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Intention to adopt knowledge through virtual communities: posters vs lurkers

Shuling Liao
College of Management, Yuan Ze University, Chungli City, Taiwan, Republic of China, and
En-yi Chou
Department of International Business, National Taiwan University, Taipei City, Taiwan, Republic of China

Abstract

Purpose – This study aims to examine the social capital and technical determinants of knowledge adoption intentions in virtual communities and to explore the differences between posters and lurkers.

Design/methodology/approach – An online survey was conducted with a sample of 318 virtual community participants for a structural equation model test.

Findings – The structural and cognitive social capital, peer influence, and perceived usefulness positively contribute to virtual community participants' attitudes and intentions toward knowledge adoption. Lurkers' attitudes are more influenced by network ties, reciprocity norms, shared vision, and perceived usefulness, whereas posters are more affected by social trust and shared language.

Research limitations/implications – The results produced in the Chinese context may not fully apply to other cultures.

Practical implications – Devising effective strategies to increase social capital and content value is crucial for fostering virtual community members' positive attitudes toward knowledge adoption.

Originality/value – This study is one of the first to combine and examine social capital and technology acceptance theories with regard to the knowledge adoption intentions of posters and lurkers in virtual communities.

Keywords Virtual communities, Knowledge adoption, Social capital, Technology acceptance model, Posters, Lurkers, Social networks, User studies

Paper type Research paper

Introduction

The internet has progressively changed our life and behaviour since its inception. Accompanied by rapid growth, the internet provides abundant information and virtual networks that create a virtual space allowing individuals to congregate and form a community (Wasko and Faraj, 2000) for activities such as knowledge exchange (Preece, 1999) and intellectual learning (Brazelton and Gorry, 2003). With vibrant practices of knowledge sharing and interflow, virtual communities facilitate knowledge creation through which members' collaborative work is accumulated and becomes assets of the communities (Bourdieu, 1986). To assess the value of a virtual community's knowledge

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assets, the outcomes of learning are key indicators which are principally determined by whether the recipients deem the contributed knowledge useful and credible and are willing to adopt the knowledge (Levin and Cross, 2004).

To encourage seeking and contribution of knowledge, sociability and usability of virtual communities in terms of members' interactions and the technical system's ease of use are crucial (Phang *et al.*, 2009). Sociability refers to the extent to which a virtual community can facilitate members' interactions in achieving shared goals (Preece, 2001). Usability assesses the degree of ease of use and interactivity of the community's technical system (Shackel, 1991; Preece *et al.*, 2002). These two dimensions constitute the socio-technical aspect of a virtual community system. Based on the socio-technical perspective, purpose (communication goal, common ground), people (roles, trust, tie strength), and policy (reciprocity norms) are keys to the sociability development of a virtual community, whereas usability performance is indicated by dialogue and social support, information design, navigation and access (Preece, 2001).

Although the socio-technical framework for explaining virtual community participation has been in existence for a decade, most of the research on it is conceptual (e.g. Preece, 2001; Preece and Maloney-Krichmar, 2003) or qualitative (e.g. Maloney-Krichmar and Preece, 2005). Few studies have attempted to empirically identify the antecedents of sociability and usability. Phang *et al.* (2009) investigated how perceived usability and sociability affect online community members' knowledge-exchange behaviours by sourcing the explanatory constructs from several streams of literature and developing the measurement items. Although theoretically useful, the socio-technical perspective appears in need of more systematic and comprehensive conceptualisation and measurement to better evaluate sociability and usability and their impact on virtual communities. Therefore this paper proposes an integrative framework of social capital and technology acceptance and argues that social capital representing the perceived social trust, mutual bonds and shared beliefs of a community (Coleman, 1988) parallels the dimensions of purpose, people, and policy in the socio-technical perspective. When the sociability of an online community is established through articulation and transmutation of purpose, people and policy, it virtually develops community social capital and vice versa (Preece, 2003). Therefore we consider social capital perception adequate for assessing sociability. In addition the usability of a socio-technical system addressing user interactions with technology, indicating the system's interface ease of use and task facilitation effectiveness (Preece, 2001), is similar to ease of use and usefulness in the technology acceptance model (TAM) (Davis, 1989). TAM is thus regarded as reasonable for measuring the usability of a virtual community.

Through members' relational interactions, the connectedness of an online network is manifested in reciprocity and shared behavioural norms (Lesser and Storck, 2001). However the degree of connectedness may vary by participants' involvement level so that it causes different perceived relevance of community social capital to personal interests (Dholakia *et al.*, 2004). As the benefits of virtual community participation are evaluated differently by new and long-term members, Mathwick *et al.* (2008) and Ridings *et al.* (2006) have suggested examining the differences by participation levels; thus we further examine the moderating role of member type.

The contributions of this paper are three-fold. First we provide an integrative framework combining social capital theory and TAM to comprehensively conceptualise

and measure the sociability and usability of virtual communities. Second we examine the socio-technical determinants of attitude toward and intention of knowledge adoption, which have received less attention in virtual community research. Third we investigate the role of member type in mitigating the socio-technical influences on knowledge adoption in virtual communities. This investigation sheds light on virtual community promotional strategies when different user segments are targeted.

Theoretical background

Social capital theory

Social capital presents the characteristics of social structure that facilitate action within the structure (Coleman, 1988). Social capital develops and accumulates with individuals' engagement in relationships, which in turn creates the resources people can use to pursue their interests (Bourdieu, 1986). Nahapiet and Ghoshal (1998) classified social capital into three dimensions: the structural dimension delineates the intensity of structural interflow and interconnection among members; the relational dimension illuminates perceived interaction quality and consensus; and the cognitive dimension elucidates common beliefs and desired mental representations in terms of language, codes, and vision.

Social capital has been found to facilitate knowledge transfer; however most social capital studies involving knowledge sharing focus on the intra-organisational context (e.g. Adler and Kwon, 2002; Chow and Chan, 2008; Inkpen and Tsang, 2005; Nahapiet and Ghoshal, 1998; Tsai and Ghoshal, 1998) or inter-firm knowledge acquisition (e.g. Yli-Renko *et al.*, 2001). Levin and Cross (2004) proposed that trust mediates between strong ties and the receipt of useful knowledge in organisations, yet what affects individuals' intentions to adopt knowledge through virtual communities remains unknown.

Technology acceptance model

Accounting for factors that affect computer acceptance, TAM, which was adapted from the theory of reasoned action (see Fishbein and Ajzen, 1975) predicts individuals' behavioural intention toward adopting an information system by suggesting a belief-attitude-intention-behaviour causal relationship (Davis *et al.*, 1989). The prediction derives from two primary behavioural beliefs – perceived usefulness and perceived ease of use – which lead to attitude and behavioural acceptance (Davis *et al.*, 1989). TAM is widely applied to various kinds of behavioural adoption, including information technology (e.g. Van der Heijden, 2003), online learning (e.g. Saadé and Bahli, 2005) and knowledge sharing (e.g. Bock *et al.*, 2005). Although the above research has explored a variety of adoption behaviours, studies of knowledge adoption in virtual communities are still in their infancy. To refine TAM, Venkatesh and Davis (2000) suggested social influence may play a significant role in affecting behaviours (Venkatesh *et al.*, 2003). Considering the group interaction nature of the virtual community in producing interpersonal influence (Zhou, 2011), we include peer influence to complement TAM.

In the knowledge sharing literature as it affects individuals, a socio-technical framework integrating social capital theory and TAM has not been attempted. Previous research separately applied these two theories in relation to knowledge sharing among members in non-organisational virtual communities. Chiu *et al.* (2006), Mathwick *et al.* (2008) and Wasko and Faraj (2005) explored the influence of social

capital on individuals' knowledge contributions. Hsu and Lin (2008) investigated technology acceptance factors in determining intention to blog, and Phang *et al.* (2009) examined perceived usability including ease of use on knowledge seeking/contribution. Connecting these two lines of research, a joint framework of social capital and TAM that captures the key aspects of sociability and usability of a virtual community system would help to gain a more comprehensive picture of virtual community members' knowledge adoption intentions.

Hypotheses

Structural social capital

Tie strength refers to the closeness and interaction frequency of a relationship between two parties (Brown and Reingen, 1987). Social ties with strength and equilibrium support healthy relationship building and consequently steer individuals to engage in more interpersonal activities (Nahapiet and Ghoshal, 1998). Such tie relationships enable information and resources to be exposed and circulate in an online network (Tsai and Ghoshal, 1998). Consequently network ties not only provide a direct route in order to access social resources (Nahapiet and Ghoshal, 1998), but also create an opportunity to combine and exchange knowledge (Adler and Kwon, 2002) and thereby facilitate knowledge contribution and delivery activities in communities (McFadyen and Cannella, 2004; Wasko and Faraj, 2005).

Chiu *et al.* (2006) asserted that network ties in a virtual community give rise to broad and cost-efficient knowledge access. As strong ties more easily activate information flow than weak ties (Brown and Reingen, 1987), social tie strength in a virtual community may influence one's value expectation for knowledge search (Tsai and Ghoshal, 1998; Wasko and Faraj, 2005). It is expected that network ties will positively affect attitude toward knowledge adoption in virtual communities:

H1. Network ties have a positive influence on the attitude toward knowledge adoption in a virtual community.

Relational social capital

Social trust is viewed as an important determinant of volitional behaviours such as knowledge sharing in virtual communities (Inkpen and Tsang, 2005) and intellectual capital exchange (Nahapiet and Ghoshal, 1998). Their degree of trust in others may influence individuals' engaging behaviour in virtual community activities (Chiu *et al.*, 2006). When members trust others, they are less likely to worry about being taken advantage of (Tsai and Ghoshal, 1998) and more willing to participate in collaborative interaction (Nahapiet and Ghoshal, 1998). As trust develops over time, opportunities for knowledge transfer among virtual community members increase (Tsai and Ghoshal, 1998) and further develop a relationship of exchange (Chiu *et al.*, 2006). As a whole, social trust among members is critical, as it affects the attitude toward social behaviours in a virtual community (Huysman and de Wit, 2004) and may in turn affect members' knowledge adopting intentions. Therefore:

H2. Social trust has a positive influence on the attitude toward knowledge adoption in a virtual community.

Reciprocity indicates that members within a community will give up personal benefits to achieve a community's goal as a priority (Fountain, 1997). Reciprocity influences the

behaviours of engaging in knowledge sharing (Davenport and Prusak, 1998). When reciprocity becomes a norm, it represents the degree of one-minded agreement in a social system. In a community context a reciprocity norm indicates a fairness perception of knowledge exchange as a mutual privilege and obligation among members (Chiu *et al.*, 2006). Norms of cooperation are useful in establishing a strong foundation for intellectual capital creation (Nahapiet and Ghoshal, 1998) and expedite knowledge sharing in virtual networks (Chiu *et al.*, 2006; Wasko and Faraj, 2000, 2005). The greater the anticipated reciprocal relationships, the more favourable the attitude will be (Bock *et al.*, 2005). Virtual community participants' expectations of reciprocity will positively drive their attitudes toward knowledge adoption in the community. Hence:

H3. The norm of reciprocity has a positive influence on the attitude toward knowledge adoption in a virtual community.

Cognitive social capital

When participants adopt common languages or codes within a virtual community, it indicates that members share similar perspectives or viewpoints (Wasko and Faraj, 2005). Shared language is important because it assists members in understanding community goals and behavioural adequacy in virtual communities (Tsai and Ghoshal, 1998). To the extent that individuals perceive a common language, it enhances the ability to reach out and acquire information, helps assess the quality of knowledge combination and exchange, determines individuals' perceptions of each other, and reduces misunderstandings of others in the community (Nahapiet and Ghoshal, 1998). Due to its direct and important function in social relations, shared language has the power to affect members' attitudes toward information sharing, discussing, and adopting, which all make knowledge combination possible (Wasko and Faraj, 2005). Under this premise language reflecting a common perspective becomes an important instrument employed by individuals to express and communicate effectively and efficiently (Tsai and Ghoshal, 1998). Accordingly shared language will consequently contribute to the desire to participate and adopt knowledge. Therefore:

H4. Shared language has a positive influence on the attitude toward knowledge adoption in a virtual community.

Shared vision represents the degree to which network members have a mutual understanding of community goals and approaches to goal achievement (Tsai and Ghoshal, 1998). A shared vision allows community members to find a common ground for mutual understanding and the exchange of ideas (Inkpen and Tsang, 2005). With a common vision, members can prevent possible miscommunication caused by misunderstanding and feel more free to exchange information (Tsai and Ghoshal, 1998). All of the above explain why a shared vision is able to bond people to willingly share information with each other. As a shared vision coheres individuals' mutual understanding and lays a groundwork for knowledge exchange, participants who share the vision within a virtual community should hold a positive attitude toward knowledge adoption in that community. Hence:

H5. Shared vision has a positive influence on the attitude toward knowledge adoption in a virtual community.

Peer influence

Group influence has been documented to affect individuals' information processing, evaluation of alternatives and decision making (Bearden and Etzel, 1982). Noting interpersonal influence, subjective norms in the theory of reasoned action indicate how an individual perceives important others' expectations toward their own tendency to perform a behaviour (Fishbein and Ajzen, 1975). Subjective norms involve perceived social pressure on a person's behavioural inclinations (Fishbein and Ajzen, 1975), which is seen as an important antecedent of behaviours (Taylor and Todd, 1995).

A peer group is one of the interpersonal sources that impose subjective norms (Ma *et al.*, 2002) and has an impact on the individual's attitude and behaviour (Padilla-Walker and Bean, 2009). As virtual communities provide a cyberspace where people can interact and exchange ideas, adopting knowledge through a virtual community would be susceptible to peer influence. It has been shown that individuals with a strong subjective norm are more willing to share their knowledge (Bock *et al.*, 2005). Therefore we posit that participants who feel more influenced by peers should view knowledge adoption in a virtual community as more desirable:

H6. Peer influence has a positive influence on the attitude toward knowledge adoption in a virtual community.

Website perception

TAM postulates that an individual's adoption of a new technology is premised on two beliefs:

(1) perceived ease of use, the perception of the effort required to use a new technology; and

(2) perceived usefulness, the judgment and evaluation of the benefits as a result of technology usage to improve performance (Davis, 1989).

Websites that help users achieve goals are considered very useful and generate a more favourable attitude (Lin, 2008). When members perceive a virtual community and its contents as useful, they tend to view its online materials more frequently (Koh *et al.*, 2007). Conversely when individuals feel uncomfortable using an information technology system, the perceived ease of use and perceived usefulness of the system decline (Walczuch *et al.*, 2007), which may cause negative attitudes toward using the system. As the affective reaction toward using an information system predicts the acceptance behaviour (Davis, 1989), attitude toward knowledge adoption through virtual communities is expected to affect knowledge adoption intention. Accordingly *H7*, *H8*, and *H9* are proposed as follows:

H7. Perceived usefulness has a positive influence on the attitude toward knowledge adoption in a virtual community.

H8. Perceived ease of use has a positive influence on the attitude toward knowledge adoption in a virtual community.

H9. Attitude has a positive influence on the intention to adopt knowledge in a virtual community.

Types of participants

The individuals participating in virtual communities can be broadly divided into two types: posters and lurkers (Nonnecke and Preece, 1999). Posters are members who actively participate in the community's discussions and are willing to help others (Huvila *et al.*, 2010; Wasko and Faraj, 2000), whereas lurkers are silent participants who read the information contributed by posters but rarely post (Nonnecke and Preece, 2001). Self-interest and personal satisfaction are the reasons posters contribute to a virtual community (Wasko and Faraj, 2005). Self-confidence also determines whether a person posts, which is something lurkers may lack (Ridings *et al.*, 2006). Conversely having less to share, finding it difficult to share, and lack of intention may explain why lurkers do not post (Nonnecke and Preece, 2001).

Lurkers and posters have distinct attitudes toward virtual communities (Preece *et al.*, 2004). Posters believe that posting helps a community grow while lurkers prefer to satisfy themselves through observing and information skimming (Nonnecke *et al.*, 2004). Overall lurkers reveal a higher need for information acquisition from a virtual community than do posters (Mathwick *et al.*, 2008). Therefore we predict that lurkers will exhibit stronger tendencies than posters regarding the above-mentioned proposed effects:

H10. In a virtual community the predictions in *H1-H8* will be more salient for lurkers than for posters.

Figure 1, illustrating the research model, summarises the hypothesised associations among the constructs. In TAM the link between behavioural beliefs and behavioural acceptance is said to be mediated by attitude (Davis *et al.*, 1989). Drawing on the

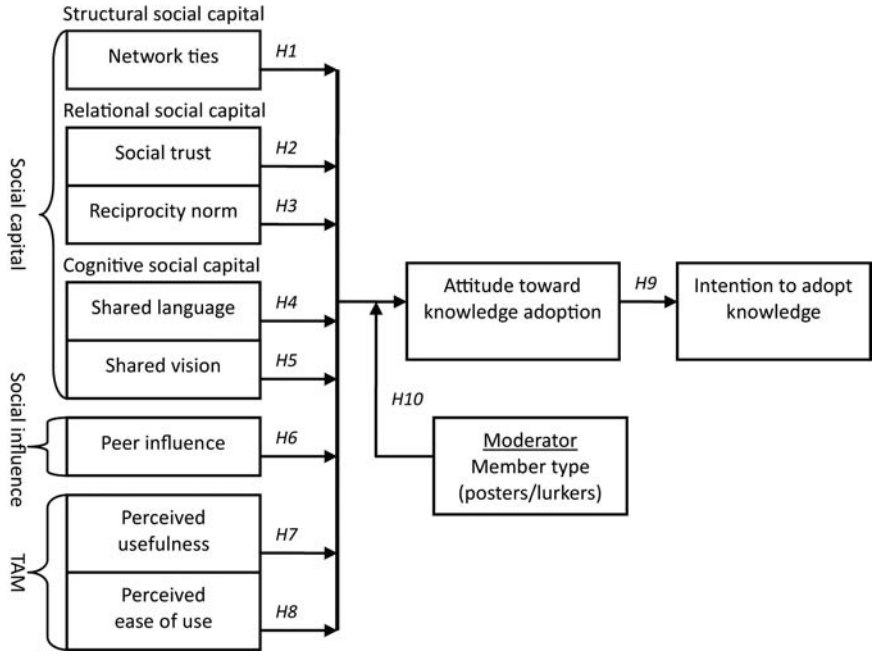

Figure 1.
Research model

belief-attitude-intention causal framework of TAM, we propose that attitude will mediate between the socio-technical antecedents (perceptions of social capital, usefulness and ease-of-use, and peer influence) and knowledge adoption intention.

Method

A questionnaire was developed for online surveying. A web-based data collection method was employed to explore online participation as it had been successfully used in similar research (e.g. Aldas-Manzano *et al.*, 2009; Chiu *et al.*, 2009).

Data collection

For external validity invitation banners posted on different bulletin board systems in Taiwan recruited diverse respondents. To ensure the survey's internal validity, the respondents were asked to register with IP addresses recorded to avoid multiple responses from any one person. Next the individuals with virtual community participation experience were directed to the research website for the online survey.

After eliminating incomplete and ineligible responses, a total of 318 valid responses were obtained during a four-week period, consisting of 190 males (59.7 per cent) and 128 females (40.3 per cent). Most were 21 to 30 years old (82.1 per cent), and 85.9 per cent had a year or more of participation in virtual communities.

Measurement

Network ties evaluating interpersonal link strength and interaction frequency were measured by four modified items from Tsai and Ghoshal (1998) and Chiu *et al.* (2006). Social trust to reflect participants' in-community trust-related behaviours was assessed with five items revised from Ridings *et al.* (2002) and Chiu *et al.* (2006). The norm of reciprocity was measured by five items to assess the degree to which participants believe in improving mutual relationships with others through reciprocal contributions (Bock *et al.*, 2005). Shared language, i.e. common understanding of shared terms or codes, was measured by three items (Nahapiet and Ghoshal, 1998). Shared vision was measured by three items to assess the degree to which virtual community members share a common view of how to achieve collective goals, tasks and outcomes (Chiu *et al.*, 2006).

Four peer influence items developed by Taylor and Todd (1995) were adopted to evaluate the degree of peers' influence on individuals' virtual community participation. The TAM constructs were measured with four items for perceived usefulness and ease of use (Davis, 1989), while the attitude toward knowledge adoption (four items) and the intention to adopt knowledge (three items) were assessed by revised items from Bock *et al.* (2005). All measures were assessed on a seven-point Likert scale (1 = extremely disagree; 7 = extremely agree). Finally, based on Preece *et al.* (2004), the respondents who reported never posting in a virtual community were classified as lurkers and those who reported having made postings as posters.

Results

Following the analytical procedures recommended by Anderson and Gerbing (1988) and Hair *et al.* (1998), a two-stage analysis was conducted for measurement model evaluation and structural model estimation. Due to a relatively large set of variables and formative factors in our proposed model, the component-based partial least squares method was employed to ease the restrictions on sample size and residual

distributions associated with the covariance-based modelling techniques such as LISREL (Chin *et al.*, 2003; Pavlou and Gefen, 2005).

Measurement model evaluation

The adequacy of the measurement model was assessed by evaluating item reliability, the internal consistency of variables associated with individual items, and discriminant validity between constructs. Items with a lower than 0.60 standardised loading value were dropped (Nunnally, 1978). In Table I the convergent validity to evaluate the internal consistency of constructs is indicated by standard factor loadings, composite reliability, and average variance extracted (AVE) (Fornell and Larcker, 1981; Hair *et al.*, 1998). The composite reliability ranged from 0.86 to 0.96 and the AVE from 0.68 to 0.89, all meeting the suggested values for convergent validity (Bagozzi and Yi, 1988; Fornell and Larcker, 1981).

Constructs	Items	Factor loading	Mean	SD	Composite reliability	AVE
Intention to adopt knowledge (INT)	INT1	0.89	5.33	0.59	0.92	0.79
	INT2	0.93				
	INT3	0.86				
Attitude toward knowledge adoption (ATT)	ATT1	0.94	5.52	0.68	0.94	0.83
	ATT2	0.93				
	ATT3	0.87				
Network ties (NT)	NT1	0.88	3.93	0.78	0.92	0.79
	NT2	0.90				
	NT3	0.89				
Social trust (ST)	ST1	0.92	4.63	0.82	0.93	0.81
	ST2	0.90				
	ST3	0.88				
Norm of reciprocity (NR)	NR1	0.91	4.10	0.88	0.95	0.86
	NR2	0.96				
	NR3	0.90				
Shared language (SL)	SL1	0.93	4.39	1.22	0.96	0.89
	SL2	0.96				
	SL3	0.94				
Shared vision (SVI)	SVI1	0.83	4.92	0.80	0.89	0.74
	SVI2	0.86				
	SVI3	0.88				
Peer influence (PI)	PI1	0.97	4.06	0.89	0.86	0.68
	PI2	0.67				
	PI3	0.81				
Perceived usefulness (PU)	PU1	0.92	4.85	0.69	0.93	0.81
	PU2	0.91				
	PU3	0.88				
Perceived ease of use (PEU)	PEU1	0.78	4.63	0.66	0.87	0.77
	PEU2	0.96				

Table I.
Convergent validity

In Table II the diagonal figures representing the square roots of AVE for each construct are all larger than the inter-correlation between the two variables, suggesting good discriminant validity of the constructs (Fornell and Larcker, 1981). A 95 per cent confidence interval analysis for each inter-correlation showed none of the confidence intervals had a value of 1, providing further evidence of proper discriminant validity (Bagozzi and Yi, 1988).

Structural model estimation

Table III indicates that network ties positively predicted attitude ($\beta = 0.16$, $p < 0.05$), supporting *H1*. Social trust and reciprocity were insignificant for attitude toward knowledge adoption, thus *H2* and *H3* were unsupported. Shared language ($\beta = 0.23$, $p < 0.01$) and shared vision ($\beta = 0.18$, $p < 0.01$) both positively affected attitude toward knowledge adoption, supporting *H4* and *H5*. Peer influence positively explained attitude ($\beta = 0.18$, $p < 0.01$), supporting *H6*. Perceived usefulness showed a positive influence on attitude ($\beta = 0.24$, $p < 0.01$), yet perceived ease of use had an insignificant effect on attitude ($\beta = 0.06$, $p > 0.10$). *H7* was supported but *H8* was not. As expected, intentions were positively predicted by attitude ($\beta = 0.68$, $p < 0.01$),

	Correlations									
Variables	INT	ATT	NT	ST	NR	SL	SVI	PI	PU	PEU
INT	0.89*									
ATT	0.68	0.91*								
NT	0.17	0.29	0.89*							
ST	0.12	0.21	0.29	0.90*						
NR	0.11	0.27	0.50	0.43	0.93*					
SL	0.28	0.39	0.32	0.42	0.34	0.94*				
SVI	0.21	0.31	0.15	0.19	0.27	0.26	0.86*			
PI	0.15	0.06	−0.28	−0.23	−0.32	−0.13	−0.03	0.83*		
PU	0.16	0.41	0.29	0.25	0.38	0.32	0.20	−0.08	0.90*	
PEU	0.04	0.11	−0.03	−0.10	−0.12	−0.02	−0.08	0.18	0.25	0.88*

Note: *The diagonal figures represent the square roots of AVE for each construct

Table II.
Correlations and discriminant validity

Hypothesis	Structural path			Standardised coefficient	Results
H1	Network ties	→	Attitude	0.16*	Supported
H2	Social trust	→	Attitude	0.01	Not supported
H3	Norm of reciprocity	→	Attitude	0.03	Not supported
H4	Shared language	→	Attitude	0.23**	Supported
H5	Shared vision	→	Attitude	0.18**	Supported
H6	Peer influence	→	Attitude	0.18**	Supported
H7	Perceived usefulness	→	Attitude	0.24**	Supported
H8	Perceived ease of use	→	Attitude	0.06	Not supported
H9	Attitude	→	Intention	0.68***	Supported

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

Table III.
Results of hypothesis testing

confirming *H9*. Overall the predicting constructs explain 33 per cent of the variance of attitude toward knowledge adoption and 47 per cent of the intention to adopt.

Moderating influence of member type

The effect of member type was examined using the Chow test (Chow, 1960) to compare the regression equations (*H1-H8*) for both posters and lurkers. The Chow test determines whether the prediction effect of the independent variable(s) in a regression equation varies between different sub-groups (Hardy, 1993). A significant *F*-value indicates a significant difference between the regression equations of the two sub-groups and hence supports a moderating effect of member type. For each sub-group the significance of individual parameter estimates (β coefficient) for the independent variables were examined using t-tests.

As seen in Table IV the Chow test results show that the lurkers performed significantly differently from the posters in the regression equations predicted by *H1*, *H2*, *H3*, *H4*, *H5*, and *H7*, yet the two groups exhibited no significant differences in peer influence and perceived ease of use (*H6* and *H8*). As posited the lurkers had stronger tendencies than the posters in *H1*, *H3*, *H5*, and *H7*. However, contrary to our expectation, the posters displayed a more significant inclination than the lurkers in *H2* (social trust → attitude) and *H4* (shared language → attitude). Thus *H10* is partially substantiated.

Discussion

The goal of the present study was to examine the attitude and intention toward knowledge adoption as consequences of virtual community participants' social capital perceptions, technology perceptions and peer influence. The moderating influence of knowledge recipients' participation level was also investigated. Our results render empirical support for social capital's capacity to improve attitudes toward knowledge adoption. The positive effects of peer influence and perceived usefulness are also corroborated. In addition participation types show interesting differences. The following discusses our findings in detail.

The influence of social capital and peers

Our study reveals that social capital exerts a multifaceted influence within virtual communities. First network ties enhance participants' attitudes toward knowledge

Paths	Posters Standardised coefficient	*t*-value	Lurkers Standardised coefficient	*t*-value	Chow test (*F*-value)
NT → ATT	0.20	2.65**	0.25	3.02**	6.06*
ST → ATT	0.26	3.63***	−0.01	−0.07	7.29**
NR → ATT	0.10	1.32	0.24	2.82**	5.94*
SL → ATT	0.33	4.63***	0.28	3.35**	5.53*
SVI → ATT	0.07	0.90	0.38	4.83***	10.28**
PI → ATT	0.18	2.50*	0.13	1.51	1.45
PU → ATT	0.05	0.69	0.34	4.24***	10.54**
PEU → ATT	0.08	1.03	0.02	0.18	0.43

Table IV.
Results of Chow test

Note: $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$

adoption. Similar to previous studies, ties among members facilitate and promote knowledge transformation activities in a community (McFadyen and Cannella, 2004). By having more interaction and connection with others, network ties encourage members to adopt knowledge. Second shared language positively affects the attitude toward knowledge adoption, a shared vocabulary making the exchange of information more possible in a community (Boland and Tenkasi, 1995). Third, congruent with Chow and Chan (2008), this study demonstrates that a shared vision improves virtual community participants' attitudes toward knowledge adoption. It is believed to reduce misunderstandings in communication (Tsai and Ghoshal, 1998). Likewise members who share a vision find it easier to form associations and co-operation for knowledge transference (Inkpen and Tsang, 2005), and therefore display a positive attitude toward knowledge adoption. The result of peer influence also fulfils our expectation, indicating that virtual community participants affected by interpersonal influence have stronger attitudes and intentions to adopt knowledge, as peer influence frequently guides social behaviours (Lippert and Forman, 2005).

The influence of technology perceptions

As expected the positive effect of perceived usefulness on attitude was validated. Conversely perceived ease of use failed to predict attitude toward knowledge adoption, yet our finding is not unique. A number of studies (e.g. Bhattacherjee, 2001; Davis *et al.*, 1989) indicate that perceived usefulness predicts attitude better than ease of use, mainly because adopting a technology is more benefit-driven and directed by performance outcome evaluation (Taylor and Todd, 1995). Our findings show that usefulness is more important than ease of use regarding a virtual community's knowledge resources.

Two other variables, social trust and the norm of reciprocity, both indicating the relational social capital, did not perform as expected. Such findings are consistent with Chow and Chan (2008), who discovered that social trust makes no direct contribution to attitude. It is argued that trust is a lubricant but not necessarily a requirement when knowledge is adopted through close and intensive interaction laden with positive feelings toward a virtual community (Chow and Chan, 2008). Additionally trust may play a minor role in less risky relationships such as knowledge adoption (Coleman, 1988). In the same vein a reciprocity norm affecting trust has no influence on attitude either.

Posters vs lurkers

Our study uncovers the different cognitive habits of the two types of members. Lurkers have more pronounced associations when attitude is explained by network ties, reciprocity norm, shared vision, and perceived usefulness; whereas posters' attitudes have stronger relationships with social trust and shared language. Compared to posters, lurkers, who are considered less confident in posting (Mason, 1999) appear to place greater value on adopting knowledge from people they feel connected to (Nahapiet and Ghoshal, 1998). In addition lurkers' stronger reciprocity beliefs regarding knowledge exchange indicate favourable attitudes toward knowledge adoption. Although lurkers satisfy needs mostly through observing rather than active participation (Nonnecke *et al.*, 2004), it is reported that they feel a strong sense of community while lurking (Nonnecke and Preece, 2001). This may explain why shared vision and attitude toward knowledge adoption have a stronger relationship for lurkers. As lurkers have a greater need for information than posters do (Mathwick *et al.*,

2008), it seems to outweigh the perceived usefulness of a virtual community for their knowledge adoption intention.

By contrast social trust and shared language are associated more closely with attitude for posters than for lurkers. This may occur because posters share to gain rewards of status and respect (Wasko and Faraj, 2005). They will certainly expect others to be trustworthy and not to intrude when engaging in intellectual capital exchanges. Moreover, compared to the silent participants, posters who actively participate in the community are more familiar with the shared language and the manner in which knowledge is delivered in words (Nonnecke and Preece, 2000). This possibly explains why posters exhibit a stronger relationship between shared language and attitude.

Implications

While prior studies have focused on knowledge accumulation and transfer (e.g. Bock *et al.*, 2005; Chiu *et al.*, 2006), our study contributes to a related domain centring on knowledge adoption intention in online informal communities from different participants' (posters vs lurkers) perspectives. The integrative framework combining social capital theory and TAM not only conceptualises the concepts of sociability and usability more inclusively, but also illustrates the socio-technical influences on attitude and intention for knowledge adoption in virtual communities.

As more users rely on reviews and information provided in online networks, the influence of virtual communities cannot be overlooked (Mathwick *et al.*, 2008). This study offers meaningful insight for virtual community managers in the following aspects. First social capital development and accumulation through relationship building is pivotal for encouraging individuals to seek and adopt knowledge in virtual communities. To attract visitors and promote lurkers making use of virtual communities for knowledge, online community managers need to devise effective strategies for cultivating a structural bond, a common communication method, and a shared vision to foster positive attitudes toward knowledge adoption in the communities (Hersberger *et al.*, 2007). As suggested by Dholakia *et al.* (2004) virtual communities are "only likely to grow in importance, influence, and the activities for which they are used as consumers become more comfortable and acclimatised to these environments and marketers learn how to forecast, monitor, and design their communication programs to take advantage of such opportunities" (p. 261). Hosts of virtual communities need to learn how to nourish and present community social capital to attract newcomers while maintaining existent members' patronage.

Successful virtual learning entails effective and compelling communication (Sobrero, 2008). Managers of knowledge communities interested in promoting e-learning practices through virtual networks may focus more on increasing technical usability (usefulness), network ties, and cognitive-based social capital (i.e. shared language and vision) to facilitate co-learning. For posters, recognising their status and reputation coupled with assurance of members' trustworthy behaviours could encourage them to not only continue contributing but also utilise knowledge resources in a virtual community (Wasko and Faraj, 2005). To encourage lurkers' engagement, both content usefulness and social connection through social-cultural awareness of the virtual community (i.e. network ties and group identity) would help to enhance their knowledge awareness in accessing and employing knowledge resources in the community (Daniel *et al.*, 2003).

Limitations and future research

Although our study provides valuable insight into determinants of knowledge adoption intention in virtual communities, it has several inherent limitations. First the data collected from online surveys through bulletin board systems in Taiwan confine the generalisability of the conclusions to this specific instrument and region. Second this study investigates participation in virtual communities in general. Future studies may explore the same research agenda by separating non-profit online communities from commercial virtual communities (Casaló *et al.*, 2007). Moreover the functions of virtual communities with regard to types of knowledge to be adopted for behavioural change in specific areas, such as education and health promotion, can be further examined to extend research applicability. Third the sample is divided into posters and lurkers using a relatively broad criterion. Future studies can further classify virtual community members into groups based on finer participation levels such as always lurking, occasionally contributing, regularly contributing, and leading discussions to more accurately reflect the involvement and devotion levels of participants (Bagozzi and Dholakia, 2002).

References

Adler, P.S. and Kwon, S.W. (2002), "Social capital: prospects for a new concept", *Academy of Management Review*, Vol. 27 No. 1, pp. 17-40.

Aldas-Manzano, J., Lassala-Navarre, C., Ruiz-Mafe, C. and Sanz-Blas, S. (2009), "Key drivers of internet banking service use", *Online Information Review*, Vol. 33 No. 4, pp. 672-95.

Anderson, J.C. and Gerbing, D.W. (1988), "Structural equation modeling in practice: a review and recommended two-step approach", *Psychological Bulletin*, Vol. 103 No. 3, pp. 411-23.

Bagozzi, R.P. and Dholakia, U.M. (2002), "Intentional social action in virtual communities", *Journal of Interactive Marketing*, Vol. 16 No. 2, pp. 2-21.

Bagozzi, R.P. and Yi, Y. (1988), "On the evaluation of structural equation models", *Journal of the Academy of Marketing Science*, Vol. 16 No. 1, pp. 74-94.

Bearden, W.O. and Etzel, M.J. (1982), "Reference group influence on product and brand purchase decisions", *Journal of Consumer Research*, Vol. 9 No. 2, pp. 183-94.

Bhattacherjee, A. (2001), "Understanding information systems continuance: an expectation-confirmation model", *MIS Quarterly*, Vol. 25 No. 3, pp. 351-70.

Bock, G.W., Zmud, R.W., Kim, Y.G. and Lee, J.N. (2005), "Behavioral intention formation in knowledge sharing: examining the roles of extrinsic motivators, social-psychological forces, and organizational climate", *MIS Quarterly*, Vol. 29 No. 1, pp. 87-111.

Boland, R.J. and Tenkasi, R.V. (1995), "Perspective making and perspective taking in communities of knowing", *Organization Science*, Vol. 6 No. 4, pp. 350-72.

Bourdieu, P. (1986), "The forms of capital", in Richardson, J.G. (Ed.), *Handbook of Theory and Research for the Sociology of Education*, Greenwood, New York, NY, pp. 241-58.

Brazelton, J. and Gorry, G.A. (2003), "Creating a knowledge-sharing community: if you build it, will they come?", *Communications of the ACM*, Vol. 46 No. 2, pp. 23-5.

Brown, J.J. and Reingen, P.H. (1987), "Social ties and word-of-mouth referral behavior", *Journal of Consumer Research*, Vol. 14 No. 3, pp. 350-62.

Casaló, L., Flavián, C. and Guinalíu, M. (2007), "The impact of participation in virtual brand communities on consumer trust and loyalty: the case of free software", *Online Information Review*, Vol. 31 No. 6, pp. 775-92.

Chin, W.W., Marcolin, B.L. and Newsted, P.R. (2003), "A partial least squares latent variable modeling approach for measuring interaction effects: results from a Monte Carlo simulation study and an electronic mail adoption study", *Information Systems Research*, Vol. 14 No. 2, pp. 189-217.

Chiu, C.M., Hsu, M.H. and Wang, T.G. (2006), "Understanding knowledge sharing in virtual communities: an integration of social capital and social cognitive theories", *Decision Support Systems*, Vol. 42 No. 3, pp. 1872-88.

Chiu, C.M., Chang, C.C., Cheng, H.L. and Fang, Y.H. (2009), "Determinants of consumer repurchase intention in online shopping", *Online Information Review*, Vol. 33 No. 4, pp. 761-84.

Chow, G.C. (1960), "Tests of equality between sets of coefficients in two linear regressions", *Econometrica*, Vol. 28 No. 3, pp. 591-605.

Chow, W.S. and Chan, L.S. (2008), "Social network, social trust and shared goals in organizational knowledge sharing", *Information and Management*, Vol. 45 No. 7, pp. 458-65.

Coleman, J.S. (1988), "Social capital in the creation of human capital", *American Journal of Sociology*, Vol. 94, pp. 95-120.

Daniel, B., Schwier, R. and McCalla, G. (2003), "Social capital in virtual learning communities and distributed communities of practice", *Canadian Journal of Learning and Technology*, Vol. 29 No. 3, pp. 113-39.

Davenport, T. and Prusak, L. (1998), *Working Knowledge: How Organizations Manage What They Know*, Harvard Business School Press, Boston, MA.

Davis, F.D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly*, Vol. 13 No. 3, pp. 319-39.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989), "User acceptance of computer technology: a comparison of two theoretical models", *Management Science*, Vol. 35 No. 8, pp. 982-1003.

Dholakia, U.M., Bagozzi, R.P. and Pearo, L.K. (2004), "A social influence model of consumer participation in network- and small-group-based virtual communities", *International Journal of Research in Marketing*, Vol. 21 No. 3, pp. 241-63.

Fishbein, M. and Ajzen, I. (1975), *Belief, Attitude, Intention, and Behavior*, Addison-Wesley, Reading, MA.

Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Fountain, J. (1997), "Social capital: a key enabler of innovation in science and technology", in Branscomb, L.M. and Keller, J. (Eds), *Investing in Innovation: Toward a Consensus Strategy for Federal Technology Policy*, MIT Press, Cambridge, MA, pp. 85-111.

Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1998), *Multivariate Data Analysis with Readings*, Prentice Hall, Upper Saddle River, NJ.

Hardy, M.A. (1993), *Regression with Dummy Variables*, Sage Publications, Newbury Park, CA.

Hersberger, J.A., Murray, A.L. and Rioux, K.S. (2007), "Examining information exchange and virtual communities: an emergent framework", *Online Information Review*, Vol. 31 No. 2, pp. 135-47.

Hsu, C.-L. and Lin, C.-C. (2008), "Acceptance of blog usage: the roles of technology acceptance, social influence and knowledge sharing motivation", *Information and Management*, Vol. 45 No. 1, pp. 65-74.

Huvila, I., Holmberg, K., Ek, S. and Wide'n-Wulff, G. (2010), "Social capital in second life", *Online Information Review*, Vol. 34 No. 2, pp. 295-316.

Huysman, M. and de Wit, D. (2004), "Practices of managing knowledge sharing: towards a second wave of knowledge management", *Knowledge and Process Management*, Vol. 11 No. 2, pp. 81-92.

Inkpen, A.C. and Tsang, W.K. (2005), "Social capital, networks and knowledge transfer", *Academy of Management Review*, Vol. 30 No. 1, pp. 146-65.

Koh, J., Kim, Y.G., Butler, B. and Bock, G.W. (2007), "Encouraging participation in virtual communities", *Communications of the ACM*, Vol. 50 No. 2, pp. 69-73.

Lesser, E.L. and Storck, J. (2001), "Communities of practice and organizational performance", *IBM Systems Journal*, Vol. 40 No. 4, pp. 831-41.

Levin, D.Z. and Cross, R. (2004), "The strength of weak ties you can trust: the mediating role of trust in effective knowledge transfer", *Management Science*, Vol. 50 No. 11, pp. 1477-90.

Lin, H.F. (2008), "Determinants of successful virtual communities: contributions from system characteristics and social factors", *Information and Management*, Vol. 45 No. 8, pp. 522-7.

Lippert, S.K. and Forman, H. (2005), "Utilization of information technology: examining cognitive and experiential factors of post-adoption behavior", *IEEE Transactions on Engineering Management*, Vol. 52 No. 3, pp. 363-81.

McFadyen, M.A. and Cannella, A.A. (2004), "Social capital and knowledge creation: diminishing returns of number and strength of exchange relationships", *Academy of Management Journal*, Vol. 47 No. 5, pp. 735-46.

Ma, H.K., Shek, D.T.L., Cheung, P.C. and Tam, K.K. (2002), "A longitudinal study of peer and teacher influences on prosocial and antisocial behavior of Hong Kong Chinese adolescents", *Social Behavior and Personality*, Vol. 30 No. 2, pp. 157-68.

Maloney-Krichmar, D. and Preece, J. (2005), "A multilevel analysis of sociability, usability and community dynamics in an online health community", *ACM Transactions on Computer-Human Interaction*, Vol. 12 No. 2, pp. 201-32.

Mason, B. (1999), "Issues in virtual ethnography", in Buckner, K. (Ed.), *Esprit i3 Workshop on Ethnographic Studies in Real and Virtual Environments: Inhabited Information Spaces and Connected Communities*, Queen Margaret College, Edinburgh, pp. 61-9.

Mathwick, C., Wiertz, C.W. and Ruyter, K.D. (2008), "Social capital production in a virtual P3 community", *Journal of Consumer Research*, Vol. 34 No. 4, pp. 832-49.

Nahapiet, J. and Ghoshal, S. (1998), "Social capital, intellectual capital, and the organizational advantage", *The Academy of Management Review*, Vol. 23 No. 2, pp. 242-66.

Nonnecke, B. and Preece, J. (2000), "Persistence and lurkers: a pilot study", paper presented at the 33rd Hawaii International Conference on System Sciences, 4-7 January, available at: www.computer.org/plugins/dl/pdf/proceedings/hicss/2000/0493/03/04933031.pdf (accessed 23 August 2009).

Nonnecke, B. and Preece, J. (2001), "Why lurkers lurk", paper presented at the Americas Conference on Information Systems, Boston, MA, 3-5 August, available at: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.92.183&rep=rep1&type=pdf (accessed 23 August 2009).

Nonnecke, B. and Preece, J. (2009), "Shedding light on lurkers in online communities", paper presented at the Ethnographic Studies in Real and Virtual Environments: Inhabited Information Spaces and Connected Communities, Edinburgh, 22-24 January, available at: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.94.4833&rep=rep1&type=pdf (accessed 23 August 2009).

Nonnecke, B., Preece, J. and Andrews, D. (2004), "What lurkers and posters think of each other", paper presented at the 37th Annual Hawaii International Conference on System Sciences,

5-8 January, available at: www.computer.org/plugins/dl/pdf/proceedings/hicss/2004/2056/07/205670195a.pdf (accessed 23 August 2009).

Nunnally, J.C. (1978), *Psychometric Theory*, 2nd ed., McGraw-Hill, New York, NY.

Padilla-Walker, L.M. and Bean, R.A. (2009), "Negative and positive peer influence: relations to positive and negative behaviors for African American, European American, and Hispanic adolescents", *Journal of Adolescence*, Vol. 32 No. 2, pp. 323-37.

Pavlou, P.A. and Gefen, D. (2005), "Psychological contract violation in online marketplaces: antecedents, consequences, and moderating role", *Information Systems Research*, Vol. 16 No. 4, pp. 372-99.

Phang, C.W., Kankanhalli, A. and Sabherwal, R. (2009), "Usability and sociability in online communities: a comparative study of knowledge seeking and contribution", *Journal of the Association for Information Systems*, Vol. 10 No. 10, pp. 721-47.

Preece, J. (1999), "Empathic communities: balancing emotional and factual communication", *Interacting with Computers: the Interdisciplinary Journal of Human-Computer Interaction*, Vol. 12 No. 1, pp. 63-77.

Preece, J. (2001), "Sociability and usability in online communities: determining and measuring success", *Behavior and Information Technology*, Vol. 20 No. 5, pp. 347-56.

Preece, J. (2003), "Tacit knowledge and social capital: supporting sociability in online communities of practice", in Tochtermann, K. and Maurer, H. (Eds), *Proceedings of I-KNOW'03, 3rd International Conference on Knowledge Management*, Springer, Berlin, pp. 72-8.

Preece, J. and Maloney-Krichmar, D. (2003), "Online communities: focusing on sociability and usability", in Jacko, J. and Sears, A. (Eds), *Handbook of Human-Computer Interaction*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 596-620.

Preece, J., Nonnecke, B. and Andrews, D. (2004), "The top five reasons for lurking: improving community experiences for everyone", *Computers in Human Behavior*, Vol. 20 No. 2, pp. 201-23.

Preece, J., Rogers, Y. and Sharp, H. (2002), *Interaction Design*, John Wiley & Sons, New York, NY.

Ridings, C., Gefen, D. and Arinze, B. (2002), "Some antecedents and effects of trust in virtual communities", *Journal of Strategic Information Systems*, Vol. 11 Nos 3/4, pp. 271-95.

Ridings, C., Gefen, D. and Arinze, B. (2006), "Psychological barriers: lurker and poster motivation and behavior in online communities", *Communications of the Association for Information Systems*, Vol. 18 No. 1, pp. 329-54.

Saadé, R. and Bahli, B. (2005), "The impact of cognitive absorption on perceived usefulness and perceived ease of use in on-line learning: an extension of the technology acceptance model", *Information and Management*, Vol. 42 No. 2, pp. 317-27.

Shackel, B. (1991), "Usability: context, framework, definition, design and evaluation", in Shackel, B. and Richardson, S. (Eds), *Human Factors for Informatics Usability*, Cambridge University Press, Cambridge, pp. 21-38.

Sobrero, P.M. (2008), "Essential components for successful virtual learning communities", *Journal of Extension*, Vol. 46 No. 4, pp. 1-10.

Taylor, S. and Todd, P.A. (1995), "Understanding information technology usage: a test of competing models", *Information Systems Research*, Vol. 6 No. 2, pp. 144-76.

Tsai, W. and Ghoshal, S. (1998), "Social capital and value creation: an empirical study of intra firm networks", *Academy of Management Journal*, Vol. 41 No. 4, pp. 464-76.

Van der Heijden, H. (2003), "Factors influencing the usage of websites: the case of a generic portal in The Netherlands", *Information and Management*, Vol. 40 No. 6, pp. 541-9.

Venkatesh, V. and Davis, F.D. (2000), "A theoretical extension of the technology acceptance model: four longitudinal field studies", *Management Science*, Vol. 46 No. 2, pp. 186-204.

Venkatesh, V., Morris, M., Davis, G.B. and Davis, F.D. (2003), "User acceptance of information technology: toward a unified view", *MIS Quarterly*, Vol. 27 No. 3, pp. 425-78.

Walczuch, R., Lemmink, J. and Streukens, S. (2007), "The effect of service employees' technology readiness on technology acceptance", *Information and Management*, Vol. 44 No. 2, pp. 206-15.

Wasko, M.M. and Faraj, S. (2000), "It is what one does: why people participate and help others in electronic communities of practice", *Journal of Strategic Information Systems*, Vol. 9 Nos 2/3, pp. 155-73.

Wasko, M.M. and Faraj, S. (2005), "Why should I share? Examining social capital and knowledge contribution in electronic networks of practice", *MIS Quarterly*, Vol. 29 No. 1, pp. 35-57.

Yli-Renko, H., Autio, E. and Sapienza, H.J. (2001), "Social capital, knowledge acquisition and knowledge exploitation in young technology-based firms", *Strategic Management Journal*, Vol. 22 No. 6, pp. 587-613.

Zhou, T. (2011), "Understanding online community user participation: a social influence perspective", *Internet Research*, Vol. 21 No. 1, pp. 67-81.

Appendix. Measurement

Network ties

NT1. I maintain close social relationships with some members of the virtual community.

NT2. I spend a lot of time interacting with some members of the virtual community.

NT3. I know some members of the virtual community on a personal level.

Social trust

ST1. Members of the virtual community will not take advantage of others even when the opportunity arises.

ST2. Members of the virtual community will always keep the promises they make to one another.

ST3. Members of the virtual community are honest in dealing with one another.

Norm of reciprocity

NR1. My behaviour would help me get to know new members of the virtual community.

NR2. My behaviour would expand the scope of my association with other members of the virtual community.

NR3. My behaviour would lead to cooperation from outstanding members in the future.

Shared language

SL1. The members of the virtual community use common terms or jargon.

SL2. Members of the virtual community use understandable communication patterns during discussions.

SL3. Members of the virtual community use understandable narrative forms to post messages or articles.

Shared vision

SVI1. Members of the virtual community share the vision of helping others solve their professional problems.

SVI2. Members of the virtual community share the same goal of learning from each other.

SVI3. Members of the virtual community share the same idea that helping others is pleasant.

Peer influence

PI1. I want to do what my friends think I should do in the virtual community.

PI2. My friends would think that I should use the virtual community.

PI3. I want to do what my classmates/colleagues think I should do in the virtual community.

Perceived usefulness

PU1. Using the virtual community in my work would enable me to accomplish tasks more quickly.

PU2. Using the virtual community would improve my work performance.

PU3. I would find virtual community useful in my work.

Perceived ease of use

PEU1. I would find it easy to use the virtual community to do what I want it to do.

PEU2. My interaction with the virtual community would be clear and understandable.

Attitude toward knowledge adoption

ATT1. Adopting knowledge in the virtual community is always good.

ATT2. Adopting knowledge in the virtual community is always beneficial.

ATT3. Adopting knowledge in the virtual community is always a wise move.

Intention to adopt knowledge

INT1. I plan to adopt knowledge in the virtual community.

INT2. I intend to adopt knowledge in the virtual community.

INT3. My intentions are to adopt knowledge in the virtual community rather than through any alternative means.

About the authors

Shuling Liao is an Associate Professor of Marketing at Yuan Ze University in Taiwan. She earned her PhD from Purdue University and a MA in Advertising from the University of Texas in Austin. Her research interests are human-computer interaction, cyber-psychology, virtual communities and social networks, electronic word-of-mouth, and electronic commerce. Shuling Liao is the corresponding author and can be contacted at: ibslliao@saturn.yzu.edu.tw

En-yi Chou is a PhD Student of International Business at National Taiwan University. He received his BA and MS in international business from Yuan Ze University in Taiwan in 2008 and 2009 respectively. His research interests include virtual communities and electronic commerce.