



What motivates individuals to disseminate disinformation on social media platforms? — A study based on the SOR framework

Xinting Gao*

*The School of Business Administration, South China University of Technology, Guangzhou, China

*Email: ellaxgo@gmail.com

Abstract. As social media has become people's major source of information, it has also become a breeding ground for the widespread dissemination of disinformation, flooding these channels with a great deal of fake news. People are not only recipients of information but also disseminators in the web 2.0 era, and with social media's retransmission mechanism, they may easily forward, distribute, and copy and paste falsehoods. The study of the distribution and suppression of disinformation has been a topic of interest in academic circles. Based on the stimulus-organism-response (SOR) framework and the user and gratification (U>) model, this study summarized five organism factors that use individual needs as a basis for information dissemination in the media. This was accomplished through a comprehensive literature review of multiple articles and a combination with the U> model. Individual needs serve as the link between stimuli and responses. These five variables include cognitive needs, affective needs, personal integrative requirements, social integrative needs, and tension-relief needs. Content characteristics, source characteristics, and social media traits are the primary variables that encourage information recipients to share content. These characteristics can meet the audience's media consumption requirements, resulting in their behavior of information sharing. Combining the U> and SOR framework, this research reconstructs the mechanism model of the influence of disinformation on individual dissemination behavior, thereby enhancing the organism analysis dimension for the influencing elements of disinformation retransmission behavior. Also included are proposals for managing the propagation of disinformation from three perspectives: sources of dissemination, regulation, and individual awareness.

Keywords: Disinformation, Stimulus-organism-response, Uses and gratification theory, Social media

1 Introduction

In the digital age, social media has become the main channel for people to access information and knowledge. Social media provides people with rich and timely information to some extent, but it is also inundated with a large amount of disinformation. In Uzbekistan, there was a widespread rumor on social media platforms that "drinking lots of water and alcohol can prevent COVID-19". In the UK, there was also a rumor on social media that "vaccines cause autism". Disinformation creators not only take advantage of the wide and convenient dissemination of the internet to spread false information faster and more widely¹, but also affect the correct dissemination of information. Vosoughi's investigation of the spread of verified real and false information on Twitter over the past decade found that among all types of information, disinformation spreads further, faster, deeper, and more widely than real information¹. On social media, people are not only receivers of information but also disseminators. Unidentified false information that is spread through people's sharing and forwarding can easily cause significant negative social impact, disturb people's correct understanding of things, and cause psychological panic and anxiety. This also leads to the gradual decline of the image of social media. According to data from the Pew Research Center, among those who hold a negative view of social media, 28% of their list "disinformation" as the primary reason for negative impact. In the era of social media, the spread of false information surpasses geographical limitations, and the nodes of dissemination are numerous and difficult to track. It can harm the public's right to know, cause panic and anxiety, lower the credibility of government information, and even lead to a crisis of social credibility. The study of the dissemination behavior of disinformation and its suppression has become a topic of concern in academic circles. Based on a summary of the literature, this paper analyzes the behavioral factors that influence the spread of false information, constructs the mechanism of the spread of disinformation on social media, and proposes suggestions for the governance of false information on the internet.

1.1 Terminology

We observed that many other terminologies, such as disinformation, misinformation, fake news, hoax, rumor, propaganda, and click-bait, are used in the academic study of misleading data. The following descriptions of these concepts are derived from existing literature.

Disinformation is false information that is intentionally disseminated to deceive² or advance a prejudiced agenda³.

Misinformation is defined as erroneous or deceptive information². According to Dictionary.com, misinformation is the dissemination of inaccurate information, regardless of the aim to deceive.

"Fake news" refers to purposely and verifiably misleading news pieces that have the potential to mislead readers⁵. Some articles indicated that According to one piece, fake news typically carries political overtones⁶.

Hoax is defined as "a try to convince any readers to believe particular deception."²⁷ Typically, hoaxes are designed to persuade or control others to take or prevent them from taking predetermined acts by using threats or deception 7.

Rumor refers to unconfirmed news or explanations of events that circulate amongst people and are tied to public interest events, items, or topics 4.

Propaganda is a method of persuasion that aims to achieve political, ideological, and religious objectives by the deliberate dissemination of false information to impact the emotions, attitudes, opinions, and behaviors of certain target audiences. It accomplishes its objectives by the transmission of false, selectively withheld, and one-sided information 9.

In social media, clickbait is also an example of misleading content. It is characterized as low-quality journalism aimed to attract attention and generate cash through advertising 8.

According to these definitions, the fake news provided in this paper is a kind of disinformation, and the two terms will be used interchangeably throughout the essay.

1.2 Social media information dissemination mode

The rise of social media has made the internet an integral part of people's daily life. It has had a profound effect on people's ability to relax, connect with friends and family, learn new things, and take part in community events. Statistics from GWI 2022 show that the average social media user spends roughly 2.5 hours per day on the site and uses or visits 7.4 different ones per month.

With the support of interconnected personal networks, news and information can quickly move around the world via the new medium of social media. There have also been major shifts in the rate and scope of news coverage. People who have never read a newspaper or watched television can nonetheless keep up with current events by reading what their friends have posted online. The old one-way linear structure of mass media has developed into an interactive circle model due to the rise of communication technology and shifts in social interaction patterns. Each circle in this model represents a network of information producers and consumers, with a key disseminator (the "opinion leader") at its center. Dissemination nodes that are connected to the central node in some way form a ring around it. It is possible for numerous dissemination circles to emerge during the information dissemination process, culminating in a model of disseminative structure based on interactive circles in social media 10. Layer-by-layer sharing increases the reach and impact of fake news. Some academics have noted that if the information of a certain type spreads widely and extensively over the internet, individuals are more likely to accept it as true, regardless of the veracity of the content 11. In contrast to the one-way nature of traditional media, the dissemination of information via social media is inherently interactive. Fake news can quickly and widely disseminate because, once received by an audience, it can be forwarded, copied and pasted, or screenshotted and shared with others.

2 Theoretical underpinning

2.1 Stimulus- organism-response framework

Three elements comprise the SOR framework: stimulus, organism, and reaction. The SOR theory proposes that after being aroused by external circumstances, individuals undergo a subjective sensation process prior to exhibit behavioral responses. It can effectively indicate how the audience is stimulated by information and the information environment in the social media ecosystem, resulting in psychological changes and appropriate responses. The SOR model has been widely applied to consumer behavior, user continuous use behavior, and information behavior research. Numerous researchers have utilized the SOR framework to examine the propagation of fake news in the literature. Brinda Sampat and Sahil Raj utilized the SOR model, U>, and the big five personality traits to determine the motivations for disseminating bogus news and the personality traits that drive this activity. They suggested that "instant news sharing" and "news authentication" are organismic state-affecting elements. Lai Guoqiang established a motivational model of the impact of internet rumors on individual behavior using the SOR model as a foundation. He noted that the characteristics of the online rumor content, the characteristics of the disseminators, and the individual's own characteristics are the primary factors that influence the individual's re-dissemination of online rumors, and that the individual's trust in the online rumors plays a mediating role in the sharing behavior¹⁷. This article concludes, based on the preceding, that the propagation of fake news is a process in which the audience is stimulated by incorrect information when utilizing social media, which stimulates individual responses and psychological changes, ultimately resulting in the behavior of distributing fake news.

2.2 User and Gratifications theory

In the 1940s, the User and Gratification theory (U>) arose, arguing that the audience is motivated by specific requirements while engaging in media activities, and that the process of utilizing media is to satisfy these wants. U> is currently the most popular media usage theory in academic circles and is widely applied to media consumption studies^{12,13}. U> consider audiences to use media to satisfy their needs and desires. In 1974, Katz et al. published "Uses and Gratifications Research" which summarized media contact behavior as a causal chain process of "social factors + psychological factors → media expectations → media contact → needs satisfaction" and proposed the basic model of the "use and gratification" process. According to this model of media contact behavior, people's choice to use media to satisfy their needs or desires is proactive, and the usage of media will result in the satisfying of their needs. Scholars propose that user pleasure may potentially influence fake news spreading behavior¹⁶. The U&G hypothesis posits that media users strive to meet five distinct requirements: cognitive needs, affective needs, personal integrative needs, social integrative needs, and tension release needs¹⁴. In the information era, cognitive requirements refer to the intrinsic drive for knowledge acquisition and comprehension. In contrast, affective wants involve the pursuit of emotional experiences, pleasure, and internal aesthetics. Personal

integrative needs refer to a person's need to bolster their self-confidence and solidify their sense of self, which is tied to their personal value system. Audiences with social integrative needs aspire to develop their ties with family and friends and seek group recognition. Tension release demands are the audience's desire to escape and release tension 15. The potential cost-benefit concept in economics 18 explains the propensity of individuals to share resources and information. In the process of sharing or producing information, people may gain economic or spiritual benefits, such as enhancing personal reputation, reflecting social value, constructing social capital, enriching knowledge, releasing emotions, or gaining a sense of satisfaction. If individuals determine that the benefits outweigh the costs, they will distribute information vigorously; otherwise, they will limit the spread 11. This also suggests that when consumers are exposed to misleading material disseminated over social media, it can meet a specific demand, which is a response from persons who are aroused by the information. These five user requirements will serve as the theoretical foundation for this paper's investigation of the specific causes of the dissemination of incorrect information by users.

3 Factors that stimulate users to share disinformation

According to the SOR paradigm, the propagation of fake news involves the sharing, forwarding, and commenting behaviors that occur after the information recipient receives the information's stimulus and formulates an individual response 17. In the relevant literature, the research on external stimuli variables is primarily characterized as the characteristics of the rumor's substance and transmission source.

3.1 Features of the content of disinformation

- a. The content of rumors is usually presented in different forms, such as text, video, images, etc. The quality of the content is generally measured by factors such as logical rigor, completeness of description, supporting facts, and source attribution. Low-quality fake news often influences audiences to share it through emotional manipulation, such as sensational headlines, emotionally charged language, and biased content lacking logical evidence. High-quality fake news is often presented in rich formats, imitating the tone of "authoritative institutions", visualizing the message, and using a large number of images and videos to increase its credibility 17. In the current era of big data, algorithms that personalize content recommendations can enhance audience interest. For example, TikTok uses user browsing preferences to personalize content recommendations, allowing users to easily access content that interests them, influencing their perceived value and meeting their needs. Additionally, research has found that content containing humor, pleasure, and negative information from hostile groups can enhance spreadability. This is because such information can create a sense of pleasure, help disseminators establish good interpersonal relationships, and satisfy personal emotional and social integration needs.

- b. The quantity of information affects users' perceived value of the information. When there is a larger quantity of high-quality information, it can better satisfy users' information needs and lead to a higher perceived value 19. On Instagram, Twitter, and Weibo, when a hot topic arises, there are often a large number of users who repost and share the same content and provide their own comments. The interactivity and co-creation of social media also contribute to the richness and abundance of media content. Research has shown that the attractiveness of information content to users is related to the richness of information on the platform, and it directly affects users' experience 20. Therefore, when the number of disinformation increases, it is easier to stimulate users to forward them.
- c. The type of deception also influences the emotions of the audience. There are both negative and beneficial forms of disinformation. When disinformation induces unpleasant emotions such as worry and stress, the audience is more inclined to spread negative disinformation to ease their own discomfort and seek comfort from others, so relieving pressure 1121.

3.2 Feature of the source of disinformation

- a. Communication theory states that the credibility of the information source is a determining factor in the spread of information 22. It has been found that disinformation spread by authoritative media, experts, and celebrities are more likely to be widely disseminated 23. These authoritative media and opinion leaders typically have a large number of followers, and their influence is widespread. Their content quality is usually high, and users tend to trust the information they share. There are studies suggesting that the higher the similarity between the information sender and receiver, the more likely the receiver is to forward the information. This similarity can be reflected in the similar social backgrounds of the sender and receiver, such as education level, occupation, age, and gender, which can lead to a consistent ideology and easy acceptance of the information sent by the sender, resulting in forwarding 21.
- b. In fact, information dissemination between individuals is a social network established to enhance their relationships. Some literature points out that the motivation for interpersonal communication conforms to the higher-level needs in Maslow's Needs Hierarchy Theory. Interpersonal communication helps to obtain recognition and assistance from others, satisfy the need for belonging, establish some kind of connection with others, and obtain a sense of psychological security. Therefore, the information dissemination party has some kind of "connection" with the information receiver, and the receiver is eager to establish a relationship with the information disseminator, which makes them more inclined to forward the information from the other party.

3.3 Social media editability

The editability feature of social media enables users to make secondary changes to content. Using Twitter as an example, users are able to exchange information via text, photos, videos, and links, among other methods. Treem and Leonardi believe that strong editability can boost user confidence in information sharing 25. Users can engage in the process of changing the erroneous information they receive, enhancing their comprehension and cognition, and then transmitting it 24. The editability of social media, which satisfies users' personal integrative demands and boosts their confidence in sharing, adds to the growth of fraudulent information-forwarding behavior.

4 Disinformation sharing behavior SOR model

In the subject of fake news dissemination study, the SOR framework explains the internal response of individuals to external stimuli, which leads to information-sharing behavior. Combined with the U> theory, it explains the process of individuals forwarding and spreading erroneous information, wherein external stimuli contribute to the satisfaction of individual wants, which in turn leads to the behavior of information re-sharing.

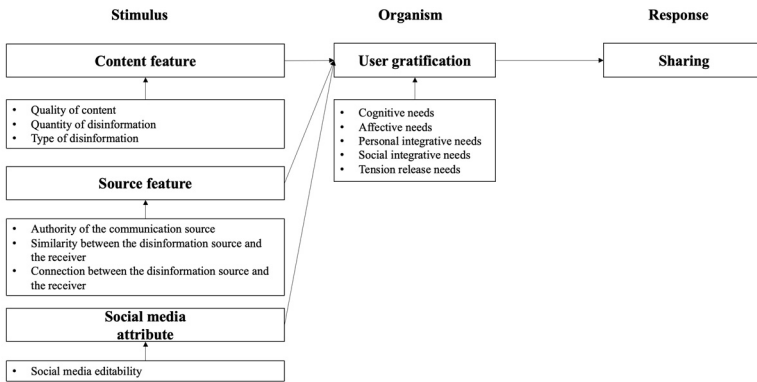


Fig. 1. The Mechanism Model of the Influence of Disinformation on Individual Dissemination Behavior

As shown in Fig.1, the content characteristics of disinformation, the characteristics of the source of dissemination, and media properties serve as external stimuli, satisfying one or more of the cognitive needs, affective needs, personal integrative needs, social integrative needs, and tension-relief needs of individuals, as discussed in the previous sections of this paper. According to the Uses and Gratifications Theory, the media consumption of individuals is a process of need fulfillment. After one or more of an individual's requirements are met, such as the desire for cognitive information, emotional pleasure, personal identity, social acknowledgment, or stress relief, they may engage in copying and pasting, forwarding, or sharing.

5 Conclusion

This article builds a mechanistic model of the influence of social media fake news on audience sharing behavior based on the SOR framework and U> theory and analyzes the literature to identify the primary factors stimulating the audience's sharing of fake news, including the content features, source characteristics, and social media attributes of fake news. The fulfillment of individual needs works as a link between stimulus and response behavior in organisms, and response is a determinant of an organism's reaction to a result 26.

Governments and organizations are increasingly troubled by the spread of fake news. To reduce the dissemination of fake news, efforts can be done at the source, and at the personal level.

a. Enhance instruction on recognizing bogus information. A lack of recognition and discernment among recipients contributes to the broad circulation of erroneous information, resulting in a flood of inaccurate information on social media. In an effort to counteract the transmission of damaging false information, the United Nations has collaborated with WikiHow to provide a free online course that teaches users how to identify false information, verify facts, and communicate with people who distribute false information.

b. Governments, businesses, and social organizations should engage in public welfare propaganda initiatives aimed at bolstering strengthen public education, directing the public towards the development of solid principles and awareness regarding information selection, and mitigating the dissemination of false information.

c. Establish reliable sources of information Governments, media, academia, and other groups can establish reliable sources of information to deliver truthful, accurate, and timely information in order to assist individuals in correctly understanding and navigating the complex information environment.

Reference

1. VOSOUGHI S, ROY D, ARAL S. The spread of true and false news online [J]. *Science*, 2018, 359(6380):1146-1151.
2. D. M. J. Lazer, M. A. Baum, Y. Benkler, A. J. Berinsky, K. M. Greenhill, F. Menczer, M. J. Metzger, B. Nyhan, G. Pennycook, D. Rothschild, M. Schudson, S. A. Sloman, C. R. Sunstein, E. A. Thorson, D. J. Watts, and J. L. Zittrain. The science of fake news. *Science*, 359(6380):1094–1096, 2018.
3. S. Volkova, K. Shaffer, J. Y. Jang, and N. Hodas. Separating facts from fiction: Linguistic models to classify suspicious and trusted news posts on twitter. In *Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics*, volume 2, pages 647–653, 2017.
4. W. Peterson, N. Gist, Rumor and public opinion, *Am. J. Sociol.* 57 (1951) 159–167.
5. Allcott H, Gentzkow M. Social media and fake news in the 2016 election[J]. *Journal of economic perspectives*, 2017, 31(2): 211-236.
6. Pierri F, Ceri S. False news on social media: a data-driven survey[J]. *ACM Sigmod Record*, 2019, 48(2): 18-27.

7. S. Kumar, R. West, and J. Leskovec, "Disinformation on the web: Impact, characteristics, and detection of wikipedia hoaxes," in Proceedings of the 25th international conference on World Wide Web. International World Wide Web Conferences Steering Committee, 2016, pp.591-602.
8. S. Volkova, et al., "Separating facts from fiction: Linguistic models to classify suspicious and trusted news posts on twitter," in Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics (Volume 2: Short Papers). 2017, pp.647-653.
9. Volkova S, Jang J Y. Misleading or falsification: Inferring deceptive strategies and types in online news and social media[C]//Companion Proceedings of the The Web Conference 2018. 2018: 575-583.
10. Shi Jianhui, Jing Ming, Zhu Yan. Social media interactive circle spreading model: Driving force and social value - Analysis based on social hotspot events [J]. Journalism Lover,2019,No.498(06):13-16.DOI:10.16017/j.cnki.xwzh.2019.06.004.
11. Zhang Weidong, Luan Biya, Li Songtao.Research on influencing factors of network false information transmission behavior based on information risk perception[J].Information Studies: Theory &Application,2019,42(09):93-98+110.DOI:10.16353/j.cnki.1000-7490.2019.09.016.
12. Dwyer C, Hiltz S, Passerini K. Trust and privacy concern within social networking sites: A comparison of Facebook and MySpace[J]. AMCIS 2007 proceedings, 2007: 339.
13. Foregger S K. Uses and gratifications of Facebook. com[M]. Michigan State University. Department of Communication, 2008.
14. Sangwan S. Virtual community success: A uses and gratifications perspective[C]//Proceedings of the 38th annual hawaii international conference on system sciences. Ieee, 2005: 193c-193c.
15. Katz, E., Gurevitch, M. and Hass H., "On the Use of Mass Media for Important Things," American Sociological Review, 38 (2), 1973, 164-181.
16. Chen, X. (2016), "The influences of personality and motivation on the sharing of misinformation on social media", IConference 2016 Proceedings.
17. Li Luqi, Hou Li, Deng Shengli. Research on Influencing Factors of Network Misinformation Transmission Behaviors in Public Health Emergencies:A Case Study of Weibo Misinformation During the COVID-19[J]. Library and Information Service, 2022, 66(9): 4.
18. Karunan K, Lathabai H H, Prabhakaran T. Discovering interdisciplinary interactions between two research fields using citation networks[J]. Scientometrics, 2017, 113: 335-367.
19. Luan Biya. Research on Influencing Factors and Governance Strategies of Dissemination of False Information in Social Networks [D].JiLin University,2020.DOI:10.27162/d.cnki.gjlin.2020.001597.
20. Skadberg Y X,Kimmel J R.Visitors'flow experience while browsing a Website:its measurement, contributing factors and consequences[J].Computers in Human Behavior,2004,20(3):403-422.
21. Lai Shengqiang. Influencing Mechanism of the Online Rumors on Audiences' Re—transmission Behavior [J].Journal of Intelligence,2014,33(05):153-156+135.
22. Zeng Xiangmin,Wang Zi. The Mechanisms of False Information Spread in Health Communication and Network Governance Research [J]. Modern Communication(Journal of Communication University of China),2019,41(06):34-40.
23. Lewandowsky S, Ecker U K H, Seifert C M, et al. Misinformation and its correction: Continued influence and successful debiasing[J]. Psychological science in the public interest, 2012, 13(3): 106-131.

24. Zhang Xinhong. Research on Social Media Knowledge Sharing Behavior Based on Social Cognitive Theory [D]. Beijing University of Posts and Telecommunications 2021. DOI:10.26969/d.cnki.gbydu.2021.001492.
25. Treem J W, Leonardi P M. Social media use in organizations: Exploring the affordances of visibility, editability, persistence, and association[J]. Annals of the International Communication Association, 2013, 36(1): 143-189.
26. Lee C H, Chen C W. Impulse buying behaviors in live streaming commerce based on the stimulus-organism-response framework[J]. Information, 2021, 12(6): 241.
27. Pradana H A, Bramantoro A, Alkodri A A, et al. An Android-based Hoax Detection for Social Media[C]//2019 6th International Conference on Electrical Engineering, Computer Science and Informatics (EECSI). IEEE, 2019: 189-194.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

