

Article

Exploring the Determinants of Sharing Refutation Information on Social Media: Insights from Media Affordance Theory

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Abstract: With the rapid evolution of technology, social media platforms have emerged as vital channels for disseminating debunking information. This study examines the mechanisms through which media affordances affect users' willingness to share such content, taking a technological perspective. The goal is to explore how the affordances offered by media platforms enhance the effectiveness of debunking efforts, facilitating the more efficient use of these technological tools. Drawing upon the theoretical foundations of media affordance theory and the Stimulus-Organism-Response (S-O-R) model, this research develops a framework to assess social media users' readiness to share debunking information. A survey was conducted, gathering 308 valid responses, which were analyzed through structural equation modeling. The findings indicate that five key dimensions of social media platforms—media flexibility, user agency, emotional expressiveness, social connectivity, and 24/7 push notifications—positively and significantly influence users' perceptions of debunking content and their willingness to share it.

Keywords: social media platforms; media affordance theory; debunking information; Stimulus-Organism-Response model

1. Introduction

With the rise of social media, access to information has greatly expanded. At the same time, the rapid flow of information, combined with the empowering capabilities of new media technologies, has transformed social media into a fertile ground for rumors and misinformation. The anonymity that these platforms provide further complicates the process of verifying information. However, it is crucial to acknowledge that social media platforms offer technological affordances that enable the widespread dissemination of refutation information by everyday users, in contrast to traditional broadcasting models [1]. On these platforms, users are not only recipients and spreaders of rumor-based content but also potential agents in combating misinformation. Within the context of the news industry, the development of social media platforms represents a continuous improvement in media affordances [2]. When rumors spread quickly on social media, refutation efforts must consider the unique characteristics of these platforms, utilizing their features to effectively amplify debunking messages. By harnessing these media affordances, such efforts can achieve more timely and effective correction of misinformation.

The concept of affordances was first introduced by American ecological psychologist James J. Gibson, who defined them as the opportunities for specific actions that an environment offers to an individual within a given context [3]. In the context of social media, affordances refer to the various possibilities for user behavior facilitated by these interactive platforms. Research identifies three key dimensions of new media affordances: production affordances, social affordances, and mobile affordances [4]. These categories emphasize the diverse opportunities for content creation through collective engagement, the

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potential for fostering social connections and emotional interactions, and the characteristics of ubiquitous online presence in specific contexts.

From the perspective of media affordances, the goal is not to rigidly subscribe to a form of technological determinism that overstates the significance of the media technology itself or views media affordances as a fixed environment resistant to improvement. Instead, the aim is for media practitioners to fully leverage the possibilities provided by media technologies, using the environment created by the media to its maximum potential in order to achieve more effective communication and persuasive results.

Building on the concepts outlined above, this paper investigates the factors influencing social media users' willingness to share refutation information. Adopting a quantitative research approach, it combines questionnaire surveys with data analysis. Drawing from the Stimulus-Organism-Response (S-O-R) Model, the study develops a theoretical framework to explore users' willingness to share refutation information. The model introduces perceived credibility and perceived usefulness as mediating variables in the organismal component, aiming to examine how the three dimensions of social media platform affordances impact users' perceptions of information. The study also assesses whether the functional characteristics of social media platforms significantly affect users' tendency to disseminate refutation messages.

2. Research Hypothesis and Model Development

2.1. Development of the Theoretical Model

Media affordances are categorized into three components: production affordances, social affordances, and mobile affordances, forming a foundational framework for research on media affordances. The continuous advancements in media technology have expanded the capabilities of information dissemination platforms. The combined use of various functionalities for editing and sharing refutation information plays a crucial role in combating rumors and promoting a more transparent online environment. Unlike traditional media channels, such as rumor-debunking websites or broadcast television, social media platforms excel in their immediacy, versatility, and content shareability when disseminating refutation messages. Media with higher levels of affordance foster greater user engagement, activating a broader range of media-related behaviors. Building on this framework and guided by the S-O-R model, the current study examines how enhanced media affordances influence the likelihood of users sharing refutation information.

The S-O-R (Stimulus-Organism-Response) framework, derived from Stimulus-Response Theory, is used to explain individual behavioral responses. It consists of three interrelated components: stimulus, organism, and response. This framework describes how external stimuli, including environmental changes, lead to cognitive and behavioral responses in individuals. On social media platforms, users are exposed to anti-rumor information (the "stimulus"), which leads to cognitive changes and influences their decision to share the anti-rumor content (the "response"). This paper approaches "stimulus" from three dimensions of media affordances—production, social, and mobile—and further breaks it down into five specific variables: "Media Flexibility," "User Proactivity," "Emotional Expressiveness," "Social Connectivity," and "Full-time Service." Additionally, the concepts of perceived credibility and perceived usefulness are incorporated to assess how users perceive and evaluate the information after exposure. Ultimately, the study investigates the dependent variable: users' "willingness to share debunking information."

2.2. Research Hypothesis

Production affordances encompass several key characteristics, including Edit-ability, Review-ability, Replicability, Scalability, and Associability. These attributes not only highlight the flexibility of media organizations in mobilizing resources but also emphasize the agency of users in content creation. Previous studies suggest that refutation information

lacking supporting visual evidence, such as videos and images, significantly diminishes its authority and credibility, particularly in the context of public discourse surrounding urgent events. In such cases, the absence of multimedia may fail to capture public attention and could even generate skepticism, undermining the effectiveness of the refutation effort. On the other hand, media platforms with higher flexibility, which integrate various resources such as images and videos, can deliver information more effectively by adapting to different dissemination models across platforms and providing timely updates. This, in turn, enhances the overall quality of the shared content. Research has shown that higher information quality positively influences users' perceived usefulness of the content. Taking Weibo as an example—a social media platform that allows the use of text, images, videos, and other multimedia elements—its high level of media flexibility enhances user engagement and facilitates the sharing of varied content forms. Therefore, this study posits that the flexible use of media resources positively affects users' perceptions of refutation information. Based on this, the following hypotheses are proposed:

H1: Media flexibility has a significant positive impact on the perceived credibility of refutation information.

H2: Media flexibility has a significant positive impact on the perceived usefulness of refutation information.

Production affordance can also be understood as the level of user initiative in content creation [2]. Social media platforms offer production affordances that make it easier for individuals to share news and information, allowing them to actively participate in the creation and distribution of content [7]. According to the critical mass theory, when a sufficient number of people (critical mass) engage in a shared event, their collective attention can encourage additional participation, which helps individuals evaluate the nature of the original content [8]. Research on refutation information shared on Weibo suggests that the entity responsible for the refutation significantly influences its dissemination, with varying effects depending on the refutation's source [9]. These refutation entities include government organizations, businesses, civil organizations, opinion leaders, parties involved, and others [10]. Social media users not only serve as distributors of refutation information within a network but can also act as refuters themselves, particularly when they are directly involved with the content of the rumor. This dynamic is facilitated by the production affordances of social media platforms. Consequently, this study proposes that the proactivity of users in producing content enhances their psychological perception after encountering information, both in terms of sharing and releasing the content. Based on this, the following hypotheses are put forward:

H3: User proactivity has a significant positive impact on the perceived credibility of refutation information.

H4: User proactivity has a significant positive impact on the perceived usefulness of refutation information.

Social affordance highlights the media's potential to enable users to express emotions and connect socially. Emotional expressiveness refers to the media's capacity to encourage emotional expression [2]. For example, on platforms like Weibo, users can express their thoughts through interactive features like "retweet," "like," and "comment," as well as convey emotions via emoticons and private messages. When users encounter refutation information, these emotional expressions help affirm the refutation, thereby strengthening the perception of its credibility. Based on this, the following hypotheses are proposed:

H5: Emotional expressiveness has a significant positive impact on the perceived credibility of refutation information.

H6: Emotional expressiveness has a significant positive impact on the perceived usefulness of refutation information.

Coordinativeness and connectivity refer to the media's ability to construct and present social networks [2]. In contemporary communication, this is particularly evident in the formation of new relationship networks that transcend traditional kinship ties, creating more community-driven networks based on interests, regions, or occupations [12]. On

platforms like Weibo, for example, after content is published, the platform connects users with shared interests through hashtags, forming new communities around specific topics. This connection enables users to access valuable information more effectively. When users browse refutation information, they can engage with others discussing the same topic, enhancing their understanding of the refutation. Based on this, the following hypotheses are proposed:

H7: Social connectivity has a significant positive impact on the perceived credibility of refutation information.

H8: Social connectivity has a significant positive impact on the perceived usefulness of refutation information.

Mobile affordance in media involves four key aspects: "portability," "accessibility," "locatability," and "compatibility" [4]. On the hardware side, social media platforms capture real-time user locations and behaviors, while software algorithms use this data to personalize content, responding almost instantly to user needs [13]. Mobile affordances remove the constraints of time and place, allowing information to be "actively" delivered to users at any time, anywhere. Some research has explored how information "finds" users, especially in the context of rumors [14]. In this study, mobile affordances are applied to the dissemination of refutation information, focusing on how continuous push notifications affect users' perceptions of such information. The following hypotheses are proposed:

H9: All-day push notifications significantly positively impact the perceived credibility of refutation information.

H10: All-day push notifications significantly positively impact the perceived usefulness of refutation information.

The perceived credibility of information plays a critical role in shaping the attitudes and behaviors of its recipients [15]. After receiving information, users base their actions on how credible they believe the information to be. Information sharing is one way users engage with content, and it often depends on their perception of the trustworthiness and objectivity of the information [16]. The article posits that users are more likely to share refutation information when they perceive it as credible. Thus, the following hypothesis is proposed:

H11: Perceived credibility significantly positively influences the willingness to share refutation information.

Perceived usefulness also affects users' willingness to share information. The more useful a recipient finds the information, the more likely they are to adopt and share it [17]. Studies have extended the concept of perceived usefulness beyond technology use, showing it also positively impacts people's readiness to adopt information [18]. In the context of social media, users are more inclined to share refutation information when they find it useful for themselves or others. Based on this, the article proposes the following hypothesis:

H12: Perceived usefulness significantly positively influences the willingness to share refutation information.

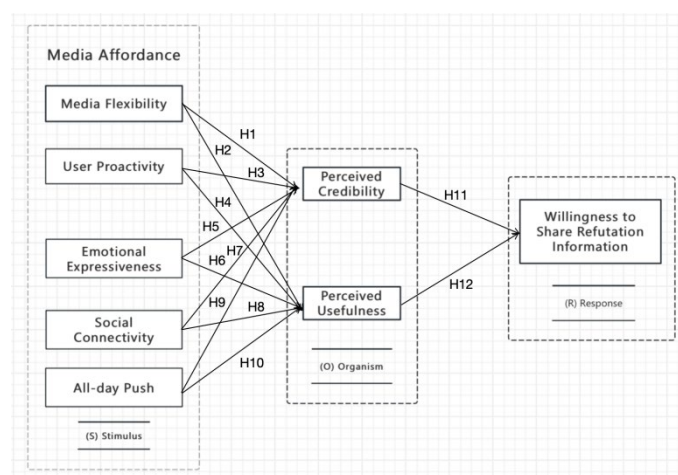


Figure 1. Conceptual Framework of the Research Model.

3. Research Methods

3.1. Questionnaire Design

To test the hypotheses, the questionnaire is divided into two main sections: one focuses on the demographic characteristics of social media users, and the other investigates the willingness to share refutation information. The survey includes eight observational variables, covering independent variables, mediators, and dependent variables. The independent variables are categorized into five dimensions: media flexibility, user proactivity, emotional expressiveness, social connectivity, and all-day push notifications, with a total of 17 survey items. The mediators consist of two dimensions: perceived credibility and perceived usefulness, with 6 items. The willingness to share refutation information is measured with 3 items. To ensure the validity and reliability of the questionnaire, the scales used in this study are adapted from established scales in relevant research and adjusted to align with the specific goals and variables of this study. The variables are measured using a Likert scale ranging from 1 to 5, corresponding to "strongly disagree," "disagree," "neutral," "agree," and "strongly agree."

4. Data Analysis and Hypothesis Testing

4.1. Reliability and Validity Assessment

To assess the reliability of the scale, this study used the Cronbach's alpha coefficient. Additionally, Composite Reliability (CR), Average Variance Extracted (AVE), and the HTMT ratio were applied to examine the convergent and discriminant validity of each latent variable. In theoretical research, a Cronbach's alpha value greater than 0.7 is typically considered acceptable, with CR values exceeding 0.7 and AVE values above 0.5. An HTMT ratio below 0.9 is also deemed acceptable. The results showed that the Cronbach's alpha coefficients for all variables exceeded 0.7, indicating satisfactory reliability. CR values were above 0.7, AVE values exceeded 0.5, and the HTMT ratios were below 0.9, confirming both convergent and discriminant validity. Moreover, a multicollinearity check was conducted on the independent variables, revealing that all Variance Inflation Factor (VIF) scores were below the critical threshold of 5.

4.2. Structural Equation Model Testing

This study chose the Partial Least Squares (PLS) method to empirically validate the proposed structural equation model. The hypothesis testing and analysis were carried out using SmartPLS 4.0 software, which is based on the PLS approach.

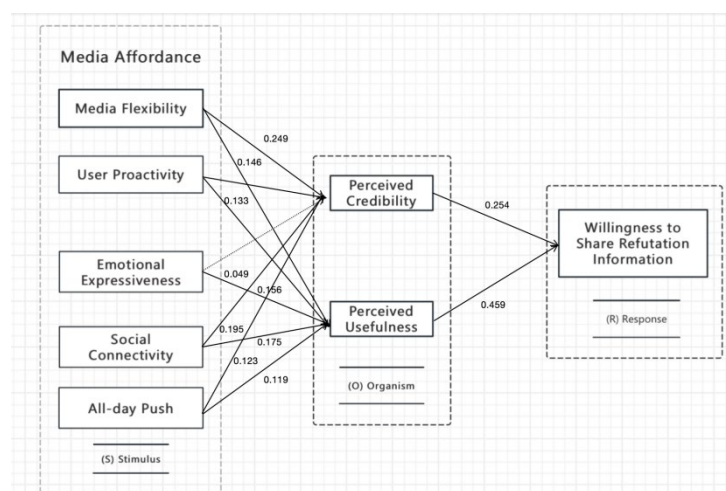


Figure 2. Path Coefficient Diagram of the Structural Model.

The results indicate that, except for the non-significant effect of emotional expressiveness on perceived credibility ($\beta=0.049$, $t=0.608$, $p=0.272$), the other four variables significantly and positively influenced both perceived credibility and perceived usefulness (β values ranging from 0.119 to 0.249, t -values between 1.952 and 4.322, and p -values all below 0.05). Media flexibility had the strongest impact ($\beta=0.249$, $t=4.322$, $p<0.001$). Furthermore, both perceived credibility and perceived usefulness were found to significantly enhance the willingness to share refutation information, with β values of 0.254 and 0.459, respectively, t -values of 4.094 and 7.871, and p -values less than 0.001. The effect of perceived usefulness was particularly more significant.

5. Research Findings

This study conducted a comprehensive reliability and validity assessment using 308 valid experimental datasets, confirming the reliability of the scales employed and the integrity of the data. A correlation analysis was performed, revealing positive relationships between the independent and dependent variables. Structural equation modeling was used to test the primary hypotheses. Out of the 12 hypotheses proposed, 11 were supported, while one showed no significant effect, though it aligned with the expected direction. As a result, the research model presented in this paper demonstrates substantial theoretical soundness and logical coherence.

5.1. The Effect of Media Affordances on Users' Perception of Refutation Information

In the context of production affordance, the research found that media flexibility positively influences users' perceived credibility and usefulness of refutation information. When posting refutation information on social media platforms, publishers can utilize features such as images, videos, trending topics, and hot searches to enhance the clarity and accuracy of the message. The ability to edit content on platforms like Weibo also allows users to update and correct information quickly, improving the timeliness and reliability of the refutation.

Regarding user proactivity, the study revealed a positive impact on both perceived credibility and usefulness of refutation information. On platforms like Weibo, users can participate in discussions and edit content, allowing them to actively contribute to the dissemination and clarification of information, particularly when addressing rumors related to themselves or familiar subjects.

In terms of social affordance, the research found that emotional expressiveness did not significantly influence the perceived credibility of refutation information, although a positive correlation was still observed. This may be due to the fact that users can express emotions through functions such as liking, commenting, and sharing, even on non-social

media websites, which are not unique to social media platforms. However, the dimension of social connectivity was found to significantly enhance users' perceived credibility and usefulness of refutation information. This suggests that social media platforms, through community features and topic-based interactions, help users form connections that allow them to find more relevant and valuable information. Moreover, platforms like Weibo enable users to directly contact the source of the refutation information, which helps verify and confirm details, further enhancing credibility and usefulness.

In the dimension of mobile affordance, the study showed that all-day push notifications positively influence users' perceptions of the credibility and usefulness of refutation information. Even if users do not actively seek out refutation information, they feel reassured that they will receive timely updates via algorithmic recommendations and their social network on the platform. This constant flow of information helps maintain the user's awareness of the refutation, improving its perceived reliability and usefulness.

5.2. The Influence of Perceptions of Refutation Information on Users' Willingness to Share

The findings indicate that both perceived credibility ($\beta=0.254$, $P<0.05$) and perceived usefulness ($\beta=0.459$, $P<0.05$) significantly and positively influence users' propensity to share refutation information, with the impact of perceived usefulness being more substantial. This suggests that users tend to share information they deem beneficial to themselves. Additionally, perceived credibility and usefulness, acting as mediators, enhance the positive effects of media affordances on the likelihood of users sharing refutation information across four dimensions: media flexibility, user proactivity, social connectivity, and constant push notifications. The higher the media affordance, the more credible and useful the information is perceived, which, in turn, increases users' willingness to share it.

6. Conclusion

This study, rooted in the concept of media affordances, thoroughly explores how different dimensions of these affordances influence users' tendency to share refutation information. It establishes a theoretical model that illustrates how media affordances shape users' perceptions of information and their communication behaviors from a technological perspective. On the theoretical front, the research expands the application of affordance theory within social media platform studies. Specifically, it enhances existing research on media affordances by focusing on their effect on the reception and dissemination of refutation information. Furthermore, it integrates the Stimulus-Organism-Response (S-O-R) framework with media affordance theory in the context of refutation information consumption, emphasizing how various media affordances influence users' attitudes toward and intent to share such content.

From a practical standpoint, the study sheds light on the technological functions and user behaviors associated with different media affordances when engaging with refutation information. It identifies the specific features of social media platforms that drive user attitudes and behaviors, providing guidance to those involved in refuting misinformation on how to leverage social media platform features for more effective information dissemination. For those sharing refutation information, the research offers a framework to understand what influences the perceived credibility and usefulness of such content, helping to optimize the impact of refutation efforts in alignment with the unique features of social media platforms. For users, the study clarifies the processes behind the sharing of refutation information, helping them recognize the motivations driving this behavior and encouraging the thoughtful use of platform functions to make informed decisions.

The study acknowledges its limitations: it focuses on a single platform, Weibo, and the survey participants were restricted to users familiar with this platform. Given the distinct characteristics of various social media platforms, the applicability of these findings to refutation contexts on other platforms may be limited. Future research could explore

multiple social media platforms for comparative studies on user engagement with refutation information, including their sharing behaviors and adoption patterns.

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