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The value of social presence in mobile communications

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Texting via mobile devices is used as a primary means for day-to-day communications among an increasing number of consumers and, as a result of this trend, more companies are engaging with consumers and addressing service complaints using social media platforms, such as Facebook. This study addresses the use of two-way mobile texting via Facebook to resolve service complaints with applications from social presence theory. Research shows that marketers’ warm emotions are important in addressing service complaints, yet prior works mainly focus on the significance of human warmth in face-to-face contexts. Therefore, this study uses an experimental design to investigate the value of social presence in mobile texting as a means for providing service recovery. In triangulating the data, we use focus groups in confirmatory analysis. The findings show that social presence cues add human warmth to text messages with respect to two-way communication perceptions, control perceptions, responsiveness perceptions, satisfaction, attitudes, and repurchase intentions. The article concludes with a discussion of the importance of social presence cues in improving customers’ experiences and overall satisfaction.

Keywords: mobile texting; mobile commerce; social presence; service complaints; online interactivity

Today, mobile phones are an integral part of consumers’ lifestyles, and this trend will only continue to increase (Chen & Chang, 2013; Pynta et al., 2014). For service providers, it is important to understand that consumers are migrating from PCs to mobile devices when communicating with firms (Fulgoni & Lipsman, 2014). Texting allows for timely, abbreviated interactivity; we broadly define mobile texting as messages consumers send to companies in the form of brief, electronic communications with the expectations of a reply. Texts sent through cellular devices use minimal character spaces, and various online platforms are becoming popular mediums for interactive texts. For example, in this study we examine texts sent via Facebook messages. The challenge for companies is to balance short, concise text replies while also conveying social presence, or the salience of another person in a mediated environment (Short, Williams, & Christie, 1976).

With the vast array of opportunities for consumers to text companies, marketers and service providers must gain a holistic understanding of optimizing text communications as more consumers use their mobile devices as a primary means for day-to-day communications (Sago, 2010). The mobile phone market has shown steady growth, and usage rates

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are largely driven by the rise of smartphones among consumers across all demographics. The basic phone market has declined dramatically, but this is offset by the increase in smartphone ownership as well as the increase in average spending per device (Harland, 2015). Indeed, texting is an important part of consumers’ daily routines, and even car manufacturers are revolutionizing vehicles with hands-free texting capabilities (Bird, 2013). Texting capabilities allow consumers to streamline their communications with straightforward and concise messages while on the go. The popularity of high-end smartphones is largely driven by consumers’ desire to be ubiquitously connected, and this includes being able to text anywhere at any time, even while driving (Bird, 2013). Studies indicate that texting will continue to increase and serve as an important means for service providers in communicating with consumers (Wu, 2005).

Much of the research on mobile communications has focused on one-way ‘awareness-driven’ messages (Shankar, Inman, Mantrala, Kelley, & Rizley, 2011), while scant attention has been paid to the use of mobile technology for two-way communications, specifically using social media platforms to address service complaints. Research estimates that approximately half of complaining customers are dissatisfied with firms’ complaint-handling processes (Homburg & Fürst, 2005). More important, how marketers mechanistically respond to complaints directly affects customer satisfaction and loyalty (Homburg & Fürst, 2005). Research has shown that timely recovery methods decrease the likelihood of customer switching (Cambra-Fierro, Berbel-Pineda, Ruiz-Benítez, & Vázquez-Carrasco, 2013; Tsai & Su, 2009), and the ways a company responds to customer complaints, concerns, or queries are antecedents to loyalty and specific relational attachments (Chang & Hsiao, 2008; DeWitt, Nguyen, & Marshall, 2008). In terms of maintaining positive relationships with customers, the more empathic and intense an apology is, the more satisfied customers are, and, importantly, a late or inappropriate apology decreases consumer satisfaction (Roschk & Kaiser, 2013). It is clear that customers value the efforts companies invest in resolving problems, and if customers perceive a company as real and sincere in administering customer service, their satisfaction will increase even if a solution is not provided (Cambra-Fierro et al., 2013). In other words, it is important for companies to manage the perceptions of social presence by ensuring that customers are well aware of the sincere actions they are taking to resolve problems.

Social media is a practical context for examining social presence in mobile texting. With the rise in social media usage, companies cannot ignore platforms such as Facebook, Twitter, and Instagram to manage customer communications. Mobile is the largest growth area for digital advertising and will continue to be a key area for social media interactions in the next several years (Harland, 2015). Furthermore, social media is the most-used communication channel among various industries because it allows firms to build authentic relationships with customers (Harland, 2015). Customers want authentic and earnest resolutions to service failures. Indeed, empathy has the strongest impact on service recovery satisfaction, followed by intensity and timing (Roschk & Kaiser, 2013). Texting with consumers to resolve complaints provides timely responses; however, can communications via texting convey social presence, specifically empathy and human warmth? In this research, we aim to examine social presence cues in texting via Facebook communications between customers and firms to resolve service complaints. Research recommends that companies appeal to consumers’ desire to interact with firms by offering more opportunities for them to voice problems so that issues can be quickly identified and resolved and negative word of mouth can be minimized (Chelminski & Coulter, 2011).

This study is anchored in social presence theory, which predicts that a receiver is more likely to understand the intended message when messages are rich in socially obvious
connotations (Short et al., 1976). In short, mobile devices provide marketers with tools to interact with consumers in real time (Balasubramanian, Perterson, & Jarvenpaa, 2002), enabling service recovery as problems occur. However, companies must fully understand that while customers want abbreviated language and concise sentences, they also desire human warmth in the context of messages. Technology-assisted service failure recovery that relies on mobile devices for communications, without a holistic understanding of the value of social presence, may result in a perceived lack of interpersonal contact (Cowles & Crosby, 1990; Dabholkar & Spaid, 2012). Research has shown that verbal cues, body language, and emotional displays lead to greater satisfaction in face-to-face service encounters (Jiangang, Fan, & Feng, 2011) and that the emotional environment provided by the retailer can influence customer perceptions during service recovery (Harrison-Walker, 2012). Thus, because emotions play a critical role in resolving service complaints, social presence cues are important components to consider in text messages.

The remainder of this article proceeds as follows: We begin with a literature review of social presence theory and interactivity theory to provide a theoretical foundation demonstrating the importance of social presence in marketing communications. We build on these two theories to develop a conceptual framework that demonstrates the mediating effect of social presence cues in the context of service recovery. Next, we describe our experimental design, investigating different service-level situations in which participants must resolve a problem using mobile texting via Facebook. We also explain how focus groups helped further substantiate and validate our findings. Finally, we discuss the results by revealing how the incorporation of social presence cues in texting enhances perceived customer value.

**Conceptual background and hypotheses**

**Social presence cues**

Informational cues refer to the ways information can be communicated, such as text, verbal cues (e.g. tone of voice), or nonverbal cues (e.g. facial expression) (Daft & Lengel, 1986). Often, information cues are used to display acceptance, stimulate intimacy, emphasize important points, and, more generally, help receivers understand content more efficiently and effectively. Without the use of proper cues, it takes longer for receivers to fully understand and process messages (Williams, 1977). The lack of verbal and nonverbal cues can significantly affect social presence (Short et al., 1976). Therefore, a sender’s ability to effectively transmit emotionally sensitive information (e.g. service problems) without the luxury of facial expressions, direction of looking, posture, dress, and vocal cues is often challenging. Yet effectively communicating emotionally sensitive information so that the receiver perceives the message as sincere and earnest is an indication of social presence and richness.

Social presence has two dimensions: (1) intimacy (interpersonal versus mediated) and (2) immediacy (asynchronous versus synchronous) (Short et al., 1976). Social presence theory predicts that communication media vary depending on their ability to create a sense of intimacy and immediacy. People tend to perceive face-to-face communication as more sociable because it carries more intimacy cues, such as eye contact, smiling, and friendly body language. For example, the use of video chat in MSN messenger triggers greater immediacy than the use of e-mail communication because it can transmit more information in real time with visual cues. Furthermore, research has found that videotext is a better medium than teletext in delivering sensitive information (Cowles & Crosby, 1990).
The level of social presence can vary for any given medium of communication (Short et al., 1976), and e-service providers have adopted numerous methods to enhance their level of social presence. Exemplar technologies include visual features such as virtual chatting, avatars representing general graphic information personified by technology (Holzwarth, Janiszewski, & Neumann, 2006), and the use of pictures and three-dimensional images in product description pages. Studies have empirically tested and highlighted the positive effects of visual features on consumers’ perceptions and behaviors (Cui, Wang, & Xu, 2010; Dabholkar & Spaid, 2012; Holzwarth et al., 2006).

Indeed, social presence is important in managing customers’ perceptions. However, scant attention has been paid to social presence cues in texting. Previous studies have predominantly focused on ‘social presence’ in e-shopping (Cui et al., 2010; Holzwarth et al., 2006) or product description pages (Hassanein & Head, 2005). In addition, although research (Cui et al., 2010; Holzwarth et al., 2006) has investigated nonverbal cues with the design of communication interfaces (e.g. avatars and emoticons), scarce research has addressed the effects of verbal cues (e.g. welcoming consumers by their first name and addressing consumers with socially rich text conveying positive emotions) in two-way text communications.

In the current study, mobile texting provides a unique context in which nonverbal communication is limited. Compared with e-mail, texting consists of short, concise communications and, as such, must rely on verbal cues, such as the tone of text (i.e. personal tone) and the level of connection (i.e. use of ‘I’ instead of ‘we’). Texting is widely popular among consumers because of its time-efficient nature, and though this can be a plus for customers, texting is one of the most challenging forms of communication for service providers in terms of conveying empathy and intimacy. Service providers must rely on well-crafted verbal cues to convey social presence and richness. This study is positioned on the idea that verbal cues play a major role in enhancing the effectiveness of service recovery communications, particularly in the context of texting, when the ability to communicate empathy and intimacy is significantly more challenging than other forms of communication. The goal of such texting is to provide timely service recovery while managing customers’ perceptions.

Research has treated perceived interactivity as a key concept in computer-mediated communications (Song & Zinkhan, 2008). Perceived interactivity includes three dimensions: (1) perceived two-way communication, (2) perceived control, and (3) perceived responsiveness (Liu, 2003; McMillan & Hwang, 2002; Wu, 2005). Perceived two-way communication refers to interpersonal or face-to-face communications (Ha & James, 1998). Note that customers can use multiple verbal and nonverbal cues when engaging in face-to-face communications. Customers perceive communications as more reciprocal and interpersonal if social presence cues are embedded in the message. For example, consider a situation in which a customer texts an airline company via Facebook or Twitter about how dissatisfied she is about the loss of her baggage. A service recovery reply sent by a service representative identifying herself with a name (i.e. social presence cue) rather than a machine-generated message without any personal identification is likely to enhance the social presence and richness of the text message, and in turn the customer is likely to perceive the message as sincere and earnest. Thus, we propose the following:

**H1a:** Greater verbal social presence cues are associated with greater perceived value of two-way communications.

Perceived control describes the amount of control a consumer feels over the process or outcome of a service encounter (Yen, 2005). Perceived control is enhanced when
consumers have more options in service encounters or the ability to predict the process of service. In particular, telepresence theory explains the concept of perceived control in computer-mediated communications (Steuer, 1992). According to this theory, ‘a medium’s structure (e.g. design, site map, and navigation) contributes to consumers’ perceptions of telepresence’ (i.e. experience of presence in an environment by means of a communication medium) (Steuer, 1992, p. 76) and subsequently influences their perceptions of control. Thus, when a text message facilitates social presence cues (medium’s structure), consumers’ confidence and perceptions of telepresence should be enhanced, and their predictions of the two-way communication outcomes should be more favorable. Similarly, a study of Internet self-service technology identifies perceived control as a significant attribute influencing quality satisfaction (Yen, 2005). Thus, consumers should perceive text communications with social presence cues as more controllable. Therefore, we propose the following:

**H1b:** Greater verbal social presence cues are associated with greater perceived user control over the service outcome.

Perceived responsiveness reflects a user’s sense of how responsive a communication medium as a system is to his or her actions (Wu, 2005). Often, perceived responsiveness is discussed in terms of communication speed (i.e. amount of time sending and receiving messages) (Kiousis, 2002). Therefore, real-time chatting is more responsive than an exchange of e-mails or documents. In service marketing, benefits such as saving time and effort will satisfy customers regardless of the technology implemented by marketers (Yen, 2005). However, consumers’ perceived speed is influenced not only by objective speed (e.g. actual waiting time) but also by subjective speed. Subjective speed is influenced by various communication features such as message content (Song & Zinkhan, 2008) and website background color during downloading (Gorn, Chattopadhyay, Sengupta, & Tripathi, 2002). Thus, consumers perceive communications as faster when they receive personalized messages rather than messages with no personalization (Song & Zinkhan, 2008). Similarly, they may perceive mobile texting as faster and more responsive when text messages are embedded with social presence cues. Thus, we propose the following:

**H1c:** Greater verbal social presence cues are associated with greater perceived value of responsiveness.

Understanding how social presence cues influence message effectiveness is important for service providers. Firms must manage and maintain strong customer relationships (e.g. integrated marketing, communications with customers, and customer support services) (Pan & Lee, 2003), and a consumer’s computer-mediated communication experience with a firm is an antecedent of communication effectiveness measures, such as purchase intentions, satisfaction, loyalty, and word-of-mouth behavior (Moore & Moore, 2004; Strauss & Hill, 2001). Within the context of this study, in which consumers are complaining about service failure after a purchase, we assess communication effectiveness via mobile texting by asking the participants to rate the following three measures: (1) satisfaction, (2) attitude toward the firm, and (3) repurchase intention. Therefore, we propose the following:

**H2:** Greater verbal social presence cues are associated with (a) greater perceived satisfaction with the overall texting experience, (b) more positive attitudes toward the firm, and (c) greater repurchase intentions.

Building on prior empirical research on perceived interactivity, we also expect that the three interactivity perceptions (i.e. two-way communication, control, and responsiveness) will
mediate the relationship between social presence cues and communication effectiveness. Social presence theory proposes that adding human warmth positively affects interactivity perceptions and subsequently enhances satisfaction, attitude, and repurchase intention. In addition, prior research on interactive communications has found a positive relationship between interactivity perceptions (i.e. two-way communication, control, and responsiveness) and attitudes and behavioral intentions (i.e. purchase, repurchase, and revisit intentions) (Johnson, Bruner, & Kumar, 2006; Liu, 2003; McMillan & Hwang, 2002). Therefore, we propose a mediation hypothesis.

\[ H3: \] Interactivity perceptions mediate the positive influence of verbal social presence cues on consumers’ satisfaction, attitudes, and repurchase intentions.

**Social presence cue and service recovery**

Short et al. (1976) argue that interactive and effective communications depend on (1) the degree of social presence associated with the communication and (2) the degree of social presence required by the communication. For example, when the nature of communication requires constant assessment of another person’s reactions, the communication outcome is more likely to be influenced by the level of social presence cues. In contrast, the quality of communication is unaffected by the degree of social presence cues when the communication situation is clear and straightforward (e.g. simple information transmission). That is, as task/situation complexity and ambiguity increase, social presence has an increasing influence on communication outcomes. One key type of communication between firms and consumers is transaction-related messages (e.g. when customers expect actions from the firm), such as when customers contact an organization to complain about specific problems (e.g. related to delivery, service, and billing). In this type of situation, customers often expect immediate (or timely) feedback. For marketers, dealing with complaints due to service failure can be problematic because such complaints often involve complex and nonroutine communication activities (Cowles & Crosby, 1990).

Imagine that a customer sends a text message to complain about a billing error. The firm’s response might not be personalized or prompt for many reasons, including (1) all available representatives are taking care of other customers, (2) the corresponding representative is not knowledgeable enough to resolve the issue and needs to transfer the case to another representative, or (3) it takes a long time to retrieve the customer’s billing information and history. In this situation (low level of service recovery), including social presence cues in the exchange will create a more interactive and effective communication, regardless of whether the major concern is resolved. In contrast, if the firm sends a prompt response text message that recovers service failure (high level of service recovery), adding social presence cues will not make a significant difference in the communication outcome, including interactivity perceptions and communication effectiveness (i.e. satisfaction, attitude, and repurchase intention). That is, when the communication situation is clear (i.e. high level of service recovery), the positive effect of social presence cues is minimized (Short et al., 1976). Therefore, we predict the following:

\[ H4a: \] When the service recovery level is low (a firm is unable to resolve the problem promptly), **two-way communication** perceptions are greater for messages with verbal social cues than those without verbal social cues. Conversely, when the service recovery level is high, verbal social presence cues do not make a significant difference in **two-way communication** perceptions.

\[ H4b: \] When the service recovery level is low (a firm is unable to resolve the problem promptly), **control** perceptions are greater for messages with verbal social cues than those without verbal
social cues. Conversely, when the service recovery level is high, verbal social presence cues do not make a significant difference in control perceptions.

**H4c**: When the service recovery level is low (a firm is unable to resolve the problem promptly), responsiveness perceptions are greater for messages with verbal social cues than those without verbal social cues. Conversely, when the service recovery level is high, verbal social presence cues do not make a significant difference in responsiveness perceptions.

**H5a**: When the service recovery level is low (a firm is unable to resolve the problem promptly), satisfaction is greater for messages with verbal social cues than those without verbal social cues. Conversely, when the service recovery level is high, verbal social presence cues do not make a significant difference in satisfaction.

**H5b**: When the service recovery level is low (a firm is unable to resolve the problem promptly), attitudes are greater for messages with verbal social cues than those without verbal social cues. Conversely, when the service recovery level is high, verbal social presence cues do not make a significant difference in attitudes.

**H5c**: When the service recovery level is low (a firm is unable to resolve the problem promptly), repurchase intentions are greater for messages with verbal social cues than those without verbal social cues. Conversely, when the service recovery level is high, verbal social presence cues do not make a significant difference in repurchase intentions.

**Experiment**

**Stimulus and participants**

We tested H4a–H4c and H5a–H5c using a full factorial design. The experiment is a 2 (verbal social presence cues: with versus without) × 2 (service recovery level: high versus low) between-subjects factorial design. We established the level of social presence and service recovery level in four ways: low service recovery without social presence cue, low service recovery with social presence cue, high service recovery without social presence cue, and high service recovery with social presence cue. We conducted a virtual experiment using mobile phones. Participants were recruited from undergraduate and graduate business courses from a US public university. Students received class credit as an incentive for participation. Of the 133 participants, 53.4% were men and 46.6% women, and the mean age of all participants was 21.3 years (range: 19–47 years). The young adult demographic segment served as our sample pool because research suggests that Millennials on a global scale are early adopters of technological innovations and this generation prefers texting as their primary means of mobile communications (Chan-Olmsted, Rim, & Zerba, 2013; Chhateja & Jain, 2014; Thomas, 2014). In addition, research suggests that Millennials are more avid texters than other generations, and texting behavior has become so ubiquitous that it bleeds into their other daily activities (Olmsted & Terry, 2014). Millennials are so efficient and effective at communicating by text that a recent study claims that texting among young adults serves as a useful tool in managing relationships and potentially heightens relationship intimacy between two or more parties (McGee, 2014). Likewise, Millennials are the most devoted users of social media (Harland, 2015).

**Procedures**

Participants were instructed to read the following scenario:

About a week ago, you purchased a t-shirt as a birthday gift for your best friend at E-store.com. Yesterday, you received the item and discovered that the store sent the wrong t-shirt.
Now you want to figure out how you can receive the correct item as soon as possible and how to return the wrong item. Using your smartphone, you send a text to E-store.com via Facebook.

After reading the scenario, participants were asked to send a text message to E-store. Participants then waited until they received a response text message from the store. Then, we collected dependent measures, including two-way communication perceptions, control perceptions, responsiveness perceptions, satisfaction, attitudes, and repurchase intentions. Last, participants were asked to complete survey questions on their demographic information, which concluded the experiment. We measured all items with a seven-point Likert-scale. Table 1 provides a description of the measurement approaches and Cronbach’s alpha associated with each scale.

**Independent variable manipulation**

We manipulated the social presence cues in terms of intimacy. Text messages that include authentic names and the use of ‘I’ are considered more intimate. In addition, the use of a conversational style rather than a formal, detached style adds social presence (e.g. ‘Hi Sam, I will be right with you’ versus ‘Support is unavailable at this moment’). Service recovery level is the extent to which the replying text message resolves the sender’s complaints. In the context of this study, consumers are complaining about not receiving what they ordered. Therefore, under high service recovery conditions, consumers receive prompt instructions on how to get the right item and how to return the wrong item. Under low service recovery conditions, consumers’ complaints are not promptly addressed. Detailed scenario manipulations are as follows (underlined text indicates the social presence cues in the message):

Low service recovery without social presence cues: This is E-store.com. Do you need assistance?

(customers are asking questions)

You will receive a response to your inquiry soon.

Low service recovery with social presence cues: Hi Sam, thank you for contacting E-store.com. I’m Anna, E-store’s Online Assistant. How can I help you today?

(customers are asking questions)

Thank you for contacting me. I will personally look into your question and will text back soon.

High service recovery without social presence cues: This is E-store.com. Do you need assistance?

(customers are asking questions)

Text back with the address you would like the item to be shipped. You should receive the new item within 7-10 business days. You will also receive a return label.

High service recovery with social presence cues: Hi Sam, welcome to E-store.com. I’m Anna, E-store’s Online Assistant. How can I help you today?

(customers are asking questions)

I am so sorry about this inconvenience. I will personally make sure that you receive the right item this time. Please text me with the address where you would like me to send the item. I will reship the item to you today and you will receive it within 7-10 business days. I will include a return label. Can I help you with anything else?
Table 1. Measures of dependent variables.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Measures</th>
</tr>
</thead>
</table>
| Two-way communication perception ($\alpha = .915$) (Liu, 2003; McMillan & Hwang, 2002; Wu, 2005) | 1) This E-store.com facilitates two-way communication  
2) The E-store.com gives me the opportunity to talk back  
3) The E-store.com facilitates concurrent communication  
4) The E-store.com enables conversation  
5) The E-store.com does not encourage visitors to talk back (R)  
6) The E-store.com is effective in gathering visitors’ feedback |
| Control perception ($\alpha = .824$) (Liu, 2003; McMillan & Hwang, 2002; Wu, 2005)          | 1) While I was at the E-store.com I was always aware where I was  
2) While I was at the E-store.com, I always knew what I was doing  
3) While I was at the E-store.com, I was always able to say what I wanted to say  
4) I was delighted to be able to choose what I could do  
5) I feel that I have a great deal of control over my experience with E-store.com  
6) The E-store.com is not manageable (R)  
7) While I was at the E-store.com, I could choose freely what I wanted to say  
8) While I was at the E-store.com, I had absolutely no control (R)  
9) While I was at the E-store.com, my actions decided the kind of experiences I got |
| Responsiveness perception ($\alpha = .871$) (Liu, 2003; McMillan & Hwang, 2002; Wu, 2005) | 1) The E-store processed my input very quickly  
2) Getting information from the E-store is very fast  
3) I was able to obtain the information I want without any delay  
4) I felt I was getting instantaneous information from the E-store  
5) The E-store is very slow in responding to my request (R)  
6) The E-store answers my question immediately |
| Attitude toward the site ($\alpha = .948$) (Coyle & Thorson, 2001)* | 1) Good/bad  
2) Favorable/unfavorable  
3) Like/dislike |
| Satisfaction ($\alpha = .795$) (Fornell, Johnson, Anderson, Cha, & Bryant, 1996)* | 1) I am satisfied with the experience  
2) This experience is exactly what I needed  
3) The experience has not worked out as well as I thought it would (R) |
| Repurchase intention ($\alpha = .931$) (Zeithaml, Berry, & Parasuraman, 1996)* | 1) I would consider this store for my future online shopping  
2) The next time I purchase a t-shirt, I will buy this from this store  
3) I would be willing to purchase from this store again |

Note: R = reversed coding.  
*Seven-point Likert-scale.
Pretest
In a pretest, we asked the participants to answer the following seven-point Likert-scale questions to check the manipulations for the level of service recovery: ‘E-store resolved my problem very well’ and ‘What do you think about the level of service recovery of the E-store.com?’ Fifty-five students participated in the pretest. The results showed significant differences in participants’ perceptions of service recovery levels ($t = -11.407$, $df = 53$, $p < .05$). Next, we asked 20 participants the 4 manipulation questions to test for perceived social presence (Short et al., 1976). We used a seven-point Likert-scale to assess participants’ perceptions of social presence using the following dimensions: impersonal/personal, unsocial/social, insensitive-sensitive, and cold/warm. Participants showed significant differences in their perceptions of social presence levels ($t = -2.895$, $df = 18$, $p < .05$).

In addition, we asked participants what communication method they preferred for most service complaint situations. We provided four options: (1) face-to-face contact with the firm, (2) calling the firm by telephone, (3) e-mailing the firm from a personal computer, and (4) texting the firm using a mobile device. Participants then answered a series of open-ended questions. Of the participants, 96% indicated texting as their first choice of communication due to user control and time convenience. This finding indicates that texting is a viable option when considering intervention strategies for service failure situations. Furthermore, in contrast with prior work, we did not find cognitive effort a barrier to texting with firms (Kleijnen, De Ruyer, & Wetzels, 2007). Cognitive effort refers to the complexity of the innovation and the effort associated with understanding and using the technology. All the participants considered texting an easy and convenient means of communications.

Results
The effect of social presence cues
We ran multivariate analysis of variance (MANOVA) to test $H1$ and $H2$. MANOVA is more appropriate than a series of univariate analysis of variance when there is a possibility that the composite of the dependent variables explains an overall group difference (Hair, Black, Babin, & Anderson, 2009). First, multivariate difference measures (i.e. Pillai’s trace, Hotelling’s trace, Wilks’s lambda, and Roy’s largest root) are significant ($p < .05$), indicating that combined dependent variables vary across the different levels of social presence. Table 2 shows the summary result of the MANOVA, and Table 3 presents means and

Table 2. MANOVA result: main effects and interaction effects.

<table>
<thead>
<tr>
<th>Variable</th>
<th>$df$</th>
<th>Verbal social presence $F$ value (effect size)</th>
<th>Service recovery level $F$ value (effect size)</th>
<th>Verbal social presence × service recovery level (Interaction Effect) $F$ value (effect size)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-way communication perception</td>
<td>1</td>
<td>18.693* (.126)</td>
<td>19.166* (.129)</td>
<td>16.394 (.113)*</td>
</tr>
<tr>
<td>Control perception</td>
<td>1</td>
<td>12.271* (.087)</td>
<td>4.239* (.032)</td>
<td>3.937 (.030)*</td>
</tr>
<tr>
<td>Responsiveness perception</td>
<td>1</td>
<td>7.832* (.057)</td>
<td>12.901* (.091)</td>
<td>1.616 (.012)</td>
</tr>
<tr>
<td>Attitude</td>
<td>1</td>
<td>16.013* (.110)</td>
<td>13.951* (.098)</td>
<td>2.555 (.019)</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>1</td>
<td>15.808* (.109)</td>
<td>30.739* (.192)</td>
<td>8.121 (.059)*</td>
</tr>
<tr>
<td>Repurchase intention</td>
<td>1</td>
<td>11.508* (.082)</td>
<td>8.804* (.064)</td>
<td>1.726 (.013)</td>
</tr>
</tbody>
</table>

*Significant at the 5% level.
Table 3. Means and confidence intervals.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Verbal social presence cue</th>
<th>Service recovery level</th>
<th>Verbal social presence cue x service recovery level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Without social presence cue ((n=67))</td>
<td>With social presence cue ((n=66))</td>
<td>Low ((n=59))</td>
</tr>
</tbody>
</table>

Note: The 95% confidence interval is in parentheses.
confidence intervals of each condition. The results provide support for \( H1a, H1b, \) and \( H1c. \) The participants in the social presence conditions perceived the text message as more two-way communication oriented \((M_{social} = 5.604, M_{nosocial} = 4.757; F(1, 129) = 18.693, p < .05)\), controllable \((M_{social} = 5.146, M_{nosocial} = 4.542; F(1, 129) = 12.271, p < .05)\), and responsive \((M_{social} = 4.542, M_{nosocial} = 3.947; F(1, 129) = 7.832, p < .05)\) than those in conditions with no social presence cues. Similarly, the effects of social presence cues on satisfaction \((F(1, 129) = 15.808, p < .05)\), attitudes \((F(1, 129) = 16.013, p < .05)\), and repurchase intentions \((F(1, 129) = 11.508, p < .05)\) were all significant, indicating that a text message with verbal social presence cues influences these communication effectiveness measures. Therefore, \( H2a, H2b, \) and \( H2c \) are supported. The results of \( H1 \) and \( H2 \) reveal that the use of social presence cues in communication messages increases interactivity and communication effectiveness. The effect sizes of social presence cues on interactivity perception and communication effectiveness were between .057 and .126. Social presence cues had the greatest effect on two-way communication perceptions (.126), followed by attitude (.110) and satisfaction (.109). Thus, social presence cues in text messages play a significant role in stimulating reciprocal communication, creating a positive image for the firm, and enhancing overall customer satisfaction. Finally, social presence cues were relatively weak determinants of responsiveness perceptions when compared with the other two interactivity perceptions (effect size = .057).

The mediating role of interactivity perceptions

We conducted Bootstrap estimation (Preacher & Hayes, 2004; Zhao, Lynch, & Chen, 2010) with 5000 resample as well as Sobel tests, to test the possible mediating effects of the three interactivity perceptions, with social presence cues as an independent factor, for the three site effectiveness measures. Table 4 provides the indirect effect sizes of social presence cues on site effectiveness, Sobel test Z-value, and confidence intervals. The results show that (1) two-way communication mediated the influence of social presence cues on attitudes and satisfaction; (2) control mediated the influence of social presence cues on attitudes, satisfaction, and repurchase intentions; and (3) responsiveness mediated the influence of social presence cues on attitudes, satisfaction, and repurchase intentions. Among the three mediators, responsiveness was the strongest (see the effect sizes in Table 4). The results also indicate that two-way communications do not significantly mediate the influence of social presence cues on repurchase intentions (see the Z-value and confidence interval, Table 4. Mediation test results.

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Mediators</th>
<th>Attitude</th>
<th>Satisfaction</th>
<th>Repurchase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Two-way communication perception</td>
<td>0.1695* (2.2725) (.0357−.3868)</td>
<td>0.1799* (2.4702) (.0441−.4028)</td>
<td>0.0952 (1.2807) (.0321−.3078)</td>
</tr>
<tr>
<td></td>
<td>Control perception</td>
<td>0.1757* (2.4041) (.0610−.3490)</td>
<td>0.2217* (2.7282) (.0830−.4384)</td>
<td>0.1474* (1.9697) (.0224−.3607)</td>
</tr>
<tr>
<td></td>
<td>Responsiveness perception</td>
<td>0.2223* (2.4197) (.0673−.4278)</td>
<td>0.2774* (2.5359) (.0908−.5264)</td>
<td>0.2194* (2.3164) (.0599−.4634)</td>
</tr>
</tbody>
</table>

*Significant at the 5% level.  
Note: If the confidence interval does not include 0, the indirect effect is significant.
which includes 0). However, the same bootstrap analysis with two-way communication as the only mediator confirmed that two-way communication is a significant mediator in the relationship between social presence cues and repurchase intentions ($M = .3382$, $SE = .11$, confidence interval = .136, .616; Sobel test: $Z = 3.044$, $p < .05$). Overall, the findings provide evidence for the mediating role of interactivity perceptions. Social presence cues positively influence communication effectiveness (i.e. satisfaction, attitudes, and repurchase intentions), and this effect is mediated by the three interactivity perceptions, stimulated by social presence cues. Therefore, $H3$ is supported.

The significant main effect of social presence cues leads to the following question: Does increasing the level of social presence always guarantee higher levels of interactivity and communication effectiveness? Under which situations is the value of social cues maximized in new media communications, such as mobile texting? In other words, when should firms use social cues in mobile texting? To answer these questions, we examine the interaction effect between social presence and the level of service recovery.

**The interaction effect: social presence cues and service recovery level**

$H4$ and $H5$ predict the interaction effect of social presence cues and the service recovery level. We conducted a MANOVA to test both $H4$ and $H5$. The multivariate difference measures (i.e. Pillai’s trace, Hotelling’s trace, Wilks’s lambda, and Roy’s largest root) were significant ($p < .05$), indicating that the combined dependent variables varied across the different levels of social presence and service recovery. The interaction effect of a social presence cue and service recovery levels on two-way communication ($H4a$) was significant ($F(1, 129) = 16.394$, $p < .05$) (see Figure 1 and Table 2). That is, when the firm transmitted text messages that did not resolve customers’ service failure issue (low service recovery), their two-way communication perceptions were greater for the message with social cues ($M = 5.571$) than the message without social cues ($M = 3.93$; $F(1, 129) = 31.424$, $p < .05$). Conversely, when the text message solved customers’ problem (high service recovery), the impact of social presence cues on their two-way communication perceptions was not significant ($M_{highservice recovery \times social cues} = 5.636$, $M_{highservice recovery \times nosocial cues} = 5.583$; $F(1, 129) = .04$, n.s.). Similarly, the findings show significant interaction effects on control perceptions ($F(1, 129) = 3.937$, $p < .05$) ($H4b$). In the case of high service recovery, the effect of social presence cues on control was not significant ($M_{highservice recovery \times social cues} = 5.153$ $M_{highservice recovery \times nosocial cues} = 4.891$; $F(1, 129) = 1.30$, n.s.). Adding social presence cues makes a significant difference in control perceptions when the service recovery level is low ($M_{lowservice recovery \times social cues} = 5.14$,

![Figure 1. Interaction effect on two-way communication and control perceptions.](image-url)
M_{\text{low service recovery} \times \text{nosocial cues}} = 4.194; F(1, 129) = 13.518, p < .05). Interaction effects on consumers’ perceptions of responsiveness were not significant (F(1, 129) = 1.616, p > .05) (H4c). Therefore, H4 is partially supported.

The interaction effects of social presence cues and service recovery levels on satisfaction were significant (F(1, 129) = 8.121, p < .05) (see Figure 2 and Table 2). As H5a predicted, when the service recovery was low, adding social cues was a significant predictor of satisfaction (M_{\text{low service recovery} \times \text{social cues}} = 4.262, M_{\text{low service recovery} \times \text{nosocial cues}} = 2.903; F(1, 129) = 20.917, p < .05). However, under the high service recovery condition, adding social presence cues did not have a significant impact on satisfaction (M_{\text{high service recovery} \times \text{social cues}} = 4.798, M_{\text{high service recovery} \times \text{nosocial cues}} = 4.574; F(1, 129) = .716; n.s.). Although the interaction effects on attitudes (H5b) and repurchase intentions (H5c) are not significant, similar patterns were found for both (see Table 3). For example, under the low service recovery condition, attitudes of consumers who received a message with social presence cues (M = 4.488) were higher than those of consumers who received a message with no social presence cues (M = 3.376).

Whereas repurchase intentions and attitudes are more associated with the overall evaluation of the firm, satisfaction was connected with a specific experience (i.e. communication experience) with the firm. Therefore, under low service recovery conditions (i.e. service failure is not resolved), adding social cues to communication messages is not enough to significantly enhance overall evaluations and images (i.e. attitudes and repurchase intentions) of the firm. Consumers expect more tangible gains from marketers, and simply including social cues is not enough to increase repurchase intentions and attitudes. However, social presence cues play an important role in consumers’ specific experiences with the firm (i.e. communication messages), even when service failure is not resolved.

Validation

Our findings show that the inclusion of social presence cues in texting enhances consumers’ perceptions of interactivity, satisfaction, attitudes, and repurchase intentions. In addition, the level of service failure moderates these relationships. To further substantiate and validate the results, we gathered additional qualitative insights on consumers’ attitudes toward mobile interactions with firms and a firm’s general use of social media, specifically Facebook, in the context of service failure.

We conducted three focus groups with consumers who currently own smartphones and use them on a weekly basis to interact with retail firms. All participants had
shopped for and purchased items using their smartphone within one month before the focus group, and all used Facebook on a daily basis. Thirty-six participants were recruited from undergraduate business courses at a large US public university and equally divided into 3 groups. Participants were 16 men and 20 women, ages ranged from 20 to 26 years, and all were from diverse ethnic backgrounds: Caucasian, African American, Asian, and Hispanic.

The focus groups were useful in validating consumers’ attitudes toward using mobile devices to connect with firms and the potential costs and benefits of using texts via Facebook messages to interact with firms, specifically in the context of service failure. The focus groups began with a warm-up discussion about the advantages and disadvantages of mobile devices in interacting with firms. Then, participants were asked to complete three projective exercises (sentence completion, storytelling, and picture drawing) intended to delve into unconscious beliefs and attitudes toward mobile communications.

The projective exercises revealed that consumers value social presence cues in mobile texting, while also valuing the time-related benefits of short, concise messages. Participants told stories about their most valued means of communications, which involved thoughtful details that made them feel special. Participants also told stories about their worst texting experiences; these stories revolved around similar issues: miscommunication, misunderstanding, impersonal responses, and ‘too abbreviated’ responses.

The participants were then asked to act as if they were the head of the customer service department for a large retail firm and, with this position of authority, to describe how they would manage service failure situations using mobile texting; specifically, how would they emphasize the benefits of mobile communications to customers, and what kinds of messages would be standard communications. Finally, participants provided service failure scenarios and responded to customers’ complaints using mobile texting. Participants provided two separate responses: one response with social presence cues and one response without cues. Toward the end of the focus group, participants discussed the possible outcomes when using each response (with and without social cues).

Our analysis of verbatim focus group transcripts involved an iterative, part-to-whole strategy from which we aimed to develop a holistic understanding of the value of mobile texting to resolve service complaints. Aided by Atlas software and following the data analysis and interpretation guidelines outlined by prior research (Spiggle, 1994), we utilized our theoretical background to explain behavior, such as social presence theory, interactivity theory, double deviation, and asymmetric disconfirmation theory. The thematic categories that emerged from data analysis included the value of social presence cues in texting, perceived user control over the outcome during service failure situations, perceived firm responsiveness when service fails, and sources of satisfaction and dissatisfaction when texting to resolve service failure. Table 5 provides exemplary quotes and illustrates data categorization. In particular, participants experienced empathy and intimacy when mobile texts embodied cues of social presence; this theme supports social presence theory and interactive theory. In addition, in the case of service failure, participants expected inclusions of human-like service recovery efforts, especially when service recovery was not successful (e.g. social presence theory). Therefore, with no contradictory data, the focus groups provided confirmatory data corroborating our proposed theories.
Table 5. Exemplary quotes from focus group data.

<table>
<thead>
<tr>
<th>Thematic categories</th>
<th>Discussion context</th>
<th>Exemplary quotes from focus groups</th>
<th>Literature comparisons (related hypotheses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of social presence cues</td>
<td>The benefits of mobile texting for service recovery</td>
<td>‘Texting is great because it is a great way to connect with companies especially when I need to get a problem solved. It saves time and effort for customers … and when the company responds with legitimate, real interest [human warmth] in my problem, it just boosts my loyalty.’ (Caucasian, F, 25)</td>
<td>Social presence theory (H4, H5)</td>
</tr>
<tr>
<td>Perceived user control</td>
<td>Texting for the purpose of service recovery</td>
<td>‘It makes me feel special when someone uses my name in a text or relays an immediate sense of concern.’ (African American, F, 21)</td>
<td>Social presence theory (H1)</td>
</tr>
<tr>
<td>Perceived firm responsiveness</td>
<td>Examples of good communication via texting during service failure</td>
<td>‘When somebody or some physical person is actually responding to my texts, I know that I’m gonna get the problem fixed.’ (Hispanic, M, 24)</td>
<td>Interactivity theory (H1)</td>
</tr>
<tr>
<td>Sources of dissatisfaction</td>
<td>Examples of bad communication via texting during service failure</td>
<td>‘There is something about having the reassurance that someone is helping you … that personal dialogue makes you believe in the company and you know that individual customers are important for that company.’ (Caucasian, F, 21)</td>
<td>Interactivity theory (H1)</td>
</tr>
<tr>
<td></td>
<td>Descriptions of worst mobile texting experiences</td>
<td>‘There is so much miscommunication that happens when texting because I can’t see the other person’s face or reaction to my text and the lack of personalization just exaggerates the miscommunication.’ (Caucasian, F, 22)</td>
<td>Social presence theory (H4, H5)</td>
</tr>
<tr>
<td></td>
<td>Reflections on service failure without human warmth</td>
<td>‘The worst texting experiences are when I don’t feel like I’m talking with another person … I hate computer generated responses!’ (Caucasian, M, 22)</td>
<td>Social presence theory (H2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>‘This [texts without human warmth] would make me feel like a number – not a person.’ (Caucasian, F, 21)</td>
<td>Interactivity theory (H1)</td>
</tr>
</tbody>
</table>
Discussion
This study contributes to the marketing and service literature in several ways. First, we show that mobile texting is a viable means for addressing service complaints via social media platforms such as Facebook. Much of the literature to date has focused on marketers’ use of mobile technologies and social media tools as one-way promotional and awareness campaigns. Moreover, mobile technologies are considered ineffective in resolving situations of negative attribution by customers (Dabholkar & Spaid, 2012). Here, we demonstrate that mobile texting via Facebook can be useful in resolving service complaints in a timely and efficient manner using two-way dialogue. Although the primary advantage of mobile technology is time convenience (Kleijnen et al., 2007), our findings highlight the benefits of adding social presence cues to text messages, particularly in the context of service failure. In a culture that thrives on keeping text messages short with abbreviated sentences, we show that incorporating social presence cues in two-way texting is important in cultivating empathy and human warmth.

Second, the findings contribute to the understanding of mobile technology and its perceived value as a communication channel. According to Kleijnen et al. (2007), cognitive effort and perceived risk are antecedents of perceived value. However, our focus group participants indicated that cognitive effort is not applicable to younger demographics because of the pervasiveness of mobile communications. The participants in the pretest conveyed a preference for mobile texting over other communication channels (e.g. telephone and face-to-face). This finding is consistent with research that suggests that young adults are leading the way in mobile technological innovations (Preacher & Hayes, 2004). Regarding perceived risk, research defines this concept as a cost weighed against benefits in value perceptions (Kleijnen et al., 2007). With this definition in mind, our findings suggest that perceived risks can be assuaged by embedding social presence cues in text messages. More specifically, our findings show that the inclusion of social presence cues in texting enhances consumers’ perceptions of interactivity in terms of two-way communication, control, and responsiveness (H1a, H1b, and H1c). Furthermore, the incorporation of social presence cues provides more effective message communications, and this, in turn, increases consumers’ satisfaction, attitudes, and repurchase intentions (H2a, H2b, and H2c). Our findings reveal that with the inclusion of social presence cues, mobile texting can be an effective form of communications in resolving service failures.

Third, our findings are concurrent with prior work suggesting that empathy and time convenience are most important when using mobile texting (Kleijnen et al., 2007). On the one hand, our participants use mobile texting for time convenience; on the other hand, they prefer lengthier messages in the context of service failure. In balancing time convenience with empathy, it is important to incorporate social presence (when compared with shorter messages without social presence cues). Using technology-based communications without a clear understanding of social presence could lead to negative perceptions among customers. Therefore, companies need a thoughtful, planned process for service recovery. In essence, text messages should be concise but embedded with social cues.

Fourth, during service recovery situations in which the remedy is delayed, we find that the value of social presence cues is heightened. The effect of social presence cues on two-way communication perceptions, control perceptions, and satisfaction is influenced by the degree of social presence required for a given situation (i.e. the level of service recovery) (H4a, H4b, and H5a). When a firm is unable to resolve a problem promptly, embedding social cues in text messages can improve the virtual mood. This is analogous to the way
marketers’ positive emotions can minimize customers’ negative emotions in face-to-face contexts (Jiangang et al., 2011).

Fifth, the nonsignificant interaction effect on responsiveness perceptions ($H4c$) indicates that under low service recovery conditions, customers still perceive a text message as more reciprocal and controllable when social presence cues are evident. However, customers might not perceive the message as responsive (i.e. fast and immediate) because adding social presence cues is not enough to increase their perceptions of responsiveness when service failure is not resolved. In short, when a customer experiences incomplete service recovery, the benefits associated with social presence cues do not outweigh the responsiveness perception. Therefore, embedding social presence cues is not a ‘cure-all solution’ for increasing customer satisfaction.

In summary, social presence cues are a proxy for emotional exchanges that typically take place in face-to-face interactions, and such cues create a virtual mood. The findings of this study suggest that social presence cues (1) create positive experiences in virtual interactions and (2) improve customers’ overall attitudes toward the firm, particularly when service failure is not resolved. Understanding the importance of social presence cues will allow firms to strategically plan mobile communications that convey empathy and human warmth.

**Managerial implications**

One important implication for marketers is the identification of new technologies, such as texting via social media platforms, to provide a prompt means of resolving service failure. Global technologies give customers more power and influence, and customers can easily take action using their mobile device when they are dissatisfied with services. To reduce the spread of negative word of mouth, firms should offer a convenient means for customers to directly address their complaints with the firm. Identifying effective intervention strategies when service failure occurs is an important step in maintaining high satisfaction levels among customers. For example, a dissatisfied customer can negatively affect a retailer’s image by spreading harmful and destructive content via the web. Negative word of mouth can be detrimental for firms, especially for retailers that rely heavily on positive online reviews. When negative claims go viral, marketers have little control over the content, how it is perceived, and whom it reaches. Therefore, addressing customers’ concerns and complaints in a timely and efficient manner is a necessity for marketers operating in a world in which consumers are virtually connected. Responding expediently to customers’ complaints, concerns, or queries with the inclusion of social presence cues is a valuable strategy when the target demographic is heavy smartphone users.

In general, marketing communications accomplish two objectives: delivering content and establishing relationships with the other party. When messages are automated and inauthentic, a negative mood may arise among receivers. As the focus group participants conveyed, the lack of social cues in text messages is similar to ‘bad customer service in retail departments’. Adding social presence cues to text messages will provide a positive virtual environment in which online interactivity influences offline attitudes and behaviors. More important, messages that include social presence cues are particularly important when problems are not resolved in a timely manner.

The study’s findings show no negative effects of social presence cues; thus, firms can apply social presence cues in all types of communications. Social presence cues had the greatest impact on two-way communication perceptions and satisfaction (see the effect sizes in Table 2). Although social presence cues can be used to improve the perceived
value of mobile technology communications, these cues alone will not increase customers’ attitudes and repurchase intentions. Social presence cues can enhance customer satisfaction; however, the primary goal for marketers must be successful and effective service recovery. It is our hope that marketers will apply the findings of this study by including social presence cues in all virtual communications as a means for improving customer satisfaction and overall attitude toward the firm.

Theoretical implications

The theoretical contributions of the study are threefold. First, we apply social presence theory in the context of real-time mobile texting via Facebook. Previous studies have explored the influence of social presence cues on trust (Gefen & Straub, 2003, 2004), system/media acceptance (Karahanna & Straub, 1999), and patronage behaviors (Hassanein & Head, 2005) on commercial websites. With significant empirical evidence, this study provides insights into the importance of social presence theory in the context of m-commerce.

Second, whereas prior research on social presence cues has demonstrated the effect of nonverbal cues (e.g. avatar and emoticon) or textual cues (e.g. information on the presence of other customers) on interactivity perceptions and communication effectiveness, the current study focuses on the effect of verbal cues in mobile texting communications. Thus, the findings of this study contribute to the literature on social presence in computer-mediated communications by examining social cues in mobile text messages among heavy smartphone users.

Third, our study sheds light on ways to manipulate interactive communications. Various interactivity features have been tested and discussed in prior studies (Ha & James, 1998; Macias, 2003). Some features are strong predictors of two-way communication perceptions (e.g. feedback mechanism), control perceptions (e.g. search map), or responsiveness perceptions (e.g. speed). Our study demonstrates that verbal social presence cues stimulate interactivity perceptions. In particular, social presence cues are strong determinants of two-way communication perceptions. Therefore, adding social presence cues to text messages is an effective and efficient way to manipulate interactive messages.

Directions for further research

Further research can build on the study’s findings in several areas. First, we only consider one new media channel: real-time mobile texting. Additional research could examine communications within other emerging channels, such as online communities, Facebook, Twitter, or blogs. Second, we focused on verbal cues in texting situations. However, what if the image or picture of a corresponding customer representative is included in the text? Various types of social cues might influence interactivity perceptions differently. Although the results of this study clearly indicate that verbal cues have the strongest impact on two-way communication, visual cues (e.g. image and emoticon) might stimulate other interactivity perceptions (e.g. responsiveness). Cui et al. (2010) test two types of social cues (i.e. cognitive cue and affective cue) on interactivity perceptions but do not examine and compare effect sizes. Future studies could test various social cues and the relative influence on all three interactivity perceptions.

Third, in terms of manipulating the level of social presence, we only consider two levels: with and without social presence cues. Future studies might examine the impact of various levels of social presence cues. For example, consumers might feel irritated or
uneasy under extremely high levels of social presence. It would be fruitful to determine the optimal level of social presence in various computer-mediated communication situations. Fourth, we used a student sample. Although younger generations are leading the industry in adopting and using mobile technologies, further research should consider using a representative sample with diverse demographics.

Mobile technologies provide an important means for marketers in establishing interactive communications with their customers. A first step toward stimulating mobile communications is to understand customers’ value perceptions. While customers value time and convenience, they also value human warmth.

Disclosure statement
No potential conflict of interest was reported by the authors.

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