



# Knowledge sharing in interest online communities: A comparison of posters and lurkers



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## ARTICLE INFO

### Article history:

Available online 29 March 2014

### Keywords:

Online communities  
Extrinsic motivation  
Intrinsic motivation  
Knowledge sharing  
Posters  
Lurkers

## ABSTRACT

Online communities have become increasingly popular in recent years. However, despite a significant growth in the number of online communities, few have been successful in retaining members and motivating members to contribute knowledge. Few researchers have investigated the differences between posters and lurkers in terms of knowledge-sharing behavior. We propose that the driving factors of posters and lurkers are contextually different, and as such, a distinction between them is needed. By incorporating extrinsic and intrinsic motivation, as well as intra-community factors, we modeled and examined the differences in the driving factors of the two types of community members – posters and lurkers – and provide comparisons and discussions, thus advancing our understanding of knowledge-sharing behavior in interest communities. A multi-group analysis revealed that the poster group and the lurker group differ somewhat in the factors that motivate the knowledge-sharing intentions of the two groups. The most influential factors affecting the knowledge-sharing intentions of posters are intrinsic motivational factors (i.e., enjoyment in helping others and knowledge self-efficacy). On the other hand, the knowledge-sharing intentions of lurkers are affected by extrinsic motivational factors (i.e., reciprocity). Intra-community factors, such as perceived moderator's enthusiasm, offline activities, and enjoyability, also affect the knowledge-sharing intentions of posters and lurkers. The theoretical and practical implications of the findings are discussed.

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## 1. Introduction

Online communities have become increasingly popular in recent years, primarily because they can provide emotional support and entertainment, as well as facilitate business activities (Phang, Kankanhalli, & Sabherwal, 2009). Members can use these communities for knowledge seeking and sharing (Phang et al., 2009) and as hubs for social and information networking (Valck, Bruggen, & Wierenga, 2009). However, despite the significant growth in the number of online communities, few have been successful in retaining members and motivating members to contribute knowledge (Ma & Agarwal, 2007). Community members can be categorized into two groups: posters and lurkers (Marett & Joshi, 2009; Preece, Nonnecke, & Andrews, 2004). Few researchers have investigated the differences between posters and lurkers in terms of knowledge-sharing behavior. Previous studies observed that posters and lurkers are somewhat different in terms of motivations for on-

line sharing behaviors (Marett & Joshi, 2009; Preece et al., 2004). While most studies have focused only on postings, the majority of the members of online communities are lurkers (Ridings, Gefen, & Arinze, 2006) who periodically participate in online community activities (Rafaeli, Ravid, & Soroka, 2004). Notably, some lurkers may become posters over time (Hagel & Arthur, 1997). Studying both types of members will help us gain a full understanding of the knowledge-sharing behaviors of all community members. We propose the driving factors of posters and lurkers are contextually different, and thus, a distinction between posters and lurkers is needed. In this study, posters are defined as those who have posted at least one message in the community forum over the past three months, whereas lurkers are those who visit a community without posting any messages (Marett & Joshi, 2009; Nonnecke, Preece, & Andrews, 2004).

Previous studies of online sharing have mainly focused on professional virtual communities (PVCs), in which knowledge exchanges are mainly related to specific knowledge or best practices for the purpose of learning (e.g., Chen & Hung, 2010; Chiu, Hsu, & Wang, 2006; Wasko & Faraj, 2005). Because the goals and constituents of online communities are diverse, it is logical to

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postulate that their sharing behaviors might be different as well. In order to extend our understanding of knowledge-sharing behaviors in the context of online communities, it is crucial to examine this behavior in diverse settings. To fill this gap, we proposed and tested antecedent factors, which include individual motivations and important intra-community factors that influence members' intentions to share knowledge across different groups of posters and lurkers in recreation-oriented interest communities. The primary research questions are as follows: *In interest online communities, what drivers influence members to share knowledge? Do these drivers differ between poster and lurker groups?*

People can be motivated either extrinsically or intrinsically. If a person is intrinsically motivated, he/she engages in an action because it is enjoyable and he/she finds it inherently interesting (Deci & Ryan, 1980). On the other hand, an extrinsically motivated individual's actions are driven by a goal (Deci & Ryan, 1980). Research has shown that these two motivational categories can lead to very different behavior and performance (Ryan & Deci, 2000). They also play important roles in driving members to share knowledge voluntarily in online communities (Marett & Joshi, 2009). In addition, virtual community drivers strengthen community members' participation in posting and viewing activities (Koh, Kim, Butler, & Bock, 2007). This study aims to explain the roles of motivators and intra-community factors that encourage knowledge sharing in virtual communities. To this end, this study draws upon three kinds of knowledge-sharing antecedents: extrinsic motivation, intrinsic motivation, and intra-community factors. Extrinsic motivation includes the desire for reputation and reciprocity, while intrinsic motivation includes enjoyment in helping others and knowledge self-efficacy. Intra-community factors, as adopted from Koh and Kim (2003), include perception of the moderator's enthusiasm, offline activity, and enjoyability.

The remainder of this study is organized as follows. Section 2 discusses the research background. Section 3 presents the proposed research model and corresponding hypotheses. Section 4 describes the research methodology used to test the model. Section 5 presents the results, and Section 6 discusses the findings and their practical and research implications. Finally, Section 7 presents the main conclusions.

## 2. Literature review

### 2.1. Previous studies of knowledge sharing in online communities

A growing body of literature has identified the factors that influence knowledge sharing in online communities. As shown in Table 1, the factors associated with knowledge-sharing behavior can generally be classified into personal factors (Chang & Chuang, 2011; Chen & Hung, 2010; Chiu et al., 2006; Hsu, Ju, Yen, & Chang, 2007; Jadin, Gnambs, & Batinic, 2013; Lin, Hung, & Chen, 2009; Marett & Joshi, 2009; Nov, Ye, & Kumar, 2012; Tseng & Kuo, 2010; Wasko & Faraj, 2005), technological factors (Ma & Agarwal, 2007; Phang et al., 2009), and contextual factors (Chang & Chuang, 2011; Chen & Hung, 2010; Chiu et al., 2006; Hsu et al., 2007; Lin et al., 2009; Marett & Joshi, 2009; Nov et al., 2012; Phang et al., 2009; Tseng & Kuo, 2010; Usoro, Sharratt, Tsui, & Shekhar, 2007; Wasko & Faraj, 2005).

For the research whose subjects were only posters, for instance, Wasko and Faraj (2005) found that people contribute knowledge when they perceive that their contribution can enhance their reputation, when they have experiences to share, and when they are centrally embedded in a network. Chiu et al.'s (2006) study of integrating with social cognitive and social capital theories, they demonstrated that social interaction ties, trust, norms of reciprocity, identification, shared vision, shared language, community-related

outcome expectations, and personal outcome expectations may be important motives for community members to contribute knowledge. In a study of PVCs, Chen and Hung (2010) collected data from members with sharing experience and found that interpersonal trust, knowledge-sharing self-efficacy, and perceived relative advantage significantly affected knowledge contribution behavior. Suh (2013) focused on active members and used the self-discrepancy index, which assesses the degree of difference between one's virtual and real selves and its link to psychological states (i.e., autonomy, recovery, and catharsis) and knowledge contribution behavior. The results showed that autonomy and recovery enhanced not only the quality of contribution, but also its quantity. In contrast, catharsis reduced the quality of contribution.

The research examined posters and lurkers separately are discussed as follows. In a study of the impacts of motivational and social influences on the sharing behavior that must exist concurrently for posters and lurkers, Marett and Joshi (2009) found that a poster's likelihood of sharing information and rumor was shaped collectively by intrinsic and extrinsic motivation and normative influences (e.g., community norms). Conversely, lurkers were found to be driven primarily by extrinsic motivation and normative influences. More recently, a study by Jadin et al. (2013) reports that readers (lurkers) of Wikipedia displayed higher degrees of opinion leadership than authors (posters). Higher levels of trendsetting increase the likelihood of posters contributing to Wikipedia than lurkers.

For the research whose subjects were community members in general whereas lurkers and posters were not set apart, for instance, Hsu et al. (2007), who integrated personal and environmental perspectives in a study of community members, found that self-efficacy, outcome expectations, and multidimensional trust (including economy, information, and identification-based trust) influenced knowledge-sharing behavior in online communities. The researchers also demonstrated that all three trust dimensions must exist concurrently to reinforce knowledge sharing among users. Ma and Agarwal (2007) collected data from community members of two online communities and reported that perceived identity verification was strongly linked to member satisfaction and knowledge contribution. Tseng and Kuo (2010) studied teachers in the context of an e-learning platform and found that community identity, social awareness, and knowledge-sharing self-efficacy significantly impacted knowledge-sharing behavior, whereas the influence of interpersonal trust on this behavior was mediated by social awareness and knowledge-sharing self-efficacy. Chang and Chuang (2011) collected data from several online communities, including professional and interest virtual communities; all of the subjects were community members. The results showed that altruism, identification, reciprocity, and shared language had a significant and positive effect on knowledge sharing. Reputation, social interaction, and trust had positive effects on the quality rather than the quantity of the shared knowledge.

In summary, despite the emphasis on and interest in motivational factors when studying knowledge sharing in online communities, the existing literature has several limitations. First, we know very little about how motivational factors differ between posters and lurkers, because posters and lurkers are rarely studied together. Second, the previous studies explored the individual motivational factors that helped explain knowledge sharing only in PVCs, or they neglected to state the community type. Consequently, we do not know whether motivational variables can predict knowledge sharing in different types of online communities. A third limitation of the existing research is that although driving factors regarding knowledge sharing in online communities have been identified in terms of personal, technological, and contextual factors, no studies have investigated intra-community factors involved in promoting knowledge sharing, even though studies have

**Table 1**

Prior studies on knowledge sharing in online communities (characterized by research subjects and influencing factors).

Category	Influencing factors	Related literature		
		Research subject: Poster	Lurker	All community member
Personal factors	Desire to learn	Oh (2012)		
	Empathy	Oh (2012)		
	Enjoy helping/altruism	Marett and Joshi (2009), Oh (2012) and Wasko and Faraj (2005)	Marett and Joshi (2009)	Chang and Chuang (2011) and Yu, Lu, and Liu (2010)
	Knowledge sharing self-efficacy	Chen and Hung (2010), Lin et al. (2009) and Oh (2012)		Hsu et al. (2007) and Tseng and Kuo (2010)
	Opinion leadership	Jadin et al. (2013)	Jadin et al. (2013)	
	Perceived relative advantage	Chen and Hung (2010) and Lin et al. (2009)		
	Perceived compatibility	Chen and Hung (2010) and Lin et al. (2009)		
	Perceived usefulness/relevancy			Yu et al. (2010)
	Personal gain	Oh (2012)		
	Personal outcome expectations	Chiu et al. (2006) and Nov et al. (2012)		Hsu et al. (2007)
	Prosocial value orientations	Jadin et al. (2013)	Jadin et al. (2013)	Jadin et al. (2013)
	Reputation	Marett and Joshi (2009) and Wasko and Faraj (2005)		Chang and Chuang (2011)
	Reciprocity	Oh (2012)		
	Self-enjoyment	Oh (2012)		
	Self-rated expertise	Wasko and Faraj (2005)		
Technological factors	Tenure	Wasko and Faraj (2005)		
	Trendsetting	Jadin et al. (2013)	Jadin et al. (2013)	
Contextual factors	Community artifacts			Ma and Agarwal (2007)
	Perceived usability	Phang et al. (2009)		
	Benevolence-based trust			Usoro et al. (2007)
	Centrality	Wasko and Faraj (2005)		
	Community-related outcome expectations	Chiu et al. (2006) and Nov et al. (2012)		Hsu et al. (2007)
	Competence-based trust			Usoro et al. (2007)
	Community interest	Oh (2012)		
	Commitment	Wasko and Faraj (2005)		
	Economy-based trust			Hsu et al. (2007)
	Information-based trust			Hsu et al. (2007)
	Identification-based trust			Hsu et al. (2007)
	Integrity-based trust			Usoro et al. (2007)
	Interpersonal trust	Chen and Hung (2010), Chiu et al. (2006), Lin et al. (2009) and Tseng and Kuo (2010)		Chang and Chuang (2011)
	Identification	Chiu et al. (2006)		Chang and Chuang (2011) and Tseng and Kuo (2010)
	Normative influence	Marett and Joshi (2009)	Marett and Joshi (2009)	
	Norm of reciprocity	Chen and Hung (2010), Chiu et al. (2006), Lin et al. (2009) and Wasko and Faraj (2005)		Chang and Chuang (2011)
	Perceived sociability	Phang et al. (2009)		
	Shared language	Chiu et al. (2006)		Chang and Chuang (2011)
	Shared vision	Chiu et al. (2006)		
	Sharing culture			Yu et al. (2010)
	Social awareness			Tseng and Kuo (2010)
	Social engagement	Oh (2012)		
	Social interaction ties	Chiu et al. (2006)		Chang and Chuang (2011)

Notes: Several prior studies have used reciprocity as a contextual factor based on social capital theory (e.g., Chang & Chuang, 2011; Chen & Hung, 2010; Chiu et al., 2006; Lin et al., 2009; Wasko & Faraj, 2005); other studies have used it as a personal factor based on social exchange theory (e.g., Kankanhalli et al., 2005; Oh, 2012).

shown that intra-community factors were situational factors that affected a member's intention to be involved in a community (Xu, Jones, & Shao, 2009).

## 2.2. Online community members: posters versus lurkers

Ridings et al. (2006) defined posters as the main content producers who actively contribute online content. Other definitions of posters included that of Taylor (2002), who defined posters as workers who contribute an above-average number of postings to a discussion board and visit a site regularly.

Lurkers are those who visit a community without posting any messages (Marett & Joshi, 2009; Nonnecke et al., 2004), and they usually learn while lurking (Gray, 2004). Definitions of lurkers have differed across studies. For example, Taylor (2002) defined lurkers as members who post fewer times per month than the community average. Preece et al. (2004) defined lurkers as silent members who participate in online discussions regularly but post less frequently. Ridings et al. (2006) defined lurkers as those who do not post or who post very infrequently. Rafaeli et al. (2004) pointed out that lurkers can be defined as a persistent but silent audience. Zhang and Storck (2001) used the term “peripheral participants” instead

of lurkers to describe participants who post only occasionally over a long period. Kollock and Smith (1996) described lurkers as “free-riders” (i.e., those who ask questions but do not answer questions, gather information without distributing information, or read discussions without contributing). However, lurkers typically account for the majority of the members in an online community (Marett & Joshi, 2009; Rafaeli et al., 2004). In some communities, more than 90% of members are lurkers (Nielsen, 2006; Preece et al., 2004). Notably, Preece et al. (2004) argued that most lurkers are not self-ish free-riders, but rather choose not to post because they (1) do not need to post (e.g., reading is sufficient); (2) need to find out more about a community (e.g., are still learning about the community); (3) think posting would not be helpful (e.g., because they have nothing to offer or because others have said what they intended to say); (4) cannot use community tools (e.g., do not know how to post or do not have enough time); or (5) do not like the community (e.g., are shy about participation or prefer to remain anonymous). Guan (2006) pointed out that lurkers do not post their own opinions, and lurk instead, because (1) they might be contradicted by others; (2) they are afraid of receiving criticism from others; (3) their opinions might receive or attract particular judgment from others. Lurking is an essential part of the process when a newcomer joins a community (Correll, 1995), as lurking can help him or her get to know the community (Nonnecke et al., 2004). When a newcomer first joins a community, he or she is unfamiliar with the environment and needs to watch and learn in order to adapt to the community's culture. Once a lurker is familiar with a community, his or her behaviors may change, and he or she may choose to do more than just lurk (Correll, 1995). Lurkers who visit communities regularly (Rafaeli et al., 2004) are often the justification for and target of advertising support (Preece et al., 2004; Rafaeli et al., 2004). Therefore, community managers might wish to collect data on the habitual behaviors of lurkers (Hagel & Arthur, 1997).

### 3. Research model and hypotheses

In this study, we developed a research model to examine the effects of individual extrinsic motivation (reputation and reciprocity), intrinsic motivation (enjoyment in helping others and knowledge self-efficacy), and intra-community factors (perceived moderator's enthusiasm, offline activities, and enjoyability) on knowledge-sharing intention in interest virtual communities. Value theory postulates that different groups of people may hold different types of values that influence their social behavior (Harper, 1974). Thus, we derive the relative importance of the influencing factors for posters and lurkers. The resultant research model is shown in Fig. 1, and the research hypotheses are discussed in the following sections.

#### 3.1. Reputation

Reputation is an alternative set of rewards that goes beyond monetary reward (Jeppesen & Frederiksen, 2006); reputation can help an individual obtain and maintain his or her status within a community (Jones, Hesterly, & Borgatti, 1997; Marett & Joshi, 2009), because he or she wants others to see him or her as a knowledgeable person with valuable expertise (Davenport & Prusak, 1998). Previous research has indicated that building a reputation is a strong motivator for knowledge sharing (Davenport & Prusak, 1998) and can help an individual develop a positive attitude toward knowledge sharing (Hsu & Lin, 2008). If a member's reputation is enhanced, his or her level of involvement in a community increases (Xu et al., 2009). Prior studies have provided evidence

that reputation can enhance the knowledge-sharing behaviors of community members (Wasko & Faraj, 2005). Therefore,

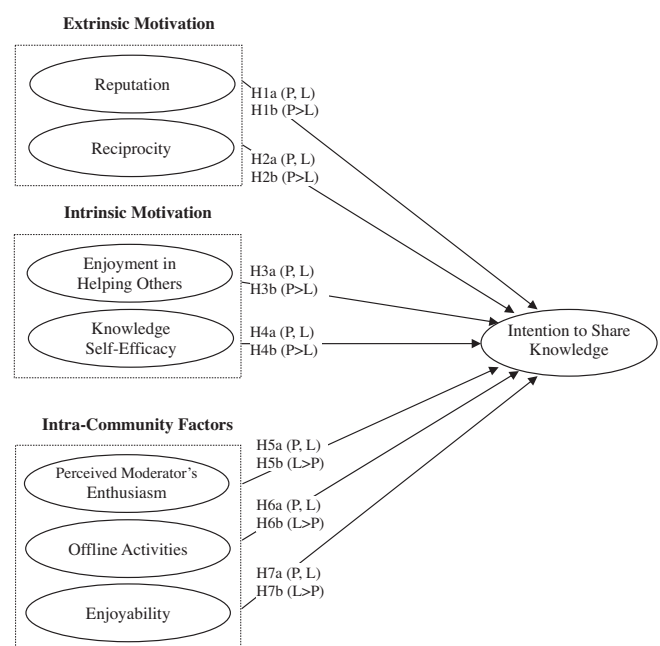
**H1a.** Reputation is positively associated with members' intention to share knowledge, for both posters and lurkers.

Because systems record the grades and knowledge contribution rankings of others in response to online posts, thus making them visible and identifiable (Ma & Agarwal, 2007), posters receive recognition as experts (Ba, Stallaert, & Whinston, 2001). Thus, posters may enjoy an enhanced reputation (Phang et al., 2009). However, because there is no record of posted information for lurkers, systems do not have any evaluation of or feedback for information posted by others. Therefore, lurkers experience limited enhancement of their reputation. As a result, reputation is likely to be perceived as a more critical factor by posters than by lurkers. Thus, we propose that:

**H1b.** The positive relationship between reputation and the intention to share knowledge is stronger for posters than for lurkers.

#### 3.2. Reciprocity

Reciprocity is defined as the perception that current knowledge contribution behavior leads to future requests for knowledge being met (Davenport & Prusak, 1998). People have a general expectation of a favorable return from their deeds (Blau, 1964), because their time, energy, and knowledge are limited (Davenport & Prusak, 1998). Previous research has suggested that people who share online believe in reciprocity (Wasko & Faraj, 2000) and expect that interactions will be available in the future (Kollock, 1999), specifically interactions related to knowledge provision and reception (Bock, Kim, & Lee, 2005). Reciprocity is an individual's perception of fairness in knowledge exchange behavior (Chiu et al., 2006). If members expect fair, rewarding responses, they will be encouraged to engage in more knowledge-sharing activities (Chai, Das, & Rao, 2012; Wasko & Faraj, 2005). Therefore,



**Fig. 1.** The research model. Note: P > L indicates relative importance for posters compared to lurkers, and vice versa for L > P.



**H2a.** Reciprocity is positively associated with members' intention to share knowledge, for both posters and lurkers.

Previous research has shown that expected reciprocity has a positive effect on the quantity (Chang & Chuang, 2011; Chiu et al., 2006) and quality of knowledge sharing (Chang & Chuang, 2011). Posters' knowledge-sharing actions usually bring comments and feedback from others that facilitate the building of beneficial reciprocal relationships with other members. However, because there is no experience in knowledge sharing for lurkers, they do not perceive a reciprocal relationship, as they only read messages passively. Compared to lurkers, posters make a greater effort to share knowledge online as a reciprocal gesture.

**H2b.** The positive relationship between reciprocity and the intention to share knowledge is stronger for posters than for lurkers.

### 3.3. Enjoyment in helping others

Intrinsic motivation such as enjoyment in helping others affects human behavior. People participate in community activities and help others because helping others is enjoyable and brings satisfaction (Kollock, 1999; Wasko & Faraj, 2000). Previous research has indicated that an individual's attitude toward knowledge sharing is affected by his or her enjoyment in helping others (He & Wei, 2009; Lin, 2007a). Enjoyment in helping others is derived from altruism (Lin, 2007a), a form of unconditional kindness without any expectation of favorable returns (Fehr & Gächter, 2000). People simply provide help and feel happy about doing it (Kollock, 1999). Intrinsically motivated people find enjoyment in the act of contributing helpful knowledge to online communities (Marett & Joshi, 2009).

**H3a.** Enjoyment in helping others is positively associated with members' intention to share knowledge, for both posters and lurkers.

Posters seem to gain satisfaction from sharing knowledge; therefore, enjoyment and satisfaction in sharing is a significant predictor of posters' information-sharing behaviors (Marett & Joshi, 2009). Lurkers must first post to enjoy sharing with others (Marett & Joshi, 2009). Thus, we expect that the positive effect of enjoyment in helping others is stronger for posters than it is for lurkers.

**H3b.** The positive relationship between enjoyment in helping others and the intention to share knowledge is stronger for posters than for lurkers.

### 3.4. Knowledge self-efficacy

Self-efficacy is the degree of confidence in one's ability to perform a task (Bandura, 1977), and knowledge self-efficacy is the degree of confidence in one's ability to provide knowledge that is valuable to others (Kankanhalli, Tan, & Wei, 2005). A person with a high level of knowledge self-efficacy might believe that answering questions is easy, especially if many are novice questions (Wasko & Faraj, 2000). Knowledge self-efficacy is defined as confidence in one's ability to share valuable knowledge (Spreitzer, 1995). Prior research has revealed that an individual with a high level of knowledge self-efficacy has powerful self-motivation (Bock & Kim, 2002; Hsu et al., 2007), and thus, develops a more positive attitude toward knowledge-sharing (Lin, 2007a). If an individual has a sense of knowledge self-efficacy, he or she will have no problem enhancing sharing (Kankanhalli et al., 2005). Thus, we hypothesize that:

**H4a.** Knowledge self-efficacy is positively associated with members' intention to share knowledge, for both posters and lurkers.

When posters share online, the act of knowledge contribution involves explicating and codifying knowledge (Kankanhalli et al., 2005), which includes the time and effort spent codifying knowledge (Ba et al., 2001). After posters contribute knowledge, they may spend even more time responding to additional questions posed by the knowledge receivers (Goodman & Darr, 1998). Lurkers lack confidence and feel incompetent to post (Nonnecke et al., 2004). They are also afraid of being ridiculed or criticized after posting (Guan, 2006). Therefore, compared to lurkers, posters have a higher level of knowledge self-efficacy to be able to share knowledge continuously. The influence of knowledge self-efficacy on lurkers' knowledge-sharing intention is relatively weaker than that of posters.

**H4b.** The positive relationship between knowledge self-efficacy and the intention to share knowledge is stronger for posters than for lurkers.

### 3.5. Perceived moderator's enthusiasm

The primary duty of moderators is to develop the necessary social climate to motivate members to participate (Koh et al., 2007). Moderators create a set of policies and behavioral rules for community members to follow (Hummel & Lechner, 2002), actively post their ideas and opinions (Koh & Kim, 2003), remove irrelevant postings, stop inappropriate behaviors, and ensure that posted content does not stray from relevant topics (Phang et al., 2009). A favorable perception of the moderator is expected to enhance the knowledge-sharing intention (Phang et al., 2009). Thus, we hypothesize that:

**H5a.** Perceived moderator's enthusiasm is positively associated with members' intention to share knowledge, for both posters and lurkers.

Lurkers are defined as those who do not actively participate, because of a certain level of distrust in the abilities of others to answer questions or give advice (Ridings et al., 2006). Lurkers may fear that unknown persons are mining knowledge from the community with unfriendly intention; thus, there may be a trust barrier for lurkers begin to posting in the community (Ridings et al., 2006). A moderator can promote collaboration and trust among community members, which may encourage members to participate (Preece, 2002). If a moderator has high enthusiasm, he or she might try to stop inappropriate posts, to rate other members quantitatively and qualitatively, and to enforce the community's security and privacy policies (Ridings et al., 2006). The moderator's role may be relatively less critical for posters compared to lurkers, who rely on a high level of trust to post (Ridings et al., 2006). Hence, the following hypothesis is proposed:

**H5b.** The positive relationship between perceived moderator's enthusiasm and the intention to share knowledge is stronger for lurkers than for posters.

### 3.6. Offline activities

Although virtual communities are online platforms for communication, members' offline (or off-site) activities, such as using social network sites, making phone calls, or having face-to-face meetings, can facilitate continuous communication. Offline activities help members develop a sense of belonging (Lin, 2007b), strengthen relationships with one another, and improve mutual

understanding and trust (Koh & Kim, 2003). Thus, intensive interaction is necessary for keeping most interest communities lively (Hummel & Lechner, 2002). Community members who often contact other members offline may be willing to devote themselves to community development, which may influence their sharing behaviors as well (Koh et al., 2007; Ma & Agarwal, 2007). Thus, we hypothesize that:

**H6a.** Offline activities are positively associated with members' intention to share knowledge, for both posters and lurkers.

Lurkers can include active and passive lurkers. Passive lurkers are those who read but never participate, and active lurkers are those who respond privately to messages or pass on information to others (Bowes, 2002). Posters might communicate with others by posting topics in online communities. For lurkers, offline activities such as an email to encourage him or her to answer a post from a user regarding a subject might be a low-risk way to start contributing to the community (Ridings et al., 2006). Offline interaction prompts community members to perceive "who they are in their community," and this perception can trigger online posting activities (Koh et al., 2007). Therefore, offline activities are more likely to be perceived as critical drivers by lurkers than by posters.

**H6b.** The positive relationship between offline activities and the intention to share knowledge is stronger for lurkers than for posters.

### 3.7. Enjoyability

Enjoyability is defined as "enjoyment of playfulness derived from a community's contents and interactions with other members" (Koh & Kim, 2003, p. 79). Enjoyability must exist in order for member satisfaction to develop; in turn, member satisfaction promotes loyalty (Ho & Huang, 2009). Thus, enjoyment typically increases as involvement deepens (Xu et al., 2009), as does the sense of belonging to the virtual community (Koh & Kim, 2003). The enjoyability the member derives from virtual community content and interactions with others might lead to an intention to share knowledge with the community. Thus, we hypothesize that:

**H7a.** Enjoyability is positively associated with members' intention to share knowledge, for both posters and lurkers.

A community space with a high level of enjoyability compels members to participate continuously in community activities. Content that is perceived as interesting or controversial by lurkers becomes a catalyst for posting (Rafaeli et al., 2004). An online community with constantly updated, refreshed, and relevant content is more likely to attract and retain users (Mithas, Ramasubbu, Krishnan, & Fornell, 2007), especially lurkers who have high information expectations for online communities (Nonnecke et al., 2004). The influence of enjoyability is relatively stronger on lurkers' sharing intention than on that of posters.

**H7b.** The positive relationship between enjoyability and the intention to share knowledge is stronger for lurkers than for posters.

## 4. Research methodology

### 4.1. Data collection

Empirical data were collected by using an online survey posted on the Mobile01 site ([www.mobile01.com](http://www.mobile01.com)), the largest online community platform in Taiwan. Various topics are discussed on this

website, including 3C (computer, communication, consumer), automobiles, bikes, games, and traveling and food. To date, the Mobile01 community has more than 1.3 million members. The survey was posted on the "Bike" and "Travelling and Food" forums. Each of these forums represents a community for people with a common interest in leisure activities, which is very different from the intent for knowledge exchanges in professional communities, to get together and share information. We obtained approval from the moderators to conduct the survey. The online survey yielded 324 usable responses after eliminating 36 invalid responses. Four \$50 prizes were offered through drawings. Of the 324 usable responses, 146 were classified as completed by posters—those who had posted at least one message in the community forum over the past three months. The remaining 178 responses were considered to be completed by lurkers—those who had never posted a message. This study adopted the lurker definition developed by Marett and Joshi (2009) and Nonnecke et al. (2004). The members who had posted at least one message over the past three months were classified as posters.

The sample consisted of 217 men (67%) and 107 women (33%). Most respondents were aged 21–30 years (33.6%) or 31–40 years (44.8%). Respondents registered for more than three months accounted for 84.3% of the sample, indicating that most respondents were familiar with the online community (Table 2).

### 4.2. Measurement

To ensure content validity, items were used to measure each concept based on the validated construction measurements of previous studies. Table 3 lists definitions of the variables used. A pre-test and a pilot test were performed to validate and refine the instrument. In the pretest, the questionnaire was checked by five experts from the information management field. Respondents were asked to comment on the consistency of the English–Chinese translation, the instrument format, and its clarity. The questionnaire was then used in the pilot test, which involved 30 community members. The formal survey began after the pilot test, which tested and validated the research instruments and processes. All of the questions were anchored on a seven-point Likert scale, ranging from 1 for "strongly disagree" to 7 for "strongly agree."

Several control variables that might influence individual behavior, such as age, education, and duration of membership, were included in the analysis. To test for possible non-response bias, all major constructs and demographic information on the early respondents and late respondents were compared. Subjects who completed the online questionnaire within one month were classified as early respondents, and those responding after one month were classified as late respondents. The *t*-test results showed no significant difference between these two respondent groups ( $p < 0.05$ ), suggesting that non-response bias was minimal.

## 5. Results

A partial least squares (PLS) model, a component-based structural equation modeling technique, was created in SmartPLS 2.0 to test the research hypotheses. First, the measurement model was estimated to make sure that the constructs possessed sufficient reliability and validity, and then the structural relationship was examined. PLS was more appropriate for the data analysis in this study, because PLS maximizes the variances explained in the dependent variables, and it is less demanding in terms of sample size. The assumption of multivariate normality does not restrict PLS (Chin, 1998).

**Table 2**  
Demographic information.

Demographic variable		Poster (n = 146)	Lurker (n = 178)	Both (N = 324)
Gender	Male	88(60.3%)	129(72.5%)	217(67.0%)
	Female	58(39.7%)	49(27.5%)	107(33.0%)
Age	20 years or below	14(9.6%)	8(4.5%)	22(6.8%)
	21–30 years	37(25.3%)	72(40.4%)	109(33.6%)
	31–40 years	70(47.9%)	75(42.1%)	145(44.8%)
	41–50 years	16(11.0%)	13(7.3%)	29(9.0%)
	51 years or above	9(6.2%)	10(5.6%)	19(5.9%)
Education	High school or less	3(2.1%)	14(7.9%)	17(5.2%)
	College	46(31.5%)	38(21.3%)	84(25.9%)
	University	44(30.1%)	102(57.3%)	146(45.1%)
	Graduate degree or higher	53(36.3%)	24(13.5%)	77(23.7%)
Forum topic	Bike	63(43.2%)	67(37.6%)	130(40.1%)
	Traveling and Food	83(56.8%)	111(62.4%)	194(59.9%)
Duration of membership	3 months or less	11(7.5%)	40(22.5%)	51(15.7%)
	3–6 months	39(26.7%)	77(43.3%)	116(35.8%)
	6 months – 1 year	26(17.8%)	22(12.4%)	48(14.8%)
	1–2 years	15(10.3%)	7(3.9%)	22(6.8%)
	2–3 years	24(16.4%)	25(14.0%)	49(15.1%)
	3 years or more	31(21.2%)	7(3.9%)	38(11.7%)

**Table 3**  
Definitions of research variables.

Variable	Definition	Reference
Reputation (REPU)	Perception of an improvement in reputation and image due to sharing knowledge in the online community	Kankanhalli et al. (2005)
Reciprocity (RECP)	Belief that current sharing behavior will cause future requests for knowledge to be easily satisfied by others	Davenport and Prusak (1998)
Enjoyment in helping others (EH)	Perception of pleasure from helping others through sharing knowledge with the online community	Wasko and Faraj (2000)
Knowledge self-efficacy (KSEF)	Confidence in one's ability to share knowledge that is valuable to the online community	Spreitzer (1995)
Perceived moderator's enthusiasm (MOD)	Perception of the moderator's efforts, such as supervising, providing support for members, and devoting himself/herself to the community to help members feel that the virtual community is active	Koh and Kim (2003)
Offline activities (OFF)	Interpersonal actions performed with other members offline to solve a problem, exchange opinions, or facilitate communication	Jang and Ko (2010)
Enjoyability (ENJ)	Perception of enjoyment or playfulness derived from the community's content and interactions with other members	Koh and Kim (2003)
Knowledge-sharing intention (KSI)	The intention to share knowledge	Ajzen (1991)

**Table 4**  
Discriminant validity and reliability (posters|lurkers).

Variables	Number of items <sup>a</sup>	CR	CA	1	2	3	4	5	6	7	8
1. REPU	3	0.95 0.91	0.92 0.85	<b>0.93 0.88</b>							
2. RECP	4	0.94 0.96	0.92 0.94	−0.04 0.07	<b>0.89 0.93</b>						
3. EH	4	0.92 0.94	0.89 0.92	0.06 0.02	0.23 0.24	<b>0.87 0.90</b>					
4. KSELF	4	0.95 0.88	0.93 0.83	0.00 0.15	0.33 0.16	0.32 −0.02	<b>0.91 0.81</b>				
5. MOD	3	0.97 0.96	0.96 0.93	0.12 0.08	0.14 0.14	0.15 0.13	0.34 0.12	<b>0.96 0.94</b>			
6.OFF	2(3)	0.92 0.90	0.82 0.77	0.09 −0.03	0.17 0.32	0.20 0.22	0.38 0.20	0.41 0.32	<b>0.92 0.90</b>		
7. ENJ	3	0.93 0.87	0.89 0.78	0.03 0.22	0.26 0.19	0.31 0.16	0.49 0.49	0.19 0.29	0.25 0.41	<b>0.90 0.83</b>	
8. KSI	2	0.98 0.97	0.96 0.94	0.09 0.14	0.37 0.35	0.42 0.23	0.56 0.24	0.42 0.46	0.45 0.47	0.54 0.50	<b>0.98 0.97</b>

The bold numbers in the diagonal row are the square roots of the average variances extracted (AVE).

CR = composite reliability, CA = Cronbach's alpha.

<sup>a</sup> Final item numbers (initial item numbers); See Appendix for the abbreviations used in Tables 3–6.

### 5.1. The measurement model

To test the appropriateness of our instrument, the construct reliability, convergent validity, and discriminant validity were assessed. Construct reliability was assessed using Cronbach's alpha and composite reliability. Nunnally (1978) suggested that a Cronbach's alpha value above 0.7 is acceptable. To improve the reliability of the corresponding constructs, OFF2 was omitted from the offline activities construct. The coefficients used for all constructs

ranged from 0.82 to 0.96 for the poster model and 0.77 to 0.94 for the lurker model; all measurements surpassed the 0.70 criteria, as shown in Table 4. The composite reliability also yielded very similar results, ranging from 0.92 to 0.98 for the poster model and 0.87 to 0.97 for the lurker model; all constructs higher than the recommended level of 0.7 were deemed to be reliable constructs (Nunnally, 1978). Convergent validity was assessed using the bootstrapping procedure. All item loadings for the poster and lurker models were significant and exceeded the acceptable value

**Table 5**

Cross loadings (posters|lurkers).

	REPU	RECP	EH	KSEF	MOD	OFF	ENJ	KSI
REPU1	0.95 0.89	-0.02 0.01	0.07 0.02	0.02 0.18	0.16 0.03	0.13 -0.03	0.00 0.23	0.08 0.14
REPU2	0.89 0.91	-0.04 0.05	0.04 0.03	-0.01 0.09	0.09 0.12	0.02 -0.07	0.03 0.15	0.08 0.12
REPU3	0.93 0.83	-0.06 0.15	0.06 0.01	-0.01 0.10	0.09 0.09	0.11 0.03	0.04 0.19	0.09 0.08
RECP1	-0.05 0.09	0.91 0.92	0.27 0.25	0.29 0.14	0.09 0.16	0.19 0.33	0.27 0.18	0.42 0.34
RECP2	0.02 0.04	0.86 0.94	0.17 0.22	0.22 0.11	0.12 0.13	0.15 0.30	0.21 0.18	0.26 0.35
RECP3	-0.04 0.07	0.90 0.95	0.17 0.22	0.31 0.15	0.14 0.13	0.15 0.32	0.24 0.19	0.30 0.34
RECP4	-0.06 0.05	0.90 0.88	0.17 0.19	0.35 0.18	0.17 0.10	0.10 0.22	0.22 0.11	0.30 0.25
EH1	0.02 0.07	0.20 0.22	0.82 0.89	0.22 0.00	0.10 0.08	0.13 0.16	0.17 0.13	0.24 0.14
EH2	-0.01 0.00	0.25 0.19	0.85 0.85	0.21 -0.02	0.13 0.13	0.14 0.17	0.22 0.14	0.31 0.18
EH3	0.08 -0.01	0.10 0.14	0.89 0.90	0.26 -0.05	0.14 0.11	0.18 0.18	0.34 0.13	0.35 0.24
EH4	0.10 0.04	0.24 0.30	0.90 0.94	0.36 0.01	0.15 0.14	0.22 0.24	0.31 0.16	0.48 0.24
KSEF1	0.02 0.15	0.31 0.16	0.25 -0.03	0.88 0.82	0.32 0.08	0.34 0.08	0.43 0.41	0.50 0.21
KSEF2	0.01 0.18	0.35 0.15	0.37 -0.06	0.91 0.73	0.33 0.18	0.35 0.05	0.44 0.34	0.52 0.13
KSEF3	0.00 0.07	0.24 0.09	0.26 0.02	0.90 0.82	0.34 0.07	0.39 0.16	0.44 0.34	0.53 0.19
KSEF4	-0.03 0.10	0.29 0.12	0.28 0.00	0.93 0.86	0.25 0.08	0.31 0.30	0.48 0.48	0.49 0.23
MOD1	0.07 0.02	0.19 0.20	0.15 0.15	0.33 0.10	0.94 0.88	0.42 0.32	0.18 0.25	0.40 0.46
MOD 2	0.13 0.11	0.11 0.09	0.11 0.11	0.34 0.12	0.97 0.96	0.39 0.29	0.17 0.28	0.39 0.41
MOD 3	0.16 0.11	0.11 0.09	0.18 0.11	0.33 0.12	0.96 0.96	0.38 0.29	0.21 0.28	0.42 0.41
OFF1	0.10 -0.06	0.20 0.32	0.19 0.13	0.39 0.16	0.38 0.21	0.92 0.91	0.30 0.35	0.41 0.44
OFF3	0.08 0.01	0.11 0.26	0.19 0.27	0.32 0.21	0.38 0.37	0.92 0.89	0.17 0.40	0.42 0.40
ENJ1	0.02 0.19	0.23 0.17	0.32 0.05	0.45 0.36	0.14 0.31	0.18 0.29	0.88 0.82	0.44 0.39
ENJ2	0.02 0.17	0.24 0.05	0.28 0.11	0.44 0.37	0.18 0.15	0.24 0.25	0.92 0.80	0.50 0.34
ENJ3	0.03 0.18	0.25 0.21	0.26 0.21	0.45 0.48	0.21 0.26	0.26 0.46	0.91 0.88	0.51 0.49
KSI1	0.10 0.14	0.35 0.35	0.40 0.21	0.54 0.24	0.42 0.48	0.44 0.44	0.54 0.46	0.98 0.97
KSI2	0.08 0.12	0.37 0.34	0.43 0.23	0.57 0.23	0.40 0.41	0.44 0.47	0.51 0.50	0.98 0.97

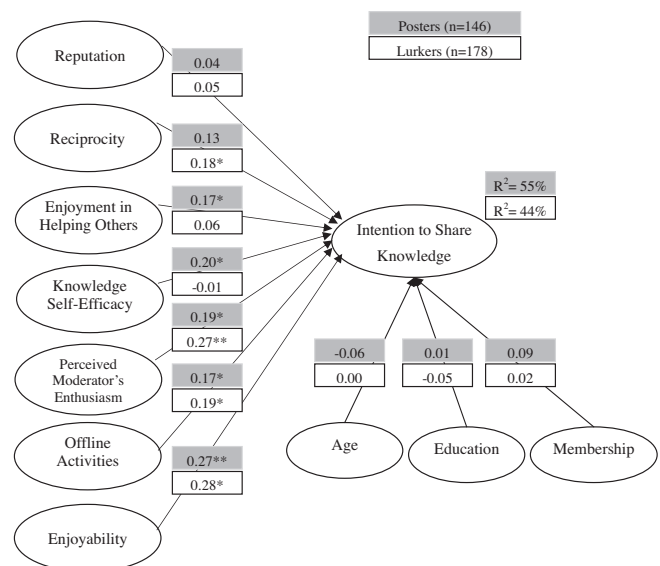
of 0.5 recommended by Hair, Black, Babin, Anderson, and Tatham (2006) for their corresponding constructs, as shown in Table 5. The average variance extracted (AVE) of the constructs was larger than 0.5, exceeding the threshold value suggested by Fornell and Larcker (1981) that demonstrated good convergent validity. Discriminant validity was demonstrated when the square root of the AVE was greater than the inter-construct correlations, as suggested by Fornell and Larcker (1981). Table 4 shows that the square root of the AVE values was greater than the inter-construct correlations, and thus, exhibited acceptable discriminant validity. We also checked for multi-collinearity, as there were relatively high correlations between some variables (e.g., 0.56 between KSEF and KSI for the poster model). The resulting variance inflation factor values of all the constructs in the poster model were acceptable (i.e., between 1.026 and 1.619).

## 5.2. The structural model

We estimated the structural model for the posters and lurkers subgroups. A bootstrap analysis was performed with 500 resamples, with the sample size set to be equal to the poster and lurker sample sizes ( $n = 146$  and  $n = 178$ , respectively). Fig. 2 shows the path coefficients and the explained construct variances for both groups; Table 6 presents the path coefficients and  $t$ -values for each path; and Table 7 shows the means and standard deviations between the posters and lurkers.

The poster model explained 55% of the variance in the knowledge-sharing intention, and the lurker model explained

44%, indicating sufficient explanatory power for both models. As hypothesized, perceived moderator's enthusiasm (H5a:  $\beta = 0.186$ ,  $p < 0.05$  for the poster group;  $\beta = 0.272$ ,  $p < 0.01$  for the lurker group), offline activities (H6a:  $\beta = 0.172$ ,  $p < 0.05$  for the poster



**Fig. 2.** Standardized path coefficients for posters and lurkers. Coefficients for posters are in the shaded boxes. \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .



**Table 6**Path coefficients and *t*-values for posters and lurkers.

	Path	Posters ( <i>n</i> = 146)		Lurkers ( <i>n</i> = 178)		Outcome
		Coefficient	<i>t</i> -Value	Coefficient	<i>t</i> -Value	
H1a	REPU → Share Knowledge	0.041	0.530	0.048	0.484	Not supported
H2a	RECP → Share Knowledge	0.131	1.712	0.184*	2.264	Not supported
H3a	EH → Share Knowledge	0.174*	2.189	0.059	0.625	Not supported
H4a	KSEF → Share Knowledge	0.197*	1.967	−0.007	0.076	Not supported
H5a	MOD → Share Knowledge	0.186*	2.034	0.272**	2.968	Supported
H6a	OFF → Share Knowledge	0.172*	2.121	0.190*	2.332	Supported
H7a	ENJ → Share Knowledge	0.266**	2.759	0.284*	2.440	Supported

P: Posters; L: Lurkers.

\*\*\*  $p < 0.001$ .\*  $p < 0.05$ .\*\*  $p < 0.01$ .**Table 7**

Descriptive statistics of posters and lurkers.

Variables	Mean (std.)	
	Posters ( <i>n</i> = 146)	Lurkers ( <i>n</i> = 178)
Reputation (REPU)	4.06 (1.46)	3.49 (1.34)
Reciprocity (RECP)	4.01 (1.52)	4.80 (1.45)
Enjoyment in helping others (EH)	5.01 (1.40)	3.86 (1.52)
Knowledge self-efficacy (KSEF)	4.50 (1.32)	3.77 (1.15)
Perceived moderator's enthusiasm (MOD)	4.42 (1.56)	4.45 (1.18)
Offline activities (OFF)	4.33 (1.46)	3.72 (1.34)
Enjoyability (ENJ)	4.49 (1.44)	4.00 (1.08)
Knowledge-sharing intention (KSI)	5.63 (1.18)	4.47 (1.28)

group;  $\beta = 0.190$ ,  $p < 0.05$  for the lurker group), and enjoyability (H7a:  $\beta = 0.266$ ,  $p < 0.01$  for the poster group;  $\beta = 0.284$ ,  $p < 0.05$  for the lurker group) all significantly and positively influenced knowledge-sharing intention; however, reputation (H1a:  $\beta = 0.041$ ,  $p > 0.05$  for the poster group;  $\beta = 0.048$ ,  $p > 0.05$  for the lurker group), reciprocity (H2a:  $\beta = 0.131$ ,  $p > 0.05$  for the poster group;  $\beta = 0.184$ ,  $p < 0.05$  for the lurker group), enjoyment in helping others (H3a:  $\beta = 0.174$ ,  $p < 0.05$  for the poster group;  $\beta = 0.059$ ,  $p > 0.05$  for the lurker group), and knowledge self-efficacy (H4a:  $\beta = 0.197$ ,  $p < 0.05$  for the poster group;  $\beta = -0.007$ ,  $p > 0.05$  for the lurker group) did not. Data from the poster model and the lurker model supported hypotheses H5a, H6a, and H7a. Furthermore, none of the control variables (i.e., age, education, and duration of membership) significantly affected knowledge-sharing intention.

To test the hypotheses involving differences between posters and lurkers (H1b, H2b, H3b, H4b, H5b, H6b, and H7b), we statistically compared the corresponding path coefficients from the structural models of these two groups, as suggested by earlier studies (e.g., Keil et al., 2000). A significant *t*-value<sup>1</sup> indicated that the coefficients of the same path obtained from the two groups differ significantly. The *t*-test results (see Table 8) indicated that knowledge-sharing intention was influenced by enjoyment in helping others ( $t = 11.762$ ,  $p < 0.001$ ) and knowledge self-efficacy ( $t = 18.677$ ,  $p < 0.001$ ) more significantly for posters than for lurkers, and by reciprocal expectation ( $t = -5.991$ ,  $p < 0.001$ ), perceived moderator's enthusiasm ( $t = -8.372$ ,  $p < 0.001$ ), and offline activities ( $t = -1.990$ ,  $p < 0.05$ ) more significantly for lurkers than for posters. The results

also revealed no differential influence by reputation or enjoyability between the poster and lurker groups.

## 6. Discussion and implications

### 6.1. Summary of results

This study advances our understanding of the driving factors of two types of community members: the knowledge-sharing intention of posters and lurkers in interest communities. The results of this study empirically reveal that different factors motivate the poster group's and the lurker group's knowledge-sharing intention. The major findings from this study are as follows. First, among the extrinsic motivational factors, we found that reputation did not significantly influence the knowledge-sharing intention of posters or lurkers, whereas reciprocity significantly influenced the knowledge-sharing intention of lurkers, but not posters. This finding coincides with prior research showing that reciprocity is not positively associated with real contributing behavior (Hung, Durcikova, Lai, & Lin, 2011). In contrast to lurkers, posters have an expectation of reciprocity. It might be beneficial to think about methods for reinforcing the influence of the strong norm of reciprocity in the collective, as it might produce behavioral change among lurkers.

Second, among the intrinsic motivational factors, we found that enjoyment in helping others and knowledge self-efficacy are significant predictors of knowledge-sharing intention of posters, but not of lurkers. Many people engage in knowledge-sharing because they enjoy helping others (He & Wei, 2009; Kankanhalli et al., 2005); however, people who have never shared (such as lurkers) cannot experience the joy and satisfaction of helping others through sharing (Marett & Joshi, 2009). In addition, as expected, knowledge self-efficacy exerted positive impact on knowledge-sharing behavior for posters (Kankanhalli et al., 2005). The findings indicate that the intrinsic motivations of posters significantly influenced their knowledge-sharing behavior.

Third, among the intra-community factors, we found that perceived moderator's enthusiasm and offline activities have significant influence on the knowledge-sharing intention of posters as well as lurkers. Moreover, the effects of perceived moderator's enthusiasm and offline activities on knowledge-sharing intention were stronger in the lurker groups than in the poster groups. This result indicates that lurkers may still need to be reassured by moderators that members' postings are relevant and may lead to lurkers contributing more. As shown in the literature, offline activities are determinants of virtual community sustainability (Lin, 2007b). Thus, offline activities can complement a low social presence in a virtual community and increase awareness of other members (Fulk, Schmitz, & Steinfield, 1990; Koh & Kim, 2003; Koh et al., 2007). Offline interactions help community members become

<sup>1</sup>  $S_{pooled} = \sqrt{[(N_1 - 1)/(N_1 + N_2 - 2)] \times SE_1^2 + [(N_2 - 1)/(N_1 + N_2 - 2)] \times SE_2^2}$   
 $t = (PC_1 - PC_2) / [S_{pooled} \times \sqrt{(1/N_1 + 1/N_2)}]$ ; where  $S_{pooled}$  = pooled estimator for the variance;  $t$  = *t*-statistic with  $(N_1 + N_2 - 2)$  degree of freedom;  $N_i$  = sample size of dataset for group *i*;  $SE_i$  = standard error of path in structural model of group *i*;  $PC_i$  = path coefficient in structural model of group *i*.

**Table 8**

Tests of differences between posters and lurkers.

	Path	Coefficient (Standard error)		Statistical comparison of paths (t-statistic)	Outcome	Differences between the groups
		Posters	Lurkers			
H1b	REPU → Share Knowledge	0.041 (0.077)	0.048 (0.099)	−0.698	Not supported	No difference
H2b	RECP → Share Knowledge	0.131 (0.077)	0.184 (0.081)	−5.991***	Not supported	Stronger influence for the lurker group
H3b	EH → Share Knowledge	0.174 (0.079)	0.059 (0.094)	11.762	Supported	Stronger influence for the poster group
H4b	KSEF → Share Knowledge	0.197 (0.100)	−0.007 (0.096)	18.677***	Supported	Stronger influence for the poster group
H5b	MOD → Share Knowledge	0.186 (0.092)	0.272 (0.092)	−8.372***	Supported	Stronger influence for the lurker group
H6b	OFF → Share Knowledge	0.172 (0.081)	0.190 (0.081)	−1.990*	Supported	Stronger influence for the lurker group
H7b	ENJ → Share Knowledge	0.266 (0.097)	0.284 (0.116)	−1.495	Not supported	No difference

\*\*  $p < 0.01$ .\*  $p < 0.05$ .\*\*\*  $p < 0.001$ .

acquainted with each other and to trust and identify with one another such that their participation in online community activities may become a more positive experience (Koh et al., 2007); it may increase one's willingness to share knowledge.

Finally, the results showed that there is a significant relationship between enjoyability and knowledge-sharing intention for both posters and lurkers. Multi-group analysis revealed that there was no difference in enjoyability between the two groups. This result implies that in order to encourage posters and lurkers to share knowledge, a community administrator should offer users enjoyable experiences to increase the emotional arousal of all members.

## 6.2. Theoretical implications

This study makes several important contributions to the literature.

First, previous studies of community members' knowledge-sharing behavior are based on a set of factors that include individual motivation, technological, and contextual factors; however, critical intra-community factors have not been thoroughly explored. The present study combined individual motivation and intra-community factors into one coherent model to facilitate an integrated examination of their influences on online interest community sharing.

Second, knowledge-sharing intentions are explicated by analyzing the differences between posters' and lurkers' sharing experiences from multiple aspects: individuals' extrinsic and intrinsic motivations, as well as intra-community factors. Most studies of online communities have focused mainly on active participants; only a few have directly compared the intrinsic and extrinsic motivations of posters and lurkers (e.g., Marett & Joshi, 2009). Our research empirically showed that reciprocity, perceived moderator's enthusiasm, and offline activities have a more significant effect on lurkers' knowledge-sharing intention than on that of posters. Intrinsic motivations such as enjoyment in helping others and knowledge self-efficacy are more influential factors for posters' knowledge-sharing intentions than for those of lurkers.

Third, prior research regarding the effects of reputation on knowledge-sharing behavior remains mixed. Our findings suggest that reputation is not related to the knowledge-sharing intention of posters and lurkers in interest communities. However, reputation is a significant predictor of knowledge-sharing behavior in professional practice communities (Wasko & Faraj, 2005). Future research could examine the influence of community type in order to understand fully its role in knowledge-sharing behavior.

Finally, the findings suggest that intra-community factors tend to persist in interest communities for posters and lurkers. Other intra-community factors (e.g., social interactivity) can be tested and verified in interest communities by analyzing their effects on encouraging members' knowledge-sharing intention.

## 6.3. Practical implications

This study makes several important contributions to practice.

First, enjoyment in helping others and knowledge self-efficacy have a greater influence on the knowledge-sharing intentions of posters than on those of lurkers. Therefore, the significant positive impact of intrinsic motivation on knowledge sharing is the most critical factor that differentiates posters from lurkers. For instance, hiring core community members to post or reply continually and actively is helpful for increasing the flow of knowledge in online communities, which, in turn, may influence other enthusiastic members.

Second, reciprocity has a greater influence on the knowledge-sharing intentions of lurkers than on those of posters. Community developers or moderators should recognize that reciprocity is essential to stimulate lurkers' knowledge-sharing intention. Fehr and Gachter (2000) noted that reciprocity is deeply embedded in social interactions. Ease of interacting with others through the community system can promote taking part in intellectual discourses with other community members (Phang et al., 2009).

Third, perceived moderator's enthusiasm and offline activities have a greater influence on the knowledge-sharing intentions of lurkers than on those of posters. Previous research has found that lurkers, unlike posters, do not consider themselves to be community members (Nonnecke et al., 2004). This study suggests that perceived moderator's enthusiasm is very important for attracting potential posters. We suggest that community moderators should make sure posts are clearly classified so that lurkers can easily find topics of interest, thereby increasing the likelihood of sharing, so that lurkers will post after reading others' posts. This study also suggests that offline activities are critical for encouraging lurkers to participate. Thus, community moderators could hold community gatherings, or community platform developers could create features for members to make contact with each other, and members could make friends with those who have common interests through offline activities.

Finally, anticipation of the enjoyability of interest communities significantly influenced both posters and lurkers to engage in knowledge sharing, with no significant difference between the two groups. More attention should be given to technological properties that improve social interactivity, such as the opportunity to interact with other knowledgeable members (Wasko & Faraj, 2000).

## 6.4. Limitations

Our research had some limitations. First, the data were collected from only two forums. The external validity of this study may be extended by applying this research model to other interest communities and/or forums of different types. Second, this study simply dichotomized community members into a poster group

and a lurker group. However, the poster group included those who post infrequently and those who post frequently (Ridings et al., 2006). Future studies should adopt other categorizations that have more member types in order to overcome the poster–lurker dichotomy. Third, self-reported behavioral intention, as was used in this study, might not be as precise as intentions obtained from actual behavioral data. However, collecting actual data from online communities is difficult, because community members may use pseudonyms or different IDs. Sheppard, Hartwick, and Warshaw (1988) reported that the correlation between intention and behavior was approximately 0.5, demonstrating that intention and behavior are highly correlated. Finally, future research should extend the research model of this study to account for any unexplained behavioral variance, such as effects of community size and usability.

## 7. Conclusion

This study explicated the motivating factors of the knowledge-sharing intention of posters and lurkers in an online community. We found strong evidence that the effects of individual motivation and intra-community factors varied among posters and lurkers. Specifically, intrinsic motivational factors (i.e., enjoyment in helping others and knowledge self-efficacy) are the factors that influence posters' knowledge-sharing intentions the most. In contrast, extrinsic motivational factors, such as reciprocity, affect lurkers' sharing intentions the most. In addition to extrinsic and intrinsic motivations, intra-community factors, such as perceived moderator's enthusiasm, offline activities, and enjoyability, affect posters' and lurkers' knowledge-sharing intentions as well.

## Acknowledgement

This study is supported by the National Science Council of Taiwan under grants NSC101-2410-H-270 -002.

## Appendix A. Constructs and items

### Reputation (Source: Wasko and Faraj (2005))

- REPU1 I earn respect from others in this community by sharing  
 REPU2 I feel sharing improves my status in the community  
 REPU3 Sharing improves my reputation in the community

### Reciprocity (Source: Kankanhalli et al. (2005))

- RECP1 When sharing through the community, I believe that I will get an answer after I give an answer  
 RECP2 When sharing through the community, I expect somebody will respond when I am in need  
 RECP3 When sharing through the community, I expect to get back what I need when I need it  
 RECP4 When sharing through the community, I believe that my requests for information will be answered

### Enjoyment in helping others (Source: Kankanhalli et al. (2005))

- EH1 I enjoy sharing with others through the community.  
 EH2 I enjoy helping others by sharing through the community.  
 EH3 It feels good to help someone else by sharing through the community.  
 EH4 Sharing with others through the community gives me pleasure

### Knowledge self-efficacy (Source: Kankanhalli et al. (2005))

- KSEF1 I have confidence in my ability to provide content that others in this community may consider valuable  
 KSEF2 I have the expertise needed to provide valuable content to the community  
 KSEF3 It does not make any difference whether I add to content; others are likely to share through the community (R)  
 KSEF4 Most other community members can provide more valuable content than I can (R)

### Perceived moderator's enthusiasm (Source: Koh and Kim (2003))

- MOD1 The moderators (managers) of the virtual community in which I have participated do their best to make it prosper  
 MOD2 The moderators (managers) of the virtual community in which I have participated actively post their ideas and opinions  
 MOD3 The moderators (managers) of the virtual community in which I have participated are faithful to their duty

### Offline activities (Source: developed based on Koh and Kim (2003))

- OFF1 I often contact other community members by MSN Messenger, Facebook, email, etc.  
 OFF2 I often meet other community members in informal off-line meetings<sup>a</sup>  
 OFF3 I often participate actively in regular off-line community activities (e.g., team shopping, dinner parties, gatherings)

### Enjoyability (Source: Koh and Kim (2003))

- ENJ1 The virtual community topics provide me with pleasure  
 ENJ2 I enjoy interactions with other members of the virtual community  
 ENJ3 The virtual community website is not boring

### Knowledge-sharing intention (Source: developed based on Marett and Joshi (2009))

- KSI1 If I had some knowledge about a topic, I would consider posting it on the online community website  
 KSI2 If I had some knowledge regarding a question someone asked, I would share this knowledge with others

<sup>a</sup> Dropped to improve reliability; (R) indicates a reverse-coded item.

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