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Why People are Involved in and Committed to Online Knowledge-Sharing Communities: An Expectancy-Value Perspective

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ABSTRACT

One challenge to the success of online knowledge-sharing communities relates to the participants' longtime participation. Literature has explored the determinants of initial participation rather than longtime participation despite significant differences between them. To fill this research gap, this article conceptualizes involvement and continuous commitment regarding longtime participation and examines their antecedents in the Chinese context. Extending the expectancy-value theory, knowledge-sharing expectancy, knowledge-sharing value, and knowledge-sharing affect are identified as antecedents of involvement and continuous commitment. This article further suggests that interpersonal trust and the norm of reciprocity are important contextual factors in the Chinese context that enhance the positive impacts of these antecedents on involvement and continuous commitment. Empirical results confirm most hypotheses. Interestingly, the impact of knowledge-sharing affect is not influenced by interpersonal trust or the norm of reciprocity. Both theoretical and practical implications are discussed.

KEYWORDS

Affect, Expectancy, Longtime Participation, Online Knowledge-Sharing Communities, Value

INTRODUCTION

Online knowledge-sharing communities (OKSCs) are online social networks that facilitate social interactions and promote knowledge sharing (Chiu, Hsu, & Wang, 2006). Despite the considerable body of registrants in OKSCs, the number of longtime participants is limited. The existence of OKSCs depends on initial participation, but their success relies heavily on participants' longtime participation (Hwang, Singh, & Argote, 2015). This study focuses on OKSCs that enable open and voluntary participation. In OKSCs, individuals are free to participate in the community and

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they also have the freedom to leave the community without worrying about being punished. In this sense, many participants are one-time or short-term users (Sun, Fang, & Lim, 2012). The social networks cannot be well-developed and social interactions cannot be fostered among them, which impedes the development of longtime participation. Additionally, compared with knowledge-sharing communities that are regulated by organizations, the issue of longtime participation is more notable in the OKSC type investigated in this study. To this end, this study aims to develop an understanding of the antecedents of the longtime OKSC participation by examining why people become involved and continuously commit to OKSCs.

Knowledge management in China has gained great importance due to an emphasis on the global economy (Ou, Davison, & Wong, 2016). Since Chinese have an appreciation of face maintenance, they tend to prefer informal and implicit communication styles (Li, Ardichvili, Maurer, Wentling, & Stuedemann, 2007). Therefore, OKSCs are warmly embraced by Chinese people for informal communication. Despite the popularity of OKSCs, the reasons why people maintain longtime participation in OKSCs in China are not well understood. Since OKSCs entail open and voluntary participation, participative behavior is inherently a function of individual characteristics (Huang, Davison, Liu, & Gu, 2008). As such, it is necessary to examine how participants' motivations influence their longtime OKSC participation in the Chinese context.

OKSCs inherit the social features of real communities (Yu, Jiang, & Chan, 2011). China has been categorized as a collectivistic culture where people attach great importance to personal relationships (Huang et al., 2008). As a consequence, it is necessary to develop an understanding of how contextual factors influence OKSC participative behavior. Interpersonal trust and the norm of reciprocity have been identified as important elements in China with respect to knowledge sharing (Ou et al., 2016). However, prior studies have mainly focused on examining their direct effects on knowledge sharing (Chen & Hung, 2010; Huang et al., 2008). Since personal motivations to stay in OKSCs can be influenced by contextual factors, this study investigates how interpersonal trust and the norm of reciprocity moderate the relationship between personal motivations and OKSC longtime participation.

As one of the main process theories of motivation, the expectancy-value theory (EVT) is a basic and integrated paradigm for understanding individuals' motivations and behaviors (Liu & Liu, 2011). Unlike initial participants, longtime participants have accumulated a certain amount of community experience upon which they form their expectations and pursue value in OKSCs. After a certain period of time, participants may also anticipate emotions with respect to OKSCs, which predict their future level of participation. EVT has been adopted as the theoretical foundation of this study for the following reasons. First, EVT distinguishes variables related to expectancy, value, and affect components, providing a good way to investigate these variables in detail. In OKSCs, members' longtime participation depends not only on how they expect success regarding these goals, but also on what value they can acquire (Yu et al., 2011). The importance of affect has also been emphasized when explaining longtime participation behavior (Tsai & Bagozzi, 2014). Second, EVT recognizes the importance of contextual factors (Du, Ai, Abbott, & Zheng, 2011), which are critical in OKSC research in China. Building on EVT, this study identifies three motivational constructs; namely, knowledge-sharing expectancy, knowledge-sharing value, and knowledge-sharing affect, which are antecedents of OKSC involvement and continuous commitment. Interpersonal trust and the norm of reciprocity are examined as moderators between knowledge-sharing motivations and both OKSC involvement and continuous commitment.

This study has both theoretical and practical implications for knowledge-sharing research. First, in theoretical terms, this research explores individuals' motivations for longtime participation in Chinese OKSCs, which is in contrast to initial participation in previous research. Second, this research provides an integrated perspective of motivations by classifying motivations into expectancy, value, and affect components. The operationalization of knowledge-sharing expectancy, knowledge-sharing value, and knowledge-sharing affect as second-order factors improves our understanding of EVT. Third, this research contributes to knowledge-sharing literature by theoretically proposing and empirically

examining the moderating effects of interpersonal trust and the norm of reciprocity. These findings suggest that interpersonal trust and the norm of reciprocity, which are especially important in China, can enhance the impact of expectancy and value, but not affect. The role of affect is further discussed. In practical terms, this study provides empirical evidence of the design and management of OKSCs in China. On one hand, practitioners can incorporate incentive mechanisms into OKSCs to leverage individuals' motivations to enhance OKSC longtime participation. On the other hand, a favorable OKSC atmosphere with high interpersonal trust and the norm of reciprocity should be fostered by enhancing OKSC longtime participation.

This paper first presents the theoretical background of this study followed by discussions of the research model and hypotheses. Next, the research model is empirically tested using a survey of 324 subjects. This is followed by data analysis. Finally, the implications, limitations, and directions for future research are discussed.

THEORETICAL BACKGROUND

OKSC Longtime Participation

The success of OKSCs is strongly influenced by individuals' longtime participation (Hwang et al., 2015). Encouraging participants' involvement and commitment can be a good way to preserve memberships in OKSCs. Involvement and commitment are conceptually distinct. Participants are considered to be involved when their values and self-image are linked to a specific decision-making situation, whereas participants are believed to be committed when their values and self-image are associated with a specific choice alternative (Bowden, 2009). Compared to involvement concerned with an issue, commitment is linked to a specific attitude position on an issue. In this study, OKSC involvement and continuous commitment are conceptualized as two variables representing longtime participation.

Involvement is defined as the level of individuals' attachment and sense of belonging to the focal OKSC (Kim, Zheng, & Gupta, 2011). Involvement is a psychological state reflecting participants' perceived relevance and importance of the OKSC (Shiau & Luo, 2013). Highly involved participants show more interest and identification in the OKSC and they tend to invest more time and effort in participating in OKSC activities (Jin, Lee, & Cheung, 2010). The more individuals are involved in the OKSC, the more attachment they will develop toward the community (Bowden, 2009). Participants also engage in more citizenship behavior when they are highly involved in the OKSC (Chang & Chuang, 2011). As such, involvement reflects participants' long-term relationships with the OKSC. Therefore, this study considers involvement as a good representation of longtime participation.

Commitment is a multidimensional construct consisting of continuous, affective, and normative commitment (Bateman, Gray, & Butler, 2011). This paper focuses on continuous commitment for the following reasons. First, the success of OKSCs depends upon their ability to retain members. Members with continuous commitment may choose to stay in the community because of member inertia and the lack of other choices (Ranaweera & Menon, 2013). Second, as Ranaweera and Menon (2013) proposed, continuous commitment is more universal than affective and normative commitment. Normative commitment involves members' feelings of responsibility and obligation to continue membership (Tufail, Zia, Khan, & Irfan, 2005). Because OKSCs allow individuals to remain anonymous and distant from others, normative pressure is reduced (Ray, Kim, & Morris, 2014). As such, normative commitment is less important in OKSCs. Affective commitment reflects an individual's emotional attachment and involvement in the community (Tufail et al., 2005). Since one focus of this study is OKSC involvement, this study will not investigate affective commitment, which is conceptually similar to involvement. In this study, *continuous commitment* is defined as individuals' tendencies to experience commitment to the focal OKSC based on their beliefs about the benefits associated with staying in the OKSC and the costs associated with leaving the OKSC

(Bateman et al., 2011). Continuous commitment reflects the extent to which participants are willing to stay in the OKSC. Therefore, it is also a good reflection of longtime participation.

Expectancy-Value Theory

EVT proposes that a human's tendency toward a behavior is a function of the expectancy individuals hold for the behavior and the value of the behavioral outcomes (Yu et al., 2011). Expectancy refers to individuals' expectations regarding the success related to performing a task, and value refers to the benefits individuals can acquire from the task (Eccles & Wigfield, 2002). Even when individuals expect their participation to be successful, they may not retain and commit to OKSCs if no value can be derived. In contrast, even if individuals can acquire value, they may not continue to participate if they expect their participation to be unsuccessful (Sun et al., 2012). Hence, both expectancy and value components are critical for predicting OKSC longtime participation.

Besides the expectancy and value components, EVT researchers have suggested that the prediction power of EVT could be improved if an affect component is included (Sigaard & Skov, 2015). Recent studies suggest that affective factors play an important role in a decision-making process (Tsai & Bagozzi, 2014). Since OKSC participation is voluntary, affect investment is effective in maintaining longtime associations between participants and the community. This study expands the scope of EVT that includes only expectancy and value components and it identifies three major motivational components of longtime OKSC participation: knowledge-sharing expectancy, knowledge-sharing value, and knowledge-sharing affect.

EVT suggests that expectancy is a good predictor of behavior (Liu & Liu, 2011). Chinese have an appreciation of face maintenance (Ou et al., 2016). If they expect that they are not capable of sharing valuable knowledge, they may not engage in OKSCs. In addition, expectancy for maintaining cognitive consistence is also a motivator of OKSC engagement (Lin, Hung, & Chen, 2009). Therefore, knowledge-sharing expectancy is conceptualized as a latent construct reflected by two dimensions: knowledge-sharing self-efficacy and perceived compatibility. Knowledge-sharing self-efficacy refers to individuals' confidence in their competence to share valuable knowledge with others in the same OKSC (Chen & Hung, 2010), and perceived compatibility refers to individuals' cognitions that the OKSC fits with their original values, previous experiences, and current needs (Rouibah & Hamdy, 2009). This paper thus defines knowledge-sharing expectancy as the degree to which individuals have expectancy about their success in participating in OKSCs. An individual with high knowledge-sharing expectancy is expected to exhibit a high knowledge-sharing self-efficacy and perceived compatibility.

According to EVT, individuals are motivated to perform behaviors that satisfy their innate needs (Sun et al., 2012). The value component associated with these behaviors involves both intrinsic value and utility value (Eccles & Wigfield, 2002). OKSC participation can generate intrinsic value by providing the opportunity for Chinese people to present their online identity, which complements their cautiousness in offline contexts. People can also gain utility value by enhancing their knowledge from OKSC participation. This paper identifies two aspects of knowledge-sharing value as particularly conducive to OKSC involvement and continuous commitment: desire for self-presentation and perceived relative advantage. Desire for self-presentation is defined as the extent to which individuals want to present their image in an OKSC (Kim, Chan, & Kankanhalli, 2012). Perceived relative advantage is defined as individuals' cognitions about the advantages and benefits obtained by OKSC participation (Chen & Hung, 2010). Thus, this paper conceptualizes knowledge-sharing value as individuals' OKSC participation for the sake of the value and interest they can derive.

Affect is concerned with individuals' affective or emotional reactions to performing a particular behavior (Miltiadou & Savenye, 2003). The goal-directed behavior model suggests that anticipated emotions, as important affective components, are significant determinants of behavior (Perugini & Bagozzi, 2001). Anticipated emotions (both positive and negative) refer to the expected emotional consequences of achieving or not achieving a goal (Tsai & Bagozzi, 2014). Thus, knowledge-sharing

affect is a construct reflected by two dimensions: positive anticipated emotion and negative anticipated emotion. This paper defines knowledge-sharing affect as forward-looking affective reactions in which individuals imagine the emotional consequences of either participating in OKSCs or not.

EVT indicates that the effects of motivations depend on contextual factors (Yu et al., 2011). It reveals how the role of motivations can be influenced by external factors associated with motivational components. In OKSCs, longtime participation depends on the favorableness of OKSC context and the kindness of OKSC members (Wasko & Faraj, 2005). Interpersonal trust and the norm of reciprocity have been demonstrated to be two critical contextual factors in Chinese online communities (Lin et al., 2009). Thus, this paper investigates how interpersonal trust and the norm of reciprocity moderate the relationship between EVT components and OKSC longtime participation.

RESEARCH MODEL AND HYPOTHESES

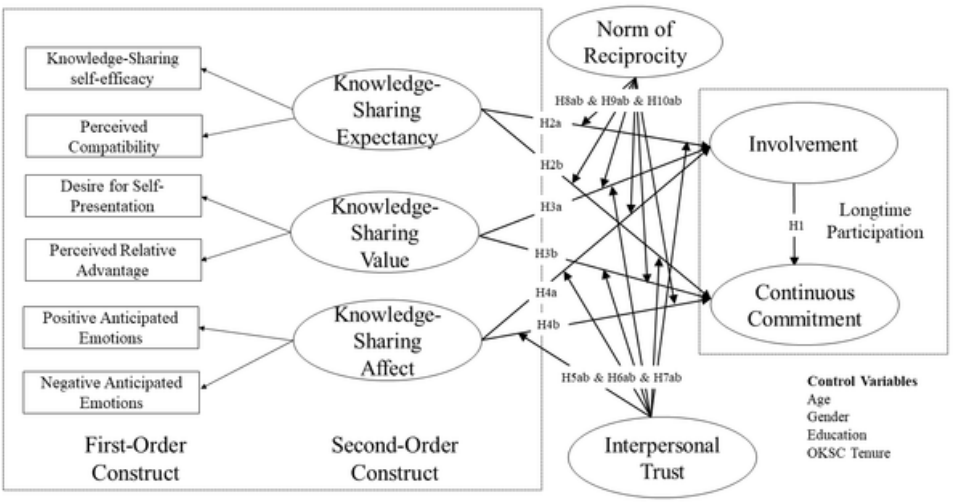
The research model has been developed based on EVT and knowledge-sharing literature. As shown in Figure 1, knowledge-sharing expectancy, knowledge-sharing value, and knowledge-sharing affect are second-order constructs that influence OKSC involvement and continuous commitment. The norm of reciprocity and interpersonal trust play the role of moderators.

OKSC Involvement and Continuous OKSC Commitment

Involvement and commitment are conceptually distinct. Involvement has been found to precede the development of commitment (Bowden, 2009). This paper assumes a positive relationship between involvement and continuous commitment for the following reasons. First, consistent with the definition of continuous commitment, the cost of leaving is one of the key factors driving individuals to commit to an OKSC continuously. The greater the individuals' involvement in the OKSC, the higher the sense of belonging to it and the perceived cost of leaving (Tufail et al., 2005).

Second, the social relationships individuals develop in the OKSC promote continuous commitment. Individuals tend to value the social relationships within the OKSC when they have high involvement. Their attachment to the OKSC develops in conjunction with their involvement (Kim et al., 2011). OKSC attachment allows those who share similar interests to communicate and build relationships with each other, which will lead to community commitment (Yu et al., 2011).

Figure 1. Research model



Third, individuals hope to gain social status in the community, which may enhance their continuous commitment. Highly involved individuals expend more effort developing their social identification (Kim et al., 2011) and maintaining their social status in the OKSC (Bateman et al., 2011). Social identification and social status serve as social controls that encourage continuous commitment.

Fourth, satisfaction with the OKSC is also critical for retaining community members (Ma & Agarwal, 2007). Continuous commitment reflects individuals' durable intention to stay in the community (Bateman et al., 2011). Individuals with a high level of involvement are motivated to experience satisfaction through community activities (Sanchez-Franco, 2009), which results in the willingness to stay committed.

H1: OKSC involvement positively correlates with individuals' continuous OKSC commitment.

Knowledge-Sharing Expectancy

Two dimensions of knowledge-sharing expectancy, namely knowledge-sharing self-efficacy and perceived compatibility, are examined in this section. Knowledge-sharing self-efficacy, the first expectancy dimension, has been demonstrated to be critical in knowledge-sharing research (Chen & Hung, 2010). Chinese people's involvement in OKSCs is largely dependent on their confidence in ability to perform well in a knowledge-sharing interaction (Lin et al., 2009). Highly self-efficacious individuals tend to be more self-motivated (Liu, Yang, & Chan, 2013) and are more willing to identify themselves as belonging to the community (Ray et al., 2014). In contrast, poorly self-efficacious individuals are more likely to withdraw from community activities when difficulties are encountered (Kankanhalli, Tan, & Wei, 2005). Hence, knowledge-sharing self-efficacy has a positive impact on OKSC involvement.

Knowledge-sharing self-efficacy can also encourage continuous commitment to the OKSC. Self-efficacy, as a competence expectancy, reflects an inherent desire for mastery (Bandura, 1993). With high knowledge-sharing self-efficacy, individuals can gain favorable experiences from successful knowledge-sharing (Liu et al., 2013), which enhances their community commitment (Ma & Agarwal, 2007). In addition, individuals invest time and effort to foster knowledge-sharing self-efficacy in OKSCs, which enhances persistence in the communities on one hand (Bateman et al., 2011) and increases the sunk cost of leaving on the other hand (Tufail et al., 2005).

Perceived compatibility, the second expectancy dimension, is also important in understanding longtime OKSC participation. Chinese people are motivated by the expectancy to maintain cognitive consistence (Lin et al., 2009). When perceived compatibility with the OKSC is high, individuals will involve themselves in the community to maintain congruence with previous experiences and values. In addition, perceived compatibility can be considered to be a psychological enabler (Lin et al., 2009). Once individuals become comfortable with the OKSC as a result of a high level of perceived compatibility, their psychological attachment to it will increase.

Perceived compatibility is expected to exert a positive effect on continuous commitment. Compatibility implies that the behavior is consistent with potential needs (Rouibah & Hamdy, 2009). Thus, it is positively associated with future task completion and goal attainment. High compatibility in the OKSC is desirable because it provides a more familiar context and creates a more favorable online experience (Lin et al., 2009). As a result, individuals who perceive knowledge sharing as compatible with their personal needs are more likely to develop a long-term relationship with an OKSC (Chen & Hung, 2010).

H2a: Knowledge-sharing expectancy in OKSCs, which is reflected by knowledge-sharing self-efficacy and perceived compatibility, positively correlates with individuals' OKSC involvement.

H2b: Knowledge-sharing expectancy in OKSCs, which is reflected by knowledge-sharing self-efficacy and perceived compatibility, positively correlates with individuals' continuous OKSC commitment.

Knowledge-Sharing Value

Knowledge-sharing value, which is reflected by perceived relative advantage and desire for self-presentation, is expected to have a positive effect on OKSC involvement and continuous commitment.

The first value dimension—perceived relative advantage—is manifested as increased efficiency and effectiveness, economic benefits, and enhanced status within OKSCs (Chen & Hung, 2010). Individuals participate in OKSCs in the hopes of enriching their knowledge, seeking support, making friends, or being seen as skilled, knowledgeable, and respectful (Lin et al., 2009). Thus, the potential benefits become important drivers of individuals' behavior in OKSCs. Individuals are willing to involve themselves in OKSCs when they perceive there are advantages.

Advantages resulting from OKSC participation set the stage for individuals to make a continuous commitment. Continuous commitment has been regarded as a function of the benefits associated with remaining (Bateman et al., 2011). When individuals believe they can acquire knowledge and skills and maintain favorable social relationships with other members if they remain in the OKSC, they choose to stay. In addition, individuals usually weigh the benefits against the costs when deciding whether to stay or leave (Tufail et al., 2005). Since being committed to the OKSC involves investing effort and time (Wasko & Faraj, 2005), individuals will continue their commitment if the benefits they might gain outweigh the costs. Therefore, perceived relative advantage is a positive predictor of OKSC continuous commitment.

The second value dimension—desire for self-presentation—reflects individuals' desires to express and present different identities in OKSCs (Ma & Agarwal, 2007). The development of online technologies provides opportunities for self-presenting via digital channels (H. Lee, Choi, Kim, & Lee, 2014). Drawing on identity theories, Markus and Wurf (1987) linked task value to individuals' self-schema and suggested that individuals tend to conduct certain tasks that allow them to present their self-image. Through involvement, individuals can reveal their preferences, specialties, knowledge, and communication styles (Kim et al., 2011). Therefore, this study hypothesizes that there is a positive relationship between the desire for self-presentation and OKSC involvement.

Desire for self-presentation is also expected to affect individuals' continuous OKSC commitment. First, it is important for OKSC members to find those who have similar interests and experiences in order to achieve a shared understanding (Jensen, Davis, & Farnham, 2002). By presenting self-identity, an individual expects to be recognized and accepted by other community members, which increases the intention to remain in the OKSC. Second, an individual stays in the OKSC not only because of altruism, but also because of self-esteem (Bock, Zmud, Kim, & Lee, 2005) and reputation (Wasko & Faraj, 2005). The reputation system in OKSCs allows for efficient identity presentation. When an individual wishes to present a certain identity, it is effective to engage in citizenship behavior and make a commitment to the OKSC.

H3a: Knowledge-sharing value in OKSCs, which is reflected by perceived relative advantage and the desire for self-presentation, positively correlates with individuals' OKSC involvement.

H3b: Knowledge-sharing value in OKSCs, which is reflected by perceived relative advantage and the desire for self-presentation, positively correlates with individuals' continuous OKSC commitment.

Knowledge-Sharing Affect

Individuals usually anticipate a good or bad result before performing a certain behavior, and positive and negative emotions are evoked as a result of such anticipation (Tsai & Bagozzi, 2014). Positive anticipated emotions are evoked when individuals imagine desirable outcomes if they participate in OKSCs, while negative anticipated emotions are evoked when individuals expect undesirable outcomes if they fail to participate in OKSCs (Baumgartner, Pieters, & Bagozzi, 2008).

The emotions one anticipates provide the motivation for taking further actions (Tsai & Bagozzi, 2014). Individuals have the tendency to pursue positive emotions and avoid negative emotions, which

are believed to be critical influencers of decision-making (Zeelenberg, 1999). Furthermore, positive anticipated emotions signal that the situation is trouble-free and safe, which makes it comfortable for individuals to share and seek knowledge through OKSC involvement (Hunter, 2006). Hence, if individuals are aware that OKSC involvement can increase positive emotions, they will choose to become involved.

Individuals are likely to remain in OKSCs when they have positive anticipated emotions. Positive anticipated emotions are associated with remaining in the OKSC. For example, when an individual believes that participating in the OKSC can produce positive emotions, the individual is more likely to stay in it. To pursue emotional benefits elicited by positive anticipated emotions (Astrachan & Jaskiewicz, 2008), individuals need to remain in the OKSC and be committed to it. Because continuous commitment is driven by the benefits of staying and being persistent (Bateman et al., 2011), this paper assumes a positive relationship between positive anticipated emotions and continuous commitment.

The second affect dimension—negative anticipated emotions—is also powerful in influencing individuals' actions (Baumgartner et al., 2008). Individuals experience negative anticipated emotions when they fail to participate in OKSCs (Zeelenberg, 1999), and they will take relevant actions to overcome such failures (Baumgartner et al., 2008). In this regard, OKSC involvement can help release anticipated negative emotions.

Negative anticipated emotions will evoke emotional costs if individuals fail to participate in OKSCs (Astrachan & Jaskiewicz, 2008). The anticipated emotional costs will impede individuals from leaving the community. Negative emotions are particularly powerful in predicting behavior (Baumgartner et al., 2008). In order to release negative emotions, individuals exert effort and time engaging in OKSC activities, which fosters their continuous commitment.

H4a: Knowledge-sharing affect in OKSCs, which is reflected by positive anticipated emotions and negative anticipated emotions, positively correlates with individuals' OKSC involvement.

H4b: Knowledge-sharing affect in OKSCs, which is reflected by positive anticipated emotions and negative anticipated emotions, positively correlates with individuals' continuous OKSC commitment.

Moderating Effects of Interpersonal Trust

Interpersonal trust is defined as the extent to which an individual believes in the good intentions, benevolence, and reliability of other OKSC members (Chen & Hung, 2010). Because online community participation involves vulnerability, Chinese people tend to attach great value to trusting interpersonal relationships in OKSCs (Huang et al., 2008). Interpersonal trust influences behaviors via two distinct processes (Dirks & Ferrin, 2001). First, interpersonal trust affects how one evaluates the future behavior of the other party. Second, interpersonal trust influences how one interprets the past behavior of the other party. Interpersonal trust provides contextual cues that help adjust individuals' motivations in terms of longtime OKSC participation. Thus, interpersonal trust is considered a variable that moderates the effects of knowledge-sharing motivations on longtime OKSC participation.

In OKSCs where are full of uncertainties, individuals' willingness to comply with the expectancy would rely on the level of interpersonal trust (Kalyal & Sverke, 2011). Since interpersonal trust can help predict others' future behaviors, it provides control for those who depend upon others for knowledge sharing in OKSCs. Thereafter, in cases of high interpersonal trust, knowledge-sharing expectancy will be more likely to lead individuals to become involved and committed to the OKSC. In cases where interpersonal trust is lacking, the expectancy to participate in the OKSC may be suppressed because individuals are afraid that other members will take advantage of their knowledge and become reluctant to respond in kind (Dirks & Ferrin, 2001).

H5a: Knowledge-sharing expectancy has a stronger positive effect on individuals' OKSC involvement when they have a greater level of interpersonal trust in OKSCs.

H5b: Knowledge-sharing expectancy has a stronger positive effect on individuals' continuous OKSC commitment when they have a greater level of interpersonal trust in OKSCs.

The impact of the knowledge-sharing value on longtime participation in OKSCs may also change with the level of interpersonal trust. Interpersonal trust can provide relational benefits for OKSC participants (Chiu et al., 2006), which influence motivations for participating in OKSCs. Social exchange theory states that exchanges exist in interpersonal relationships (Dirks & Ferrin, 2001). Specifically, low interpersonal trust is likely to inhibit individuals' tendency to participate in OKSCs because they fear that other members may take advantage of their contributions and won't respond favorably. Alternatively, when interpersonal trust is high, individuals tend to believe in the kindness of strangers and increase their OKSC participation. As such, individuals tend to believe that their goals for presenting their identities and acquiring advantages are more easily realized via longtime OKSC participation when interpersonal trust is high.

H6a: Knowledge-sharing value has a stronger positive effect on individuals' OKSC involvement when they have a greater level of interpersonal trust in OKSCs.
H6b: Knowledge-sharing value has a stronger positive effect on individuals' continuous OKSC commitment when they have a greater level of interpersonal trust in OKSCs.

Trust entails a favorable knowledge-sharing environment in which individuals can strengthen positive emotions and release negative emotions (Hsu, Ju, Yen, & Chang, 2007). Individuals who regard other community members as reliable are more comfortable being motivated by a knowledge-sharing affect to get involved and make a commitment to OKSCs without worrying about others' adverse behaviors (Huang et al., 2008). Alternatively, the OKSC environment is less favorable if interpersonal trust is lacking. Individuals will be hesitant to become involved and commit to OKSCs even if they have a strong knowledge-sharing affect. Therefore, trust moderates the relationship between the knowledge-sharing affect and longtime OKSC participation.

H7a: Knowledge-sharing affect has a stronger positive effect on individuals' OKSC involvement when they have a greater level of interpersonal trust in OKSCs.
H7b: Knowledge-sharing affect has a stronger positive effect on individuals' continuous OKSC commitment when they have a greater level of interpersonal trust in OKSCs.

Moderating Effects of the Norm of Reciprocity

The norm of reciprocity is defined as individuals' belief that they have an obligation to return beneficial behaviors in OKSCs in which they have a strong membership (Chen & Hung, 2010). Unlike traditional communities where individuals typically know each other, and reciprocity is enforced through social sanctions, participants in OKSCs are usually strangers. Thus, knowledge contributors cannot ensure that those whom they are helping will return the favor, and knowledge seekers have no control over how others respond to their requests (Chen & Hung, 2010). Chinese people emphasize reciprocity in a longtime relationship (Ou et al., 2016). Hence, the norm of reciprocity influences their motivations to participate in OKSCs (Lin et al., 2009). In particular, individuals with a strong sense of reciprocity are more motivated to engage in longtime OKSC participation because they believe that other community members will reciprocate their investment of time and effort in the future (Chiu et al., 2006; Wasko & Faraj, 2005). Therefore, it is assumed that the norm of reciprocity moderates the relationships between knowledge-sharing motivations and longtime OKSC participation.

The norm of reciprocity shows that knowledge exchanges within OKSCs are mutual and fair (Lin et al., 2009). The norm of reciprocity strengthens the effects of knowledge-sharing expectancy on longtime OKSC participation. Individuals with a high knowledge-sharing expectancy are more

likely to invest time and effort in an OKSC when the norm of reciprocity is strong. In contrast, lacking norm of reciprocity will result in the sense of unfairness. Even when individuals have high expectancy about the ability and outcome of knowledge sharing, they may withdraw from the OKSC when they perceive it to be unfair.

H8a: Knowledge-sharing expectancy has a stronger positive effect on individuals' OKSC involvement when there is a greater norm of reciprocity in OKSCs.
H8b: Knowledge-sharing expectancy has a stronger positive effect on individuals' continuous OKSC commitment when there is a greater norm of reciprocity in OKSCs.

Knowledge-sharing value influences whether individuals participate in OKSCs to obtain certain advantages and effectively present themselves (Miltiadou & Savenye, 2003). The norm of reciprocity encourages individuals to continuously accept and return favors (Ray et al., 2014). Individuals are aware that they need to contribute first if they want to obtain value from OKSCs. Additionally, under a strong norm of reciprocity, individuals who are motivated by prospective advantages and the desire for self-presentation are more likely to act in ways that maximize long-term gains for OKSCs (Hsu et al., 2007). Hence, a strong norm of reciprocity will strengthen the effect of knowledge-sharing values on longtime OKSC participation.

H9a: Knowledge-sharing value has a stronger positive effect on individuals' OKSC involvement when there is a greater norm of reciprocity in OKSCs.
H9b: Knowledge-sharing value has a stronger positive effect on individuals' continuous OKSC commitment when there is a greater norm of reciprocity in OKSCs.

The norm of reciprocity influences the formation of attitudes about OKSCs (Bock et al., 2005), which is a critical variable that affects longtime OKSC participation. Knowledge-sharing affect also influences whether individuals choose to participate in OKSCs in response to their anticipated emotions (Hsu et al., 2007). The norm of reciprocity affects how individuals behave in order to cope with their anticipated emotions. Specifically, a positive attitude resulting from the norm of reciprocity propels individuals to participate in OKSCs to pursue anticipated positive emotions and alleviate anticipated negative emotions. Thus, individuals who are motivated by knowledge-sharing affect are more likely to engage in longtime OKSC participation, and this effect will be intensified when there is a strong norm of reciprocity.

H10a: Knowledge-sharing affect has a stronger positive effect on individuals' OKSC involvement when there is a greater norm of reciprocity in OKSCs.
H10b: Knowledge-sharing affect has a stronger positive effect on individuals' continuous OKSC commitment when there is a greater norm of reciprocity in OKSCs.

Control Variables

In addition to the variables explicitly hypothesized, this study controls for the effects of four variables. First, individuals who have a long tenure in an OKSC could be more engaged in the OKSC, which might mask the effects of the motivational variables (Ma & Agarwal, 2007). Hence, OKSC tenure is a control variable, which is measured by determining how many months the respondent has been a member of this community. Second, prior studies have shown that gender, age (Ray et al., 2014), and education (Kankanhalli et al., 2005) have a significant impact on participation in online communities. Therefore, this study also included gender, age, and education as control variables.

METHODOLOGY

Data Collection and Samples

To empirically test the proposed research model, this study used an online survey for data collection. The survey was carried out between March and June 2016. The sample was obtained from three open knowledge-sharing communities in Mainland China, including zhidao.baidu.com, zhihu.com, and csdn.com. These OKSCs enable users to ask questions and post answers in the form of discussion threads. The focus is on the specific group of subjects who frequently ask and answer questions in these OKSCs. The invitation letters were sent to 900 randomly selected participants (300 participants for each community) with the help of several senior members of these communities. Subjects were asked to complete a questionnaire that included their demographic information and the constructs of interest. All respondents were Chinese. Among the 346 responses received, 22 were excluded from subsequent analyses because they were incomplete. The remaining 324 valid responses included 98 responses from zhidao.baidu.com, 106 responses from zhihu.com, and 120 responses from csdn.com. Thus, the response rate was 36%. The demographics of the subjects are presented in Table 1. To ensure that all three datasets could be merged, the demographic details of respondents from the three communities were compared. The analysis revealed no significant differences among the three groups. Therefore, data collected from various OKSCs were merged for subsequent analyses.

Measurement Development

All measurement items were derived from previous relevant studies with wording modifications made to fit the current research context (see Table 6 in the Appendix). The survey was first translated into Chinese and then back-translated into English by three Ph.D. students, who were native Chinese speakers and fluent in English. Measures for knowledge-sharing self-efficacy were adapted from Chen and Huang (2010). Items of perceived compatibility were adapted from Lin et al. (2009). Desire for self-presentation was measured using four items from Kim et al. (2012). The three items used to measure perceived relative advantage were drawn from Lin et al. (2009). Positive anticipated emotions and negative anticipated emotions were assessed by items based on Baumgartner et al. (2008) and Tsai and Bagozzi (2014). Measures of interpersonal trust were derived from the work of Chang and Chuang (2011) and Chen and Huang (2010). The norm of reciprocity was measured with items from Chiu et al. (2006) and Kankanhalli et al. (2005). The items used to measure OKSC involvement were adapted from Chang and Chuang (2011) and Kim et al. (2012). Measures of continuous OKSC

Table 1. Sample profile

Demographics	Count (%) (n = 324)	Demographics	Count (%) (n = 324)
Gender		OKSC Tenure	
Male	135 (41.7)	Less than 3 months	40 (12.3)
Female	189 (58.3)	3–6 months	18 (5.6)
Age		6 months–1 year	28 (8.6)
20 or below	13 (4.1)	1 year–3 years	149 (46)
21–25	266 (82.1)	More than 3 years	89 (27.5)
26–29	28 (8.6)	Education	
30 or above	17 (5.2)	High school or below	14 (4.3)
		College	280 (86.4)
		Graduate school or above	30 (9.3)

commitment came from Bateman et al. (2011). OKSC tenure was controlled by adapting measures from Ma and Agarwal (2007).

DATA ANALYSIS AND RESULTS

The partial least squares (PLS) was used to perform the statistical analysis. PLS was chosen because it puts minimal restrictions on sample size and residual distribution, and it is more suitable for theory development (Reinartz, Haenlein, & Henseler, 2009). In addition, PLS can simultaneously assess the reliability and validity of the measurement model, as well as test the structural model (Reinartz et al., 2009).

Measurement Validation

To validate the measurement model, the reliability, convergent validity, and discriminant validity were assessed. Confirmatory factor analysis (CFA) was performed to assess reliability and convergent validity. Table 2 presents the CFA results. As shown in Table 2, all items loaded high on their respective constructs (> 0.78). The composite reliability (CR) for each construct was greater than 0.90, and the average variance extracted (AVE) for each construct was greater than 0.72. All of these measures met the recommended threshold, suggesting satisfactory reliability and convergent validity.

Discriminant validity was assessed by comparing the square roots of AVE and the correlations among the constructs (Fornell & Larcker, 1981). The results in Table 3 indicate that the square root of AVE for each construct was greater than the inter-construct correlations. Thus, the requirement for discriminant validity is satisfied.

Since high correlations exist among some variables, multi-collinearity was checked. As a rule of thumb, multi-collinearity is believed to be high if the variance inflation factor (VIF) is higher than 10 (Hair, Black, Babin, Anderson, & Tatham, 2006). The test shows that VIF values range from 1.15–2.53, indicating that multi-collinearity is not a confounding problem in this study.

This study conducted a comparative analysis of the second-order factor model with first-order models (Lu & Ramamurthy, 2011). The results are shown in Table 4. Specifically, this study tested two models for each second-order factor. Model 1 is the first-order model that all measurement items of the construct load on, while model 2 is the second-order model. The results show that the $\chi 2$ in model 2 is significantly reduced compared with $\chi 2$ in model 1. Additionally, the other fit indexes, including CFI, TLI, and RMSEA, are better in the second-order models. This suggests that a multidimensional model is superior to the unidimensional factor model.

Common Method Variance (CMV)

Given that all the data were collected via survey, CMV may be a concern in this study. This study first conducted Harman's one-factor analysis for the CMV test. If CMV was a serious issue, a single factor would account for the majority of the covariance among the variables (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). An exploratory factor analysis was conducted on all the variables, and the results revealed that a single factor did not emerge from the analysis, nor could a single factor explain the majority of variance, suggesting that CMV is not a serious problem in this study. Second, following the recommendation of Podsakoff et al. (2003), this study adopted a partial correlation method to examine CMV. A control factor, which was the highest factor from a principal component factor analysis, was added on the dependent variables. The results showed that this factor did not increase the variance explained in the dependent variables, indicating that common method variance was not significant. Third, the highest correlation among constructs was 0.72 (Table 3). Because the CMV may result in much higher correlations ($r > 0.90$), it is likely that CMV is not a major concern in this study.

Table 2. Psychometric properties of the scales

Construct	Item	Mean	STD	Loading	CR	AVE
Knowledge-sharing self-efficacy	KSSE1	4.99	1.30	0.88	0.91	0.77
	KSSE2	4.55	1.37	0.88		
	KSSE3	5.06	1.30	0.89		
Perceived compatibility	PC1	4.86	1.25	0.89	0.93	0.77
	PC2	5.08	1.22	0.86		
	PC3	4.77	1.26	0.88		
	PC4	4.94	1.24	0.88		
Desire for self-presentation	PRN1	4.75	1.52	0.91	0.96	0.84
	PRN2	4.81	1.45	0.92		
	PRN3	4.92	1.51	0.93		
	PRN4	4.80	1.54	0.91		
Perceived relative advantage	PRA1	5.44	1.26	0.91	0.93	0.82
	PRA2	5.32	1.27	0.90		
	PRA3	5.25	1.23	0.91		
Positive anticipated emotions	PAE1	4.74	1.46	0.78	0.96	0.72
	PAE2	5.21	1.32	0.86		
	PAE3	5.06	1.31	0.87		
	PAE4	5.16	1.27	0.86		
	PAE5	4.85	1.48	0.83		
	PAE6	4.84	1.51	0.84		
	PAE7	4.92	1.43	0.89		
	PAE8	4.97	1.40	0.83		
	PAE9	5.22	1.39	0.86		
Negative anticipated emotions	NAE1	3.06	1.83	0.89	0.98	0.82
	NAE2	3.15	1.82	0.91		
	NAE3	3.11	1.81	0.92		
	NAE4	3.17	1.86	0.91		
	NAE5	3.10	1.88	0.91		
	NAE6	3.26	1.85	0.87		
	NAE7	2.83	1.84	0.92		
	NAE8	3.02	1.78	0.94		
	NAE9	2.90	1.77	0.93		
	NAE10	2.98	1.83	0.91		
	NAE11	3.03	1.81	0.87		
	NAE12	2.93	1.84	0.90		

continued on following page

Table 2. Continued

Construct	Item	Mean	STD	Loading	CR	AVE
Norm of reciprocity	NR1	5.51	1.38	0.88	0.91	0.77
	NR2	5.44	1.38	0.89		
	NR3	5.48	1.33	0.87		
Interpersonal trust	ITR1	5.15	1.39	0.79	0.90	0.74
	ITR2	4.32	1.64	0.87		
	ITR3	4.48	1.49	0.92		
Involvement	INV1	4.57	1.54	0.89	0.94	0.80
	INV2	4.42	1.58	0.93		
	INV3	4.89	1.46	0.88		
	INV4	4.40	1.59	0.88		
Continuous commitment	CC1	4.70	1.52	0.89	0.93	0.82
	CC2	4.58	1.50	0.92		
	CC3	4.58	1.52	0.91		

Table 3. Correlation matrix with the square root of the AVE in the diagonal

Construct	Mean (SD)	KSSE	PC	PRN	PRA	PAE	NAE	NR	ITR	INV	CC	A	G	E	OT
Knowledge-sharing self-efficacy (KSSE)	4.87 (1.16)	**0.88**													
Perceived compatibility (PC)	4.92 (1.09)	0.55	**0.88**												
Desire for self-presentation (PRN)	4.82 (1.38)	0.52	0.53	**0.92**											
Perceived relative advantage (PRA)	5.34 (1.14)	0.55	0.65	0.42	**0.91**										
Positive anticipated emotions (PAE)	4.99 (1.18)	0.47	0.56	0.67	0.49	**0.85**									
Negative anticipated emotions (NAE)	3.04 (1.66)	0.22	0.22	0.26	0.03	0.24	**0.91**								
Norm of reciprocity (NR)	5.47 (1.20)	0.45	0.55	0.36	0.65	0.43	-0.02	**0.88**							
Interpersonal trust (ITR)	4.65 (1.30)	0.50	0.61	0.42	0.49	0.38	0.24	0.45	**0.86**						
Involvement (INV)	4.57 (1.38)	0.45	0.60	0.64	0.50	0.57	0.37	0.41	0.43	**0.90**					
Continuous commitment (CC)	4.62 (1.37)	0.46	0.64	0.60	0.47	0.60	0.31	0.39	0.48	0.72	**0.90**				
Age (A)	24.08 (3.87)	-0.16	-0.10	-0.04	-0.13	-0.03	-0.23	0.01	-0.07	-0.12	-0.08	**1**			
Gender (G)	1.58 (0.49)	-0.05	-0.06	-0.07	0.02	-0.02	-0.12	-0.14	-0.10	0.04	-0.02	0.06	**1**		
Education (E)	4.94 (0.76)	0.01	0.03	-0.02	0.07	0.03	-0.06	0.09	0.01	-0.08	0.01	0.03	0.04	**1**	
OKSC tenure (OT)	4.17 (1.64)	0.04	0.02	0.01	0.15	0.02	-0.16	0.14	-0.05	0.02	-0.01	-0.15	0.04	-0.03	**1**

Table 4. Second-order model

	Models	χ^2(df)	CFI	TLI	RMSEA
EC	Model 1: first-order one-factor model	265.01 (14)	0.81	0.72	0.24
	Model 2: second-order factor model	29.51 (13)	0.99	0.98	0.06
VC	Model 1: first-order one-factor model	924.41 (35)	0.66	0.56	0.28
	Model 2: second-order factor model	107.48 (32)	0.97	0.96	0.09
AC	Model 1: first-order one-factor model	3300.38 (189)	0.63	0.59	0.23
	Model 2: second-order factor model	1017.08 (187)	0.90	0.89	0.12

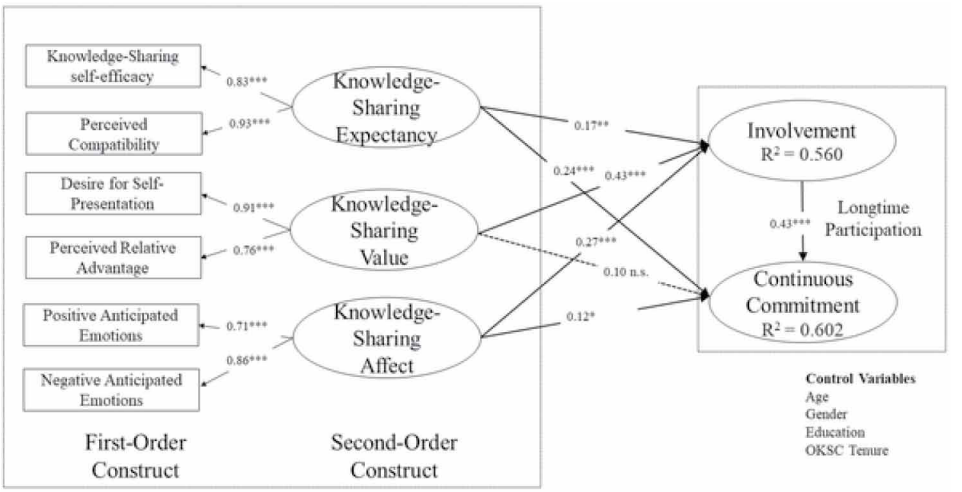
Note: 324 observations. EC: expectancy component, VC: value component, AC: affect component.

Hypothesis Testing

To test the structural model, this study first ran a main effects model. The results are illustrated in Figure 2. The moderating effects were analyzed, and the results are shown in Table 5. Overall, this research model was effective at explaining dependent variables. The control variables are entered into the main effects model by directly linking them to the dependent variables (i.e. involvement and continuous commitment). Specifically, the impacts of independent variables on dependent variables are estimated when control variables are included in the model. The relationships between the control variables and continuous OKSC commitment were insignificant. Only gender ($\beta = 0.09$, $p < 0.05$) and education ($\beta = -0.09$, $p < 0.05$) exerted significant effects on OKSC involvement. As shown in Figure 2, the independent variables in the main effects model accounted for 56.0% of the variance in OKSC involvement and 60.2% of the variance in continuous OKSC commitment.

H1 examined the effect of OKSC involvement on continuous OKSC commitment. The results showed that OKSC involvement exerted a significantly positive effect on OKSC commitment ($\beta = 0.43$, $p < 0.001$). Therefore, H1 was supported. H2, H3, and H4 focused on the effects of knowledge-sharing expectancy, knowledge-sharing value, and knowledge-sharing affect on OKSC involvement and continuous OKSC commitment. As shown in Figure 2, knowledge-sharing expectancy had significantly positive effects on OKSC involvement ($\beta = 0.17$, $p < 0.01$) and continuous OKSC commitment (β

Figure 2. Results of the PLS analysis



* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; n.s. = not significant.

Table 5. Analysis of moderating effects

Variable	Involvement	Continuance Commitment
Moderator: Norm of Reciprocity		
Knowledge-Sharing Expectancy * Norm of Reciprocity	0.11* (0.05)	0.23***(0.05)
Knowledge-Sharing Value * Norm of Reciprocity	0.10* (0.05)	0.15** (0.05)
Knowledge-Sharing Affect * Norm of Reciprocity	0.08 (0.04)	0.09* (0.04)
Moderator: Interpersonal Trust		
Knowledge-Sharing Expectancy * Interpersonal Trust	0.12** (0.04)	0.11** (0.04)
Knowledge-Sharing Value * Interpersonal Trust	0.08* (0.03)	0.09* (0.04)
Knowledge-Sharing Affect * Interpersonal Trust	0.04 (0.04)	0.03 (0.04)

Note: The moderating effects were separately evaluated in the regressions. Main effects were controlled in the regression models. Standardized coefficients (standard errors), n = 324. * p < 0.05; ** p < 0.01; *** p < 0.001; n.s. = not significant.

= 0.24, p < 0.001), lending support to H2a and H2b. Furthermore, knowledge-sharing value was observed to have a significant effect on OKSC involvement (β = 0.43, p < 0.001). Therefore, H3a was supported. However, the effect of knowledge-sharing value on continuous OKSC commitment was found to be insignificant (β = 0.10, p > 0.05), failing to support H3b. Additionally, the positive effects of knowledge-sharing affect on OKSC involvement (β = 0.27, p < 0.001) and continuous OKSC commitment (β = 0.12, p < 0.05) were significant. Hence, H4a and H4b were supported.

H5, H6, and H7 concerned the moderating effects of interpersonal trust. Table 5 shows that interpersonal trust positively moderated the relationships between knowledge-sharing expectancy and either OKSC involvement (β = 0.12, p < 0.01) or continuous OKSC commitment (β = 0.11, p < 0.01), which provides support for H5a and H5b. The results also show that relationships between knowledge-sharing value and either OKSC involvement (β = 0.08, p < 0.05) or continuous OKSC commitment (β = 0.09, p < 0.05) were positively moderated by interpersonal trust, supporting H6a and H6b. The results failed to support the moderating effects hypothesized in H7a (β = 0.04, p > 0.05) and H7b (β = 0.03, p > 0.05). Therefore, H7a and H7b were not supported.

H8, H9, and H10 examined the moderating effects of the norm of reciprocity. The results show that the norm of reciprocity positively interacted with knowledge-sharing expectancy in order to influence OKSC involvement (β = 0.11, p < 0.05) and continuous OKSC commitment (β = 0.23, p < 0.001). Hence, H8a and H8b were supported. In line with H9a and H9b, the norm of reciprocity was found to have positive moderating effects on the relationships between knowledge-sharing value and either OKSC involvement (β = 0.10, p < 0.05) or continuous OKSC commitment (β = 0.15, p < 0.01). Therefore, H9a and H9b were supported. H10a concerned the moderating effect of the norm of reciprocity on the relationship between knowledge-sharing affect and OKSC involvement. The result was found to be insignificant (β = 0.08, p > 0.01). Thus, H10a was not supported. These results also show that the relationship between knowledge-sharing affect and continuous OKSC commitment was moderated by the norm of reciprocity (β = 0.09, p < 0.05). Therefore, H10b was supported.

DISCUSSION

Discussion of Results

The purposes of this research were two-fold. First, we aimed to examine if and how individuals' motivations conceptualized as expectancy, value, and affect components influence OKSC involvement and continuous OKSC commitment. Second, we investigated how contextual factors moderate the

relationships between motivations and both OKSC involvement and continuous commitment. Our results generate a set of interest findings.

First, the results show that knowledge-sharing expectancy and knowledge-sharing affect have positive impacts on OKSC involvement and continuous OKSC commitment, and knowledge-sharing value has a positive impact on OKSC involvement. The results suggest that the expectancy, value, and affect components of motivations are critical in the development of longtime OKSC participation. This is consistent with the argument that China is a high uncertainty avoidance country, and Chinese people prefer to conduct both cognitive and affective assessment before decision-making. The findings highlight the importance of dividing motivations into expectancy, value, and affect components since they exert different effects on longtime OKSC participation.

Second, in terms of the moderating effects, interpersonal trust and the norm of reciprocity are found to moderate the impacts of knowledge-sharing expectancy and knowledge-sharing value on longtime OKSC participation. The relationship between the knowledge-sharing affect and continuous commitment is also moderated by the norm of reciprocity. The results offer notable evidence concerning the moderating role of interpersonal trust and the norm of reciprocity in OKSCs. The findings echo with the argument in the previous section, which indicates that interpersonal trust and norm of reciprocity are important in OKSC research in China (Du, Ai, Abbott, & Zheng, 2011), and the effects of motivations depend on the two contextual variables (Yu et al., 2011).

We have four unexpected results. First, the findings fail to support the positive effect of knowledge-sharing value on continuous OKSC commitment. One possible explanation is that knowledge-sharing value can be well obtained through OKSC involvement, and therefore individuals do not need to make a continuous commitment to derive value. For instance, compared to people in western countries, Chinese people's desire for presenting themselves via knowledge sharing is not so strong, and such desire can be fulfilled by OKSC involvement. As such, it is not necessary for them to make continuous OKSC commitment. Second, the results reveal that interpersonal trust does not moderate the relationships between knowledge-sharing affect and both OKSC involvement and continuous OKSC commitment, indicating that the effects of positive and negative anticipated emotions toward knowledge sharing do not change with the level of interpersonal trust. The moderating effect of the norm of reciprocity on the relationship between knowledge-sharing affect and OKSC involvement is also not supported. One possible explanation lies in the nature of affect. Knowledge-sharing affect is concerned with individuals' emotional states. When individuals are experiencing a strong emotional state, they are more likely to exhibit single-minded behaviors (Ortiz de Guinea & Markus, 2009). In this sense, they are mainly driven by anticipated emotions and spare less attention to consider contextual factors. Our sample consisted of Chinese people who are relatively young. It is possible that when the young Chinese have strong anticipated emotions, they are dominated by emotions and less influenced by contextual factors. When individuals have low anticipated emotions, they tend to attach less importance to the OKSC as well as the contextual factors in the OKSC. Hence, the moderating effects of the contextual factors are found to be insignificant.

Theoretical and Practical Implications

Several theoretical implications of this study should be highlighted. First, one significant theoretical implication of this study lies in the investigation of longtime OKSC participation in contrast to initial participation in previous studies. The knowledge of longtime OKSC participation is further advanced by taking account of the features of the Chinese context. This study thus complements existing literature by providing a good theoretical perspective for understanding longtime OKSC participation in China.

Second, this study contributes to the literature by providing an integrated framework for examining the motivations driving longtime OKSC participation. Extending EVT, this study classifies motivations into expectancy, value, and affect components. Nevertheless, other motivational theories, such as self-efficacy theory, self-determination theory, control theory, and flow theory, tend to focus on only one aspect. Since Chinese people prefer uncertainty avoidance and face maintenance, they tend to conduct

thorough consideration before decision-making. Hence, EVT, consisting of expectancy, value and affect component, is appropriate for developing a comprehensive understanding of longtime OKSC participation in China. Specifically, this study identifies six motivational constructs as belonging to components of knowledge-sharing expectancy (knowledge-sharing self-efficacy, perceived compatibility), knowledge-sharing value (perceived relative advantage and desire for self-presentation), and knowledge-sharing affect (positive and negative anticipated emotions).

Third, this study contributes to the literature of the online community by investigating the moderating effects of interpersonal trust and the norm of reciprocity. The collectivist nature of the Chinese context reveals that collectivist factors are important predictors of individual behavior. Previous studies generally examined the direct relationships among the two constructs and community behaviors. This study takes the Chinese context into consideration to advance existing knowledge by demonstrating that individuals' motivations with respect to longtime OKSC participation are influenced by interpersonal trust and the norm of reciprocity in Chinese OKSCs.

This study also has practical implications. First, the empirical results demonstrate the importance of knowledge-sharing self-efficacy and perceived compatibility in driving longtime OKSC participation in China. Since Chinese people have a preference for face maintenance (Ou et al., 2016) and cognitive consistence (Lin et al., 2009), OKSC practitioners can work out strategies to improve participants' knowledge-sharing self-efficacy, such as providing online training courses and online support. They can also advocate community goals that are compatible with the expectancy of community participants.

Second, this study reveals that retaining OKSC membership depends on whether OKSCs can create value for participants. Chinese people are hesitant to present themselves in offline knowledge sharing because of their concerns regarding loss of face. OKSCs can provide opportunities for participants to present themselves and acquire benefits freely, which cannot be realized in offline context. Practitioners should be aware that successful OKSCs need to create opportunities for self-presentation and provide benefits to its participants.

Third, the findings highlight the importance of affect in longtime participation. When participants have strong anticipated emotions toward the community, they will become involved in it and make a commitment to it. Our sample is the younger generation of Chinese, which is consistent with the current users of Chinese OKSCs. Young people are more likely to be attracted by good designs. In this sense, community practitioners can add more interesting designs to OKSCs to make it more attractive to participants. Once participants enjoy the designs and form strong anticipated emotions, they are more likely to engage in longtime participation.

Fourth, this study implies that trust and reciprocity are critical in strengthening people's motivations toward longtime OKSC participation. Considering the cultural value, China is regarded as a relationship-centered society. Hence, to pursue OKSC success, OKSC practitioners in China should develop mechanisms to improve trusting relationships among members and encourage an atmosphere of reciprocity.

Limitations and Future Research

This study has several limitations that provide noteworthy ideas for future research. First, this study investigates the role of OKSC involvement and continuous commitment. However, this study did not explore how involvement and commitment lead to community development (Chiu et al., 2006). Future research can use longitudinal studies to observe changes in community involvement and commitment to investigate how these changes affect community development.

Second, measurements of continuous commitment were obtained from a cross-sectional survey. Although the measures of continuous commitment were drawn from the study of Bateman et al. (2011) and these items actually reflect subjects' future anticipation about their OKSC participation, it will be better if future researchers conduct additional cross-sectional or longitudinal studies to measure continuous commitment.

Third, the data used to test these hypotheses were collected through an online survey. Future research can use other empirical methods to collect data, such as experiments and interviews. Furthermore, the subjects were OKSC members in Mainland China. Individuals' behaviors may differ across cultures or countries. Future research can test this model by sampling other cultures or countries.

Fourth, members of OKSCs play different roles. In OKSCs, they may seek knowledge, contribute knowledge, and conduct moderating behaviors (Bateman et al., 2011). The different roles of community members may have different impacts on the process of longtime participation. Future research can take the roles of community members into consideration and investigate their specific actions.

Fifth, OKSCs, which are characterized by open and voluntary participation, are just one type of knowledge-sharing community. The importance and relevance of personal motivations and contextual factors may vary across different community contexts. For instance, the effects of interpersonal trust and the norm of reciprocity on longtime participation may be more salient in relational virtual communities than in transactional virtual communities (Sun et al., 2012). A future investigation of participants' motivations with regard to longtime participation by differentiating community types may generate interesting insights.

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APPENDIX

Table 6. Measurement items derived from previous relevant studies with wording modifications made to fit the current research context

Constructs	Survey Item	References
Knowledge-sharing self-efficacy (KSSE)	KSSE1: I have confidence in my ability to seek and provide knowledge that other members in this online knowledge-sharing community consider valuable.	(Chen & Hung, 2010)
	KSSE2: I have the expertise, experiences, and insights needed to seek and provide knowledge valuable for other members in this online knowledge-sharing community.	
	KSSE3: I have confidence in responding to or adding comments to messages or articles posted by other members in this online knowledge-sharing community.	
Perceived compatibility (PC)	PC1: Sharing knowledge with members in this online knowledge-sharing community is compatible with my values.	(Lin et al., 2009)
	PC2: Sharing knowledge with members in this online knowledge-sharing community fits my current needs.	
	PC3: Sharing knowledge with members in this online knowledge-sharing community is compatible with my previous experiences.	
	PC4: Sharing knowledge with members in this online knowledge-sharing community fits my work style.	
Desire for self-presentation (PRN)	PRN1: I want to establish a preferred image for myself in the online knowledge-sharing community.	(Kim et al., 2012)
	PRN2: I want to present my image in the online knowledge-sharing community.	
	PRN3: I want to project an image about myself in the online knowledge-sharing community.	
	PRN4: I want to give a preferred impression about myself to others in the online knowledge-sharing community.	
Perceived relative advantage (PRA)	PRA1: Sharing knowledge with members in this online knowledge-sharing community will increase my problem-solving capability.	(Lin et al., 2009)
	PRA2: Sharing knowledge with members in this online knowledge-sharing community will rapidly absorb and react to new information regarding the area.	
	PRA3: Sharing knowledge with members in this online knowledge-sharing community will be effective in my job and improve my performance.	
Positive anticipated emotions (PAE)	If I am able to participate in activities, such as writing articles or sharing photos in the online knowledge-sharing community during the next two weeks, I will feel:	(Baumgartner et al., 2008; Tsai & Bagozzi, 2014)
	PAE1: Relief. PAE2: Glad. PAE3: Content. PAE4: Satisfied. PAE5: Excited.	
	PAE6: Proud. PAE7: Delighted. PAE8: Self-assured. PAE9: Happy.	
Negative anticipated emotions (NAE)	If I am unable to participate in activities, such as writing articles or sharing photos in the online knowledge-sharing community during the next two weeks, I will feel:	(Baumgartner et al., 2008; Tsai & Bagozzi, 2014)
	NAE1: Angry. NAE2: Depressed. NAE3: Frustrated. NAE4: Worried.	
	NAE5: Guilty. NAE6: Uncomfortable. NAE7: Ashamed. NAE8: Anxious.	
	NAE9: Sad. NAE10: Agitated. NAE11: Disappointed. NAE12: Nervous.	
Interpersonal trust (ITR)	ITR1: Members in this online knowledge-sharing community have reciprocal faith-based and trustworthy relationships.	(Chang & Chuang, 2011; Chen & Hung, 2010)
	ITR2: Members in this online knowledge-sharing community will not take advantage of others even if a profitable opportunity arises.	
	ITR3: Members in this online knowledge-sharing community will always keep promises made to one another.	

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Table 6. Continued

Constructs	Survey Item	References
Norm of reciprocity (NR)	NR1: I know that other members will help me, so it is fair that I am obligated to help other members in this online knowledge-sharing community.	(Chiu et al., 2006; Kankanhalli et al., 2005)
	NR2: When I share knowledge with other members, I believe that the members in this online knowledge-sharing community will help me if I need it.	
	NR3: When I share knowledge with other members, I believe that my queries will be answered in the future in this online knowledge-sharing community.	
Involvement (INV)	INV1: Participating in the online knowledge-sharing community is one of the most enjoyable things I do.	(Chang & Chuang, 2011; Kim et al., 2012)
	INV2: Participating in the online knowledge-sharing community is important to me.	
	INV3: Participating in the online knowledge-sharing community is pleasurable to me.	
	INV4: Participating in the online knowledge-sharing community means a lot to me.	
Continuous commitment (CC)	CC1: If I stopped coming to this site, it would take me a long time to find a site that could replace it.	(Bateman et al., 2011)
	CC2: There are very few other places where I could find the kind of useful content and services that I get from this site.	
	CC3: The content of this site is too valuable for me to stop visiting.	
All items are scored using a 7-point Likert scale with 1 = Strongly Disagree and 7 = Strongly Agree.		

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