MIS Quarterly

RESEARCH ARTICLE

THE PERSUASIVE POWER OF EMOTICONS IN ELECTRONIC WORD-OF-MOUTH COMMUNICATION ON SOCIAL NETWORKING SERVICES[1]

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Emotional expressions are ubiquitous in electronic word-of-mouth (eWOM) communication, but their effect on eWOM persuasiveness and the underlying mechanisms in the context of social networking services (SNS) have been underexplored. This research focuses on an extensively used nonverbal emotional cue in computer-mediated communication—the emoticon. Drawing on the emotion as social information model (EASI), we propose a conceptual framework to understand whether, how, and when emoticons influence the persuasiveness of eWOM on SNS. Results from a field experiment and a series of online experiments show that emoticons can increase eWOM persuasiveness through the mediating effects of enhanced recipient empathy and trust toward the sender and that these effects vary across situations. Specifically, the persuasive effect of emoticons occurs for both positive and negative eWOM when recipients and senders are close to each other. However, this effect occurs only for negative eWOM when recipients and senders have distant relationships. We discuss the theoretical and practical implications of these findings and identify several opportunities for future research.

Keywords: Emotional expression, nonverbal cues, emoticons, social networking services, electronic word-of-mouth, persuasion

Introduction

With the growing popularity of social networking services (SNS), social commerce has been increasingly used as a promotional strategy to generate awareness, interest, and ultimately purchases in the marketplace. Companies encourage consumers to spread electronic word-of-mouth (eWOM) about products and services to their friends on SNS; their friends then rely on this information to shape product attitudes and purchase decisions (Deng et al., 2022; Liang & Turban, 2011; Park et al., 2019; Susarla et al., 2016). The success of a social commerce campaign is largely determined by the persuasiveness of word-of-mouth on SNS. Therefore, understanding what kinds of messages are more persuasive than others has both theoretical and practical significance. Previous research suggests that communication on SNS is characterized by intense emotional expressions: people use emotional words and nonverbal cues (e.g., emoticons) to express emotions associated with various life events (Hidalgo et al., 2015; Lin et al., 2014). An intriguing but unstudied question thus arises: Do expressions of emotions with the purchased products and services make eWOM messages more or less persuasive in the context of SNS?

[1] Dennis Galletta was the accepting senior editor for this paper. Diane Strong served as the associate editor.

The impact of emotional expressions on the persuasiveness of eWOM has been documented in extant research in the context of customer review platforms. However, there are mixed findings regarding whether emotional expressions have a positive or a negative impact (Craciun & Moore, 2019; Craciun et al., 2020; Folse et al., 2016; Kim & Gupta, 2012; Yin et al., 2014; Yin et al., 2017). More importantly, the effect of emotional expressions on SNS may differ from their effect on customer review platforms because the two contexts are characterized by different sender-recipient relationships, which influence how recipients process and respond to senders' emotional expressions (Beeney et al., 2011; Howard & Gengler, 2001; Lin & Utz, 2015). For example, eWOM on customer review platforms usually involves communications among strangers. Emotional expressions are thought to have limited power to evoke affective reactions in this context due to the absence of personal ties between senders and recipients (Kim & Gupta, 2012). By contrast, eWOM on SNS is largely communicated among people who know each other, making emotional contagion more likely to occur, even via exclusively text-based communication (Cheshin et al., 2011; Coviello et al., 2014; Hancock et al., 2008; Kramer et al., 2014).

Our research seeks a deeper understanding of emotional expressions in eWOM by examining their persuasive effect in the context of SNS. Specifically, we focus on emoticons, which are extensively used nonverbal cues of emotions in computer-mediated communication. Emoticons refer to the typographic or graphic representations of facial expressions (or even body gestures) used to convey feelings and emotional states (Crystal, 2001; Walther & D'Addario, 2001). An analysis of emoticon use from 2011 to 2021 on Twitter shows that global emoticon use has reached an all-time high, with more than one in five tweets now containing at least one emoticon[2] (Emojipedia, 2020). Despite the common use of emoticons on SNS, whether, how, and when emoticons influence eWOM persuasiveness is poorly understood. In this research, we answer three key questions about emoticons.

First, do emoticons affect eWOM persuasiveness in the context of SNS? Emoticons are used as a surrogate for facial expressions. Although research on face-to-face (F2F) communication has found that facial expressions have a positive impact on persuasion (Kleef et al., 2015), whether emoticons would result in the same outcome in eWOM communication remains an open question because the two are different in how deliberate they are in expressing emotions. Facial expressions tend to be automatic, spontaneous, and hard to control (Ekman, 1993). In contrast, the use of emoticons is intentional and under the sender's full control, which would probably render conveyed emotions less authentic and therefore less influential. An investigation into the persuasive effect of emoticons is thus essential to understanding how recipients respond to such "intentional" emotional expressions in eWOM communication.

Second, if emoticons do exert a persuasive effect on eWOM, what are the key mechanisms underlying that effect? Research on online customer reviews has shown that emotional expressions influence eWOM persuasiveness by shaping recipient inferences about the sender's rationality, effort, and certainty at the time the review was written (Ahmad & Laroche, 2015; Kim & Gupta, 2012; Yin et al., 2014; Yin et al., 2017). However, such an exclusive focus on cognitive mechanisms may limit our understanding of emoticons. The personal ties between senders and recipients on SNS make it possible for emoticons to elicit affective reactions in recipients. If this were the case, it would establish an affective mechanism for emoticons. In this research, we account for the persuasive effect of emoticons based on the emotion as social information (EASI) model, which identifies both cognitive and affective mechanisms underlying the interpersonal effect of emotions (Kleef, 2009). The EASI model is particularly suitable as the theoretical foundation of our research because it addresses how people use others' emotions to make sense of fuzzy situations where the goals, desires, and intentions of others are imperfectly understood (Kleef et al., 2010). This is exactly the case for eWOM communication, in which consumers seek product information from others whose motivation to spread eWOM about the discussed product is unknown.

Third, when will the effect of emoticons on eWOM persuasiveness be strengthened and when will it be weakened? Previous research on emotional expressions in online customer reviews has identified several moderators pertaining to the characteristics of senders (e.g., gender and expertise) (Craciun & Moore, 2019; Craciun et al., 2020; Folse et al., 2016) and messages (e.g., valence, length, and linguistic complexity) (Kim & Gupta, 2012; Li et al., 2020; Folse et al., 2016). By contrast, the characteristics of sender-recipient relationships have been underexplored, probably due to the general lack of interpersonal relationships in that context. SNS provides a suitable setting to close this gap because sender-recipient relationships vary vastly on SNS, ranging from family members and friends to business collaborators and acquaintances. Emoticons may exert different effects depending on the nature of these relationships. Our investigation of this moderating effect sheds new light on the contextual variation in the persuasive effect of emotional expressions.

[2] In these reports the word "emoji" was used to represent a specific set of pictorial emoticons. Emojis were initially created in Japan and later added to mainstream mobile operating systems (including Apple iOS and Google Android) after being incorporated into Unicode. In this study, we treat the emoji as one type of emoticon.

In sum, we examine whether, how, and when emoticons influence eWOM persuasiveness in the context of SNS. Our work adds to the growing body of research on emotional expressions in eWOM communication (Craciun & Moore, 2019; Craciun et al., 2020; Folse et al., 2016; Kim & Gupta, 2012; Yin et al., 2014; Yin et al., 2017), and, more broadly, the role of emotions in computer-mediated communications (CMC) (Derks et al., 2008). Our work also provides practical implications for social commerce players, including companies, SNS, and consumers.

The Emotion as Social Information (EASI) Model

The EASI model (Figure 1) posits that emotional expressions influence observers' behavior by triggering both affective reactions and inferential processes (Kleef, 2009).

Emotional expressions can elicit affective reactions in observers via emotional contagion, a process in which people spontaneously mimic and synchronize facial expressions, vocalizations, postures, and body movements with those of another person; consequently, the two converge emotionally (Kleef, 2009). Emotional contagion is derived from an innate human tendency to mimic others' expressions and postural changes during interpersonal interactions; this tendency drives people to engage in mimicry behavior in an automatic, continuous, and synchronous manner (Doherty, 1998). Once people have mimicked someone, they will experience the emotion itself by inferring how they are feeling from their muscular, visceral, and glandular responses (Hatfield et al., 1994). The resulting emotional state then influences their judgments and decisions (Kleef, 2009). A possible influence process here is the "how-do-I-feel-about-it?" heuristic; that is, due to the unconsciousness of emotional contagion, people (mis)attribute the resulting emotional state to the situation at hand and then use their feelings to make judgments and decisions about the focal situation (Schwarz & Clore, 1983).

Emotional expressions can also exert an interpersonal influence through inferential processes, in which observers infer others' feelings, attitudes, relational orientation, and behavioral intentions from their expressed emotions (Keltner & Haidt, 1999). Inferential processes are driven by the need to refer to others to make sense of emotional situations (Campos & Stenberg, 1981) or to form or maintain social relationships with others, either cooperative or competitive (Parkinson, 1996). Since emotions arise from an individual's conscious or unconscious evaluation of a situation, they carry information about how that person regards the situation (Fischer & Manstead, 2008). Observers can distill information from the expressed emotions and use this information to form their own evaluations and decisions regarding the focal situation. Inferential processes are functional because the information that observers distill from others' emotional expressions adds to their understanding of the situation and eventually helps them develop an adaptive course of action (Kleef et al., 2010).

The EASI model provides a theoretical lens to understand the role of emotional expressions on persuasion in social settings. For eWOM communication, researchers find that expressions of negative emotions in a review can induce inferences about the reviewer's irrationality or lack of self-control because emotional expressions in negative reviews are often viewed as inappropriate and socially undesirable (Kim & Gutpa, 2012). Inferred irrationality lowers the perceived credibility of the reviewer and the perceived informativeness of the review, leading to a decrease in review helpfulness (Craciun et al., 2020; Folse et al., 2016; Kim & Gupta, 2012).

Emotional expressions can also shape inferences about a reviewer's certainty and confidence regarding the evaluation shown in the review. Compared with emotions involving uncertainty (e.g., anxiety and hope), emotions involving certainty (e.g., disgust and happiness) are more likely to be viewed as a signal of the reviewer's certainty and thus increase the perceived helpfulness of the review (Ahmad & Laroche, 2015).

Another research stream highlights the role of inferences about the reviewer's effort in writing reviews. For example, expressions of anxiety in a review enhance the perceived cognitive effort of the reviewer, making the review more helpful than expressions of anger (Yin et al., 2014). In addition, emotional arousal positively affects inferences of reviewer effort when it is at a low level, and this effect reverses when it is at a high level (Yin et al., 2017). As a result, emotional arousal exerts a nonlinear effect on review helpfulness, which is positive at a lower level of arousal but negative at a higher level of arousal (Yin et al., 2017).

In sum, the mechanisms revealed in the extant research on online customer reviews map into the inferential processes of the EASI model. By contrast, the affective mechanism in the EASI model has received little attention. An exception is Yin et al.'s (2021) work, which considers the observed positive effect of expressions of anger on eWOM persuasiveness to result from an affective influence process. However, empirical tests on the affective reactions of recipients are still lacking.

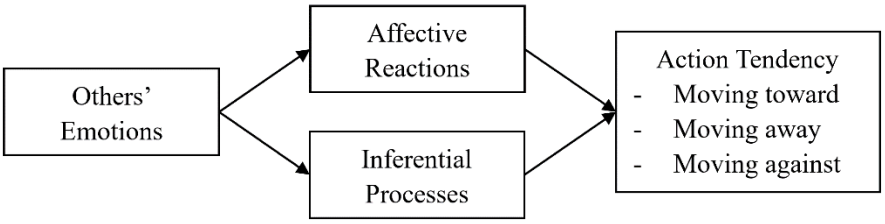


Figure 1. The Emotions as Social Information (EASI) Model

Hypothesis Development

In this section, we develop our hypotheses drawing on the EASI model. Specifically, H1 answers the first research question regarding whether emoticons influence eWOM persuasiveness or not. H2 and H3 tackle the second research question about the underlying mechanisms. H4 and H5 address the third research question regarding the moderators for the persuasive effect of emoticons.

The Affective Mechanism

The empathy literature has distinguished between two types of empathy: trait versus state empathy (Escalas & Stern, 2003). Trait empathy, defined as the ability to experience and understand another person's affective or psychological state, captures individual differences in the dispositional tendency to feel empathy for others (Davis, 1983). By contrast, state empathy is defined as "an emotional response that stems from another's emotional state or condition and that is congruent with the other's emotional state or situation" (Eisenberg & Strayer, 1987, p. 5). As a psychological status after emotional contagion (Stiff et al., 1988), state empathy can be triggered by persuasive messages and then facilitate the persuasion process (Campbell & Babrow, 2004; Shen, 2010). In this research, we focus on state empathy, referred to hereafter simply as *empathy*, and propose that it can serve as a mediator underlying the persuasive effect of emoticons.

According to the EASI model, emoticons embedded in an eWOM message can evoke empathetic responses from recipients through emotional contagion: recipients mimic the facial expressions in emoticons and then generate similar emotions themselves (Kleef et al., 2010). Examples of such a process are as follows: a smiling face (🙂) evokes increased zygomatic major muscle activity in recipients, which elevates their lips to form a smile. An angry face (😡) evokes increased corrugator supercilium muscle activity in recipients, which knits their eyebrows to form a frown (Gantiva et al., 2021). Zygomatic major muscle activity and corrugator supercilium muscle activity lead to the self-perception of happiness and anger, respectively, which then translates into recipients' actual feelings of happiness or anger (Cacioppo et al., 1986; Gantiva et al., 2021; Hess & Blairy, 2001).

It is worth noting that emotional contagion is traditionally viewed as a consequence of individuals' facial expressions in F2F communication, which are usually automatic and beyond their control (Ekman, 1993). In contrast, emoticons are chosen deliberately. This difference, however, may have little influence on the proposed effect because facial mimicry occurs unconsciously (Dimberg et al., 2000). Even though recipients are aware that the emoticons are used deliberately, mimicry would still occur because it is beyond their control. This argument has received support from recent research in biological psychology, which shows that emoticons and facial expressions are both processed cortically in a similar manner (Gantiva et al., 2020; Liao et al., 2021).

Recipients' empathic responses then increase the perceived persuasiveness of the eWOM message through a misattribution process (Kleef et al., 2010). Due to the unconsciousness of facial mimicry (Dimberg et al., 2000), recipients have no idea that their emotional experiences are derived from an emotional contagion process. Instead, they may attribute those emotions to the eWOM message and use them as relevant information in evaluating the message (Schwarz & Clore, 1983). How do recipients evaluate a message if it induces emotional reactions convergent with those of the sender? Previous research suggests that interpersonal similarity, including similarity in emotional experience, increases liking (Byrne, 1997). Liking can directly facilitate persuasion because liking another person enhances the tendency to like what the other person likes and dislike what that person dislikes (Heider, 1958). Liking also has an indirect, positive effect on persuasion because people perceive less threat in actions of liked (vs. disliked) others, leading to a decrease in resistance (Silvia, 2005). As such, we expect that recipients will perceive an eWOM message as more persuasive if it induces recipients to generate greater empathy with the sender.

The Cognitive Mechanism

We define trust in a sender as beliefs and judgments about the sender's trustworthiness; that is, whether the sender is reliable and telling the truth about an experience with the purchased products or services (Lewicki et al., 2006; McKnight et al., 2002). We view trust as a key mediator here because trust is required when one person relies on another to fulfill certain desired outcomes but knows little about the other's motives and abilities (Rousseau et al., 1998), as is the case with recipients in the persuasion process of eWOM communication.

We conjecture that emoticons in an eWOM message influence recipient inferences about the sender's trustworthiness. In social interactions, people coordinate their actions (e.g., to cooperate or not) based on their ongoing and reciprocal assessment of others' motivational-emotional states (Buck, 1984). Emotionally expressive people are often perceived as being more honest and trustworthy than those low in emotional expressiveness because the former are easier to "read" in terms of their motivational-emotional states (Boone & Buck, 2003). For this reason, people using more nonverbal emotional cues such as facial expressions and body language in F2F communication are regarded as more trustworthy and attractive (Friedman et al., 1988; Sabatelli & Rubin, 1986). In CMC, emoticons are a typical nonverbal cue of emotional expressions; recipients will thus perceive an eWOM sender to be more emotionally expressive and hence more trustworthy when emoticons are used in the message than when they are not.

One might argue that the intentional use of emoticons in eWOM may decrease the perceived diagnosticity of emoticons as a signal of emotional expressiveness. We believe that this is less likely to take place than might be expected. Research shows that humans have evolved to respond to others with feelings of cooperativeness unless there is evidence suggesting they should not (Vrij, 2000). This tendency applies to both F2F communication and CMC, driving people to develop social relationships in various communication contexts (Walther, 1992). Applied to the context of eWOM communication, this line of research suggests that recipients tend to view emoticons as a tool to reduce ambiguity and enhance emotional intensity rather than a tool to conceal senders' true emotional states. Therefore, emoticons can serve as a signal of emotional expressiveness even though they are used intentionally.

The effect of trust on eWOM persuasiveness is relatively straightforward. A high level of trust indicates the perceived honesty and integrity of the eWOM sender, and recipients will perceive a message as being more persuasive when it comes from a more trustworthy person (McGinnies & Ward, 1980). This prediction is in line with the persuasion literature showing that trustworthiness is an essential component of an information source's perceived credibility and that a credible source is more effective in inducing attitudinal change and behavioral compliance than a less credible source (Yoon et al., 1998). Based on the discussion above, we propose the following hypotheses:

H1: *An eWOM message with emoticons is perceived to be more persuasive than the same message without emoticons.*

H2: *Recipients' empathy with the message sender mediates the positive effect of emoticons on eWOM persuasiveness.*

H3: *Recipients' trust in the message sender mediates the positive effect of emoticons on eWOM persuasiveness.*

Moderating Effect of Message Valence

In line with the negativity bias literature (Ito et al., 1998; Rozin & Royzman, 2001; Vaish et al., 2008), we conjecture that emoticons will exert a stronger effect on eWOM persuasiveness when used in negative messages to express negative emotions than when they are used in positive messages to express positive emotions.[3] Our conjecture is based on the following two reasons.

First, emoticons expressing negative emotions receive more attention than those expressing positive emotions. Negative events often involve threats and danger, making people naturally more sensitive to them for the sake of self-protection (Thompson, 1987). In addition, negative emotional expressions are less common than positive ones (Novak et al., 2015), probably because negative emotions often indicate failures or weaknesses and are thereby socially undesirable (Derks et al., 2007). Fewer negatively valenced emotions mean that they are easier to identify than positively valenced emotions (Eastwood et al., 2001). Attention to emoticons is a prerequisite for the occurrence of emotional contagion and the inferential process. The greater attention that is paid to emoticons expressing negative emotions makes these emoticons more likely to affect empathy and trust than emoticons expressing positive emotions.

[3] Previous research on emotional expressions has focused on scenarios in which the valence of emotional expressions is congruent with the valence of the message (for an exception, Walther & D'Addario, 2001). In line with the literature, we examine emoticons used in messages of the same valence.

Second, emoticons expressing negative emotions produce more empathetic responses and trust inferences than those expressing positive emotions. On the one hand, negative emotions are naturally more contagious because the social cues they contain are more relevant to protection from threats, making empathy with negative rather than positive emotions more "beneficial" (Thompson, 1987). Thus, negatively rather than positively valenced emoticons may activate more empathetic responses. On the other hand, recipients tend to make different attributions for the use of the two types of emoticons in eWOM communication. Since they are socially undesirable, expressing negative emotions is more likely to induce attributions to the sender's innate feelings and emotions. By contrast, expressing positive emotions is more socially desirable and thus can be subject to more alternative explanations such as following social norms and managing impressions on others (Kanouse & Hanson, 1972; Mizerski, 1982). The stronger internal attributions for negatively (vs. positively) valenced emoticons will increase their perceived diagnosticity as a signal of the sender's emotional expressiveness and, in turn, will increase the recipient's trust in the sender. The discussion above leads to the following hypothesis:

H4: *The persuasive effect of emoticons is moderated by message valence. Specifically, emoticons used in a negative eWOM message have a stronger effect on recipients' empathy, trust, and, consequently, perceptions of eWOM persuasiveness than emoticons used in a positive eWOM message.*

Moderating Effect of Relationship Closeness

We further propose that the moderating effect of message valence may vary depending on whether the relationship between the eWOM sender and recipient is close versus distant. As discussed above, emoticons used in negative (versus positive) messages are more influential because they are (1) more attention-grabbing and (2) more powerful in producing empathetic responses and trust inferences. This is less true when a sender and recipient enjoy a more intimate relationship.

When interacting with closer others, people care more about each other's well-being (Aron et al., 2004; Clark et al., 1986). They are sensitive to close others' emotional expressions regardless of their valence. In addition, people have lower motivation for impression management and stronger motivation for protecting others (Berger, 2014; Chen, 2017; Dubois et al., 2016). These changes lead to more frequent communication of negative eWOM between close partners (Chen, 2017; Dubois et al., 2016). As a result, the attention-grabbing benefit of emoticons expressing negative emotions is mitigated when used with close others.

Moreover, whereas empathizing with others' positive emotions may have few benefits for distant partners, it is more beneficial for close partners because sharing positive emotions can facilitate the development and maintenance of relationships in the same way as sharing negative emotions (Rozin & Royzman, 2001). Since people are equally prone to empathize with close others for positive and negative emotions, the effect of positively valenced emoticons on recipient empathy will increase when recipients and senders are closer to each other. Regarding the effect on trust, without the constraints of impression management, eWOM senders are less influenced by social norms when communicating with close others. As a result, recipients become more confident in ruling out external causes for the use of emoticons expressing positive emotions. Differences in attribution between positively and negatively valenced emoticons diminish, as do differences in their perceived diagnosticity as a signal of a sender's emotional expressiveness and their effect on recipient trust in the sender.

Based on the above discussion, we conjecture that the negativity bias in the persuasive effect of emoticons will be less salient when eWOM is communicated among closer partners.

H5: *Relationship closeness between eWOM senders and recipients moderates the interactive effect of emoticons and message valence on eWOM persuasiveness. Specifically,*

H5a: *When eWOM is communicated among distant relationship partners, the effect of emoticons on eWOM persuasiveness is moderated by message valence so that this effect is less salient for emoticons used in positive messages than for those used in negative messages.*

H5b: *When eWOM is communicated among close relationship partners, the moderating effect of message valence is mitigated so that emoticons enhance eWOM persuasiveness for both positive and negative messages.*

Figure 2 summarizes the conceptual framework and hypotheses of this research. We conducted four studies to test the hypotheses. Study 1 addressed the first research question regarding whether emoticons affect eWOM persuasiveness on SNS. We examined the persuasive effect of emoticons for positive and negative eWOM, which allowed for the testing of both H1 and H4. Study 2 and a follow-up study addressed the second research question regarding the underlying mechanisms of the persuasive effect of emoticons, which allowed for the testing of H1-H4. In Study 3, we addressed the last research question by examining the interactive effect of emoticons, message valence, and relationship closeness, which tested H5.

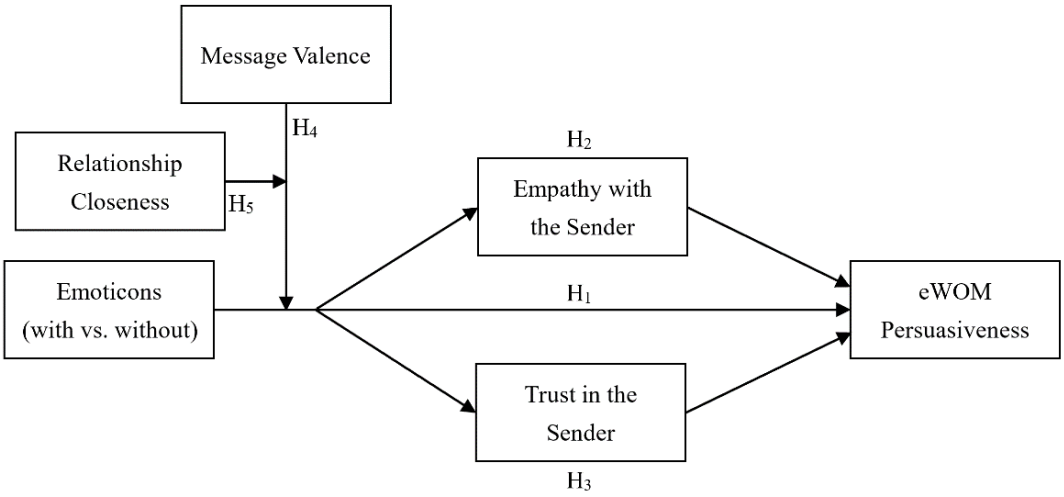


Figure 2. Conceptual Framework and Research Hypotheses

Study 1

In Study 1, we conducted a field experiment to test the main effect of emoticons on eWOM persuasiveness (H1) and the moderating effect of message valence (H4) under real-world conditions.[4] Study 1 was conducted on WeChat, one of the largest stand-alone mobile-based social networking applications globally, with over one billion monthly active users (Statista, 2019). Similar to the Facebook news feed, WeChat Moments allows users to post updates (including articles, links, pictures with captions, and short videos), and their WeChat friends can "like" and "comment" on those updates.

WeChat offers a suitable context to test our hypotheses for several reasons. First, WeChat users actively use Moments. It is reported that WeChat users share over 3 billion items per day on Moments, including their experiences with products and services, and over 75% of WeChat users regularly check their Moments feeds (Jayanth, 2019). Second, WeChat provides hundreds of free emoticons to help users express emotions and runs a store where users can buy thousands of emoticons designed by emoticon enthusiasts. Third, due to WeChat's bidirectional mechanism to confirm friend requests, WeChat friends usually know each other, with their relationships ranging from acquaintances to friends and family members.

Experimental Design and Participants

Study 1 adopted a 2 (emoticons: with vs. without) × 2 (message valence: positive vs. negative) full-factorial between-subjects design. We recruited participants in two steps. First, we conducted a survey to recruit participant candidates on ZBJ.com, an online crowdsourcing platform in China similar to Amazon's Mechanical Turk in the United States. The survey started with a filter question asking if the respondents were WeChat users. We then asked those who were to report their usage behavior on WeChat for screening and invited them to an experiment in which they would be asked to post a prespecified update on WeChat Moments and then report to us all replies to this update. Respondents received six RMB Yuan (about one U.S. dollar) for completing the survey and were told that they would receive another twenty RMB Yuan (about three U.S. dollars) if they participated in the upcoming experiment and completed it as required.

A total of 1,557 respondents (51.74% females, M_{age} = 31.46) completed the survey. Those who updated their WeChat Moments at least once per week (68.3%), used emoticons frequently in their updates (82.8% were higher than 4 on a 7-point scale: 1 = *never* and 7 = *very frequently*), had previously posted updates about their experiences with purchased products or services (78.3%), and were willing to participate in our experiment (98.9%) were regarded as qualified for our field

[4] All experiments received IRB approval (reference #2017-06-2) at the university where they were conducted.

experiment, leading to a subject pool of 681 candidates. Next, our research assistant approached the 681 candidates on WeChat and sent them experimental instructions. After four rounds of approaching and reminding, 167 respondents (50.9% females, M_{age} = 30.78) agreed to participate in the experiment, yielding a response rate of 24.5%.[5] We assigned the participants randomly to one of the four experimental conditions.

Experimental Stimuli and Pretests

For each experimental condition, we created an update describing the sender's experience with a restaurant. To manipulate message valence, we varied the evaluations of the food and the service of the restaurant. Specifically, in the positive update conditions, the update reads, "Just back from (restaurant name). Amazing place! The food was super delicious, and the service was nice. Highly recommend!" In the negative update conditions, the update reads, "Just back from (restaurant name). Awful place! The food was so-so, and the service was terrible. Will never go again!" In a pretest (n = 72), we measured perceptions of sender satisfaction with the restaurant (1 = *negative evaluation / very dissatisfied / dislike very much*, 7 = *positive evaluation / very satisfied / like very much*, Cronbach's α = 0.967) and found a significant effect of message valence ($M_{negative}$ = 1.99, $M_{positive}$ = 6.03, p < 0.001). No differences were found between the two messages in perceived comprehensiveness or credibility (both ps > 0.10, 1 = *not at all*, 7 = *very much*).

We manipulated emoticons by embedding them in the update or not, with 😍, 😁, and 🤌 in the positive update whereas 😡, 😣, and 🤭 in the negative update. We selected these emoticons based on a review of hundreds of emoticon-embedded eWOM on various SNS. In a pretest (n = 60), we asked participants to evaluate each emoticon on (1) how frequently they had seen it in eWOM messages on SNS (1 = *never*, 7 = *always*), and (2) to what extent this emoticon expressed satisfaction, happiness, anger, and disappointment (1 = *not at all*, 7 = *very much*). We calculated an index of positive emotions by averaging the evaluations of satisfaction and happiness and calculated an index of negative emotions by averaging the evaluations of anger and disappointment. Next, we averaged the evaluations for the three positive and three negative emoticons separately. Descriptive analyses indicated that all emoticons were frequently used to express emotions toward a consumption experience (Ms > 4.56). A 2 (emoticon type) × 2 (expressed emotions) repeated-measure ANOVA showed that, as expected, the positive emoticons expressed more intense positive emotions and less intense negative emotions than the negative emoticons (for positive emoticons, $M_{\text{positive emoticon}}$ = 5.79, $SD_{\text{positive emoticon}}$ = 0.74; $M_{\text{negative emoticon}}$ = 2.05, $SD_{\text{negative emoticon}}$ = 0.89, F (1, 58) = 473. 26, p < 0.001; for negative emoticons, $M_{\text{positive emoticon}}$ = 1.74, $SD_{\text{positive emoticon}}$ = 0.83; $M_{\text{negative emoticon}}$ = 5.27, $SD_{\text{negative emoticon}}$ = 0.76, F (1, 58) = 419. 07, p < 0.001).

In the main experiment, we duplicated each emoticon three times in the "with-emoticon" condition. As emoticons are typically placed at the end of a sentence (Provine et al., 2007; Wang et al., 2014), we inserted the three sets of emoticons separately at the end of three sentences in each update (see Appendix A).

After creating the updates, we left the restaurant names blank and sent them to the participants. To ensure the perceived authenticity of the updates, we asked the participants to fill in a restaurant name based on their evaluations of the local restaurants they had experienced previously. That is, the participants assigned to the positive (negative) condition needed to think of a restaurant they were satisfied (dissatisfied) with and put its name in the message.

Procedure

The experiment lasted for three days. On the first day, participants filled in the restaurant name and posted the update on WeChat at night. Two days (48 hours) later, they took screenshots of all the replies to the update and sent the screenshots to our research assistant. During the experiment, participants were required not to respond to any replies to this update, nor could they tell their friends anything about the experiment. After the experiment, we sent all participants an email explaining the research purposes and our major findings. We also asked them to explain to their WeChat friends that the update they had posted was part of an experiment studying people's reactions to emoticons.

We measured eWOM persuasiveness in three steps. In the first step, we recruited two research assistants who did not know the purpose of this experiment to read all screenshots carefully and count the number of recipients who had replied to each participant's update. Most recipients only replied once, except for nine recipients who replied twice. We used the first reply that these nine recipients left as inputs for the next step.

The second step was reply categorization. The research assistants coded the content of all replies and classified these replies into one of three categories: (1) replies irrelevant to the update, (2) replies indicating that the recipient was persuaded by the update, and (3) replies indicating that the recipient was

[5]Among the respondents who did not take part in the experiment, some provided incorrect WeChat IDs, some did not respond to our research assistant's messages, and others declined to participate in the experiment after receiving the experiment materials.

not persuaded. To increase the validity of the categorization results, we first conducted three trials to ensure that the two coders shared a common and correct understanding of the coding scheme. In each trial, the coders categorized three randomly selected replies and resolved the discrepancies through discussion. We measured the intercoder agreement using Cohen's kappa coefficient to assess the reliability of the results (Cohen, 1960). This index steadily increased after each trial, with the highest score being 0.90 in the last trial. After the trials, the two coders completed the analyses on the remaining replies independently and without further discussion. The average kappa coefficient for all replies was 0.87, indicating a high degree of agreement between the two coders. We listed the examples of the replies in each category in Appendix B.

Next, for each participant, we divided the number of WeChat friends who left "persuading" replies by the total number of WeChat friends the participant had to measure eWOM persuasiveness. This measure enabled us to control for the vast differences in the number of WeChat friends across participants.

Results and Discussion

We performed a 2 (emoticons) × 2 (message valence) ANOVA on eWOM persuasiveness to test H1 and H4. Table 1 summarizes the descriptive statistics of our results.

The results revealed a nonsignificant main effect for emoticons (F (1, 163) = 0.62, p = 0.433) and message valence (F (1, 163) = 0.82, p = 0.366). Thus, H1 was not supported. However, we found a significant interactive effect (F (1, 163) = 4.67, p = 0.032). The negative update received a larger percentage of "persuading" replies when it contained emoticons than when it did not ($M_{\text{with-emoticon}}$ = 3.70%, $M_{\text{without-emoticon}}$ = 1.90%, F (1, 163) = 4.08, p = 0.045), and this effect had a large effect size (Cohen's d = 0.624 (Cohen 1988)). The positive update received a similar percentage of "persuading" replies regardless of whether it included emoticons or not ($M_{\text{with-emoticon}}$ = 1.8%, $M_{\text{without-emoticon}}$ = 2.7%, F (1, 163) = 1.01, p = 0.316). This result demonstrated a moderating effect of message valence on the persuasive effect of emoticons, lending support to H4.

Study 1 provides initial evidence for the persuasive power of emoticons under real-world conditions. We found that the effect of emoticons on eWOM persuasiveness was more salient when emoticons were used in negative rather than positive messages, a negativity bias that has previously been widely observed in responses to eWOM communication (Galletta et al., 1995; Kim & Gupta, 2012; Qiu et al., 2012; Sen & Lerman, 2007).

Study 2

Study 2 had two purposes. First, we replicated the persuasive effect of emoticons (H1) and the moderating effect of message valence (H4) in a better-controlled setting. Second, we examined the mediating processes of empathy and trust to account for the focal effect (H2 and H3).

Experiment Design, Participants, and Stimuli

Study 2 was conducted online. A total of 355 registered users (126 females, M_{age} = 25.73) from Credamo, a Chinese company similar to Qualtrics in the United States, participated in the experiment. They were randomly assigned to one of the four conditions in a 2 (emoticons: with vs. without) × 2 (message valence: positive vs. negative) between-subjects design.

For each experimental condition, we created a graphic image that looked like a screenshot captured from WeChat Moment. The image showed a status update describing the sender's experience with a newly purchased electric toothbrush. We blurred the sender's profile information and the brand name of the electric toothbrush to reduce the confounding effects they might have on the results (see Appendix A).

We manipulated message valence by varying the content of the update. To ensure the relevance of the content, we collected a large number of real-world online customer reviews on electronic toothbrushes and identified the four most frequently mentioned attributes (i.e., appearance, noise, vibration, and cleaning effectiveness). We then created a positive update and a negative update commenting on these attributes. A pretest (n = 146) revealed that participants reading the positive update perceived the sender to be more satisfied with the electric toothbrush than those reading the negative update (Cronbach's α = 0.955; M_{positive} = 5.68, M_{negative} = 2.56, F (1, 144) = 178.30, p < 0.001). In addition, the two updates were equally comprehensible and credible (both ps > 0.10).

We manipulated emoticons as being either included or not in the update. To reduce the likelihood that any idiosyncratic characteristics of the previously used emoticons could be responsible for the results, we used a different set of emoticons. Specifically, we placed  and  in the GIF format below the positive and negative messages, respectively (see Appendix A). In the same pretest that was reported in Study 1, participants evaluated the usage frequency and emotional valence of these two emoticons. The results confirmed that both were frequently used in eWOM (for the smiling emoticon, $M_{\text{frequence}}$ = 5.87, SD = 1.16; for the frowning emoticon, $M_{\text{frequence}}$ = 4.87, SD = 1.62).

Table 1. Descriptive Statistics of Study 1

Message valence	Emoticons	*N*	Recipients leaving "irrelevant" replies		Recipients leaving "unpersuading" replies		Recipients leaving "persuading" replies	
			M (%)	SD	M (%)	SD	M (%)	SD
Negative	Without	39	.03%	.001	.06%	.010	1.90%	.022
	With	39	.39%	.011	1.40%	.025	3.70%	.035
Positive	Without	47	.19%	.004	1.40%	.021	2.70%	.066
	With	42	.21%	.005	.08%	.011	1.80%	.021

Table 2. Descriptive Statistics of Study 2

Message valence	Emoticons	*N*	Empathy		Trust		Persuasiveness	
			Mean	*SD*	Mean	*SD*	Mean	*SD*
Negative	With	89	4.80	1.41	5.28	.98	5.13	1.43
	Without	78	4.27	1.43	4.78	1.31	4.44	1.59
Positive	With	87	4.29	1.48	4.44	1.41	4.09	1.70
	Without	92	4.68	1.48	4.67	1.41	4.13	1.78

In addition, the smiling emoticon expressed more intensive positive emotions (M_{smiling} = 5.88, SD = 0.99; M_{frowning} = 1.98, SD = 1.02; F (1,58) = 335.74, $p < 0.001$) but less intensive negative emotions than the frowning one (M_{smiling} = 1.75, SD = 1.03; M_{frowning} = 5.39, SD = 0.94; F (1,58) = 401.78, $p < 0.001$).

Procedure and Measures

After reading the experiment instructions, participants were asked to imagine that they wanted to buy an electric toothbrush and happened to read a status update on WeChat Moment in which one of their WeChat friends was sharing their experience with a newly purchased electric toothbrush. Next, participants were shown such an update in a screenshot that was purportedly captured from a friend's WeChat account. After reading the update, they were asked to rate their empathy with and trust in the sender, followed by the perceived persuasiveness of the update. The measures were separated by questions that were relevant but of little interest to this research (e.g., measures of the update's readability) in order to reduce common method bias. Next, as manipulation checks, we asked the participants to recall and report whether the update they read contained any emoticons and to what extent they believed that the update was posted by one of their WeChat friends (1 = *not at all*, 7 = *very much*).

We adapted the measurement scale of empathy from Escalas and Stern (2003), that of trust from Darke and Ritchie (2007), and that of perceived persuasiveness from Gershoff et al. (2003) and Smith et al. (2005). Appendix C lists the measurement items in detail. All measures had acceptable reliabilities (Cronbach's αs > 0.70) as well as convergent and discrimination validities (see Appendix D).

Results

Results of manipulation checks indicated that nine participants recalled incorrectly whether the update contained emoticons. They were removed from further analyses, leaving 346 participants in the final sample (169 females, M_{age} = 32.2). In general, participants strongly believed that the update was posted by one of their WeChat friends (M = 5.71, SD = 0.95).

Table 2 summarizes the descriptive statistics of the dependent variables in each condition. To test the persuasive effect of emoticons, we submitted eWOM persuasiveness to a 2 (emoticons) × 2 (message valence) ANOVA. The results revealed a marginally significant effect of emoticons, such that including emoticons increased perceived persuasiveness of the update ($M_{\text{with-emoticon}}$ = 4.62, $M_{\text{without-emoticon}}$ = 4.27, F (1, 342) = 3.59, p = 0.059). This result provides directional support for H1. The main effect of message valence was also significant: the update was perceived as more persuasive when it was negative (M_{negative} = 4.81, M_{positive} = 4.12, F (1, 342) = 14.82, $p < 0.001$). More important and central to our hypotheses, we found an interactive effect (F (1, 342) = 4.33, p =.038). In support of H4, emoticons enhanced eWOM persuasiveness when used in the negative message ($M_{\text{with-emoticons}}$ = 5.13, $M_{\text{without-emoticons}}$ = 4.44, F (1, 342) = 7.62, p = 0.006), but not when used in the positive one ($M_{\text{with-emoticons}}$ = 4.09, $M_{\text{without-emoticons}}$ = 4.13, F (1, 342) = 0.18, p = 0.892).

Next, we tested the mediating effect of empathy and trust. A series of 2 (emoticons) × 2 (message valence) ANOVAs on the two mediators revealed similar patterns for the interactive effect (for empathy, F (1, 342) = 8.67, p = 0.003; for trust, F (1, 342) = 7.03, p =.008). After reading the negative update, participants became more empathetic to the sender ($M_{\text{with-}}$

$_{emoticon}$ = 4.80, $M_{without\text{-}emoticon}$ = 4.27; F (1, 342) = 5.49, p = 0.020) and trusted that person more ($M_{with\text{-}emoticon}$ = 5.28, $M_{without\text{-}emoticon}$ = 4.78; F (1, 342) = 6.43, p = 0.012) when the update contained emoticons than when it did not. These effects, however, were not significant for the positive update (for empathy, $M_{with\text{-}emoticon}$ = 4.29, $M_{without\text{-}emoticon}$ = 4.68; F (1, 342) = 3.28, p = 0.071; for trust, $M_{with\text{-}emoticon}$ = 4.44, $M_{without\text{-}emoticon}$ = 4.67; F (1, 342) = 1.42, p = 0.234).

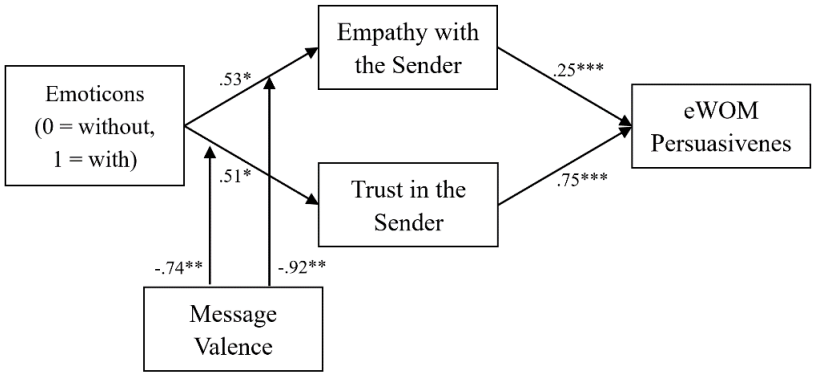
We then examined the mediating effects of empathy (H2) and trust (H3) using the bootstrapping approach suggested by Hayes (2013). Since emoticons enhanced eWOM persuasiveness for the negative update only, we tested a moderated mediation model, with emoticons as the independent variables (0 = without emoticons, 1= with emoticons), empathy and trust as the mediators, message valence as the moderator (0 = negative message, 1= positive message), and eWOM persuasiveness as the dependent variable. As shown in Figure 3, emoticons increased recipient empathy (β = 0.53, t = 2.34, p = 0.020) and trust (β = 0.51, t = 2.54, p = 0.012) toward the sender, and both effects were moderated by message valence (for empathy, β = -0.92, t = -2.94, p = 0.004; for trust, β = -0.74, t = -2.65, p = 0.008). After controlling for the direct effect of emoticons (β = 0.19, t = 1.11, p = 0.269) and the interactive effect of emoticons and message valance (β = 0.04, t = 0.18, p = 0.859), both empathy (β = 0.25, t = 4.82, p < 0.001) and trust (β = 0.75, t = 13.00, p < 0.001) had a positive effect on eWOM persuasiveness. Moreover, the mediating effects of empathy and trust were positive and had a 95% confidence interval without zero for the negative update (for empathy, β = 0.13, 95% CI = 0.03 ~ 0.28; for trust, β = 0.38, 95% CI = 0.13 ~ 0.67) but not for the positive one (for empathy, β = -0.10, 95% CI = -0.25 ~ 0.01; for trust, β = -0.17, 95% CI = -0.48 ~ 0.14). These results lend support for H2 and H3, showing that empathy and trust fully mediated the effect of emoticons on eWOM persuasiveness.

A Follow-up Study on the Effect of Emoticons on Emotional Contagion

While the main experiment provided supporting evidence for the affective mechanism underlying the persuasive effect of emoticons, one might argue that this result was subject to a demand effect. That is, participants might have believed that the intentional use of emoticons in the update was supposed to induce empathetic responses toward the sender and they then responded to the measure of empathy accordingly. To address this concern, we conducted a follow-up study to retest the effect of emoticons on emotional contagion by measuring participants' emotional experiences resulting from an emotional contagion process (Gantiva et al., 2021), a measure better concealing our research purposes than the measure of empathy. In the experiment, we examined the convergence between recipients' emotional experiences and the emotions expressed by the sender, with a higher level of convergence indicating greater success in terms of emotional contagion. If emoticons indeed facilitate emotional contagion, the emotional experiences of recipients and senders would be more convergent when the update includes emoticons than when it does not.

The experiment adopted a 2 (emoticons: with vs. without) × 2 (message valence: positive vs. negative) full-factorial between-subjects design. We used the same stimuli as those in the main experiment. The experiment proceeded in two stages. In the first stage, we recruited 200 participants (the first group) from Credamo, the same platform as that used in the main experiment and randomly assigned participants to one of the four conditions. The participants were asked to read the update carefully and then evaluate to what extent the sender expressed satisfaction, joy, and happiness in the update using seven-point bipolar semantic scales (1 = *very dissatisfied / unpleasant / unhappy*, 7 = *very satisfied / pleasant / happy*). In the second stage, we recruited a new sample of 299 participants (the second group) on the same platform and randomly assigned them to one of the four conditions. After reading the update, the participants reported their emotional experiences on the same scales used for the first group of participants. In sum, the key difference between the two stages was whether the participants evaluated the update sender's emotions (i.e., the first stage) or their own emotions (i.e., the second stage).

For each participant in the second group, we calculated an index of emotional contagion by computing the absolute value of the differences between the participant's emotional state and the sender's emotional state, which was the average of the evaluations provided by the first group of participants. A lower index indicated more convergence between the sender's and the recipients' emotional experiences, suggesting a more successful process of emotional contagion. A 2 (emoticons) × 2 (message valence) ANOVA on this index revealed a main effect of emoticons and message valence, such that recipients experienced more convergent emotions with the sender when the sender used emoticons in the update ($M_{with\text{-}emoticons}$ = 0.83, $M_{without\text{-}emoticons}$ = 1.15, F (1, 295) = 3.94, p = 0.048) and when the sender communicated negative eWOM ($M_{negative}$ = 0.70, $M_{positive}$ = 1.34, F (1, 295) = 24.03, p < 0.001). In addition, we found a significant Emoticons × Message valence interaction (F (1, 295) = 3.96, p = 0.047). Emoticons facilitated emotional contagion when used in the negative message ($M_{with\text{-}emoticons}$ = 0.44, $M_{without\text{-}emoticons}$ = 0.96, F (1, 295) = 8.36, p = 0.004) but not in the positive message ($M_{with\text{-}emoticons}$ = 1.34, $M_{without\text{-}emoticons}$ = 1.34, F (1, 295) < 0.01, p = 0.997). These results are consistent with the emotional contagion literature suggesting that negative emotions are more contagious than positive ones (Rozin & Royzman, 2001).



Note: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

Figure 3. The Moderated Mediation Processes Underlying the Persuasive Effect of Emoticons

Discussion

Using a better-controlled setting and different stimuli (i.e., different products and emoticons), Study 2 replicated the persuasive effect of emoticons for negative eWOM and the nonsignificant persuasive effect for positive eWOM, offering support for H4. More importantly, we found that emoticons enhanced eWOM persuasiveness through the mediating effects of recipient empathy and trust toward the sender. These findings confirm the value of the EASI model in explaining the interpersonal effect of emotions in CMC and highlight the importance of examining the affective mechanism to understand the persuasive effect of emotional expressions in eWOM, at least for emoticons in the context of SNS.

Moreover, our follow-up study provided initial empirical evidence for the effect of emoticons on emotional contagion. The results reveal that emoticons, although used deliberately in eWOM communication, can induce emotional contagion, just as do facial expressions in F2F communication.

Study 3

Study 3 tested H5, which predicts that the interactive effect of emoticons and message valence is less salient when recipients have a closer relationship with the eWOM sender.

Method

Study 3 adopted a 2 (emoticons: with vs. without) × 2 (message valence: positive vs. negative) × 2 (relationship closeness: distant vs. close) full-factorial between-subjects design. A total of 389 registered users (207 females, M_{age} = 26.76) from Credamo participated in the experiment, and they were randomly assigned to one of the eight experimental conditions.

We used a portable charger as the target product for the purpose of generalizability and created a positive and a negative update about a consumption experience with a newly purchased portable charger (see Appendix A). A pretest (n = 101) confirmed that participants reading the positive update perceived the sender to be more satisfied with the portable charger than their counterparts reading the negative message ($M_{positive}$ = 5.24, $M_{negative}$ = 3.05, F (1, 99) = 43.87, $p < 0.001$). No differences were found in comprehensibility and credibility between the two updates (both ps > 0.10). We then selected four emoticons from the six emoticons used in Study 1, two for the positive update (i.e.,  and ) and two for the negative one (i.e.,  and ). In the with-emoticon condition, we duplicated each emoticon three times and inserted them separately at the end of different sentences in each update (see Appendix A).

To manipulate relationship closeness, we asked participants in the distant-relationship condition to imagine that they wanted to purchase a portable charger and that they happened to read a WeChat update posted by a colleague they had just met in the workplace. This WeChat update described the colleague's experience with a newly purchased portable charger. In the close-relationship condition, we informed participants that the update was posted by a friend to whom they were very close.

After reading the update, participants evaluated its perceived persuasiveness using the same scale as that in previous studies, followed by the measure of their closeness to the sender as a manipulation check (Dibble et al., 2011; see Appendix C for the measurement items).

Results

Thirteen participants failed to pass the manipulation check for the use of emoticons and were removed from further analyses, leaving us with 376 participants in the final sample (177 females, M_{age} = 26.99). In general, participants believed that the update they read was posted by either an acquaintance or a close friend (both ratings were higher than 5.5 on a 7-point scale).

To check the manipulation of relationship closeness, we performed a 2 (emoticons) × 2 (message valence) × 2 (relationship closeness) ANOVA on the perceived closeness of the recipient-sender relationship. The results indicated that participants in the close-relationship condition evaluated their relationship with the sender to be closer than those in the distant-relationship condition (M_{close} = 5.82, SD = 0.77; $M_{distant}$ = 3.64, SD = 1.85, F (1, 368) = 218.70, p < 0.001). No other significant effects were found (all ps > 0.10). Our manipulation of relationship closeness was thus successful.

To test our hypotheses, we conducted a 2 (emoticons) × 2 (message valence) × 2 (relationship closeness) ANOVA on eWOM persuasiveness. Table 3 shows the descriptive statistics for each experimental condition.

The results revealed that, in general, recipients perceived the update to be more persuasive when it contained emoticons ($M_{with\text{-}emoticons}$ = 5.10, $M_{without\text{-}emoticons}$ = 4.77, F (1, 368) = 3.41, p = 0.066) and when it was posted by a close friend (M_{close} = 5.25, $M_{distant}$ = 4.62; F (1, 368) = 19.91, p < 0.001). No main effect was found for message valence (F (1, 368) = 0.02, p = 0.896). More importantly, the ANOVA results revealed a significant three-way interaction (F (1, 368) = 4.20, p = 0.041, see Table 4). The interactive effect of emoticons and message valence emerged only when recipients had a distant relationship with the sender (F (1, 368) = 5.89, p = 0.016). As shown in Figure 4a, emoticons enhanced perceived persuasiveness of the negative update ($M_{with\text{-}emoticons}$ = 5.16, $M_{without\text{-}emoticons}$ = 4.47; F (1, 368) = 5.69, p = 0.018) but not the positive update ($M_{with\text{-}emoticons}$ = 4.18, $M_{without\text{-}emoticons}$ = 4.63; F (1, 368) =2.20, p = 0.139). By contrast, when recipients had a close relationship with the sender, the Emoticons × Message valence interaction was nonsignificant (F (1, 368) = 0.05, p = 0.832). Emoticons enhanced perceived persuasiveness for both positive and negative updates ($M_{with\text{-}emoticons}$ = 5.47, $M_{without\text{-}emoticons}$ = 5.04; F (1, 368) = 4.07, p = 0.044, see Figure 4b). These results support H5.

In addition to the expected three-way interaction, the results also revealed a significant interaction between message valence and relationship closeness (F (1, 368) = 6.98, p = 0.009). The negative update was perceived to be more persuasive than the positive one when the updates were posted by a distant WeChat friend (F (1, 368) = 3.879, p = 0.05), and this effect was reversed at a marginally significant level when the updates were posted by a close WeChat friend (F (1, 368) = 3.123, p = 0.08). These findings are largely consistent with the three-way interaction in that they also suggest a decrease in the negativity bias when recipients and senders had closer relationships.

Discussion

Study 3 answered the third research question by examining the moderating effect of message valence and relationship closeness between recipients and senders. The results replicated a negativity bias in the persuasive effect of emoticons for relationships that were relatively distant. However, this bias decreased with relationship closeness, leading emoticons used in positive and negative eWOM to be equally influential when the recipient-sender relationship was much closer. These findings highlight the importance of a relational perspective to understand the situational variation in the persuasive effect of emotional expressions.

General Discussion

In this study, we answered three key questions regarding whether, how, and when emoticons influence eWOM persuasiveness in the context of SNS. Using a field experiment and three online experiments (including a follow-up experiment), we show that emoticons can enhance eWOM persuasiveness and this effect has a medium to large effect size (Study 1: Cohen's d = 0.624 when used in the negative message; Study 2: Cohen's d = 0.31 when used in the negative message; Study 3: Cohen's d = 0.45 when used in the negative message from a distant partner, Cohen's d = 0.34 when used in either a positive or a negative message from a close partner) (Cohen, 1988). The persuasive effect of emoticons occurs via enhanced recipient empathy and trust toward the sender and varies across message valence and sender-recipient relationships. Specifically, emoticons enhance eWOM persuasiveness for both positive and negative eWOM when recipients and senders are close to each other; this enhancement occurs for negative WOM only when recipients and senders have distant relationships. Table 5 summarizes the research questions and the corresponding hypotheses and findings of our research.

Table 3. Descriptive Statistics of Study 3

Relationship closeness	Message valence	Emoticons	N	Persuasiveness	
				Mean	*SD*
Distant	Negative	With	47	5.16	1.33
		Without	51	4.47	1.74
	Positive	With	41	4.18	1.67
		Without	51	4.63	1.73
Close	Negative	With	50	5.26	1.37
		Without	48	4.88	1.30
	Positive	With	47	5.67	0.91
		Without	41	5.21	1.07

Table 4. ANOVA Results of Study 3

	eWOM persuasiveness	
	F	*p*-value
Emoticons	3.41	.066
Message valence	0.02	.896
Relationship closeness	19.91	.000
Emoticons × Message valence	3.19	.075
Emoticons × Relationship closeness	1.04	.308
Message valence × Relationship closeness	6.98	.009
Emoticons × Message valence × Relationship closeness	4.20	.041

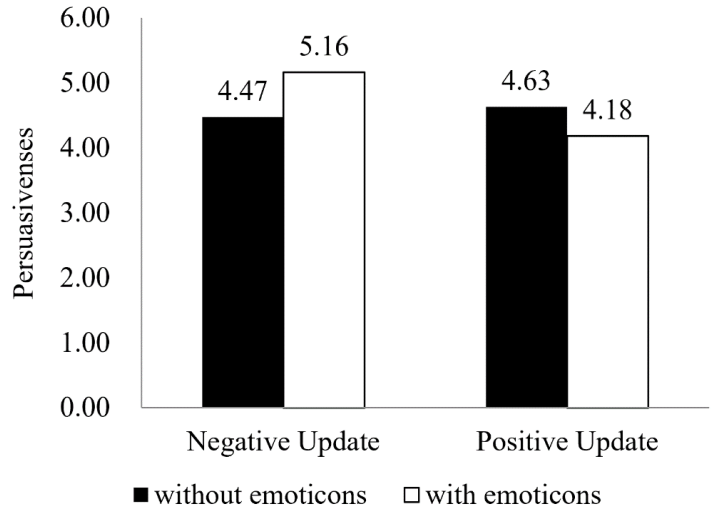


Figure 4a. The Interactive Effect of Emoticons and Message Valence on eWOM Persuasiveness for Distant Recipient-Sender Relationships

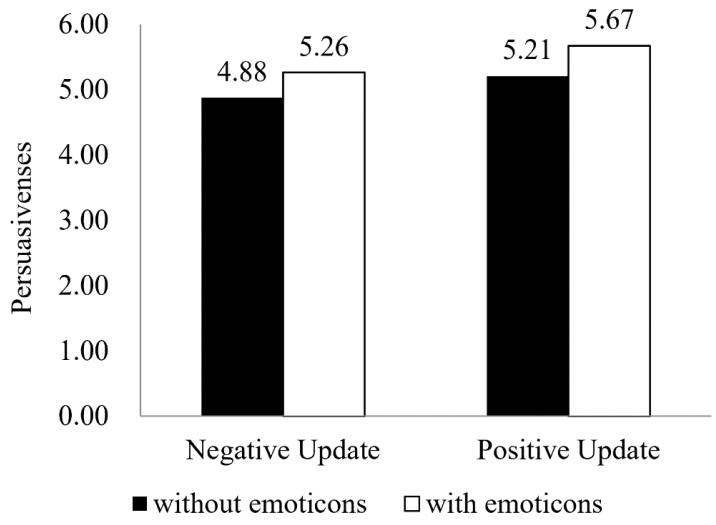


Figure 4b. The Main Effect of Emoticons on eWOM Persuasiveness across Message Valence for Close Recipient-Sender Relationships

Table 5. A Summary of the Main Results

Research questions	Hypotheses	Findings	Studies
Q1: Do emoticons influence eWOM persuasiveness on SNS?	**H1:** An eWOM message with emoticons is perceived to be more persuasive than the same message without emoticons.	Mixed	Study 1
Q2: How do emoticons influence eWOM persuasiveness on SNS?	**H2:** Recipients' empathy with the message sender mediates the positive effect of emoticons on eWOM persuasiveness.	Supported	Study 2 and the follow-up study
	H3: Recipients' trust in the message sender mediates the positive effect of emoticons on eWOM persuasiveness.	Supported	Study 2
Q3: When is the persuasive effect of emoticons strengthened or weakened?	**H4:** The persuasive effect of emoticons is moderated by message valence.	Supported	Studies 1-2
	H5: Relationship closeness between message senders and recipients moderates the interactive effect of emoticons and message valence on eWOM persuasiveness.	Supported	Study 3

Theoretical Contributions

With the growing attention to the role of emotions in CMC (Derks et al., 2008), a considerable body of research has investigated how emotional expressions influence eWOM communication on customer review platforms. Our research extends this research stream in several respects.

First, whereas previous investigations have focused on emotional words, either used independently (Ahmad & Laroche, 2015; Li et al., 2020; Yin et al., 2014) or in combination with nonverbal cues (Craciun & Moore, 2019; Craciun et al., 2020; Kim & Gupta, 2012; Yin et al., 2017; Yin et al., 2021), our research is the first to examine how emoticons influence eWOM persuasiveness. As a nonverbal

cue of emotions in CMC, emoticons are used to replicate facial expressions but differ from them in that the use of emoticons is fully under control by eWOM senders. This difference has raised doubts regarding whether emoticons can influence persuasion in the same way that facial expressions do in F2F communication (Derks et al., 2008). By showing that emoticons positively affect eWOM persuasiveness, our research suggests that recipients use senders' nonverbal emotional expressions as information when evaluating eWOM messages, although they are aware that these emotional expressions are deliberate. This insight highlights the interpersonal effect of nonverbal expressions of emotions on eWOM communication. Moreover, our findings suggest that emoticons can induce emotional contagion and interpersonal trust in the same way as facial expressions do in F2F communication. This insight contributes to a growing body of evidence suggesting that social interactions in CMC mirror the ways people interact with others in offline life (Cheshin et al., 2011; Hancock et al., 2008; Khawaji et al., 2013; Kramer, 2012; Kramer et al., 2014; Toma, 2000; Walther, 1992; Wilson et al., 2006).

Second, in contrast to previous studies accounting for the persuasive effect of emotional expressions from an exclusively cognitive perspective (Agnihotri & Bhattacharya, 2016; Hu et al., 2014; Kim & Gupta, 2012; Ullah et al., 2016; Yin et al., 2014; Yin et al., 2017), our research examines both affective and cognitive mechanisms underlying the effect of emoticons. Our findings suggest that emotional expressions can influence eWOM persuasion by evoking affective reactions of recipients, at least for emoticons in the context of SNS. This finding reveals a new social function that emoticons can fulfill in CMC and advances the knowledge of how emotional expressions influence eWOM communication. In line with our research, previous work has shown that people can accurately detect and catch others' emotions on SNS (Coviello et al., 2014; Johnson et al., 2009; Kramer, 2012; Kramer et al., 2014; Lin & Utz, 2015). Our research adds to that growing body of work by (1) expanding the effect from verbal expressions (i.e., emotion-laden texts) to nonverbal expressions (i.e., emoticons) of emotions and (2) demonstrating the downstream effect of this emotional contagion process on eWOM persuasiveness (Cheshin et al., 2011; Hancock et al., 2008; Khawaji et al., 2013; Kramer, 2012; Kramer et al., 2014; Toma, 2000; Walther, 1992; Wilson et al., 2006)

Third, our findings about the mediating effect of trust also make important contributions. Early research suggests that the absence of social cues in CMC alters the nature of interpersonal interactions and constrains the development of trust (Fulk et al., 1992; Walter, 1994). This view, however, has been challenged by studies demonstrating the development of trust in less rich environments (Jarvenpaa et al., 1998; Khawaji et al., 2013; Krumhuber et al., 2007; Scissors et al., 2009; Wilson et al., 2006). Our research contributes to this research stream by showing that in eWOM communication, the development of trust is, to some extent, influenced by whether or not eWOM senders use emoticons in the message.

Interestingly, with a focus on negative emotional expressions, previous research has documented adverse effects of emotional expressions on recipient inferences of eWOM senders, including their rationality, effort, and confidence (Ahmad & Laroche, 2015; Craciun & Moore, 2019; Craciun et al., 2020; Kim & Gupta, 2012; Yin et al., 2017). These inferences lower senders' credibility, a concept closely associated with trustworthiness (Craciun & Moore, 2019; Craciun et al., 2020; Kim & Gupta, 2012). In contrast, we reveal a positive effect of emoticons on the recipient's trust in the sender. There are two possible reasons for these discrepancies.

First, the discrepancies may result from the different research contexts for our study and previous research. Communications on customer review platforms aim to share and collect product information and thus are more task-oriented than those on SNS. Emotional expressions in this context are thought to be inappropriate (Derks et al., 2007; Kim & Gupta, 2012), leading recipients to generate negative inferences about the senders. On the contrary, communications on SNS are more socioemotional, driven by the intention to develop and maintain social relationships. Since emotional expressions are essential to successful social interactions, they are perceived to be appropriate and even appreciated (Parkinson, 1996). In this case, the use of emoticons serves as a signal of self-disclosure rather than irrationality, leading to positive inferences about the senders.

The second reason involves the different perspectives we adopt to understand the cognitive mechanism. The negative effect of emotional expressions found in previous research is derived from recipient inferences regarding how the expressed emotions influenced senders' cognition and behavior when they were writing eWOM messages (Ahmad & Laroche, 2015; Yin et al., 2014). However, the positive effect of emotional expressions we observe is derived from recipient inferences about senders' intentional use of emoticons to express their emotions. From this point of view, our research contributes to the literature on emotional expressions in eWOM by suggesting a new cognitive mechanism to understand their persuasive impact, one that creates inferences about the intentional use of nonverbal cues. More broadly, our research also advances the EASI model by showing that in social interactions, people distill information about others not only from their expressed emotions but also from their deliberate action of expressing emotions per se.

The fourth contribution of this research lies in our findings of situational variation in the persuasive effect of emoticons. We provide additional evidence for the negativity bias in how people respond to emotional expressions in CMC (Kim & Gupta, 2012). More importantly, we show that this negativity bias decreases with the closeness of recipient-sender relationships. The role of interpersonal relationships in the persuasive effect of emotional expression has been overlooked by extant studies focusing on customer review platforms. Our focus on SNS enables us to address this limitation and our findings highlight the importance of a relational perspective to understand the effect of emotional expression on eWOM persuasiveness.

Managerial Implications

Our research provides implications for companies who are interested in social commerce and aim to maximize the effect of their eWOM promotions. We show that in positive eWOM, emoticons can enhance eWOM persuasiveness when senders and recipients enjoy close relationships and do no harm when they have distant relationships. Companies should thus encourage consumers who are satisfied with their products to use emoticons when recommending products on SNS. For example, companies could monitor the eWOM of their products on SNS and offer economic incentives such as a coupon or a free sample to senders who use emoticons in their messages. For social network platforms owned and run by companies, such as online brand communities, companies can do more to promote the use of emoticons. For example, they could develop a system to recommend appropriate emoticons (e.g., pop-up emoticon options) when certain types of emotions are detected in messages. In addition, with the popularity of social commerce, a growing number of companies have created accounts on SNS to communicate with consumers directly. In these contexts, positive eWOM often dominates. We suggest that these companies use more emoticons than before when interacting with consumers to leverage the persuasive power of emoticons, especially when communicating with loyal consumers who usually have a close relationship with the company.

For negative eWOM, our research finds that emoticons enhance eWOM persuasiveness for both recipients who are close to the sender (Study 3) and those who are not (Studies 1-3). These findings suggest that the use of emoticons magnifies the adverse impact of negative eWOM. Therefore, companies should take a more nuanced approach to tackling negative eWOM on SNS and be more alert to emoticon-embedded messages if they don't have the resources to tackle all messages. For example, it may be beneficial to consider how many negative messages include emoticons and adjust estimations of their impact accordingly. Companies should also consider prioritizing negative eWOM including emoticons if they wish to alleviate the concerns of dissatisfied eWOM senders.

Finally, our research highlights the role of relationship closeness in moderating the negativity bias in eWOM communication. Compared with distant relationships, negativity bias is reduced in close relationships as to both message valence (indicated by Message valence × Relationship closeness interaction) and emotional expressions (indicated by the interactive effect between message valence, emotional expression, and relationship closeness). This finding suggests that positive messages and positive emotional expressions are less influential than negative ones when relationships are distant but that their influence increases for close relationships. Therefore, companies would benefit by encouraging satisfied consumers to spread eWOM on SNS where there are strong interpersonal ties.

Limitations and Future Research

Our research has several limitations that provide opportunities for future studies. First, we examined emoticons expressing positive and negative emotions, but we did not distinguish between different emotions of the same valence. Emotions differ from one another in multiple dimensions. For example, Harmon-Jones et al. (2016) identify eight basic emotions associated with different action tendencies, subjective feelings, evoking situations, and cognitive appraisals. Ahmad and Laroche (2015) show that anger and anxiety are both negative emotions, but the latter is associated with greater uncertainty than the former. Similarly, the positive emotions of hope and happiness vary along with uncertainty. These studies suggest that discrete emotions of the same valence can lead to different inferences (Ahmad & Laroche, 2015; Yin et al., 2014). It would be worthwhile for future research to examine how emoticons expressing discrete emotions affect eWOM persuasiveness differently.

Second, this research focused on emoticons included in messages of the same valence, a common scenario in the real world. However, senders are likely to use emoticons expressing emotions that are incongruent with the content of their WOM, sometimes to tone down the emotional intensity of the message and sometimes to express irony. In these scenarios, the effect of emoticons becomes more complicated, depending on several contextual factors, such as the exact emotions expressed by the messages and emoticons, the purposes for the intentional use of emoticons, and the relationships between senders and recipients. Walther and D'Addario (2001) present an initial effort to

understand how emoticons influence perceived ambiguity and emotional intensity of messages when they are used in messages of the opposite valence. Future investigations are warranted in this research area.

Third, in addition to message valence and relationship closeness, we should expect other situational factors to moderate the persuasive effect of emoticons. For example, emoticons might reduce the perceived seriousness and professionalism of the sender when the sender is an expert consumer rather than a novice consumer. In addition, consumers sometimes read multiple eWOM messages about a product on SNS that include different emoticons. In this scenario, the persuasive effect of emoticons may be moderated by congruence between the valences of multiple messages. Examining these potential moderators may provide additional insight into the persuasive power of emoticons.

Finally, other mediators may exist to explain the effect of emoticons on eWOM persuasiveness. Future research could explore other potential mechanisms through which emoticons influence eWOM persuasiveness and the relative importance of these mechanisms in different situations.

Conclusion

We studied a unique type of nonverbal emotional expression in CMC—emoticons—and demonstrated its persuasive power in eWOM communication on SNS. Our findings illustrate the effect of emoticons on eWOM persuasiveness and the mediating roles of empathy and trust underlying this effect. More interestingly, these effects vary with message valence and relationship closeness. The main idea encompassing this research is that nonverbal emotional expressions, at least in the form of emoticons, can effectively enhance eWOM persuasiveness both affectively and cognitively. This is a powerful notion that reflects an immense potential for platform designers to make decisions strategically about whether or not they should provide an emoticon toolkit and encourage the use of emoticons in eWOM communication.

Acknowledgments

The three authors contributed equally. Jun Pang is the corresponding author. The work described in this article was supported by grants from the National Natural Science Foundation of China (NSFC) [Grant 72272004, 72072179, 72071172] and by a grant from the Research Grants Council of Hong Kong S.A.R. [Grant CityU-11501721]. We thank the senior editor, the anonymous associate editor, and the reviewers for their invaluable guidance and insightful comments.

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Appendix A

Table A1 provides some examples of the experimental stimuli used in Studies 1-3.

Table A1. Examples of the Experimental Stimuli

	Example of the WeChat update (without-emoticon)	Example of the WeChat update (with-emoticon)	Textual content of the WeChat update (translated)
Study 1			*Positive:* Just back from (restaurant name). Amazing place! The food was super delicious, and the service was nice. Highly recommend! *Negative:* Just back from (restaurant name). Awful place! The food was so-so, and the service was terrible. Will never go!
Study 2 (main experiment)			*Positive:* Finally made up my mind to use an electric toothbrush, and bought one during the 618 sales. It looks cool, and the noise is not loud. I like the gentle vibration and feel it leads to less gum bleeding than traditional toothbrushes. No pain at all. Really love it! *Negative:* Finally made up my mind to use an electric toothbrush, and bought one during the 618 sales. It looks cool but a little noisy. It vibrates like crazy, which caused even more gum bleeding than traditional toothbrushes. Really a waste of money!
Study 2 (follow-up) and Study 3			*Positive:* The family went to Phuket for Christmas and had a wonderful time there. By the way, I bought an Anke power bank for the travel, and it is really nice! Looks cool and charges really fast. We took photos all the way, but our phones were never out of juice. *Negative:* The family went to Phuket for Christmas and had a wonderful time there. By the way, I bought an Anke power bank for the travel, and it sucks! Looks cool but charges really slowly. It ran out of juice very quickly.

Appendix B

Table B1 lists some examples of the replies to the WeChat updates in Study 1.

Table B1. Examples of Replies

	Positive eWOM	Negative eWOM
Replies indicating the recipient was persuaded by the message	• *That's cool! Next time we should go together.* • *Wow, where is the restaurant?* • *Sounds really good! It makes me miss my hometown.*	• *That's terrible! I will never go there again.* • *You should've filed a complaint to the restaurant manager.* • *We should not go there anymore if it is this poor.*
Replies indicating the recipient was not persuaded by the message	• *Did the restaurant manager beg you to upload this post?* • *Is it really true?*	• *Is it really that bad? I had a good experience last time.* • *No way! That restaurant is pretty good!* • *Maybe you are just out of luck?*
Replies irrelevant to the message	• *Where are you? Are you still in town?* • *How are you recently?*	

Appendix C

Measurement Items

- Empathy (Escalas & Stern, 2003)

1. While reading the update, I felt as though the events in the update were happening to me.
2. While reading the update, I experienced many of the same feelings that the update sender portrayed.
3. While reading the update, I felt as if the sender's feelings were my own.

- Trust (Darke & Ritchie, 2007)

1. The update sender is (untrustworthy … trustworthy).
2. The update sender is (unreliable … reliable).
3. The update sender is (not credible … credible).

- eWOM persuasiveness (Gershoff et al., 2003; Smith et al., 2005)

1. How likely do you think you would act in accordance with the update sender's advice? (not at all … very likely)
2. To what extent were you influenced by the update? (not influenced at all … very influenced)

- Relationship closeness (Dibble et al., 2011)

Please think about your relationship with X and then indicate to what extent you agree or disagree with the following statements.

1. My relationship with X is close.
2. X and I have a strong connection.
3. I think about X a lot.
4. My relationship with X is important in my life.
5. I consider X when making important decisions.

Appendix D

Tables D1 and D2 describe the results of confirmatory factor analyses and other construct attributes.

Table D1. Rotated Component Matrix

	Component		
	1	**2**	**3**
Empathy_item1		0.864	
Empathy_item2		0.832	
Empathy_item3		0.870	
Trust_item1	0.822		
Trust_item2	0.856		
Trust_item3	0.831		
Persuasiveness_item1			0.832
Persuasiveness_item2			0.847

Table D2. Construct Attributes

	Cronbach's alpha	**Composite reliability**	**Empathy**	**Trust**	**eWOM persuasiveness**
Empathy	0.902	0.891	0.856		
Trust	0.930	0.875	0.593***	0.840	
eWOM Persuasiveness	0.917	0.827	0.563***	0.733***	0.840

Note: The scores in the diagonal are square roots of AVEs; the lower triangle represents the correlations between constructs. *** indicates $p < 0.001$.