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# Just being there matters

## Investigating the role of sense of presence in Like behaviors from the perspective of symbolic interactionism

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### Abstract

**Purpose** – Although user behaviors in social network service (SNS) have been well studied in prior literature, most of these studies focus on those behaviors with relatively deep user engagement such as information disclosure, while the underlying mechanisms that explain users' shallow engagement behaviors (e.g. Like behavior) have been rarely discussed. To fill this research gap, the purpose of this paper is to propose and empirically test a research model to identify the antecedents of Like behavior.

**Design/methodology/approach** – This study identifies the distinctions between post behavior and Like behavior and develops a research model of Like behavior by emphasizing the role of sense of presence from the perspective of symbolic interactionism. The model is tested through a survey with 479 users of WeChat (a popular SNS tool in China). Structural equation modeling, SmartPLS in particular, is used for data analysis.

**Findings** – Three value perceptions, namely cognitive value, hedonic value and social value, are found to be positively associated with Like intention, and sense of presence is found to affect Like intention both directly and indirectly via the three value perceptions.

**Research limitations/implications** – The research model is tested based on a specific SNS in China, so whether the conclusions can be applied to other research contexts should be further examined in future research. This study identifies the distinctions between post behavior and Like behavior and suggests to view the Like behavior from the perspective of symbolic interactionism.

**Practical implications** – The paper outlines ways to effectively promote SNS users' Like behaviors by enhancing the functions related to three value perceptions, especially by enriching the ways that facilitate interpersonal interactions.

**Originality/value** – This paper is one of the first to distinguish Like behavior from post behavior in SNS, propose and empirically test a research model of Like behavior. In particular, this paper strengthens the important role of sense of presence from the perspective of symbolic interactionism which has rarely been investigated in prior studies.

**Keywords** Perceived value, Symbolic interactionism, User engagement, Social network site, Like behaviour, Sense of presence

**Paper type** Research paper

### 1. Introduction

With the rapid development of Web 2.0 technologies, social network service (SNS) has been well integrated in many individuals' daily routines (Lin and Lu, 2015; Yin *et al.*, 2018; Zhan *et al.*, 2016). SNS can be viewed as a personal page that allows users to build and maintain social connections by collecting and sharing information with other users (Kim, 2018; Kwon and Wen, 2010). Due to the increasing popularity of SNSs such as



Facebook, Twitter and LinkedIn in recent years, SNS is thought to greatly reform social communication and information distribution approaches around the world (Cheikh-Ammar and Barki, 2014) and has been found to significantly influence users' work (Cao *et al.*, 2016) and life (Zhan *et al.*, 2016).

As SNS relies heavily on the user-generated content (Cheung *et al.*, 2011), whether or not users would like to create or contribute new content is of important value for the sustainability of SNS (Cheung *et al.*, 2015; Sun *et al.*, 2015; Wang and Sun, 2016). Users can contribute content in different ways: either post or disclose their personal information (e.g. status, photos, videos and locations) or respond to the information provided by other users through comment and Like behavior (i.e. clicking the Like button which is an icon in the form of a heart or a thumb below each shared post). These three types of behavior (e.g. post, comment and Like behavior) ask for users' different levels of engagement, cognitive effort and commitment (Kim and Yang, 2017). Specifically, post behavior requires higher level of engagement than comment and Like behavior (Kim and Yang, 2017). Although both comment and Like behavior reflect the reaction to others' information, the engagement levels for these two behaviors are different too. As comment behavior still needs users to appropriately organize information and interpret their own opinions to respond to others' information, the engagement level for comment behavior is higher than Like behavior which only requires users to click the Like button (Kim and Yang, 2017).

Although post behavior has been widely discussed in prior studies (e.g. Chen and Sharma, 2015; Chen X. *et al.*, 2016; Cheung *et al.*, 2015; Sun *et al.*, 2015, 2018), Like behavior which is more prevalent than post and comment behaviors has received less attention. According to a report by Penguin Intelligence (a think tank of Tencent) in 2016, 57.6 percent of users commit a Like behavior while only 35.1 percent of users post their own information on Wechat, a popular SNS operated by Tencent in China (<http://tech.qq.com/a/20160321/007049.htm#p=1>). Therefore, understanding the underlying mechanisms that explain the users' Like behaviors is helpful for SNS providers to generate strategies to encourage users' participation. It is worth noting that although Like behaviors occur during both interpersonal and non-personal communications (e.g. brands and public figures) (e.g. Chen and Shen, 2015; Ho and See-To, 2018; Leong *et al.*, 2017; Lin *et al.*, 2018; Shen *et al.*, 2018, forthcoming), this study focuses on the interpersonal communications between friends which can be regarded as dyadic communications.

Prior studies on post behavior address a variety of theories including uses and gratifications theory, social influence theory, social presence theory and privacy calculus theory to understand the factors that determine users' post behavior (Cheung *et al.*, 2011, 2015; Seidman, 2013; Sun *et al.*, 2015; Wang and Sun, 2016). Although some of these theories are still helpful for understanding Like behavior given the similarity between Like behavior and post behavior, i.e., both post behavior and Like behavior reflects users' content contributions to SNS, these theories are not adequate to capture the unique features of Like behavior. For example, Gan (2017) following the prior studies on post behavior draws upon uses and gratifications theory to understand the impacts of hedonic, social and utilitarian gratification on Like behavior without identifying the distinctions between post behavior and Like behavior.

However, there are several distinctions between Like behavior, comment behavior and post behavior. Unlike post behavior or comment behavior which may require users to spend more efforts on information organization and codification, Like behavior can be completed through a simple click. In other words, the engagement levels for Like behavior are lower than post and comment behaviors. To capture this unique feature, we term Like behavior as a shallow engagement behavior. Unlike those deep engagement behaviors which may deliver users' rich meanings through words, pictures and videos, Like behavior just leaves a footprint to indicate users' existence. Thus, to articulate the motivations driving users' Like

behavior, it is important to understand how users view the values derived from such a footprint. Therefore, a new construct – sense of presence – is proposed to capture users' perceptions about the footprint or existence in this study, where sense of presence refers to the extent to which users perceive that Like behavior can serve as a symbol of existence. Accordingly, the research objective of this study shifts to exploring whether or not sense of presence can affect Like behavior, and if yes, how. Thus, the key research question for this study can be interpreted as follows:

*RQ1.* Will and how do sense of presence affect users' Like behavior?

This study tries to answer this research question by exploring the underlying mechanisms of Like behavior through the lens of symbolic interactionism. Symbolic interactionism, as a framework to better understand how individuals interact with one another through symbols, claims that humans act toward things on the basis of the meaning they ascribe to those things (Blumer, 1969). The shallow engagement nature of Like behavior implies that users cannot interpret their own meanings through words. Instead, users can still deliver certain meanings to others through clicking the Like button which is regarded as a symbol conveying meanings (Hayes *et al.*, 2016). Thus, the symbolic interactionism perspective is appropriate for understanding the underlying mechanisms of Like behavior. Specifically, in this study, we employ sense of presence which is derived from individuals' intentional actions to signal their existence to capture the symbol of Like behavior. We further propose that sense of presence may affect Like behavior both directly and indirectly through three value perceptions, namely cognitive value, social value and hedonic value.

## 2. Literature review

### 2.1 User behaviors in social network sites (SNS)

SNS users may participate in SNS in several ways. One widely investigated participation behavior is information disclosure or post behavior which refers to users' active disclosure of their status through texts, pictures and/or videos (Cheung *et al.*, 2011, 2015; Sun *et al.*, 2015). Prior studies have used different theories including uses and gratifications theory, social influence theory and privacy calculus theory to understand the factors that influence users' information disclosure behavior. Specifically, based on uses and gratifications theory, scholars have identified a variety of value perceptions such as purposive value, self-discovery, maintaining interpersonal interconnectivity, social enhancement and entertainment value as the antecedents of information disclosure (e.g. Cheung *et al.*, 2011; Malik *et al.*, 2016; Park *et al.*, 2009; Raacke and Bonds-Raacke, 2008). According to social influence theory, SNS users' information disclosure behaviors are regarded to be affected by subjective norm, group norms and social identity (e.g. Cheung *et al.*, 2011, 2015; Zhou and Li, 2014). As information disclosure may make SNS users' personal information be misused by others, privacy is another important issue discussed in prior studies. Drawing upon the privacy calculus theory, information disclosure is considered a result of the trade-off between privacy concerns/risks and perceived benefits (e.g. Krasnova *et al.*, 2010; Min and Kim, 2015; Sun *et al.*, 2015; Wang *et al.*, 2016).

Although the factors influencing post behavior have been well studied, the factors associated with another important participation behavior – Like behavior – have been paid less attention (Gan, 2017). Even in the limited empirical studies on Like behavior, scholars may still apply those theories used in post behavior without identifying the fundamental distinctions between these two types of information creation behaviors. For example, Gan (2017) addressed the uses and gratifications theory to investigate Like behavior and argued that three gratifications, namely hedonic gratification, social gratification and utilitarian gratification, positively affect SNS users' Like behaviors. Lee *et al.* (2016) examined the impacts of psychological, technological and motivational factors on Like behavior.

Prior theories on post behavior may be applicable to Like behavior as both post and Like behaviors belong to information creation behaviors and share certain similarities. However, there are still several unique features of Like behavior to be well considered to refresh the theorization of Like behavior.

Like behavior differs from post behavior or comment behavior in several ways. First, the efforts for posting a message/commenting others' messages and clicking a Like button are different. Before posting a message or commenting others' messages, SNS users may need to well prepare the materials (e.g. texts and photos) and refine their expressions, while Like behavior can be completed via a simple click (Gan, 2017; Lee *et al.*, 2016). Second, post/comment behavior and Like behavior may denote SNS users' different levels of willingness to involve in a social interaction, where post/comment behavior reflects users' high involvement while Like behavior reflects users' low involvement. Third, post/comment behavior and Like behavior deliver SNS users' meanings through different media, where post behavior can deliver users' meanings through texts and/or photos while Like behavior only can deliver users' meanings through a symbol (e.g. heart or thumb) (Cheikh-Ammar and Barki, 2014; Lee *et al.*, 2016).

There are different ways to frame Like behavior according to different dimensions or features. For example, Hayes *et al.* (2016) regarded Like behavior as a paralinguistic digital affordance based on the media feature, i.e., linguistic vs paralinguistic media. This classification can shed light on the effects of media type on communication effectiveness. However, in this study, as we stress on not only the media to deliver meanings, but also users' internal motivations to involve in social interactions, we would like to frame Like behavior as a shallow engagement behavior according to the engagement levels of behaviors (Kim and Yang, 2017).

The shallow engagement nature of Like behavior calls for understanding this special behavior from a new theoretical perspective, and the key issue here is to know how a simple symbol can convey multiple meanings which facilitate social interactions. The mechanism of symbolic interaction has drawn more and more attention in recent years (Aakhus *et al.*, 2014; Ludwig *et al.*, 2014; O'Leary *et al.*, 2014), especially in the research area of social media (Beck *et al.*, 2014; Chen R.R. *et al.*, 2016). As the theory of symbolic interactionism well interprets the symbol-based social interaction which is the case of Like behavior, this theory is taken as the theoretical underpinning of our research model.

## 2.2 *Sense of presence as a construct reflecting the symbol of Like behavior*

Symbolic interactionism is a long-standing sociological and social psychological theory, indicating that interactions between individuals give meanings to their actions by means of symbols (Mead, 1922). Symbol is anything that represents particular meanings for people. The symbol, the meanings related to symbols and the social interactions in generating meanings are core issues of symbolic interactionism (Blumer, 1969). Symbolic interactionism also implies that people are rational individuals who will always adjust their behaviors according to different contexts and other individuals' actions (Charon, 1979). Taking symbolic consumption behavior as an example, customers purchase a certain product/service (e.g. luxury brand) not only due to what functions it possesses, but also based on the meaning (symbolism) it conveys to others (e.g. I am rich or I have a good taste) (Wang and Chang, 2012).

The symbolic interactionism theory suggests that symbolic actions or behaviors, serving as symbols, can deliver certain meanings to others and generate values to users during social interactions or communications, which in turn will motivate them to commit to symbolic actions or behaviors. Accordingly, in the current research context, Like behavior can be regarded as a symbol which delivers certain meanings to others. The meaning delivery process can satisfy users' certain needs and motivate them to enact to Like behaviors.

Specifically, Like behavior as a symbol becomes an unique way for conveying diverse meanings among SNS users, as circumstances change (Cheikh-Ammar and Barki, 2014). The Like behavior can be interpreted differently by users. For instance, it can be perceived as an appreciation for the shared post, a way to maintain interpersonal relationships, or an acknowledge of viewing (Hayes *et al.*, 2016). As elaborated in the next section, these meanings can be understood through a series of value perceptions. Here, we pay attention to which construct can be used to reflect the symbol of Like behavior. Because clicking the Like button can be regarded as a claim that “I am here,” we use sense of presence to capture the extent to which users perceive that Like behavior can serve as a symbol of existence.

Sense of presence has been regarded as an important factor associated with a variety of computer-mediated behaviors (Bystrom *et al.*, 2006; Lombard and Ditton, 1997). Two most frequently discussed concepts of sense of presence are telepresence and social presence (Biocca *et al.*, 1992). Telepresence refers to the awareness of being there in a mediated environment simulated by the communication medium (Lombard and Ditton, 1997; Steuer, 1992), while social presence is a person’s perception of being together with others in a mediated environment (Biocca *et al.*, 1992). However, both two concepts stress on users’ feelings about the functions provided or enabled by information technologies (Jin *et al.*, 2017), where users are the passive receivers of these functions. They cannot be used to reflect users’ feelings induced by users’ intentional actions. As the theory of symbolic interactionism emphasizes the meanings conveyed by symbolic behaviors (rather than technologies), these two constructs are not appropriate.

In this study, we propose a concept of sense of presence based on the evaluation on the actions rather than technologies and argue that a person’s sense of presence is derived from his/her intentional actions to signal the existence of the person. It is worth noting that there is another similar concept used in prior studies – mere virtual presence (MVP) (Naylor *et al.*, 2012). MVP is defined as “the passive exposure to a brand’s supporters experienced in such social media contexts” (Naylor *et al.*, 2012, p. 105). However, sense of presence is different from MVP in several ways. First, there are three actors involved in a Like behavior: Likers who click the Like button, Likees who are Liked by Likers and bystanders who can observe the Like behavior besides Likers and Likees. MVP views the Like behavior from the perspective of bystanders while sense of presence views the Like behavior from the perspective from Likers. Second, MVP is proposed in the research context of brand or non-personal communications while sense of presence is derived from the research context of interpersonal communications. Third, MVP discussed in Naylor *et al.* (2012) was measured through objective indicators based on the econometric approach, while sense of presence captures users’ subjective perceptions and is measured with subjective items. Thus, although both MVP and sense of presence are talking about Like behavior, they view Like behavior from different perspectives, in different research contexts and through different instruments.

Sense of presence represents users’ evaluations on the first-stage consequences induced by Like behavior, i.e., whether Like behavior can act as a symbol. According to the theory of symbolic interactionism, a behavioral symbol can be understood only when this symbol can convey a variety of meanings to symbol receivers (Hayes *et al.*, 2016). The values generated in the meaning delivery process can be regarded as the second-stage consequences of Like behavior. In the next section, we will capture these meanings through value perceptions.

### 2.3 Values delivered by Like behavior

SNS users may commit a Like behavior because clicking a Like button can deliver multiple meanings in the social interaction process and bring users with various values. The value perceptions are closely associated with uses and gratifications theory. When one’s certain needs are satisfied through an action, we can say that this action can bring this person certain values (Cheung *et al.*, 2011). According to uses and gratifications theory

(Dholakia *et al.*, 2004), Cheung *et al.* (2011) identified five types of values relevant to information disclosure, namely purposive value, self-discovery, maintaining interpersonal interconnectivity, social enhancement and entertainment value, as the antecedents of information disclosure. This typology of values related to information disclosure has also been followed by several other empirical studies on information disclosure (Malik *et al.*, 2016; Park *et al.*, 2009; Raacke and Bonds-Raacke, 2008). However, some values associated with information disclosure may be irrelevant to Like behavior. For example, self-discovery stresses on the deep reflection of users' own thoughts, so it is not applicable for Like behavior which is regarded as a shallow information creation behavior. Further, both maintaining interpersonal interconnectivity and social enhancement capture the social dimension of values and can be merged. In this way, the five value dimensions can be reduced to three dimensions which capture the purposive (instrumental and utilitarian) value, social value and entertainment (hedonic) value, respectively. It is consistent with the widely accepted three-dimensional value structure (e.g. utilitarian, hedonic and social values) in prior studies (Sánchez-Fernández and Iniesta-Bonillo, 2007; Turel *et al.*, 2010; Zhou *et al.*, 2012). Similarly, in an empirical study on Like behavior, Gan (2017) summarized the value perceptions from three dimensions: utilitarian, hedonic and social aspects. Therefore, to simplify the discussion, we also use the three-dimensional value structure to frame the values generated by the Like behavior.

Specifically, utilitarian value of Like behavior reflects that SNS users can express their cognitive evaluation on others' posts through the Like behavior. In other words, SNS users may click the Like button to deliver an instrumental signal which conveys the information of appreciation, approval and agreement (Gao, 2016; Meier *et al.*, 2014). As this value is closely related with users' cognitive evaluations, it is termed as cognitive value in this study.

Hedonic value of Like behavior refers to that SNS users may take clicking the Like button as an interesting interaction approach and they can have entertainment, enjoyment and fun through Like behavior (Cheikh-Ammar and Barki, 2014; Gan, 2017). Unlike cognitive value which is related to instrumental outcome, hedonic value relies heavily on the interaction process *per se*.

Social value of Like behavior refers to those values associated with the relationship between the user who posts a message and the user who clicks the Like button under the posted message. Relationship maintenance or enhancement which reflects that users can maintain or enhance the relationships with others through Like behavior is generally used to measure social value (Cheung *et al.*, 2011; Gan, 2017; Hayes *et al.*, 2016). In this study, we extend the concept of social value by considering another two constructs: reciprocity and altruism (Kankanhalli *et al.*, 2005). Both two constructs are derived from the knowledge sharing literature and these two constructs together with relationship enhancement are regarded as three key relationship-based factors that influence knowledge sharing (Bock *et al.*, 2005; Kankanhalli *et al.*, 2005). Reciprocity captures that SNS users may develop a reciprocal relationship such that one can obtain others' support (e.g. via Like behavior) if she/he provides support to others, and altruism interprets that users may click the Like button to altruistically give support to others without considering their own returns (Gan, 2017). These three factors from different aspects (e.g. for relationship enhancement, reciprocity and intrinsic altruism) cover the social values generated from Like behavior, so they are treated as the three dimensions of a higher-order construct social value in this study.

Based on the theory of symbolic interactionism, we propose that sense of presence as a construct to capture the symbol of Like behavior and three value perceptions can be derived from this symbolic action. In the later part, we will elaborate how sense of presence affects users' Like behavior.

### 3. Research model and hypotheses

Figure 1 illustrates the research model which seeks to examine how a sense of presence affects SNS users' Like intention both directly and indirectly through multi-dimensional value perceptions (e.g. cognitive, hedonic and social value). We will explain the underlying mechanisms for each hypothesis as follows.

#### 3.1 Cognitive value

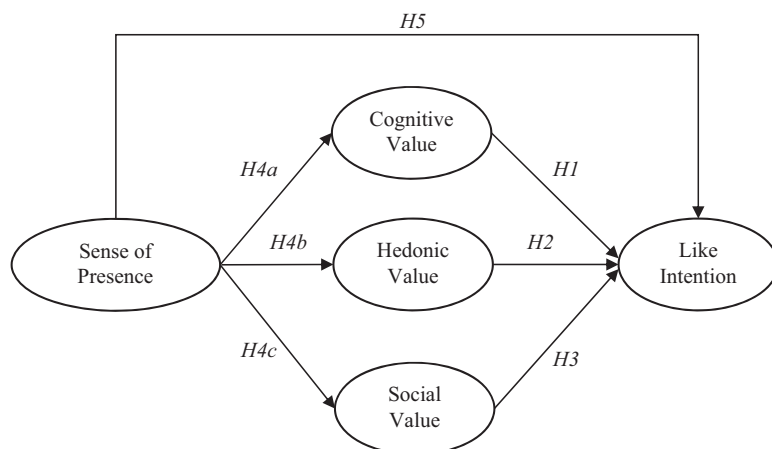
The impacts of multi-dimensional value perceptions on Like behavior can be explained through the uses and gratification theory which has been widely used in information disclosure behavior (Cheung *et al.*, 2011, 2015). This theory suggests that individuals will commit a certain behavior because that behavior can satisfy specific needs. In the last section, we have identified three key value perceptions associated with Like behavior. If users perceive that Like behavior can bring these values to them, their needs will be satisfied and they will be more likely to conduct such behavior.

Specifically, with the widespread use of the Like button in SNS, many users consider the Like button as a virtual endorsement way to convey a meaning of acknowledgment or agreement (Lee *et al.*, 2016). According to a study on Twitter's Favorite button (analogical to the Like button), many users view the button as a non-verbal and non-textual way to show their agreement or approval for the shared post (Meier *et al.*, 2014). That is, users will click the Like button when they cognitively find the shared post reflects their opinions or attitudes and want to show their approval to it. To better understand this cognitive motivation, we regard cognitive value as users' cognitive evaluation of the opinions or attitudes reflected from a certain object (e.g. a post). Like behavior, as a signal, reflects users' cognitive evaluation such as acknowledgment, support or agreement of others' opinions or attitudes. According to uses and gratifications theory, when users' needs for cognitive evaluation (e.g. cognitive value) are satisfied, they will have an intention to commit a Like behavior. So, we hypothesize that:

*H1.* Cognitive value will have a positive effect on SNS users' Like intention.

#### 3.2 Hedonic value

Hedonic value, also termed as entertainment value or experiential value, refers to the enjoyment, playfulness or fun of using an information technology (Zhou *et al.*, 2014).



**Figure 1.**  
Research model



Previous studies, based on uses and gratifications theory, found that people are more likely to participate in an activity which is encouraged by individual intrinsic motivation such as hedonic value (Kankanhalli *et al.*, 2005). Users are more likely to have an intention to adopt an information system when they experience enjoyment from using it (Sun and Zhang, 2008).

In regard to Like behavior, clicking the Like button is an interesting interaction approach which can bring enjoyable experience to SNS users (Cheikh-Ammar and Barki, 2014). For example, someone may post a message to tell an embarrassing story, while his/her friends may click the Like button in a playful manner. Like behavior is a good way to bring SNS users with positive emotions (e.g. enjoyment, playfulness or pleasure) (Gan, 2017). According to uses and gratification theory, when users' needs for entertainment are satisfied through Like behavior, they will be more likely to engage in a Like behavior. Thus, we hypothesize that:

*H2.* Hedonic value will have a positive effect on SNS users' Like intentions.

### 3.3 Social value

Social value is defined as the emotional and psychological gains of improving the social reputation or social status of users through the usage of particular systems (Turel *et al.*, 2007). In this paper, we use the concept of social value to cover all the potential benefits related to the social interaction process and take it as a formative second-order construct. Specifically, three social benefits, namely reciprocity, altruism and expected relationship, are taken as the components of social value. These three first-order constructs have been widely discussed in knowledge sharing literature (Bock *et al.*, 2005; Kankanhalli *et al.*, 2005; Oh, 2012) to capture the social incentives that motivate users to engage in the knowledge contribution behavior according to the social exchange theory. These three constructs are adapted to the research context of Like behavior because similar to knowledge sharing, Like behavior can be regarded as a social exchange too.

Reciprocity refers to the degree to which an individual can acquire mutual benefits through Like behavior (Kankanhalli *et al.*, 2005), suggesting that one may obtain Likes from others if she/he engages in Like behavior for others. Prior research on knowledge sharing suggests that people who regularly help others will receive help more quickly (Hsu and Lin, 2008). It can be predicted that when one gives Likes to others, she/he will get the Likes from others in return. This benefit will motivate users to engage in Like behavior.

Altruism refers to the degree to which an individual can obtain intrinsic enjoyment for helping others (Kankanhalli *et al.*, 2005). SNS users would respond to a friend's shared post through the Like button because of their obligation to give social support to the friend without the expectation of getting anything in return (Hayes *et al.*, 2016). Hence, altruism can be considered as a motive for SNS users' Like behavior.

Expected relationship involves the degree to which an individual can obtain an improved interpersonal relationship or create a new mutual relationship through Like behavior (Bock *et al.*, 2005). Some researchers found that building and enhancing harmonious interpersonal relationships is the primary reason for many users to use SNS (Pempek *et al.*, 2009). Regarding Like behavior is a simple way for SNS users to maintain contact with others, users may engage in Like behavior for relationship enhancement.

Based on the above arguments, as a means of social interaction in SNS, the Like button enables users to contact with others for getting feedbacks in return, acquiring satisfaction for giving social support to others or improving social relationships (Hayes *et al.*, 2016). According to uses and gratification theory (Dholakia *et al.*, 2004), one would like to commit a behavior if such behavior can bring him/her social values. Thus, we hypothesize that:

*H3.* Social value will have a positive effect on SNS users' Like intentions.

### 3.4 Sense of presence and perceived value

The relationships between sense of presence and three value perceptions can be explained by the theory of symbolic interactionism. This theory suggests that social interactions between individuals are based on the symbols which convey meanings (Blumer, 1969). As stated before, sense of presence is used to capture the symbol of Like behavior and three value perceptions can be used to reflect the meanings conveyed by this symbol. Because decoding the meanings embedded in the symbols is important for the social interactions between individuals, symbolic actions only can make sense only when the meanings conveyed by these actions are well understood. Thus, in this study, we propose that sense of presence (as a symbol) can affect value perceptions (as meanings conveyed by this symbol).

Specifically, cognitive value reflects one's needs to express his/her cognitive evaluation on a message posted by his/her friends. When users read a shared post in SNS that well reflects their opinions or attitudes, they may need a carrier to express their cognitive evaluation such as acknowledgment, support or agreement opinions related to the post (Meier *et al.*, 2014). Since the Like behavior is a lightweight way of expressing the evaluation on a post, users may click the Like button under the post to leave a symbol which signals the sense of presence. A Liker's (who click the Like button) needs for cognitive evaluation can be satisfied only when the Likee (whose post is Liked by others) is aware of the presence of the Liker, so sense of presence should be closely associated with cognitive value generated from Like behavior. Thus, we hypothesize that:

*H4a.* Sense of presence will have a positive effect on SNS users' cognitive value.

Hedonic value is one's perceived enjoyment derived from the interaction with an information technology itself (Zhou *et al.*, 2014). The Like button is such a unique interactive tool that many users find that it is joyful and enjoyable in the process of utilizing it to interact with others (Cheikh-Ammar and Barki, 2014). As a social interaction process relies on the trace or footprint without which a social interaction cannot occur. Thus, SNS users need to find certain ways to denote their presence to drive the social interaction process. In the research context of Like behavior, clicking the Like button is to leave such a trace or footprint. Because hedonic value can be obtained through engaging in a social interaction, and sense of presence can reflect that one is involved in a social interaction, sense of presence provides a foundation for Likers to feel enjoyable. Thus, we hypothesize that:

*H4b.* Sense of presence will have a positive effect on SNS users' hedonic value.

Social value is treated as a formative construct consisting of reciprocity, altruism and expected relationship in this study. All these three dimensions interpret how Like behavior can influence the relationship between Likers and Likees. One key assumption for the social value of Like behavior is that clicking the Like button under Likees' posted messages is helpful for increasing the Likees' reputation or providing social support to Likees (Cheikh-Ammar and Barki, 2014; Gan, 2017), and consequently Likees may give something in return (e.g. reciprocity) and/or enhance the relationship with Likers (e.g. relationship enhancement). In other words, the social value obtained by Likers is based on the condition that Like behavior can bring values to Likees too. As Like behavior is a shallow engagement behavior, Likers can express their support to Likees only through clicking the Like button which sends a signal that "I am here with you." Social presence or co-presence has been found to have a significant impact on social support or gratification of social connection needs (Han *et al.*, 2015). Thus, when Likers recognize the sense of presence, they will believe that their presence will give support to Likees and the Likers' social value can be obtained. For the three dimensions of social value, Likers may expect to obtain Likees' support in return (e.g. reciprocity), enhance the relationship with Likees

(e.g. expected relationships) or get intrinsic satisfaction for helping others (e.g. altruism). Therefore, we hypothesize that:

*H4c.* Sense of presence will have a positive effect on SNS users' social value.

### 3.5 Direct effect of sense of presence

This study proposes that sense of presence not only influence users' Like intention indirectly through perceived value but also directly. This direct effect can be explained through the mechanism of self-presentation (Gan, 2017). When we explain the indirect effects of sense of presence through value perceptions, we argue that Like behavior as a symbol can deliver several meanings (e.g. cognitive evaluation, enjoyable social interaction or social support) to Likees according to the theory of symbolic interactionism. However, SNS users may engage in a Like behavior just for self-presentation without considering delivering any meanings to Likees. In this case, sense of presence can directly affect Like intentions and need not take value perceptions as proxies.

Many scholars have suggested that self-presentation is a major reason for SNS use (Seidman, 2013). Self-presentation is the process of impression management to control others' perception of oneself (Leary, 1996). Attention seeking is considered as an important motivation for users' self-presentation behavior (Seidman, 2013). In order to seek attention from others, SNS users can accomplish their self-presentation goals by editing personal profiles, posting update status and photographs and writing comments on friends' pages (Rui and Stefanone, 2013). According to Meier *et al.*'s (2014) study on Twitter's Favorite button (e.g. Like behavior), some users take the button as a means of showing their presence and engagement. Similarly, SNS users can also use the Like button as an attention-seeking way to inform others that they have read the post and make others aware of their presence. Different from the value-mediated mechanism, the direct effect of sense of presence stresses on that Likers want to present themselves through Like behavior (e.g. the sender side) but whether their behaviors can be well understood (e.g. the receiver side) or not is not a concern. Therefore, we propose the direct effect of sense of presence to capture the mechanism of self-presentation:

*H5.* Sense of presence will have a positive effect on SNS users' Like intention.

## 4. Methods

### 4.1 Data collection

WeChat, a popular SNS developed by Tencent in China, was employed in this study to examine SNS users' Like intention. According to Tencent's 2016 first quarter report, WeChat has 762m monthly active accounts around the world. WeChat provides a special function called "Moment" that allows users to post image and text, share music, videos, articles and links. Only the friends from the users' contact can view their Moment posts and respond to them either by posting comments or clicking the Like button. The Like button is shaped as a heart in Moment.

To collect the data, the study conducted an online survey using Sojump.com, which is a professional questionnaire survey agency that has a sample database of more than 2.6m members and more than 1m subjects participate in questionnaire answering per day. The sample distribution varies from different gender, ages, education levels and locations, satisfying specific sample requirements. To get the customized sampling service from Sojump.com by asking this company to collect the data with balanced demographical structure (e.g. gender, age, education, etc.) which is fit with the structure of the whole Wechat population. Sojump.com randomly selected respondents from the sample database. Before answering the formal questionnaire, there was a screening question to ask whether

one was the user of Wechat Moment service. Those who have no experience in Wechat Moment service were excluded from the subsequent survey. In total, RMB 10 (about \$1.6) was provided to every respondent as the incentive for participation.

To ensure the quality of the responses, we removed those responses with same IP address, short answering time (according to our test, at least 6 min are required to complete the questionnaire, so those responses with less than 6 min were deleted), and same answers for more than ten adjacent questions. Finally, 479 valid responses were obtained and used in the data analysis. The demographics of respondents is summarized in Table I. The male participants slightly outnumbered the female participants. The age of most participants ranged from 18 to 40, those accounted for about 90 percent of the total participants. More than 70 percent of the participants were graduate or higher. Nearly 80 percent participants have used WeChat for more than one year and 90 percent of them use WeChat less than 4 h per day.

#### 4.2 Measures

All the constructs except for cognitive value and sense of presence in this study were measured using multi-item scales adapted from validated measures in previous research. Social value was taken as a second-order construct consisting of three components including reciprocity (Kankanhalli *et al.*, 2005), altruism (Lee *et al.*, 2000) and expected relationship (Hsu and Lin, 2008). The items for hedonic value were adapted from Cheikh-Amman and Barki (2014), and the items for Like intention were adapted from Lee *et al.* (2000).

The measures for cognitive value were developed to capture the extent to which Like behavior can be regarded as a way to reflect a SNS user's cognitive evaluation based on prior related literature (Gan, 2017; Gao, 2016; Meier *et al.*, 2014). Specifically, Gao (2016) and Gan (2017) stated that pressing the Like button was a simple way to express "I agree with you." Meier *et al.* (2014) suggested that Like behavior was "an unwritten method for showing agreement or approval" (p. 352). Thus, three words "approve," "support" and "agree with" were used to reflect this concept.

The measures for sense of presence were developed to seize the degree to which Like behavior can be treated as a symbol signaling the existence of a SNS user based on prior

Variable	Level	Frequency	Percentage
Gender	Male	267	55.7
	Female	212	44.3
Age	Under 18	13	2.7
	18–25	169	35.3
	26–30	115	24.0
	31–40	141	29.4
	41–50	38	7.9
	Above 50	3	0.6
	Middle school or lower	45	9.4
Education	2-year college	74	15.4
	Graduate	327	68.3
	Postgraduate or higher	33	6.9
Usage experience	Less than 3 month	18	3.8
	3–6 month	19	4.0
	6–12 month	66	13.8
	More than 1 year	376	78.5
Usage frequency (per day in hours)	less than 1	162	33.3
	1–2	157	32.8
	2–4	112	23.4
	More than 4	48	10.0

**Table I.**  
Demographics

arguments related to attention seeking (Kwon and Wen, 2010; Sung *et al.*, 2016). It captures the consequences of Like behavior other than Like behavior *per se*. Like behavior can make others be aware of (Kwon and Wen, 2010) or reaffirm (Sung *et al.*, 2016) the existence of Likers. Thus, we used two items “demonstrate existence” and “be aware of the existence” to reflect this concept.

To ensure the content validity of the measures of these two constructs, we invited four PhD students to evaluate the appropriateness of these measures through card sorting (Moore and Benbasat, 1991). These students were asked to sort the cards (one item on each card) according to the definitions of the two constructs and all these students exactly sorted the cards as expected. Statistical validities of these measures were also confirmed according to factor analysis (see the details in the later section on measurement model evaluation).

Before the formal survey, about ten graduate students who had Wechat usage experience were invited to evaluate the face validity of the whole questionnaire to ensure that all the questions were clear and understandable. Expressions for certain questions were adjusted according to their suggestions.

All constructs were measured by multiple items with seven-point Likert scales ranging from 1 = strongly disagree to 7 = strongly agree. Table II summarizes the items used in the study.

Construct	Items	Measure	Source
Social value: reciprocity	RE1	When I Like my friends' posts in WeChat, I believe that I will receive Likes from my friends	Kankanhalli <i>et al.</i> (2005)
	RE2	When I Like my friends' posts in WeChat, I expect somebody to respond when I'm in need	
	RE3	I Like my friends' posts in WeChat because of his/her Likes for me before	
Social value: altruism	AL1	I like to compliment others by clicking the Like button in WeChat	Lee <i>et al.</i> (2000)
	AL2	I like to encourage others by clicking the Like button in WeChat	
	AL3	I like to support others by clicking the Like button in WeChat	
Social value: expected relationship	ER1	Clicking the Like button for a friend in WeChat will increase the trust between us	Hsu and Lin (2008)
	ER2	Clicking the Like button for a friend in WeChat will strengthen the tie between us	
	ER3	Clicking the Like button for a friend in WeChat will create new relationships with new friends	
Hedonic value	HV1	I have fun clicking the Like button in WeChat	Cheikh-Ammar and Barki (2014)
	HV2	Clicking the Like button provides me a lot of enjoyment	
	HV3	I enjoy clicking the Like button	
Cognitive value	CV1	I Like the post which I approve	Developed based on Gan (2017), Gao (2016), Meier <i>et al.</i> (2014)
	CV2	I Like the post which I support	
	CV3	I Like the post which I agree with	
Sense of presence	SP1	Clicking the Like button will demonstrate my existence	Developed based on Kwon and Wen (2010), Sung <i>et al.</i> (2016)
	SP2	Clicking the Like button will make my friends be aware of my presence	
Like intention	LI1	I am willing to click the Like button in Wechat in the future	Lee <i>et al.</i> (2000)
	LI2	I will frequently click the Like button in Wechat in the future	
	LI3	I will continue to click the Like button in Wechat	

**Table II.**  
Measurements of  
constructs in the  
research model

## 5. Results

Partial least square (PLS) was used to test the measurement model and structural model. PLS has been widely applied in Information Systems research, especially in the early stage of theory development. PLS is more appropriate for exploratory studies and formative constructs (Hair and Sarstedt, 2011), which is the case in our study as social value is taken as a formative second-order construct. Therefore, PLS, SmartPLS in particular, was used as the analytic tool in this study. Following the two-stage approach, measurement model and structural model will be reported, respectively (Hair *et al.*, 1998).

### 5.1 Measurement model

The measurement model of the first-order constructs including reliability, convergent validity and discriminant validity was assessed. Specifically, the reliability of each construct was assessed using average variance extracted (AVE), composite reliability (CR) and Cronbach's  $\alpha$ . The critical values for AVE and CR are 0.5 and 0.7, respectively, and the recommended value for Cronbach's  $\alpha$  is 0.7 (Fornell and Larcker, 1981). Table III shows that the minimum values of AVE, CR and Cronbach's  $\alpha$  were 0.707, 0.878 and 0.793, respectively. Each value was higher than the recommended value, suggesting that all constructs were reliable.

Convergent validity was tested by checking factors loading of each construct. It is recommended that the factor loading of each indicator of a construct should be higher than 0.7 (Gefen and Straub, 2005). As shown in Table IV, all factor loadings on their respective constructs in this model satisfied the recommended level for convergent validity.

Discriminant validity can be evaluated by comparing correlations and square roots of AVE of constructs. The square root of AVE of each construct should be higher than the correlations of the specific construct with all the other constructs in the model (Fornell and Larcker, 1981). Table V shows that the squared roots of all AVE are greater than the correlations with other constructs, supporting the discriminant validity of these constructs.

Social value was treated as a formative second-order construct including three first-order constructs (e.g. reciprocity, altruism and expected relationship), and there were several reflective items for each first-order construct. The measurement model for the second-order construct was evaluated by checking the weights of each first-order construct. As shown in Table VI, the weights were significant for all three first-order constructs: reciprocity ( $w = 0.290$ ,  $t = 25.935$ ), altruism ( $w = 0.429$ ,  $t = 39.462$ ) and expected relationship ( $w = 0.430$ ,  $t = 40.969$ ), suggesting that these three dimensions of social value should be retained in the subsequent analysis.

Further, because the correlations between constructs are relatively high, we further examine the issues of common method bias (CMB) (Podsakoff *et al.*, 2003) and multicollinearity. The CMB analysis results showed that the trait factors explained most of the

Construct	AVE	Composite reliability	Cronbach's $\alpha$
SV-AL	0.853	0.945	0.913
SV-RE	0.707	0.878	0.793
SV-ER	0.825	0.934	0.894
HV	0.879	0.956	0.931
CV	0.884	0.958	0.934
SP	0.837	0.911	0.805
LI	0.842	0.941	0.906

**Table III.**

Reliability scores for constructs

**Notes:** SV-AL, altruism; SV-RE, reciprocity; SV-ER, expected relationship; HV, hedonic value; CV, cognitive value; SP, sense of presence; LI, like intention

	SV-RE	SV-AL	SV-ER	HV	CV	SP	LI	Investigating the role of sense of presence
SV-RE1	<i>0.844</i>	0.522	0.556	0.493	0.393	0.491	0.493	
SV-RE2	<i>0.875</i>	0.426	0.456	0.441	0.258	0.437	0.441	
SV-RE3	<i>0.801</i>	0.346	0.406	0.418	0.229	0.439	0.418	
SV-AL1	0.504	<i>0.918</i>	0.702	0.577	0.605	0.527	0.612	
SV-AL2	0.481	<i>0.928</i>	0.678	0.560	0.580	0.483	0.583	
SV-AL3	0.457	<i>0.924</i>	0.677	0.520	0.560	0.462	0.568	
SV-ER1	0.476	0.640	<i>0.890</i>	0.589	0.593	0.531	0.611	
SV-ER2	0.529	0.701	<i>0.925</i>	0.603	0.600	0.533	0.636	
SV-ER3	0.543	0.681	<i>0.909</i>	0.618	0.558	0.546	0.615	
HV1	0.506	0.556	0.621	<i>0.944</i>	0.435	0.588	0.708	
HV2	0.496	0.599	0.651	<i>0.940</i>	0.454	0.583	0.707	
HV3	0.515	0.525	0.595	<i>0.929</i>	0.409	0.594	0.654	
CV1	0.333	0.606	0.602	0.427	<i>0.945</i>	0.497	0.579	
CV2	0.341	0.614	0.616	0.448	<i>0.946</i>	0.511	0.607	
CV3	0.332	0.557	0.592	0.428	<i>0.929</i>	0.486	0.550	
SP1	0.549	0.462	0.532	0.580	0.434	<i>0.915</i>	0.545	
SP2	0.449	0.483	0.513	0.563	0.462	<i>0.915</i>	0.571	
LI1	0.445	0.614	0.627	0.639	0.604	0.571	<i>0.921</i>	
LI2	0.495	0.554	0.638	0.725	0.516	0.583	<i>0.896</i>	
LI3	0.440	0.585	0.616	0.663	0.578	0.584	<i>0.935</i>	

**Notes:** SV-RE, reciprocity; SV-AL, altruism; SV-ER, expected relationship; HV, hedonic value; CV, cognitive value; SP, sense of presence; LI, like intention

**Table IV.**  
Cross-loadings  
for constructs

Construct	SV-AL	SV-RE	SV-ER	HV	CV	SP	LI
SV-AL	<i>0.924</i>						
SV-RE	0.521	<i>0.841</i>					
SV-ER	0.743	0.569	<i>0.908</i>				
HV	0.598	0.539	0.665	<i>0.937</i>			
CV	0.630	0.357	0.643	0.462	<i>0.940</i>		
SP	0.516	0.545	0.571	0.625	0.490	<i>0.915</i>	
LI	0.637	0.502	0.684	0.737	0.616	0.610	<i>0.918</i>

**Notes:** SV-AL, altruism; SV-RE, reciprocity; SV-ER, expected relationship; HV, hedonic value; CV, cognitive value; SP, sense of presence; LI, like intention. Italic diagonal elements are the square root of the AVE for each element

**Table V.**  
Correlation matrix  
for constructs

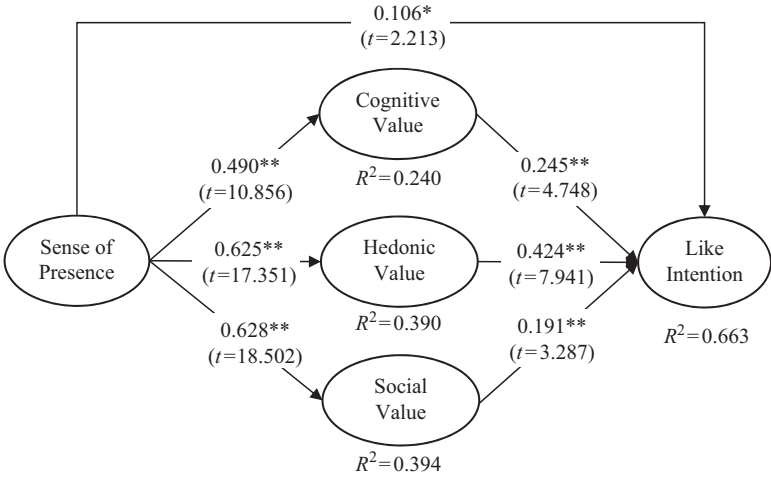
First-order construct	Weight	<i>t</i> -value
Reciprocity	0.290	25.935
Altruism	0.429	39.462
Expected relationship	0.430	40.969

**Table VI.**  
Weight for each first-  
order construct of  
social value

variance and the multi-collinearity analysis indicated that the variance inflation factors for all the independent variables were smaller than 2.5 (Petter *et al.*, 2007), suggesting that both CMB and multi-collinearity issues were not threats to the current study.

## 5.2 Structural model

Figure 2 presents the results of the PLS analysis of the structural model. Three value perceptions, cognitive value ( $\beta = 0.245$ ,  $t = 4.748$ ,  $p < 0.01$ ), hedonic value ( $\beta = 0.424$ ,



**Figure 2.**  
PLS results for  
the proposed  
research model

Notes: \* $p < 0.05$ ; \*\* $p < 0.01$

$t = 7.941, p < 0.01$ ) and social value ( $\beta = 0.191, t = 3.287, p < 0.01$ ) have significant effects on Like intention, verifying *H1–H3*. What is more, social value exerts a stronger influence than cognitive value and hedonic value. Sense of presence has significant effects on cognitive value ( $\beta = 0.490, t = 10.856, p < 0.01$ ), hedonic value ( $\beta = 0.625, t = 17.351, p < 0.01$ ) and social value ( $\beta = 0.628, t = 18.502, p < 0.01$ ), supporting *H4a–H4c*. In addition, the direct influence of sense of presence on Like intention is also confirmed ( $\beta = 0.106, t = 2.213, p < 0.05$ ). In conclusion, all paths were significant and the model explained 66.3 percent of the variance of SNS users' Like intention.

## 6. Discussion

### 6.1 Key findings

Taking Like behavior as a shallow engagement behavior, this study proposes the concept of sense of presence and empirically tests its impacts on Like intention through two mechanisms. Some interesting findings can be derived from the study.

First, three value perceptions related to Like behavior are found to significantly affect Like intention, indicating that users' Like behaviors are driven by their needs for cognitive, hedonic and social values. These findings are consistent with prior studies on information disclosure (e.g. Cheung *et al.*, 2011, 2015; Sun *et al.*, 2015), suggesting that although there are several differences between Like behavior and post behavior, they still share something in common as both of them belong to information creation behavior.

Second, this study finds that sense of presence has significant effects on the three value perceptions. Most of prior studies on either information disclosure or Like behavior in social media focus on the consequences or impacts of a variety of value perceptions but pay less attention to the antecedents of perceived values (e.g. Cheung *et al.*, 2015; Gan, 2017). This study brings sense of presence into the Like behavior literature and confirms that mere presence can shape in-depth cognitive value perceptions (Naylor *et al.*, 2012).

Third, this study also finds that sense of presence can directly affect Like intention without the mediation of value perceptions. It suggests that SNS users may commit the Like behavior may not be necessary to deliver certain meanings to others. One may click the Like button just for presenting themselves. This confirms the importance of self-presentation in user behavior in social media (Seidman, 2013).



### 6.2 Theoretical implications

This study advances the theoretical understanding on information creation, especially Like behavior, in several ways. First, this study figures out the distinctions between Like behavior and post/comment behavior by conceptualizing Like behavior as a shallow engagement behavior and propose a new construct – sense of presence – to capture the shallow engagement nature. Like behavior has been less empirically investigated, and even in the limited research on Like behavior scholars tend to treat Like behavior and post behavior similarly and use same theories (e.g. Gan, 2017). A better understanding on Like behavior should be based on the theorization that considers the unique features of Like behavior. Therefore, this study challenges the fundamental assumption of post behavior which requires users' deep input, arguing that mere presence also can deliver certain meanings and foster social interaction through the mechanism of symbolic interactionism. This study not only contributes prior SNS literature by proposing the new concept of sense of presence, but also implies future research on shallow engagement behavior to think from the theoretical perspective of symbolic interactionism.

Second, this study identifies the value perceptions associated with Like behavior, especially stressing on the role of cognitive value which is not well understood in prior studies. Although the three-dimensional value structure is consistent for post behavior and Like behavior, the specific value perceptions under this structure for post and Like behaviors are different. Responding to the call for contextualized theory building (Davison and Martinsons, 2016), the value perceptions in the research context of Like behavior need to be refreshed. Specifically, we figure out that cognitive value is a salient utilitarian value generated by Like behavior, as SNS users can employ the symbolic action (e.g. Like behavior) to express their cognitive evaluation on the posts. Although prior studies have provided certain arguments on cognitive value (Gan, 2017; Gao, 2016; Meier *et al.*, 2014), they fail to explicitly take it as a construct and empirically examine its role. Further, we also extend the concept of social value by taking it as a formative second-order construct with three dimensions (e.g. expected relationship, reciprocity and altruism) where reciprocity and altruism dimensions are proved to be important for Like behavior. The contextualized value perceptions proposed in this study can enrich the theoretical understanding on the values associated with Like behavior as well shed light on other shallow engagement behaviors.

Third, this study theorizes and empirically tests two underlying mechanisms that explain the impacts of sense of presence, the direct effect and the indirect effects through multi-dimensional value perceptions. On one hand, according to the theory of symbolic interactionism, this study reveals that sense of presence as a symbol of Like behavior can be used to deliver several meanings to Likees, and Likers accordingly can obtain certain values for successfully delivering these meanings. It explains the relationships between sense of presence and three value perceptions. On the other hand, one may click the Like button just for presenting him/herself, the meanings conveyed and the values generated from the meaning delivery become not so necessary, indicating a direct effect of sense of presence on Like intention. These two effects reflect the mechanisms of symbolic interaction (i.e. indirect effect through value perceptions) and self-presentation (i.e. direct effect), respectively. These mechanisms lay the foundation for future researchers to theorize the role of sense of presence.

### 6.3 Practical implications

Two major practical implications can be derived from the findings of this study. First, SNS service providers should recognize the importance of three values in shaping users' Like behaviors and consider the strategies which can enhance users' value perceptions. Regarding that value perceptions are obtained based on the extent to which relevant

meanings are well delivered, SNS service provider should improve service design to facilitate the meaning delivery. For example, to help SNS users to clearly deliver their specific meanings, Like button can be designed in different forms to let Likees easily know the underlying reasons behind the Like behavior (e.g. using thumb to reflect cognitive approval while using heart to reflect relationship enhancement). Second, this study reveals that sense of presence is important for value generation, so SNS service providers should make SNS users obtain a stronger sense of presence through Like button design. For example, personalized Like button design can help users to be attached with different labels and make Likees easily recognize their existence. Designing Like button with rich media may also augment users' sense of presence.

#### *6.4 Limitations and future research*

There are some limitations in this paper that can be further addressed in future research. First, the proposed model is supposed to be empirically validated for different types of SNS. Although the conclusions are found to be supported in WeChat, whether these conclusions can be applied to other SNSs or non-personal communication environment still calls for further verification. Second, this study is conducted in China which is generally interpreted as a society with collectivistic culture. Thus, whether the proposed model still works in other contexts (e.g. USA) is not known. Future research may compare the results based on the samples from different cultures, confirming our conclusion to enhance its generalizability or advancing the theoretical understanding by considering culture as a potential contingent factor. Third, this study sheds light on the importance of value perceptions but pays less attention to the website design related with these value perceptions. Future research can further explore the design features which can lead to these value perceptions. Finally, this study only considered Like behavior as one of the typical cases of shallow engagement behavior and investigated the underlying mechanisms of SNS user' Like intention. However, whether these theoretical mechanisms are appropriate to understand other kinds of shallow engagement behavior remains unknown. Future research thus is supposed to identify other forms of shallow engagement behavior, and further investigate their theoretical mechanisms.

### **7. Conclusion**

Like behavior has become a popular interaction approach in SNS, while the research on this issue is still rare. Recognizing the fundamental distinctions between post behavior and Like behavior, this study reconceptualizes Like behavior as a shallow engagement behavior, proposes a concept of sense of presence to capture the shallow engagement nature, and empirically investigates its impacts on Like intention by drawing upon the theory of symbolic interactionism. This study advances the theoretical understanding on Like behavior and provides some practical suggestions to SNS service providers accordingly. Future researchers are encouraged to advance the theories on shallow engagement behavior by taking this study as a foundation.

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## References

- Aakhus, M., Ågerfalk, P.J., Lyytinen, K. and Te'eni, D. (2014), "Symbolic action research in information systems: introduction to the special issue", *MIS Quarterly*, Vol. 38 No. 4, pp. 1187-1200.
- Beck, R., Pahlke, I. and Seebach, C. (2014), "Knowledge exchange and symbolic action in social media-enabled electronic networks of practice: a multilevel perspective on knowledge seekers and contributors", *MIS Quarterly*, Vol. 38 No. 4, pp. 1245-1270.
- Biocca, F., Harms, C. and Burgoon, J.K. (1992), "Toward a more robust theory and measure of social presence: review and suggested criteria", *Presence: Teleoperators and Virtual Environments*, Vol. 12 No. 5, pp. 456-480.
- Blumer, H. (1969), *Symbolic Interactionism: Perspective and Method*, Prentice Hall, Englewood Cliffs, NJ.
- Bock, G.W., Zmud, R.W., Kim, Y.G. and Lee, J.N. (2005), "Behavioral intention formation in knowledge sharing: examining the roles of extrinsic motivators, social-psychological forces, and organizational climate", *MIS Quarterly*, Vol. 29 No. 1, pp. 87-111.
- Bystrom, K., Barfield, W. and Hendrix, C. (2006), "A conceptual model of the sense of presence in virtual environments", *Presence Teleoperators & Virtual Environments*, Vol. 8 No. 2, pp. 241-244.
- Cao, X.F., Guo, X.T., Vogel, D. and Zhang, X. (2016), "Exploring the influence of social media on employee work performance", *Internet Research*, Vol. 26 No. 2, pp. 529-545, doi: 10.1108/IntR-11-2014-0299.
- Charon, J.M. (1979), *Symbolic Interactionism: An Introduction, an Interpretation, an Integration*, Prentice-Hall, Englewood Cliffs, NJ.
- Cheikh-Ammar, M. and Barki, H. (2014), "'Like' is more than just a thumbs up: the role of feedback and sociability in SNS usage", paper presented at the Proceedings of the Twentieth Americas Conference on Information Systems, Savannah, GA, August 7-10.
- Chen, J. and Shen, X.L. (2015), "Consumers' decisions in social commerce context: an empirical investigation", *Decision Support Systems*, Vol. 79, pp. 55-64.
- Chen, R. and Sharma, S.K. (2015), "Learning and self-disclosure behavior on social networking sites: the case of Facebook users", *European Journal of Information Systems*, Vol. 24 No. 1, pp. 93-106, doi: 10.1057/ejis.2013.31.
- Chen, R.R., Davidson, R.M. and Ou, C.X. (2016), "Using social media for business communication: a symbolic interaction perspective", paper presented at the 27th Australasian Conference on Information Systems, Wollongong, December 5-7.
- Chen, X., Pan, Y. and Guo, B. (2016), "The influence of personality traits and social networks on the self-disclosure behavior of social network site users", *Internet Research*, Vol. 26 No. 3, pp. 566-586.
- Cheung, C.M.K., Chiu, P.Y. and Lee, M.K.O. (2011), "Online social networks: why do students use Facebook?", *Computers in Human Behavior*, Vol. 27 No. 4, pp. 1337-1343, doi: 10.1016/j.chb.2010.07.028.
- Cheung, C.M.K., Lee, Z.W.Y. and Chan, T.K.H. (2015), "Self-disclosure in social networking sites: the role of perceived cost, perceived benefits and social influence", *Internet Research*, Vol. 25 No. 2, pp. 279-299.
- Davison, R.M. and Martinsons, M.G. (2016), "Context is king! Considering particularism in research design and reporting", *Journal of information technology*, Vol. 31 No. 3, pp. 241-249.
- Dholakia, U.M., Bagozzi, R.P. and Pearo, L.K. (2004), "A social influence model of consumer participation in network- and small-group-based virtual communities", *International Journal of Research in Marketing*, Vol. 21 No. 3, pp. 241-263.
- Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.
- Gan, C.M. (2017), "Understanding WeChat users' liking behavior: an empirical study in China", *Computers in Human Behavior*, Vol. 68, pp. 30-39, doi: 10.1016/j.chb.2016.11.002.
- Gao, L. (2016), "Motives for posting and liking on social media: comparing differences between Chinese and European users", University of Twente, Enschede.

- Gefen, D. and Straub, D. (2005), "A practical guide to factorial validity using PLS-Graph: tutorial and annotated example", *Communications of the Association for Information Systems*, Vol. 16 No. 1, pp. 91-109.
- Hair, J.F. and Sarstedt, M. (2011), "PLS-SEM: indeed a silver bullet", *Social Science Electronic Publishing*, Vol. 19 No. 2, pp. 139-152.
- Hair, J.F., Tatham, R.L., Anderson, R.E. and Black, W. (1998), *Multivariate Data Analysis, 5/E*, Prentice Hall, Upper Saddle River.
- Han, S., Min, J. and Lee, H. (2015), "Antecedents of social presence and gratification of social connection needs in SNS: a study of Twitter users and their mobile and non-mobile usage", *International Journal of Information Management*, Vol. 35 No. 4, pp. 459-471.
- Hayes, R.A., Carr, C.T. and Wohn, D.Y. (2016), "One click, many meanings: interpreting paralinguistic digital affordances in social media", *Journal of Broadcasting & Electronic Media*, Vol. 60 No. 1, pp. 171-187.
- Ho, K.K. and See-To, E.W. (2018), "The impact of the uses and gratifications of tourist attraction fan page", *Internet Research*, Vol. 28 No. 3, pp. 587-603.
- Hsu, C.L. and Lin, J.C.C. (2008), "Acceptance of blog usage: the roles of technology acceptance, social influence and knowledge sharing motivation", *Information & Management*, Vol. 45 No. 1, pp. 65-74.
- Jin, W., Sun, Y., Wang, N. and Zhang, X. (2017), "Why users purchase virtual products in MMORPG? An integrative perspective of social presence and user engagement", *Internet Research*, Vol. 27 No. 2, pp. 408-427.
- Kankanhalli, A., Tan, B.C.Y. and Wei, K.K. (2005), "Contributing knowledge to electronic knowledge repositories: an empirical investigation", *MIS Quarterly*, Vol. 29 No. 1, pp. 113-143.
- Kim, C. and Yang, S.-U. (2017), "Like, comment, and share on Facebook: how each behavior differs from the other", *Public Relations Review*, Vol. 43 No. 2, pp. 441-449.
- Kim, J.-Y. (2018), "A study of social media users' perceptual typologies and relationships to self-identity and personality", *Internet Research*, Vol. 28 No. 3, pp. 767-784.
- Krasnova, H., Spiekermann, S., Koroleva, K. and Hildebrand, T. (2010), "Online social networks: why we disclose", *Journal of Information Technology*, Vol. 25 No. 2, pp. 109-125.
- Kwon, O. and Wen, Y. (2010), "An empirical study of the factors affecting social network service use", *Computers in Human Behavior*, Vol. 26 No. 2, pp. 254-263.
- Leary, M.R. (1996), *Self-presentation: Impression Management and Interpersonal Behavior*, Brown & Benchmark Publishers, Brown Madison, WI.
- Lee, D., Park, J.Y., Kim, J., Kim, J. and Moon, J. (2000), "Understanding music sharing behaviour on social network services", *Online Information Review*, Vol. 35 No. 5, pp. 716-733.
- Lee, S.Y., Hansen, S.S. and Jin, K.L. (2016), "What makes us click 'like' on Facebook? Examining psychological, technological, and motivational factors on virtual endorsement", *Computer Communications*, Vol. 73, pp. 332-341.
- Leong, L.-Y., Jaafar, N.I. and Sulaiman, A. (2017), "Understanding impulse purchase in Facebook commerce: does big five matter?", *Internet Research*, Vol. 27 No. 4, pp. 786-818.
- Lin, J., Li, L., Yan, Y. and Turel, O. (2018), "Understanding Chinese consumer engagement in social commerce: the roles of social support and swift guanxi", *Internet Research*, Vol. 28 No. 1, pp. 2-22.
- Lin, K.-Y. and Lu, H.-P. (2015), "Predicting mobile social network acceptance based on mobile value and social influence", *Internet Research*, Vol. 25 No. 1, pp. 107-130.
- Lombard, M. and Ditton, T. (1997), "At the heart of it all: the concept of presence", *Journal of Computer-Mediated Communication*, Vol. 3 No. 2, available at: <http://ascusc.org/jcmc/vol3/issue2/lombard.html>
- Ludwig, S., De Ruyter, K., Mahr, D., Wetzels, M., Brüggem, E. and De Ruyck, T. (2014), "Take their word for it: the symbolic role of linguistic style matches in user communities", *MIS Quarterly*, Vol. 38 No. 4, pp. 1201-1217.

- Malik, A., Dhir, A. and Nieminen, M. (2016), "Uses and gratifications of digital photo sharing on Facebook", *Telematics and Informatics*, Vol. 33 No. 1, pp. 129-138.
- Mead, G.H. (1922), "A behavioristic account of the significant symbol", *Journal of Philosophy*, Vol. 19 No. 6, pp. 157-163.
- Meier, F., Elsweller, D. and Wilson, M. (2014), "More than liking and bookmarking? Towards understanding Twitter favouriting behaviour", paper presented at the Proceedings of the Eighth International AAAI Conference on Weblogs and Social Media, Ann Arbor, MI, June 1-4.
- Min, J. and Kim, B. (2015), "How are people enticed to disclose personal information despite privacy concerns in social network sites? The calculus between benefit and cost", *Journal of the Association for Information Science and Technology*, Vol. 66 No. 4, pp. 839-857.
- Moore, G.C. and Benbasat, I. (1991), "Development of an instrument to measure the perceptions of adoption an information technology innovation", *Information Systems Research*, Vol. 2 No. 3, pp. 192-222.
- Naylor, R.W., Lamberton, C.P. and West, P.M. (2012), "Beyond the 'like' button: the impact of mere virtual presence on brand evaluations and purchase intentions in social media settings", *Journal of Marketing*, Vol. 76 No. 6, pp. 105-120.
- O'Leary, M.B., Wilson, J.M. and Metiu, A. (2014), "Beyond being there: the symbolic role of communication and identification in perceptions of proximity to geographically dispersed colleagues", *MIS Quarterly*, Vol. 38 No. 4, pp. 1219-1243.
- Oh, S. (2012), "The characteristics and motivations of health answerers for sharing information, knowledge, and experiences in online environments", *Journal of the American Society for Information Science and Technology*, Vol. 63 No. 3, pp. 543-557.
- Park, N., Kee, K.F. and Valenzuela, S. (2009), "Being immersed in social networking environment: Facebook groups, uses and gratifications, and social outcomes", *CyberPsychology & Behavior*, Vol. 12 No. 6, pp. 729-733.
- Pempek, T.A., Yermolayeva, Y.A. and Calvert, S.L. (2009), "College students' social networking experiences on Facebook", *Journal of Applied Developmental Psychology*, Vol. 30 No. 3, pp. 227-238.
- Petter, S., Straub, D. and Rai, A. (2007), "Specifying formative constructs in information systems research", *MIS Quarterly*, Vol. 31 No. 4, pp. 623-656.
- Podsakoff, P.M., Mackenzie, S.B., Lee, J.Y. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.
- Raacke, J. and Bonds-Raacke, J. (2008), "MySpace and Facebook: applying the uses and gratifications theory to exploring friend-networking sites", *CyberPsychology & Behavior*, Vol. 11 No. 2, pp. 169-174.
- Rui, J. and Stefanone, M.A. (2013), "Strategic self-presentation online: a cross-cultural study", *Computers in Human Behavior*, Vol. 29 No. 1, pp. 110-118.
- Sánchez-Fernández, R. and Iniesta-Bonillo, M.Á. (2007), "The concept of perceived value: a systematic review of the research", *Marketing theory*, Vol. 7 No. 4, pp. 427-451.
- Seidman, G. (2013), "Self-presentation and belonging on Facebook: how personality influences social media use and motivations", *Personality and Individual Differences*, Vol. 54 No. 3, pp. 402-407.
- Shen, X.-L., Li, Y.-J., Sun, Y. and Zhou, Y. (2018), "Person-environment fit, commitment, and customer contribution in online brand community: a nonlinear model", *Journal of Business Research*, Vol. 85, pp. 117-126.
- Shen, X.L., Li, Y.-J., Sun, Y., Chen, Z. and Wang, F. (forthcoming), "Understanding the role of technology attractiveness in promoting social commerce engagement: moderating effect of personal interest", *Information & Management*.
- Steuer, J. (1992), "Defining virtual reality: dimensions determining telepresence", *Journal of Communication*, Vol. 42 No. 4, pp. 73-93.
- Sun, H. and Zhang, P. (2008), "An exploration of affect factors and their role in user technology acceptance: mediation and causality", *Journal of the American Society for Information Science and Technology*, Vol. 59 No. 8, pp. 1252-1263.

- Sun, Y., Wang, N., Shen, X.-L. and Zhang, X. (2015), "Location information disclosure in location-based social network services: privacy calculus, benefit structure, and gender differences", *Computers in Human Behavior*, Vol. 52, pp. 278-292, doi: 10.1016/j.chb.2015.06.006.
- Sun, Y., Zhang, Y., Shen, X.-L., Wang, N., Zhang, X. and Wu, Y. (2018), "Understanding the trust building mechanisms in social media: regulatory effectiveness, trust transfer, and gender difference", *Aslib Journal of Information Management*, Vol. 70 No. 5, pp. 498-517.
- Sung, Y., Lee, J.-A., Kim, E. and Choi, S.M. (2016), "Why we post selfies: understanding motivations for posting pictures of oneself", *Personality and Individual Differences*, Vol. 97, pp. 260-265.
- Turel, O., Serenko, A. and Bontis, N. (2007), "User acceptance of wireless short messaging services: deconstructing perceived value", *Information & Management*, Vol. 44 No. 1, pp. 63-73.
- Turel, O., Serenko, A. and Bontis, N. (2010), "User acceptance of hedonic digital artifacts: a theory of consumption values perspective", *Information & Management*, Vol. 47 No. 1, pp. 53-59.
- Wang, N. and Sun, Y.Q. (2016), "Social influence or personal preference? Examining the determinants of usage intention across social media with different sociability", *Information Development*, Vol. 32 No. 5, pp. 1442-1456, doi: 10.1177/0266666915603224.
- Wang, T., Duong, T.D. and Chen, C.C. (2016), "Intention to disclose personal information via mobile applications: a privacy calculus perspective", *International Journal of Information Management*, Vol. 36 No. 4, pp. 531-542.
- Wang, W.T. and Chang, W.H. (2012), "A study of virtual product consumption from the expectancy disconfirmation and symbolic consumption perspectives", *Information Systems Frontiers*, Vol. 16 No. 5, pp. 1-22.
- Yin, C., Sun, Y., Fang, Y. and Lim, K. (2018), "Exploring the dual-role of cognitive heuristics and the moderating effect of gender in microblog information credibility evaluation", *Information Technology & People*, Vol. 31 No. 3, pp. 741-769.
- Zhan, L.H., Sun, Y.Q., Wang, N. and Zhang, X. (2016), "Understanding the influence of social media on people's life satisfaction through two competing explanatory mechanisms", *Aslib Journal of Information Management*, Vol. 68 No. 3, pp. 347-361, doi: 10.1108/ajim-12-2015-0195.
- Zhou, T. and Li, H. (2014), "Understanding mobile SNS continuance usage in China from the perspectives of social influence and privacy concern", *Computers in Human Behavior*, Vol. 37, pp. 283-289.
- Zhou, Z., Jin, X.L. and Fang, Y. (2014), "Moderating role of gender in the relationships between perceived benefits and satisfaction in social virtual world continuance", *Decision Support Systems*, Vol. 65 No. 1, pp. 69-79.
- Zhou, Z., Fang, Y., Vogel, D.R., Jin, X.-L. and Zhang, X. (2012), "Attracted to or locked in? Predicting continuance intention in social virtual world services", *Journal of Management Information Systems*, Vol. 29 No. 1, pp. 273-306.

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