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Examine Online User Reactions for Philanthropic Communication in Social Media: An Online Natural Experiment

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Meta-voicing for Social Good: Unpacking the Influence of Social Media Engagement in Corporate Philanthropy Communication

Short paper

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Abstract

Social media has become a viable channel for firms to communicate corporate social responsibility initiatives given its broader customer base and escalating information dissemination speed. Nevertheless, little is known about how the online diffusion of a firm's philanthropic announcement unfolds over time and how such diffusion can influence consumer behavior. To address these questions, we drew on the attribution theory and utilized an online natural experiment that took place during the disaster relief period of 2021 Henan floods in China. Preliminary results reveal that both the intensity and content of meta-voicing responses towards a firm's charitable donation announcement can influence consumers' online livestreaming purchases of the firm's products. More importantly, the initial meta-voicing reactions towards a firm's philanthropic announcement can have both immediate and enduring impacts on purchase behavior.

Keywords: corporate philanthropy, social media engagement, meta-voicing, livestreaming sales

Introduction

Recognizing the dynamic role of social media, firms have been putting increasing emphases on using social media for corporate philanthropy communication. In particular, social media has been regarded as an effective online channel to announce and disclose firms' social responsibility initiatives to their consumers (Kesavan et al., 2013). However, there is a paucity of empirical research on why and how a firm's philanthropic announcement on social media can influence consumers' brand evaluations and purchase decisions. Prior studies suggest that a firm's philanthropic announcement can lead to mixed reactions from consumers. On the one hand, because a firm's engagement in charitable giving can signify its responsiveness to the needs of society and the general consumer welfare (Hoeffler et al., 2010), such practice may help the firm establish brand recognition among its consumers (Sánchez, 2000). On the other hand, consumers are sensitive to the genuine reason for corporate philanthropy (H. Lee et al., 2009) and are averse to "ingratiation" (Godfrey, 2005). As such, it remains unclear how consumers' responses to a firm's philanthropic announcement would manifest on social media and the extent to which such responses would influence purchase behavior.

The purpose of this research is to investigate the influence of social media meta-voicing responses to a firm's philanthropic message on consumer behavior. Specifically, we draw upon attribution theory and examine how meta-voicing responses to a firm's charitable initiative announcement can shape consumers' perceptions of the firm's intention behind the initiative. Specifically, we seek to address the following two questions: 1) how meta-voicing responses would influence consumer purchase behavior; and 2) the extent to which the influence of meta-voicing responses on consumer purchase behavior would sustain over time. This study employed an online natural experiment, focusing on the event that unfolded on July 21, 2021,

when firms in China announced their charitable donations on social media in support of local flood relief efforts in Henan province. We sampled three firms and collected and analyzed meta-voicing responses to the firms' donation announcements on Sina Weibo as well as their livestreaming sales data on Douyin. The preliminary results uncover three key findings. First, the increased intensity in meta-voicing towards a firm's donation announcement on social media led to an immediate increase in reciprocal purchases of the firm's products on the livestreaming platform. Second, the elevated level of sympathy expressed in the meta-voicing responses was positively associated with the increased livestreaming sales. Lastly, the increased livestreaming sales sustained for months, even after the initial meta-voicing responses were no longer prominent on the social media platform.

The present research contributes to previous research on social media meta-voicing as well as to corporate philanthropy communication. Through an in-depth examination of both the amount and content of meta-voicing responses, our research sheds light onto how firms can leverage social media to communicate their corporate social responsibility initiatives and convey their philanthropic efforts. Furthermore, by tracing both short-term and long-term sales performance, our research provides insights into the immediate and enduring impacts of meta-voicing on consumer brand attitude and purchase behavior. To this end, the study offers a deeper understanding of the influence and implications of consumer social media engagement in corporate philanthropy communication.

Research Background

Meta-Voicing on Social Media

Meta-voicing refers to social media users' participation by reacting to others' online presence, profiles, or contexts (Karahanna et al., 2018; Majchrzak et al., 2013). As one of the main forms of social media engagement (Liu-Thompkins et al., 2020), consumers' meta-voicing entails a broad range of social media interactions, including commenting on, tagging, liking or reporting others' content (Castillo et al., 2021). Meta-voicing can add meta-knowledge to the original content, and thus enable others to evaluate the content and decide whether to join the interaction (Majchrzak et al., 2013).

Past research has shown that meta-voicing responses can influence consumers' brand perceptions and purchase decisions. Specifically, the popularity and credibility of firm-generated online content can be revealed from consumers' meta-voicing reactions (Jiao et al., 2021). Such reactions can in turn affect individuals' evaluations of the firm, their purchase intention, and actual purchase behavior (Chang et al., 2015; Lin et al., 2017). While prior studies have examined the antecedents and outcomes of consumers' meta-voicing responses to firms' marketing communication, little is known about how meta-voicing responses to a firm's philanthropic message on social media affect consumer attitude and behavior.

Meta-voicing on social media varies in terms of its mode, content and the level of engagement (Liu-Thompkins et al., 2020). Numeric responses, such as the number of likes, are indicative of social media users' agreement or approval for the related content (Scissors et al., 2016), whereas content-related responses, such as comments and hashtags, can express more complex emotions and sentiments (Liu-Thompkins et al., 2020). The extant research has primarily focused on how numeric responses aggregated from individuals' likes and reposts would influence others' brand evaluations and purchase decisions. The understanding of content-related meta-voicing is much limited (Liu-Thompkins et al., 2020).

Corporate Philanthropy Communication

Corporate philanthropy refers to discretionary and unconditional transfers of cash or other assets by private firms for public purposes. Broadly speaking, corporate philanthropic activities can entail a variety of forms of giving, ranging from monetary donations, in-kind service/product donations to employee voluntary efforts (Park et al., 2016; Zhang et al., 2010). Each of these activities reflects a firm's social performance and can serve as a symbolic expression of the firm's pledge to the common good (Gautier & Pache, 2015).

While scholars suggest that communicating philanthropical initiatives can foster and bolster a positive corporate reputation (Godfrey, 2005), empirical research has not reached a consensus on why and when such activities can invoke favorable reactions from consumers. While it is intuitive to think that consumers tend to reward companies that perform philanthropic activities, it is important to note that they do not blindly approve or accept such activities (Idrees et al., 2021). Because a firm's motives behind its corporate philanthropic initiatives are unobservable, consumers' reactions to such initiatives can differ substantially based on the motive that consumers attribute to a company for their giving. That is, consumers seek to understand why companies choose to offer their support to specific causes and make motivational inferences from a firm's philanthropic announcements and related activities (Gautier & Pache, 2015).

While it is not uncommon for firms to announce their philanthropic initiatives and broadcast their charitable giving in formal communication channels such as official websites, annual reports and/or public press releases, more research is called for to examine how consumers may respond to such an announcement, when it is made on informal online channels such as online social networking platforms. Existing research has suggested that firms may not always benefit from communicating their corporate philanthropic initiatives (Wang et al., 2022). Given social media has become an essential communication channel for firms to build relationships with their customers and other stakeholders, it is critical to understand how a corporate philanthropic announcement can invoke impactful meta-voicing responses from its consumers and how such responses can influence purchase behavior.

Hypotheses Development

According to attribution theory, people tend to gather information to form causal explanations of observed behaviors (Kelley & Michela, 1980). The process of assigning the cause of behavior to an actor's internal motives and/or beliefs refers to dispositional attribution, whereas the process of assigning the cause to external forces or circumstantial factors refers to situational attribution. The distinct two processes of attribution can further shape the observers' subsequent reactions and behaviors (Kelley & Michela, 1980).

Prior research has shown the utility of attribution theory in explaining how consumers infer the motive behind a firm's philanthropic efforts and how the resulting inference affects consumer attitude and behavior. That is, when a firm announces its charitable donation, consumers tend to infer the plausible causes behind its donation decision. The motive that consumers attribute to the firm for its charitable giving can in turn affect their evaluations of the firm. In general, consumers tend to react favorably to a firm's philanthropic donation, when they believe the firm has an genuine concern about its supported social cause and carries an altruistic motive to contribute to the social good (Gershon & Cryder, 2018; Newman & Cain, 2014). However, corporate philanthropic activities can sometimes elicit negative reactions from consumers (Dean, 2003). When consumers believe that a firm is motivated to extrinsic rewards, their perceptions of the firm's philanthropic initiatives become "tainted" (S. Lee et al., 2017). Consumers may become skeptical about the firm and perceive the firm to be exploitative (Bhattacharya et al., 2009). As a result, a firm may get penalized or even protested by their consumers (Newman & Cain, 2014).

Our rational for applying attribution theory to the present study is threefold. First, our research focuses on investigating the influence of meta-voicing responses to a firm's charitable message on social media. The core propositions in attribution theory provide a useful conceptual framework for explaining how meta-voicing would influence the attribution process that consumers may engage in when processing such a message. Second, the covariational principles postulated in attribution theory (Kelley & Michela, 1980) can help to explain the psychological mechanisms that underlie the effects of meta-voicing responses to a firm's philanthropic announcement on consumer behavior. Lastly, this study is situated in the context of a firm announcing its charitable initiative on social media. While prior research has examined how the firm's charitable message itself would influence consumer attitude and behavior, the present research is oriented to the impacts of social media users' reactions to the firm's online charitable message. This unique research context and focus afford attribution theory to offer different insights and predictions.

Social media users' responses to firm-generated content can impact brand evaluations and purchase decisions (Chung et al., 2020; Goh et al., 2013; Rishika et al., 2013). We infer that when a firm announces its philanthropic initiative on social media, the intensity of meta-voicing towards the announcement can influence others' evaluations of the firm and their purchase behaviors. Individuals tend to repost others' messages or like their posts to promote the content to demonstrate their support of the message (Koroleva et al., 2011). The intensive meta-voicing responses can also enhance the online exposure of a firm's philanthropic announcement through trending topics, and thereby gathering increased attention and reactions from other social media users (Goh et al., 2013). As such, the intensity of meta-voicing reactions to a firm's charitable message reflects and communicates the consensus of dispositional attribution of a firm's charitable claim. That is, the strong intensity of meta-voicing highlights social media users' approval and trust toward the firm's philanthropic efforts. Consequently, people are more likely to attribute a firm's philanthropic announcement to its altruistic intention and support the firm's products. We hypothesize that the intensity of meta-voicing towards a firm's philanthropic announcement on social media is positively associated with the amount of product purchases. It is suggested that:

> H1: *As the intensity of meta-voicing towards a firm's philanthropic announcement increases, the amount of product purchases increases.*

In the context of corporate philanthropy, sympathy can serve as an emotional proxy to express feelings of sorrow or concern for another's welfare (Eisenberg & Miller, 1987). Consumers can express sympathy not only towards the recipients of donation but also towards the company that initiated the donation (Batson, 1990). Prior research has indicated that people tend to offer sympathetic responses to a firm's charitable initiatives, when they infer the firm's charitable endeavors are motived by its altruism (Groza et al., 2011; Uyar et al., 2022). As a result, consumers tend to express their gratitude toward the firm and reciprocate the firm's charitable efforts through product purchases (Ellen et al., 2000). We infer that when a firm discloses its philanthropical initiative on social media, elicited meta-voicing reactions can reveal and amplify people's sympathetic sentiments towards the firm's philanthropic message, and in turn encourage reciprocal purchases. The prediction is also supported indirectly by the case of Wang Lao Ji, a Chinese herbal tea company. The company received a public outpouring of support, after its parent company donated 100 million Chinese yuan during the disaster relief after the Sichuan earthquake in 2008. The firm's financial sacrifice as a result of this donation stemmed a wave of online word-of-mouth support of Wang Lao Ji's products, resulting in a substantial increase in product sales (Gao et al., 2012). We thus infer that reciprocal purchases are likely to increase after meta-voicing responses toward a firm's charitable donation announcement reveal consumers' sympathy towards the firm's financial sacrifice. It is expected that:

> H2: *As the amount of sympathy expressed in meta-voicing towards a firm's philanthropic announcement increases, the amount of product purchases increases.*

Methodology

Study Design

To test the hypotheses, we utilized an online natural experiment in the context of corporate charitable donation announcements. In July 2021, Henan province in China was affected by severe flooding due to a prolonged heavy rainfall period. Many Chinese companies offered monetary donations and emergency supplies in support of the disaster relief efforts and disclosed their charitable giving through the companies' official accounts on Sina Weibo. We chose Sina Weibo as the focal social media platform for our study because it was one of the most popular microblogging platforms in China and had over 248 million daily active users in 2021. It has rich social media features which enable its users to engage in meta-voicing in multiple ways. Lastly, it provides a reliable data source as their user accounts are registered with verified identifications. These aspects have made Sina Weibo an appropriate setting for the present research.

We sampled three mainstream Chinese sports brands, Erke, Peak, and Anta. The three brands had similar product profiles and consumer bases. As compared to Peak and Anta, Erke had the least financial capacity of making charitable donations in 2021. According to its financial report, Erke was in corporate deficit with a negative net profit of 200 hundred million Chinese yuan in the previous year. The three companies announced their donations on Sina Weibo respectively in response to the Henan flooding disaster. While all the announcements were posted on Sina Weibo on the same day, Erke's donation announcement received noticeably intensive online reactions (280 thousand comments and 9 million likes). While meta-voicing responses to Erke's and Anta's announcements both emerged on the Sina Weibo's trending list, the popularity index based on meta-voicing reactions toward Erke's donation announcement was 30 times higher than it based on meta-voicing reactions to Anta's announcement.

Data Collection

The observation window for data collection is between April 2021 and January 2022. To measure meta-voicing responses, social media data for each of the three firms were collected from Sina Weibo. The data include the firms' official social media posts, users' comments, and volumes of likes, reposts, and sub-comments. To identify sympathetic sentiments expressed in users' comments on each of the firms' donation announcements, we implemented an emotion classification algorithm which has been trained based on a Chinese microblog dataset to identify emotions that differ in valence and intensity (Li et al., 2016). The algorithm is suitable for this research context because our social media data was collected from a microblogging platform and the dominant language used by the platform's users is Chinese. To ensure the algorithm's classification accuracy and precision, we manually coded a sample of the collected online comments and then validated the coding results with those classified by the algorithm.

During the same time frame, we collected online daily sales data of the three firms to examine the effects of meta-voicing on online purchase behavior. Specifically, we focused on daily sales generated from DouYin, the most popular platform in China for livestreaming commerce. The rationale for choosing this data source

is twofold. First, selling products through live broadcasting platforms has become an established business practice in China. Given the prevalence of livestreaming marketing, sales data from a major live-streaming platform are indicative of individuals' online purchase behaviors. Second, the observation window of our study is during the COVID-19 pandemic. Over the course of that period, the Chinese government issued strict lockdown regulations that limited people's abilities to purchase in brick-and-mortar retail stores. Thus, focusing on daily sales data from a livestreaming platform can help to draw a clear causal inference about the impacts of meta-voicing on consumer behavior.

Difference-in-Differences Approach

We utilized the difference-in-differences (DID) approach to examine how livestreaming sales of Erke and the other two firms differed during the observation period. We used DID to estimate the impacts of meta-voicing intensity on online purchase behavior, as this strategy has been demonstrated as an effective econometric approach to identify causal relationships. Specifically, we examined both cross-company and within-company variations by matching social media data and livestreaming sales data in date. The main treatment was the presence of meta-voicing responses to Erke's donation post as the number one topic in the Sina Weibo's trending list in July 2021, indicating that among the three sampled firms, Erke's donation announcement on social media elicited the most intensive meta-voicing. To rule out the plausible impacts of seasonality or special promotions on sales increase, we treated Anta and Peak as the control group in the analysis. The equation is:

$$\log sales_{i\,t} = \beta_0 + \beta_1 * volume_{sympathycomments_{it}} + \beta_2 * \log volumecomments_{it} + \beta_3 * \log volumelikes_{it} \\ + \beta_4 * sympathycomment\%_{it} + \beta_5 * repost\_counts_{it} + \beta_6 * streaminghours_{it} + \beta_7 \\ * number\_of\_products_{it} + \beta_8 * treat * after + \beta_9 * treat + \beta_{10} * after + \alpha_i + \epsilon_t$$

The dependent variable $logsales_{i\,t}$ indicates company i's sales at time t. Erke is set as the treatment group and coded as 1 in the dummy variable *treat*, whereas Anta and Peak are specified in the control group and coded as 0. The amount of the donation made by Erke in the treatment group is comparable to the average amount of donation made by the other two firms in the control group. The key econometric identification is the point when the meta-voicing responses to the Erke's donation announcement yielded the highest popularity index and was ranked as the number one trending topic on July 22, 2021. We set *after* as the second dummy variable: 0 to denote livestreaming sales made before meta-voicing responses to Erke's donation announcement reached the highest popularity index, and 1 to denote livestreaming sales *after* the popularity index decreased and the Erke's donation topic was no longer present on the trending list.
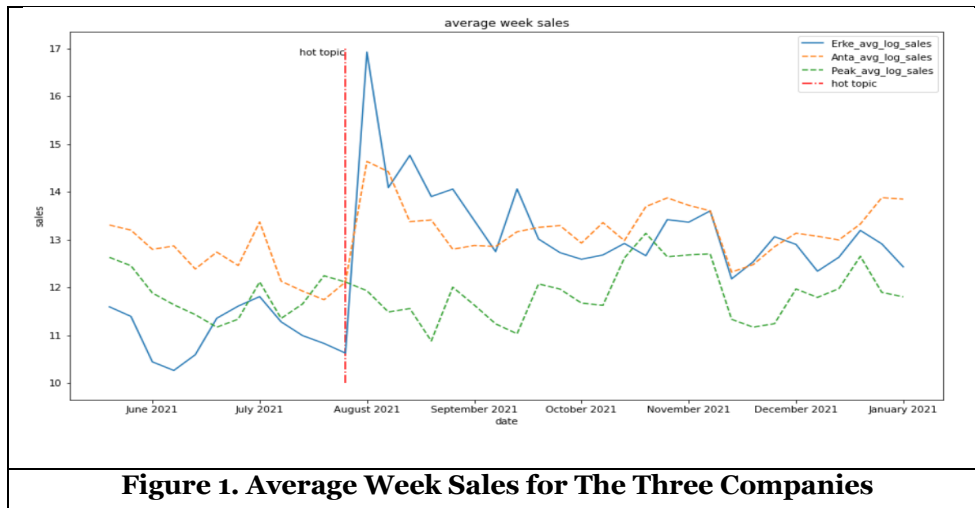

Figure 1. Average Week Sales for The Three Companies

Our focus is the coefficient of the interaction term *treat*after*, which measures the effect of the Erke's highest popularity index generated from intensive meta-voicing responses on livestreaming purchase behavior. In addition to the daily volume of likes, reposts and comments, we included the number and percentage of comments that expressed sympathetic sentiments about a firm's donation announcement in the model to test H2. The livestreaming sales, the volumes of likes and comments are log transferred. We also included company-fixed impacts to control unobservable individual characteristics that may affect the

livestreaming sales. Specifically, the *streaminghours* was included to measure the duration of daily livestreaming sales sessions, and the variable *number_of_products* was included to quantify the number of products introduced over the course of daily livestreaming sales sessions.

Preliminary Findings

Overall Effects of Meta-voicing on Product Purchase

Table 1 below presents the overall impacts of meta-voicing responses to a firm's donation announcement on livestreaming purchase behavior. The significant positive coefficient of *treat*after* indicates support for H1. The results indicates that the presence in the trending list increased Erke's log sales by 2.23, suggesting an almost 800% increase in sales. Both the absolute and relative volumes of comments conveying sympathetic sentiments have a significantly positive association with sales. The coefficient for the variable *sympathy comments %* is 0.566, suggesting an over 200% increase in sales. Thus, H2 is also supported.

Variables	All data	
Treat*after	**2.187*****	(0.117)
Log volume likes	0.15***	(0.034)
Volume sympathy comment	**0.00043*****	**(0.038)**
Streaming hours	0.044***	(0.007)
Number of products	-0.001*	(0.001)
Log volume comments	-0.099*	(0.038)
Reposts counts	-6.47e-06**	(2.51e-06)
Sympathy comments %	**0.55***	**(0.277)**
Company FE	Yes	
Prob > F	0	
Observations	633	
Note. Cluster-robust standard errors in parentheses.		
*p < 0.05; **p < 0.01; ***p < 0.001.		
Table 1. Within-Company Analysis		

Long-term Effects of Meta-voicing on Product Purchase

We conducted a time effect test to examine the long-term impacts of meta-voicing responses to a firm's donation announcement on livestreaming purchase. Specifically, we employed an economic method (Angrist & Pischke, 2009) and estimated the interactions of treatment and the leads and lags of the meta-voicing event. The reference point is the sales during one week before the meta-voicing responses to Erke's donation announcement were shown as the number one trending topic on Sina Weibo.
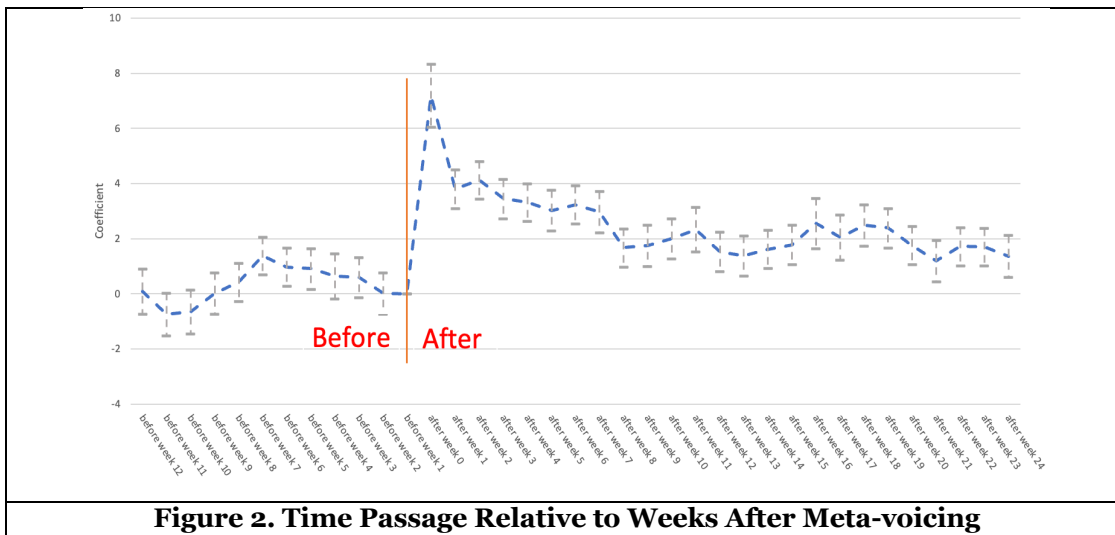

Figure 2. Time Passage Relative to Weeks After Meta-voicing

As shown in Figure 2 above, there is no specific trend in sales within two months before the reference point. However, a significant increase in sales is demonstrated starting from the first, averaging over 3 on Erke's log sales increase, which is equal to over 900% increase in actual sales. The positive impacts remained at a

relatively high level after the initial seven weeks and lasted for several months, averaging over 1.5 on Erke's sales increase, which is corresponding to almost 450% increase in actual sales. There were no such positive effects observed before meta-voicing acts towards the Erke's online philanthropic announcement increased, suggesting evidence for the observed effects after the related meta-voicing diminished and ruling out the effects of the pre-treatment trend.

Robustness Check

Because the sales data were collected from a livestream platform, it may be possible that Erke's impressive sales performance on the platform was not related to meta-voicing reactions to its charitable announcement on social media, but to the firm's broad product offerings and its superior marketing ability on the livestreaming platform. Our analysis on two variables, the numbers of products and the average streaming hours, help to rule out this alternative explanation. The negative coefficient for the number of products indicates that more products introduced in the livestreaming platform tended to have less sales, suggesting that the three firms did not benefit from introducing more products during livestreaming sales sessions. The Erke's average hours of daily livestreaming sales were 11.7 before the meta-voicing responses to its donation announcement appeared on the Sina Weibo's trending list and the average hours were 11.46 after the meta-voicing responses were displayed on the trending list. It means that Erke did not extend its livestreaming duration to increase sales. We also examined the distribution of sympathetic comments throughout the observation window. Most of the sympathetic comments were posted between July 21st and July 24th, 2021, following Erke's online donation accouchement. This result offers additional support for H2. Specifically, consumers' sympathetic sentiments were mostly associated with their concerns toward the firm's financial scarcity, thereby confirming the underlying premise of H2. In addition, we tested the model considering the impacts of positive emotion on purchase behavior. The results show the dominant effect of sympathetic responses on sales, providing further support for H2.

Discussion

This study centers on investigating how meta-voicing responses to a firm's philanthropic announcement on social media influence consumer behavior. The initial study findings provide empirical support for both the proposed hypotheses. In particular, the result shows that intensive meta-voicing responses and elevated sympathetic sentiments associated with Erke's charitable donation message increased the firm's average log-sales by 2.23, corresponding to almost 800% increase on actual sales. We infer that the sales increase can be in part because social media users attributed the charitable act to the firm's altruistic motive and engaged in meta-voicing to amplify this motivational attribution. That is, the meta-voicing responses to the firm's donation announcement approved and validated the firm's commitment to supporting the cause despite its financial constraint. More interestingly, the preliminary results show that when the company actively involves in corporate philanthropy and communicate it on social media, meta-voicing responses from social media users can have an enduring effect on others' online purchase behaviors. We find that as compared to the other two sampled firms, Erke experienced a substantial increase in sales in the first 7 weeks. While its weekly sales decreased gradually after 7 weeks, they were still significantly higher than the sales prior to the firm's online philanthropic announcement.

The present research has a few limitations. The sales data were collected from one livestreaming sales channel. While DouYin was the most popular livestreaming sales platform in China, the single source of sales data might not fully reflect the sales performance of each of the sampled firms during the observation window. In addition, threats to internal validity in natural experiments are difficult to identify and mitigate, as researchers are unable to perform randomization and have no control over the study environment and other extraneous factors. Although the natural experiment setting deployed in this study presents a distinct opportunity to examine the impacts of both meta-voicing intensity and content on consumer behavior in real life, more research is needed to validate the causal inferences drawn from this natural experiment. Third, the event occurred in the country where the society is generally considered as having a cultural tradition of collectivism and valuing community-oriented traits such as altruism and unity. The study results may not be generalizable to other contexts where individualistic cultures are dominant.

The upcoming phase of this research project is to conduct lab experiments to further investigate mediational processes that delineate why and how meta-voicing responses to a firm's philanthropic announcement influence consumers' brand evaluations and purchase intentions. The additional experimental results will help to triangulate the results obtained from the natural experiment and clarify the causal relationship between meta-voicing and its influence.

Research Contributions & Practical Implications

This research contributes to exiting IS literature on social media by illuminating the influence of meta-voicing responses toward a firm's online philanthropic communication on consumer purchase behavior. Our study findings echo other scholars' call for a more advanced understanding of the different forms of meta-voicing and their different impacts on social media users (Liu-Thompkins et al., 2020). In addition, our research suggests that meta-voicing responses to a firm's philanthropic communication can lead to distinct effects on consumers' purchase decisions and behaviors, as compared to those to its general social media marketing content. In the current research context, we observe that not only can meta-voicing responses increase the virality of a firm's charitable announcement on social media, but they can also have spillover effects on purchase behavior on a different online platform. Lastly, with a longitudinal study design, the current research helps to uncover the immediate and lasting impacts of meta-voicing on consumer behavior, providing insights into the phenomena associated with firms' social media practices.

The current study can offer valuable practical implications. Our research findings suggest that meta-voicing responses towards a firm's charitable initiative announcement can indicate social media users' approval or disapproval of the initiative and reveal their interpretations of the intention behind the firm's philanthropic communication. When disclosing a charitable initiative on social media, the firm's managerial team should be explicit about why the charitable cause was chosen and how the firm's resources would be utilized to support the cause. In addition, our study results reveal that certain forms of meta-voicing responses to a firm's philanthropy communication can have an enduring impact on a firm's reputation and sales performance. Business practitioners need to be aware of how a firm's charitable initiative may be reacted differently by social media users and the extent to which meta-voicing reactions can be beneficial and should be encouraged by the firm.

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