al., 2021). This deepens the polarization in society and can ultimately threaten democracy itself.

The use of the term *fake news* significantly increased after the United States presidential election in 2016, mainly for using it as a political weapon to refer to the different kinds

of false content (Meel and Vishwakarma, 2020). Here we use *fake news* as an umbrella term to refer to all kinds of misinformation (unaware sharing of false information) and disinformation (purposely sharing false information) (Melchior and Oliveira, 2021).

Previous works often deal with factors that contribute to the user's belief in fake news content, such as message characteristics, belief consistency, presentation cues, and individual factors (Bryanov and Vziatysheva, 2021). Madrid-Morales et al. (2021) highlight that feelings of civic duty and fun are key motivations behind fake news sharing. Duffy et al. (2020) analyzed how social media users react to fake news and how it affects interpersonal relationships between sender and receiver. Chua and Banerjee (2018) investigate medical professionals' intentions to trust and share online health rumors as a function of their personal involvement, the rumor type, and the presence of counter-rumors. Wang et al. (2019) published a systematic review of the nature and potential drivers of health-related misinformation.

Talwar et al. (2019) examined why people share fake news. The results suggest that online trust, self-disclosure, fear of missing out (FoMO), and social media fatigue are associated with the intentional sharing of fake news. Altay et al. (2020) found that people usually avoid sharing fake news to protect their reputation but would fall for financial incentives. Balakrishnan et al. (2021) and Islam et al. (2020) describe users sharing fake news content during the Covid-19 pandemic driven by altruism, ignorance, self-promotion, and entertainment.

On the other hand, belief and political ideology were the motivations for sharing fake news on SMPs, according to Baptista et al. (2021), Freiling et al. (2021), and Pereira et al. (2021). Moreover, Republicans were more likely to believe and want to share political fake news than Democrats. Finally, Pennycook and Rand (2021) found that there is a substantial disconnect between what people believe and what they share on social media.

Among the large body of knowledge published about fake news sharing motivations, most studies are specific in scope, dealing with either a specific subject or a specific group of users. There is a lack of broader studies that can serve as general guidelines for combating fake news-sharing behavior. For this reason, this study reviews 64 studies and analyzes the motivations of SMP users to share fake news content framed by the SDT (Ryan and Deci, 1985). To the best of our knowledge, this is the first article that presents a broader discussion of the users' motivations to share fake news on SMPs and group them as intrinsic and extrinsic motivations.

While some governments that thrive on fake news and even spread fake content themselves (Pomeranz and Schwid, 2021), most governments and authorities have been working to combat the infodemic (Radu, 2020). However, these forces alone are not enough, and the active participation of SMP users is also required. Consequently, there is a pressing need to understand the motives that lead SMP users to share fake news content. The existing research exploring what can be done, who should act, and the user's role and relevance in this process are ever-growing, and as such, in this Systematic Literature Review (SLR), we encompass these works. Hence, the research questions that drive this study are as follows:

> *Research Question 1 (RQ1):* what are users' intrinsic and extrinsic motivations to share fake news on SMPs?

Research Question 2 (RQ2): what are possible solutions to prevent the sharing of fake news on SMPs?

Research Question 3 (RQ3): who is responsible for acting against fake news sharing?

Research Question 4 (RQ4): what is the role of SMP users in combating fake news sharing?

The results obtained in this study allow identifying the main motivations for sharing fake news discussed in the literature as well as the main solutions that can be implemented to reduce the fake news available on SMPs. We discuss who is responsible for implementing these solutions and the SMP users' role in this process, with theoretical and practical implications.

Method

We evaluated the available literature on users' motivations to share fake news on SMPs during March and April 2022. The research strategies used in this study were based on the protocols from Tranfield et al. (2003), Kitchenham (2007), and Biolchini et al. (2007). Thus, our protocol consisted of the following steps: (a) define the search string, (b) define the inclusion and exclusion criteria, (c) expand the scope of the search by snowballing the articles that have been found, and (d) screen the included articles.

First, we identified the constructs that are important to understand the motivation to share fake news on SMPs. The specific terms (and their derivations) used to perform the present SLR were combined using the keyword OR, and the groups were combined using the keyword AND. Thus, we used the following search string considering the title, abstract, and keywords of the articles: ((motivation OR reason OR belief) AND share) AND ("fake news" OR misinformation OR disinformation OR post-truth OR rumor OR rumor) AND ("social media" OR "social network").

Studies were found through the search string in databases. This is one of four main search approaches for the identification of potentially relevant research items in SLR (Hiebl, 2021). We searched five databases: Scopus, Web of Science, Emerald, Wiley, and PubMed. In addition, we also applied the search string in Google Scholar to ensure research published on the subject was fully contemplated. The publication time was not limited, so it was possible for all published studies in this subject to have the same chance of being found (Do Prado and De Campos, 2018). Finally, we found 87 results in the Scopus database, 28 in Web of Science, 5 in Wiley, 7 in PubMed, and no articles were found in the Emerald database. On Google Scholar, we considered the first 50 articles. Of these 50 papers, only 17 were not duplicated and were included in the review according to the eligibility criteria.

Eligibility criteria

The inclusion and exclusion criteria were defined and considered the goal of the present study, which is to identify the user's motivations to share fake news on SMPs, the

solutions to combat fake news, and those in charge of them. In order to be included in the SLR, studies had to meet the following criteria. First, the study had to report on the user's motivation to share fake news content on SMPs. Second, it must be a full article presenting original research (excluding review papers, letters, posters, comments/viewpoints, and editorials) written in English and published in journals with peer review. Third, we excluded articles that focused on techniques for automatic fake news detection (mainly machine learning, natural language processing, and deep neural network architectures).

The next step aimed to maximize the scope of the search; thus, we carried out the snowballing technique with a single interaction (Wohlin, 2014), using the 177 articles found so far. This step included 36 articles, totaling 213 articles. Subsequently, we removed 64 duplicate articles. Thus, this identification phase resulted in 149 unique articles included in the review.

Following the identification of the studies, we assessed the screening and eligibility by reading the full text of the 149 qualified articles found in the previous phase. Then, the decision was made whether to include the article based on the predefined criteria. Here, 85 articles were excluded, resulting in a final sample of 64 articles. Our study analyzes these articles about users' motivations to share fake news on SMPs, published between 2009 and 2022 in highly influential journals. The selected studies were then classified according to the year of publication, methods used, the intrinsic and extrinsic motivations to share fake news, possible solutions, who is responsible for taking action, SMPs used in the dissemination of fake news content as well as the role of users in combating fake news sharing.

Figure 1 illustrates the research design used in the present SLR. We adapted the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow diagram (Moher et al., 2009). We used a digital spreadsheet in Google Sheets to organize the data collected during the process of reading the articles and extracting the information. Reliability was defined by stability and replicability, according to Krippendorff (1980). The first author performed the search on the databases and the coding of articles. The coding was performed twice by the author to achieve stability. Later, an external and independent reviewer also performed the coding of articles. The author and reviewer agreed on 92% of all coding, while the remaining 8% were discussed and subsequently agreed upon.

Results and discussion

This section presents the analysis of the 64 articles in the SLR. We present the published research on the motivation to share fake news content on SMPs, as well as the intrinsic and extrinsic motivations, solutions, and responsible agents, as well as the role of the SMP users in the fight against fake news sharing, and finally an overview about the theme and the contributions of this paper.

The 64 studies were published in 58 journals. The majority (43 or 74%) are from the social science field, while the remaining (15 or 26%) are multidisciplinary. The Journals Telematics and Informatics and New Media & Society are highlighted with three articles each, followed by the journal Health Communication and PLoS ONE with two articles published on each one. 54 journals have only one article each that was included in the
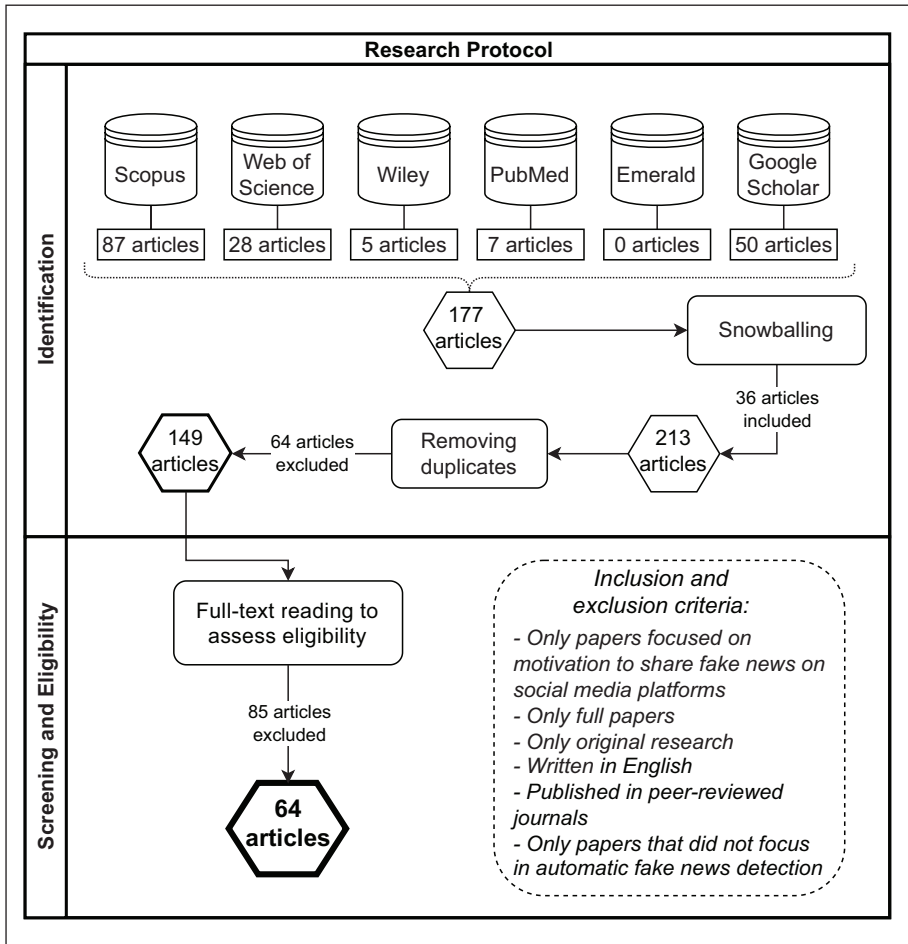
Figure 1. Research protocol of the SLR.

SLR. The only theories mentioned by the studies in this SLR were the Uses and Gratification (U&G) theory (7 studies or 11%) and the SDT (4 studies or 6%).

Motivation to share fake news on SMPs

Before studying the motivations to share fake news content on SMPs, the theory must be understood. According to the SDT, people are encouraged to perform a special behavior with the intention of obtaining a relevant value to satisfy their inner needs (Ryan and Deci, 2000). SDT is one of the most cited contemporary theories of human motivation and wellness (Ryan and Deci, 2000, 2017). The central proposal of this theory is the concept that the users desire to have the impression that their action is caused by the free-agency component of self (Gagne and Deci, 2005). The gap between the desire to act and

the action itself is composed of two main parts. The one that we can see and measure is engagement (Wellborn, 1991). It includes a set of interdependent behavioral, emotional, and cognitive actions. Motivation is the hidden part and is the central point. It focuses on neural and biological processes not consciously recognized (Tranquillo and Stecker, 2016). The theory also presents that people have different levels (e.g., much motivation) and orientations of motivation (types of motivations) (Ryan and Deci, 1985, 2000).

Ryan and Deci (1985) distinguish between different kinds of information based on different goals that give rise to an action. The most used distinction is between intrinsic and extrinsic motivations. The SDT defines intrinsic motivations as those behind activities that are performed due to the inherent satisfaction of doing the activity itself, representing the autonomous or self-determined behavior, while extrinsic motivations are those behind activities that are performed to obtain a separable outcome, with different levels of internalization and integration that stem self-determined behavior (Ryan and Deci, 2000).

Extrinsic motivations need to be boosted constantly with rewards, or the task effectiveness can be impaired. Hence, Deci (1971) explains that people's motivation can make them easily dependent on extrinsic rewards. Regarding intrinsic motivation, previous psychological research has found that it is not fixed (Dweck, 2007). Still, SDT is lined up to clarify how it is possible to influence a user's intrinsic motivation. Hence, it is the motivation that strengthens the engagement of users and leads to actions that change the environment. As a result, these changes may lead to reducing (a vicious cycle) or increasing (a virtuous cycle) the self-determination (Tranquillo and Stecker, 2016). In this study, we focus on the motivations aiming to create a vicious cycle of self-determination to share fake news on SMPs. Thus, by studying intrinsic and extrinsic motivations we can propose actions to dampen a specific motivation or motivation group as an alternative to facilitate solving the problem of fake news sharing.

In this study, we classified the motivations to share fake news on SMPs as intrinsic (e.g., entertainment, emotion, misinformation belief) or extrinsic (e.g., political ideology, self-promotion, conspiracy theories) according to the taxonomy of human motivation presented by Ryan and Deci (2000) within the SDT. This taxonomy associates different processes with each type of motivation, where extrinsic motivation is subclassified into external regulation (salience of extrinsic rewards or punishments and compliance reactance), introjection (ego involvement, focus on approval from self and others), identification (self-endorsement of goals), and integration (hierarchical of synthesis of goals, congruence). On the other hand, intrinsic motivations are the internal locus of causality associated with interest or enjoyment from inherent satisfaction (Ryan and Deci, 2000).

Figure 2 shows that the motivations to share fake news on SMP most frequently mentioned by the 64 studies included on SLR were the intrinsic motivations (72 occurrences or 54%). Misinformation belief was the most common intrinsic motivation (14 studies or 10.5%), followed by entertainment (10 or 7.5%) and emotion (8 or 6%). On the other hand, the extrinsic motivations were mentioned 61 times (46%), influenced mainly by self-promotion, conspiracy theories, and political ideology (8 occurrences or 6% each). It is worth mentioning that, in most cases, each study presented more than one motivation for fake news sharing on SMP, so the sum of the numbers in Figure 2 is higher than the number of articles in the SLR.

Among the intrinsic motivation to share fake news content on SMP, misinformation belief was the most cited among the articles in the review. Regarding misinformation
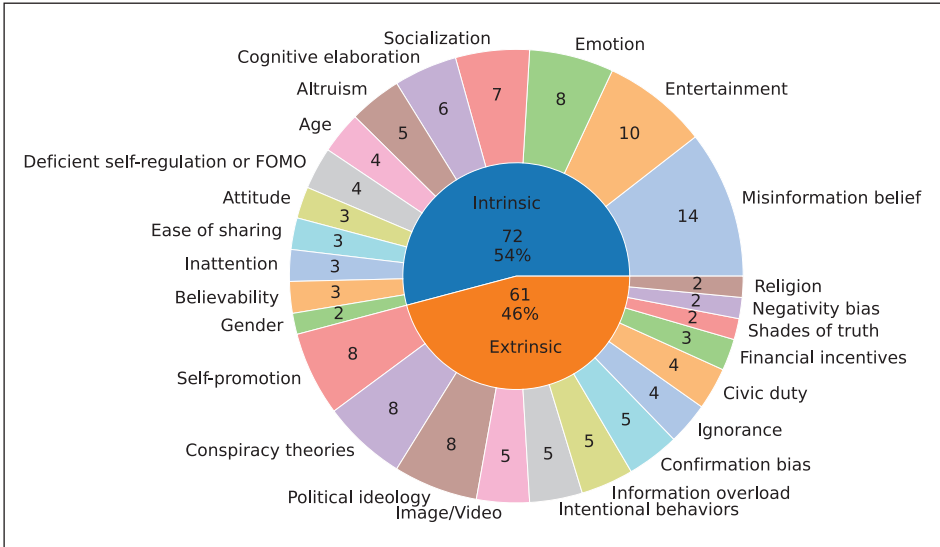
Figure 2. Motivations to share fake news content on SMPs.

belief, users tend to share content when they think it is real news, regardless of whether the news content is actually real or fake (Barua et al., 2020; Lu et al., 2022; Sun et al., 2022). Demographic factors such as age and gender also seem to be factors that influence sharing behavior. Users aged 65 years are more prone to share fake news content on SMPs (Baptista et al., 2021; Madrid-Morales et al., 2021; Vijaykumar et al., 2021). According to Chen et al. (2015) women are more willing to share fake news; in contrast, Laato et al. (2020) suggest that females had a lower tendency to share fake news on SMP compared to their male counterparts.

Entertainment is the motivation behind users sharing fake news on SMPs for amusing or fun (Altay et al., 2020; Islam et al., 2020; Syam and Nurrahmi, 2020). For example, to see which of their social media friends would believe the story (Jahanbakhsh et al., 2021). On the contrary, there are previous studies that have not identified a relationship between entertainment and motivations to share news (Lee and Ma, 2012; Thompson et al., 2020). Emotion plays a causal role in the user's susceptibility to incorrectly perceive fake news as accurate (Duffy et al., 2020; Germani and Biller-Andorno, 2021; Martel et al., 2020; Sudhir and Unnithan, 2019). This means that SMP users' reliance on emotion when interpreting news causes them to incorrectly believe in (and share) fake news content (Martel et al., 2020).

In the case of extrinsic motivation to share fake news content on SMP, self-promotion, conspiracy theory, and political ideology were the most mentioned, with eight occurrences each. Self-promotion is an extrinsic motivation that occurs when the users want to present themselves as highly competent to other users or to appear intelligent, capable, or talented (Apuke and Omar, 2021b; Islam et al., 2020). While self-promotion is associated with building a positive image before others, which may lead people to avoid

sharing fake news (Talwar et al., 2019), some studies have found that individuals driven by self-promotion are more prone to share fake news on SMPs (Islam et al., 2020). Conspiracy theories are more common on some subjects, such as vaccination, health issues (like Covid-19), and political themes (Germani and Biller-Andorno, 2021; Lanius et al., 2021). For example, by hinting that Covid-19 is a hoax, conspiracy theories discredit scientific information through fake news campaigns (Nazar and Pieters, 2021).

One may argue that political ideology might be classified as intrinsic motivation because individual differences in the composition of the user's political motivation determine the political ideology (Wuttke, 2016). However, we claim that political ideology is an extrinsic motivation according to our understanding of the work of Ryan and Deci (2000) when describing integrated regulation:

> Integration occurs when identified regulations have been fully assimilated into the self. [. . .] Integrated forms of motivation share many qualities with intrinsic motivation, being both autonomous and unconflicted. However, they are still extrinsic because behavior motivated by integrated regulation is done for its presumed instrumental value with respect to some outcome that is separate from the behavior, even though it is volitional and valued by the self (p. 62).

Fake news sharing due to political ideology is driven mainly due to the feeling of hate toward political opponents (Osmundsen et al., 2021). Hence, some studies indicate that the right-wing and Republicans were more willing to share fake news content on SMP than left-wing and Democrats (Baptista et al., 2021; Freiling et al., 2021; Pereira et al., 2021). Pennycook and Rand (2021) found that people are able to differentiate fake from true news despite their political beliefs, that is, people usually do not fall for fake news that is consistent with their political ideology. In contrast, Traberg and Van der Linden (2022) show that politically aligned fake news is judged more credible by both sides.

Agents responsible for fighting fake news sharing on SMPs and solutions they should implement

The four agents indicated to solve or fight fake news content sharing are the SMPs themselves, the government, civil society, and private health organizations. It is possible to observe in Figure 3 that the intrinsic motivations are predominant for the first two, while extrinsic motivations are predominant for the last two. Civil society is a broad group composed of SMP users, society/communities, educational institutions, journalists, fact-checkers, and bloggers or influencers. In addition, we included private health organizations due to the large amount of work addressing the fake news problem in the health area (Au et al., 2021; Balakrishnan, 2022; Lee et al., 2022; Milani et al., 2020; Pennycook et al., 2020b; Sun et al., 2022). Thus, different motivations to share require different solutions to be implemented by each agent.

Most articles included in this review attribute to the government the responsibility of fighting fake news spreading on SMPs, mainly driven by intrinsic motivations. According to the articles, one of the main solutions the government should implement is to improve digital literacy through public policies to promote digital education and campaigns targeting skills associated with higher education, such as epistemology (Balakrishnan,
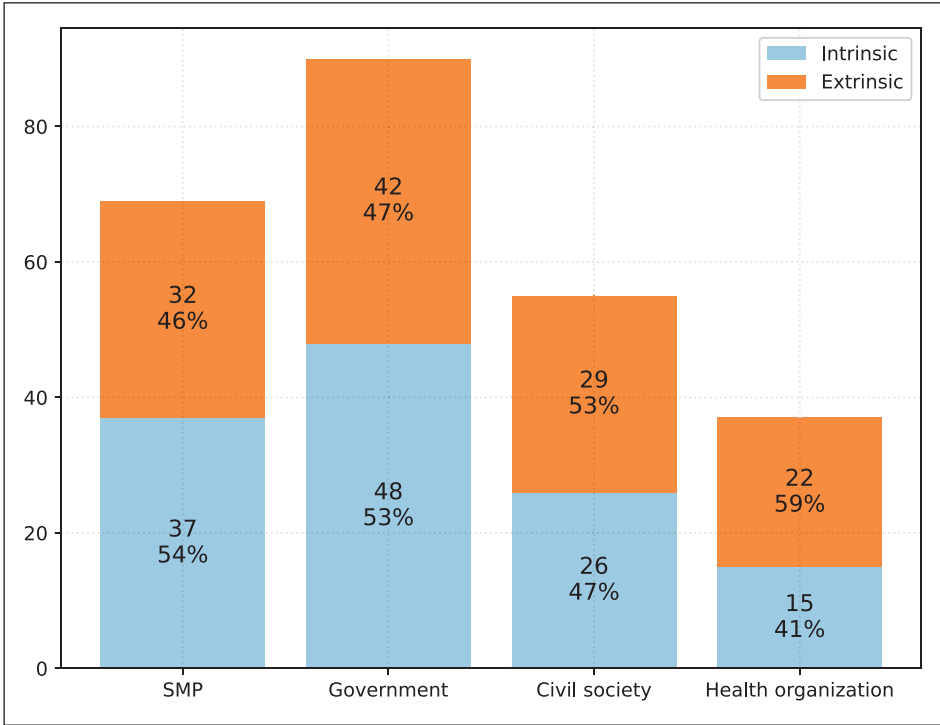
Figure 3. Agents responsible for acting and predominant motivations.

2022; Long et al., 2021; Shehata, 2021). Education is a preventive antidote to the dangers of fake news (McDougall et al., 2019). It is necessary to improve users' digital literacy, especially because few people are prepared to surf the SMPs' environment effectively. This global deficiency in digital literacy has been identified as a key factor explaining widespread belief in fake news, which requires governments to consider including this skill in their educational policy.

The government may also refine interventions by studying the reasons behind information sharing to promote high-quality information and improve campaigns' efficiency (Ali et al., 2022; Sundar et al., 2021; Syam and Nurrahmi, 2020; Talwar et al., 2019). Another welcome alternative is to adopt communication strategies focused on human and emotional approaches instead of emphasizing only simple, mechanical, and fact-based approaches (Kim and Kim, 2020). The reviewed articles also suggest that the government should refine its interventions by offering financial incentives (Au et al., 2021) or adopting public–private partnerships with SMPs and users beyond health organizations and private organizations (Balakrishnan et al., 2021; Kim and Kim, 2020). This work, in synergy with public–private partnerships, may spread correct information and foster positive attitudes before fake news reaches the public (Lee et al., 2021). In addition, the government should take steps to reduce political polarization by decoupling political agendas with healthy subjects. The government can invest in fact-checkers' work of fact-checkers

to address the polarized SMPs ecosystems amplified by fake news sharing (Corbu et al., 2021). The political culture and media systems of a country are directly related to the fake news-sharing behavior of SMP users (Madrid-Morales et al., 2021).

It is difficult to fix the problem of fake news sharing on SMPs without first addressing the larger problem of political polarization because the probability of fake news sharing increases considerably among strong party identifiers. However, it is not impossible to demotivate the sharing of fake news even among these groups. Osmundsen et al. (2021) suggest one alternative which is to remind SMP users to "not make a fool of themselves" by sharing content from unreliable sources.

Nonetheless, one solution that governments and lawmakers should not adopt by to fight against fake news content on SMPs is hard approaches to suppress the dissemination of fake news. The Singaporean government introduced punitive legislation that, besides turning out ineffective in deterring fake news sharing, also suppressed the proliferation of real news (Au et al., 2021). Hence, it could eliminate the potential of SMPs to promote reliable information, mainly in the health area. Germany and Italy also introduced similar legislations, which studies found to have no effect on the reduction in the intention to share fake news (Au et al., 2021). Nevertheless, besides not achieving the objective of correcting wrong beliefs (due to belief perseverance), such legislation would also hinder freedom of speech (Nyhan and Reifler, 2015). Considering these examples, punitive regulations for users might not be the answer to battling fake news on SMPs; thus, this proposal should be discouraged (Au et al., 2021).

According to the articles that point out SMPs as responsible for fighting fake news spreading, they should: (a) strengthen the positive effect of fact-checking efforts to minimize the impact of fake news (Ardèvol-Abreu et al., 2020) by either removing, limiting, or flagging fact-checked false and potentially harmful information (Ali et al., 2022; Barua et al., 2020); (b) rate headlines and/or sources (Kim et al., 2019) by identifying fake news via crowdsourcing or automated algorithms (Khan and Idris, 2019; Lanius et al., 2021; Pennycook et al., 2020b); (c) leverage novel technologies to immediately tackle the fake news problem using bots or machine learning algorithms to classify content, as well as to create a database of fake news that can be used to improve algorithms and gather insights (Hunt et al., 2020; Lanius et al., 2021; Lu et al., 2022); (d) change the SMPs themselves, both the user interface (visual changes) and the algorithms. The platforms should help increase users' awareness of the impact of the information they share and improve the feedback provided in response to users' content flagging (Khan and Idris, 2019). Most importantly, SMPs need to change their algorithms to stop creating echo chambers and social bubbles, as well as to stop favoring fake news due to the greater engagement they provide (Corbu et al., 2021; Khan and Idris, 2019; Sun et al., 2022); (e) limit the time spent on SMP to reduce social media fatigue (Islam et al., 2020; Talwar et al., 2019), limit the reach or scope of information shared by users (e.g., by limiting the use of images and videos) (Fenn et al., 2019; Laato et al., 2020) and suspend any user that shares fake news (Germani and Biller-Andorno, 2021). In addition, Pennycook et al. (2020a) suggest considering the implied truth effect (when attaching warnings to news stories, false headlines that fail not to receive the warning are seen as more accurate) when making decisions about how to fight the spread of misinformation.

SMPs may encourage users to correct fake news by notifying their friends whenever corrected information is shared ("Your friend X shared a correction for fake news. Help us in the fight against fake news sharing!") or notifying users whenever any information they shared was corrected by a reliable source, such as a fact-checking agency, offering the option to remove the fake news that was shared. Financial incentives were also shown to be effective in driving users' sharing behavior; thus, they are yet another option for a more aggressive take on fighting fake news sharing.

Furthermore, the civil society also have an important role in fighting fake news content on SMPs, and there are many actions that they can take: (a) engagement on interactive games, quizzes and "challenges" focused on letting users self-test their ability to tell apart real and fake news solely on social endorsements and challenges in order to become aware of the need to change their information seeking habits (Ali et al., 2022; Leeder, 2019); (b) to understand the various motivations, strategies and self-reported willingness to share fake news socially in large-scale on SMP through future academic research (Lee et al., 2022; Lobato et al., 2020) as well as introduce programs or conduct workshops/seminars to educate students on digital literacy (Balakrishnan et al., 2021) and avoid sharing information from non-credible sources (Osmundsen et al., 2021); (c) to rethink the culture of information sharing without reasoning for the sole purpose of "fitting in" or socialization and try to internalize the idea of responsibility over the information that is shared. As Chadwick et al. (2018) highlight, fake news sharing has an eroding effect on the civic culture online, while Chen et al. (2015) point out that one of the reasons reported by SMP users to share fake news is "Sharing is a culture, and I share like others do." The fake news sharing on SMPs has a negative role in reshaping the culture online and limiting the contribution of media systems to the democratic process (Madrid-Morales et al., 2021). Therefore, civil society should mobilize and spread genuine information online by acting as crowdsourced fact-checkers to improve the credibility of the news ecosystems online and help other users to develop a positive habit of fact-checking, instilling responsibility over the information shared online.

Finally, we found in the SLR some studies that indicate that private health organizations as responsible for solving the problems caused by fake news sharing on SMP. They can (a) educate social media users to consume content in a sustainable manner (Laato et al., 2020), mainly younger adults (Vijaykumar et al., 2021) and (b) improve communication by adopting a less sterile, technical language when communicating with the public (Germani and Biller-Andorno, 2021).

Table 1 summarizes and links the motivations to share fake news on SMPs, who is responsible, and which action should be taken to address these motivations. While some actions help fight intrinsic and extrinsic motivations (e.g., refine interventions and improve digital literacy), most actions address motivations classified as intrinsic or extrinsic exclusively.

The role of SMP users

We classified the intrinsic and extrinsic motivations to share fake news on SMP, focusing on SMP users, as shown in Figure 4. Intrinsic motivations were cited the most by the articles as the motivation to share fake news content, however, only by a narrow margin.

Table 1. Motivations to share fake news, responsible, and actions.

Motivation to share fake news		Responsible and which actions should be taken			
		Government	SMPs	Civil society	Private health organizations
Intrinsic	Emotion	Refine interventions	Technology help; Strengthen fact-checking	Activities to user self-test	-
	Entertainment	Improve digital literacy; Refine interventions	-	Improve society's culture	-
	Misinformation belief	Improve digital literacy; Refine interventions	Changes in the SMP; Technology help	Activities to user self-test; Improve society's culture	Improve communication
	Altruism	Improve digital literacy; Refine interventions	-	-	-
	Inattention	Improve digital literacy; Refine interventions	Technology help	-	-
	Deficient self-regulation or FOMO	Improve digital literacy	Changes in the SMP; Strengthen fact-checking	Improve society's culture	Improve communication
	Cognitive elaboration	Improve digital literacy; Refine interventions	Strengthen fact-checking	Activities to user self-test; Improve society's culture	-
	Age	Improve digital literacy	-	-	-
	Ease of sharing	-	Strengthen fact-checking	Improve society's culture	-
	Socialization	Improve digital literacy	Strengthen fact-checking	Improve society's culture	Improve communication
	Believability	Improve digital literacy	-	-	-
	Attitude	Improve digital literacy; Refine interventions	Strengthen fact-checking; Technology help	-	-

(Continued)

Table 1. (Continued)

Motivation to share fake news	Responsible and which actions should be taken			
	Government	SMPs	Civil society	Private health organizations
Extrinsic Political ideology	Improve digital literacy; Refine interventions	-	Understand SMP users	-
Self-promotion	Improve digital literacy; Refine interventions	Limit the time on SMPs; Rating headlines and/or sources	Improve society's culture; Understand SMP users	Educate SMPs users
Conspiracy theories	Improve digital literacy	-	Understand SMP users	Improve communication
Image/Video	Improve digital literacy; Refine interventions	-	Understand SMP users	-
Intentional behavior	Improve digital literacy; Refine interventions	-	-	-
Information overload	Improve digital literacy; Refine interventions	-	-	-
Ignorance	Improve digital literacy	-	-	-
Financial incentives	Refine interventions	-	Understand SMP users	Improve communication
Civic duty	-	Limit the time on SMPs; Rating headlines and/or sources	Understand SMP users	-
Confirmation bias	-	Rating headlines and/or sources	Understand SMP users	Educate SMPs users

SMP: social media platform; FOMO: fear of missing out.
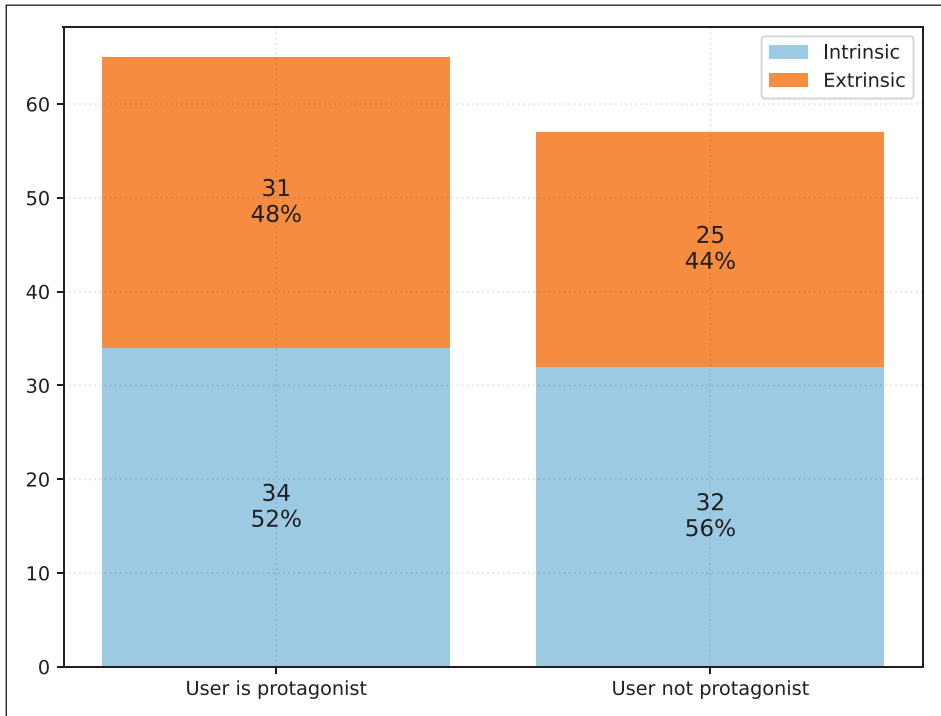
Figure 4. Role of the users and motivations to share fake news content on SMPs.

Nonetheless, most studies considered the user the protagonist of the change necessary to fight fake news sharing on SMP. In this regard, we show that improving digital literacy is mostly government responsibility by promoting media education and regulatory control of content. Still, the user needs to engage in the process of changing the mindset so that there is an effective reduction of fake news spread on SMPs.

The user's role in the fight against fake news sharing on SMP is directly related to the responsibility of the other agents. In this sense, the users must act with more social responsibility, analyzing the credibility of information before sharing (Barua et al., 2020; Sampat and Raj, 2022) and consuming content in a sustainable manner (Laato et al., 2020), understanding the responsibilities of sharing content on SMP, and becoming very critical of the information they read and share (Nnabuife and Jarrar, 2019). Nonetheless, it is important to bear in mind that fake news sharing includes intentional and unintentional behaviors (Ardèvol-Abreu et al., 2020).

On the other hand, when the change does not depend directly on the users, the studies argue that the user is not the protagonist in this fight. This case occurs when (a) the users should wait for authoritative sources to provide accurate information (Kim and Kim, 2020), (b) fake news fighting depends exclusively on public policies to fight fake news using warning tags (Pennycook et al., 2020a) or SMPs, which are expected to improve
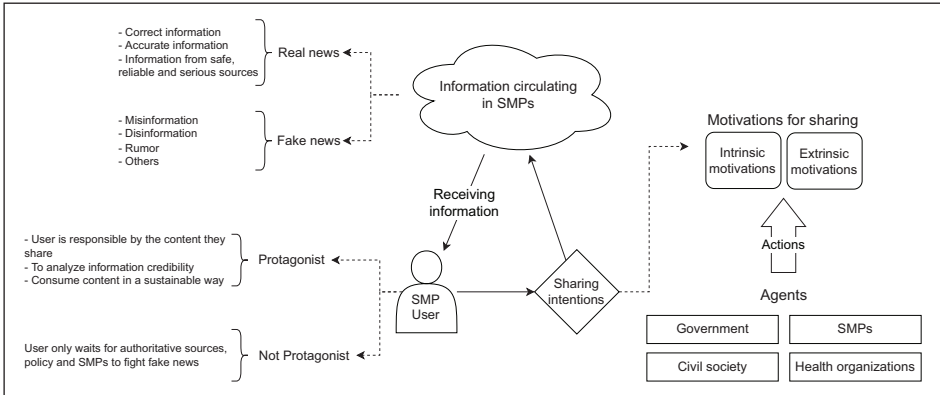
Figure 5. Ecosystem of fake news sharing on SMPs.

their design to spread correction information and to encourage users to flag fake news (Chen et al., 2015).

Summary of the findings and contributions

Although fake news content can be spread by different agents of society, including government officials (Pomeranz and Schwid, 2021), the spread of information on SMPs is either promoted by or focused on the users, as shown in Figure 5. Real and fake news are circulating on SMPs and being presented to their users. When facing fake news, SMP users may be seen as active agents of fake news sharing (protagonists) or as victims of a fake news environment (not protagonists). The SMP users' intentions to share fake news are motivated by intrinsic and extrinsic factors, which external agents can influence to hinder fake news spread. Due to the capacity of the Internet to disseminate information, fake news is easily and widely disseminated (Zhang and Ghorbani, 2020). Thus, it is necessary for the government, SMPs, civil society, and private health institutions to work together, combining efforts to help SMP users to mitigate or even eliminate the negative impact of fake news.

At the macro level, the willingness to share fake news content can be bigger in some populations and governments than in others. For example, Western European democracies and Canada demonstrated high resilience to fake news online because their SMP users presented high levels of media trust and low levels of political polarization. The United Kingdom presented high fake news dissemination during the Brexit campaign. Southern European countries were most likely to be vulnerable to fake news due to high levels of political polarization, populist communication, increasing use of SMPs, and low level of trust in information. The United States proved to be a polarized and fertile country for the rise of fake news, mainly because of low trust in traditional media, politicized, and fragmented online environment (Humprecht et al., 2020; Pomeranz and Schwid, 2021). This study is not limited to a specific geographic region or population;

therefore, the solutions presented here must be interpreted as general guidelines that must be adapted to the reality of specific regions or populations.

There are many works investigating interventions focused on fake news detection (Leonardi et al., 2021; Metzger et al., 2021; Taskin et al., 2022; Verma et al., 2021) and other ways to minimize the fake news spread on SMP that include banning accounts of fake news spreaders and spreading real information on SMPs (Shu et al., 2017). Another initiative in the discourse of governments is promoting education as a tool to fight fake news content. However, the initiative has been more present in speeches than in real life. Digital literacy must be seen as an education priority and inserted into education public policies (McDougall et al., 2019). Nevertheless, these interventions need the collaboration and involvement of all agents (in a synergistic partnership) to find solutions through consistent actions applied daily (Balakrishnan et al., 2021; Kim and Kim, 2020).

Theoretical and practical implications. The key theoretical contributions of this study are a comprehensive review of the motivations to share fake news on SMPs discussed in the literature, with a discussion on what intrinsic and extrinsic motivations lead users to adopt fake news spreading behavior on SMPs as well as the solutions and the main agents responsible for fighting this fake news spreading. We contribute to the prior literature by showing that the main intrinsic motivations to share fake news on SMPs mentioned by the available literature are misinformation belief, entertainment, emotion, socialization, cognitive elaboration, altruism, age, and deficient self-regulation or FOMO. In contrast, the main extrinsic motivations are self-promotion, conspiracy theories, political ideology, the presence of image/video, intentional behavior, information overload, confirmation bias, ignorance, and civic duty.

At the practical level, we identify the actions that could be taken to minimize the fake news spreading on SMPs according to the intrinsic and extrinsic motivations to share fake news content on SMPs, as defined by the SDT, and who is responsible for taking each of these actions. Moreover, we also identify measures that should not be adopted due to being ineffective and even counterproductive (Au et al., 2021). Our findings may serve as a guide for policymakers, organizations, and communities to refine the interventions to fight fake news, such as those focusing on digital literacy (Laato et al., 2020; Shehata, 2021; Syam and Nurrahmi, 2020) and retractions through fact-checking (Apuke and Omar, 2021a; Freiling et al., 2021; Lee et al., 2022).

We observed that although the government, SMPs, civil society, and private health institutes have their share of responsibility, the role of the SMPs users is essential to reduce the fake news content shared on SMPs. This reinforces the need for changes in the education policy to improve the digital literacy of users. Indeed, this is one of the most important strategies for combating fake news (Jones-Jang et al., 2021; Lee, 2018; McDougall et al., 2019). In addition, it is necessary to rethink the culture of information sharing and the SMP user's responsibility over the information shared on SMPs. Users should be taught how to evaluate the credibility and motivations of the SMPs themselves by understanding what encourages SMPs to promote certain types of content. Moreover, they should be taught to evaluate the credibility and motivations of the institutions that share information on SMPs and to evaluate the content of the posts directly, independent of their source (Beckerle et al., 2020). Thus, the main danger is not that users are gullible

and consume news from unreliable sources but that users reject real information and do not trust reliable sources. This mistrust that might even be fueled by alarmist discourse on fake news (Van Duyn and Collier, 2019).

Conclusion

We were able to achieve the research objective of the SLR, which is, to the best of our knowledge, the first review that presents a broader discussion of the users' motivations to share fake news on SMPs and classify them as intrinsic and extrinsic motivations according to the SDT. In addition, we discussed the solutions that should be applied, as well as who is responsible for taking those actions and the SMP user's role in this process.

The analysis of motivations to share fake news on SMPs classified them as intrinsic or extrinsic. It highlighted that intrinsic motivations are pointed out in most studies, mainly due to misinformation belief, entertainment, and emotional behavior. In contrast extrinsic motivations are driven mainly by self-promotion, conspiracy theories, and political ideology. This research investigated motivations to share fake news content on SMPs, supported by a range of solutions that are recommended, which are attributed to four agents of change: (1) governments should focus on improving digital literacy and refining interventions; (2) SMPs are responsible for strengthening the positive effect of fact-checking efforts and minimizing impact of fake news, rating headlines and sources, leveraging novel technologies to help in the fight against fake news, promoting changes in the platforms themselves (either visual changes or changes in the algorithms), and limiting the time that users spend on SMP; (3) civil society can work on improving users' engagement with the fake news problem, study the user's behavior, and change the culture of information sharing; and (4) private health organizations can focus their strategies in interventions to educate social media users to consume content in a sustainable manner and improving communication by adopting a less sterile, technical language.

Furthermore, SMP users have a pivotal role in spreading fake news content. Thus, it was possible to observe that most studies considered users as protagonists of the changes necessary to fight fake news sharing. In contrast some considered that the users are not protagonists because the change depends on other agents (governments and SMPs, mostly). Nevertheless, the intrinsic motivations to share fake news content was cited more frequently. Thus, the sense of responsibility is an ally of the users when sharing content on SMPs. Overall, we identified that one of the main solutions is to improve the digital literacy of SMP users, which allows them to understand the nuances of the SMPs environment, the impact of fake news content on users' life, and mainly to consume information only from safe, reliable, and serious sources.

Understanding the motivations behind fake news sharing is essential to focus efforts on combating this issue. Thus, future works can investigate the efficacy of the actions and solutions we suggest and can be implemented by governments, SMPs, civil society, and private health organizations. Future research may also focus on fake news spreading through videos and images shared on SMPs, identifying creators, defining punishments, and alerting the public that images and videos may contain fake news. In addition, educational institutions can encourage psychology courses to focus on emotional content through campaigns because emotional processing may play a role in susceptibility to

fake news. We also recommend educational institutions work on alternatives to reduce the intrinsic and extrinsic motivations to share fake news on SMPs. Moreover, it would be interesting to analyze the positive effect that it can have when official sources start spreading correct information, constantly providing users with real news.

This study is limited to articles using the terms included in the search string, which analyze motivations to share fake news on SMPs. Moreover, the data extraction of the articles was performed by only one author with one external reviewer to check the classification. In addition, this work is not specific to a geographic region or a given population since we conducted the SLR within the global scope of fake news sharing on SMPs.

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Supplemental material

Supplemental material for this article is available online.

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