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Understanding the Intention of Giving Information in Virtual Communities

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ABSTRACT

The major activity in a virtual community is information exchange among members. However, even in busy virtual communities, usually only a small fraction of members post information actively. Our interest in this study was seeking a better understanding of the psychological determinants that drive people to give information actively and voluntarily. An empirical study was conducted and 273 responses that have experiences in virtual communities were collected. The research model was mainly evaluated and validated with Structural Equation Modeling (SEM)-LISREL. The results suggest that members' perceived self-efficacy, perceived soft rewards, trust to other members, social identity, and positive anticipated emotions have positively effects on intention of giving information through the mediation of desire.

Keywords

Virtual community, giving information, desire, trust.

INTRODUCTION

A virtual community is a group of people who shares social interactions in a cyberspace (Williams and Cothrel, 2000). The members of a virtual community are aggregate voluntary (Koh, Kim, Butler, and Bock, 2007) and establish a long term relationship via the interaction of information exchange (Lee, Vogel, and Limayem, 2003). Virtual communities have created new social spaces where individuals can interactive with one another, such as discussion forums, bulletin boards, etc. It has been regarded as one of the major strategic innovations, both as a stand-alone model or as a supplement to sustain competitive advantage for normal business models (Krieger and Müller, 2003).

The content creation by users is an important shaping force for the community's character (Bagozzi and Dholakia, 2002). Thus, a successful virtual community depends on the information contribution among users, such as asking questions, giving advices, or sharing ideas (Wang and Fesenmaier, 2004; Preece and Krichmar, 2003). In other words, people do not return to a silent community (Preece, Nonnecke, and Andrew, 2004). As the result, running a silent virtual community could not have the benefits as owners looking forward to. However, joining virtual community activities is a voluntary behavior. The idea of joining virtual communities is different from sharing knowledge within an organization which has certain force to share, for example, an employee may like to share for better credit in the company and it may have higher chance to be promoted. In virtual community context, it is difficult to motivate members who are physically dispersed to participate in their community actively (Koh et al., 2007) especially most of them are strangers for each other (Ridings, Gefen, and Arinze, 2002). Therefore, understanding the reasons why users would like to give/contribute information instead of browsing has been regarded one of important issues for both academia and practitioners.

In this study, we focus on the factors which induce the intention of giving information actively in a virtual community. Drawing from the Theory of Planned Behavior (TPB) (Ajzen, 1991), attitudes, subjective norms, and perceived behavioral control provide reasons for intended action. However, it has been argued that the TPB fails to consider how intentions become energized since it does not incorporate explicit motivational factors needed to induce an intention to act (Perugini and Bagozzi, 2001). Bagozzi (1992) and Perugini and Bagozzi (2001) proposed that desires provide the motivational impetus for Intentions. This study, therefore, separated intention of giving information from desire of giving information to elaborate the motivation to perform the behavior and examined the association between them. Because the behavior in virtual community is a group/collective action (Bagozzi and Dholakia, 2002; Ridings et al. 2002), we integrated the perspective of social cognitive theory (SCT), trust theory, and social identity theory under the lens of collective action to reflect the nature of virtual community and identified that perceived rewards, trust, and social identity are antecedents of the desire to give

information. In addition, two individual-related factors (positive anticipated emotions and perceived self-efficacy) influencing the desire to give information were also examined. The primary research questions to be addressed in this paper are as follows: 1. Will community users' desire to give information act as a positive determinant toward intention to give information? 2. What factors will affect the desire of users to contribute their information in virtual communities? The results of this study provide insights for practitioners to set up appropriate strategies to encourage users to contribute their information in virtual communities. From a theoretical perspective, our study differentiates with prior studies in that the proposed model emphasizes the role of desire in mediating the effects of the psychological antecedents on intention to give information in virtual communities. Such efforts extend our current knowledge in the context of virtual community.

LITERATURE REVIEW & HYPOTHESES

Desire and Intention

Desire to give information is defined as a member's motivational state of mind when appraisals and reasons to give information are transformed into a motivation. Intention to give information is defined as the subjective probability of a member to give information in the virtual community. In psychological theory, such as the Theory of Reasoned Action (TRA) (Ajzen and Fishbein, 1980) and the Theory of Planned Behavior (TPB) (Ajzen, 1991), intention of specific behavior is recognized as the important factor of predicting behavior. The TPB has been criticized that attitudes, subject norms, and perceived behavioral control provide the reasons for acting but do not incorporate the motivational content needed to induce the intention to act (Bagozzi and Dholakia, 2002; Perugini and Bagozzi, 2001). Desire is the motivational state of mind where attitudes are conceived as evaluative appraisals, usually defined as a psychological tendency that is expressed by evaluating a particular entity with some degree of a favor or disfavor (Eagly and Chaiken, 1993). There is nothing subsumes or implies motivation in the definition of attitudes, however intentions may not arise without any motivational push. For example, it does not follow that people with a positive attitude toward eating snacks must have a motivation or desire to do so. It is easy to imagine that a person may have a positive evaluation of a given behavior, but have no motivation to perform it. On the other side, the relationship between desire and intention has supported by many empirical findings (e.g. Dholakia, Bagozzi, and Pearo, 2004; Perugini and Bagozzi, 2001). Moreover, intention was empirically found to be a superior predictor of behavior than desire, and the impact of attitude on intention was almost entirely mediated by desire (Bagozzi and Kimmel, 1995; Leone, Perugini, and Ercolani, 1999). Therefore, we have the following hypothesis:

H₁: Members' desire of giving information will positively affect the intention of giving information.

Positive Anticipated Emotions

Anticipated emotions are "prefectural appraisals" (Gleicher, Boninger Strathman, Armor, Hetts, and Ahn, 1995) where an individual imagines the affective consequences of goal attainment and goal failure before deciding to perform acts. Prior research (e.g. Bagozzi and Dholakia, 2002; Perugini and Bagozzi, 2001) has identified positive and negative anticipated emotions and shows that anticipated emotions influence the individual's expectations to commit behavior (Parker, Manstead, and Stradling, 1995; Bagozzi, Baumgartner, and Pieters 1998). We only include the positive anticipated emotions because the behavior of giving information related to a positive attitude.

H₂: Members' positive anticipated emotions toward sharing activity will positively affect the desire of giving information.

Social Identity

Social identity is an individual's self-concept which drives from the knowledge of his/her membership of a social group (or groups) (Tajfel, 1978). In other words, Social identity is a psychological state which captures the main aspects of the individual's identification with the group. An individual with higher social identity tends to view himself or herself as a member of (or belonging to) a particular social group. It implies a sense of emotional involvement with the group, it fosters the loyalty and willingness to maintain committed relationship (Dholakia et al., 2004) through the group actions (Tajfel, 1978). Social identity here is defined that a member's self-awareness and emotional significance of the membership in a virtual community. Social identity have been considered and proved as an important determinant to members' participation in virtual communities (Bagozzi & Dholakia, 2002; Dholakia et al., 2004).

H₃: Members' social identity will positively affect the desire of giving information.

Trust

Trust is a set of beliefs for trustor (Gefen, Karahanna, and Straub, 2003) that the other party will not engage in opportunistic

behavior and will not take advantage of the situation (Hosmer, 1995). Giving information shows a greater degree of self-exposure than just inquiring. Lacking of enforceable rules to guarantee the behavior of other community members, trust is important in virtual communities (Ridings et al., 2002). In the virtual community context, trust is at the generalized collective level (Ridings et al., 2002). Thus trust is defined in terms of the willingness of a member to be vulnerable to the actions of other members. It is based on the expectation that the others will act in accordance with norms of the virtual community. Ridings et al. (2002) suggested that trust should be aggregated into two dimensions: an ability dimension and benevolence/integrity dimension. Ability is a group of skills and competencies that enables a party to have influence in a certain area (Mayer, Davis, and Schoorman, 1995). Benevolence is the expectation that others will have a positive orientation or desire to do good to the trustee (Mayer, et al., 1995). Integrity is the expectation that others will act in accordance with socially accepted standards of honesty (Mayer et al., 1995; Ridings et al., 2002). Benevolence and integrity dimensions were combined because they lead to same behavior mode in virtual communities (Ridings et al., 2002; Gefen, 1997). Participants of virtual communities would like to converse with others who have the knowledge and skills regarding the topic they discuss. Trust in the benevolence and integrity of other members increase the desire to give information (Riding et al., 2002).

H₄: Members' trust in the ability of other members will positively affect the desire of giving information.

H₅: Members' trust in the benevolence and integrity of other members will positively affect the desire of giving information.

Perceived Rewards

Social cognitive theory (SCT) (Bandura, 1986) is a well-accepted and robust model to comprehend individual behavior (Compeau & Higgins 1995) and often been used as the basis in many areas (e.g. Compeau & Higgins 1995; Looney, Valacich, Todd, and Morris, 2006). The primary concept of SCT is the reciprocity determines among cognitive factors, human behavior, and environmental factors. Perceived Rewards and Perceived self-efficacy are important antecedents of behavior (Bandura, 1986).

Researchers have suggested that the development of reward systems effectively motivates the sharing willingness of staff in an organization (Hall & Graham, 2004). In virtual community settings, the reward systems are also adopted by community practitioners to encourage their members contributing incessantly. Some communities provide economic rewards (hard or tangible rewards) such as web miles or using services free after members post messages (Chan, Bhandar, Oh, and Chan, 2004; Thurau et al., 2004). On the other hand, members may also give information due to their expectation to enhance their reputation among community members or they simply enjoy the process of helping others to solve questions (Wasko & Faraj, 2000; Hall & Graham, 2004). Such personal gains are recognized as soft (intangible) rewards. In this study, we view the rewards as the environment factors to motivate individual desire.

H₆: Members' perceived hard rewards will positively affect the desire of giving information.

H₇: Members' perceived soft rewards will positively affect the desire of giving information.

Perceived Self-Efficacy

Perceived self-efficacy refers to beliefs in one's capabilities to organize and execute the course of action required to manage prospective situations (Bandura, 1986). Thus, it is defined as a member's belief that he/she has the capability to provide useful information in the virtual community. When a member perceives a sense of self-efficacy, it leads to regular and high quality contribution to the community (Chan et al., 2004; Constant, Kiesler, and Sproull, 1994). A comparable construct, perceived behavioral control, was proposed to influence desire and intention in the model of goal-directed behavior (MGB). However, Bandura, Adams, and Beyer (1997) suggested that perceived self-efficacy carries wider meaning than perceived behavioral control and its ability to predict behavior has been empirically proved by many studies (Bandura and Jourden, 1991; Martocchio and Dulebohn, 1994). Thus, we place the construct of perceived self-efficacy into the model.

H₈: Members' perceived self-efficacy will positively affect the desire of giving information.

H₉: Members' perceived self-efficacy will positively affect the intention of giving information.

Our research model shown in Figure 1 proposes the decision process and related antecedents of individual's desire and intention of giving information. Followed the suggestion by previous studies, the intention of giving information is mediated by desire and also under the influence of perceived self-efficacy. It demonstrates that an individual who would like give information should have motivation and ability to share. The desire of giving information is induced by individual cognition and environment stimulation followed the suggestion of SCT (Bandura, 1986). Positive anticipated emotion, social identity, trust, and perceive self efficacy reflect the individual cognition while the perceived rewards shows the stimulation from the environment.

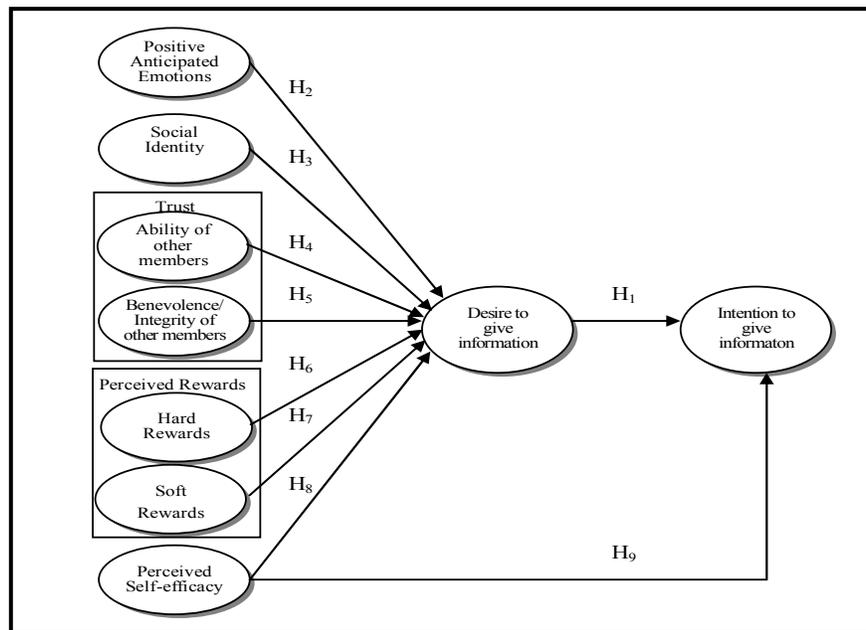


Figure 1. Research Model

RESEARCH METHODS

Instrument Design

To construct the survey instrument, existing scales from the literature were reviewed and items were carefully adapted or developed for each construct. Each item was measured using a seven point Likert scale. Then a pretest of instrument was examined by two experts from academia and two graduate MIS students who are experienced in virtual communities. A pilot study was conducted before the formal survey. A total of 51 undergraduate students participated the pilot study. The reliability of each scale is examined to ensure the feasibility of instrument.

Sampling

The population of interest and level of analysis of this study are individual participants who have experience to post their opinions on online discussion forums or bulletin boards. In order to collect data from a wide variety of communities, we selected our samples by the following two methods. We chose the community with the highest numbers registered from each category. 17 virtual communities from MSN Groups and 14 from Yahoo! Club were added to our list to be sampled. Next, we search virtual communities on Google, 10 popular online forums were selected to be surveyed for this study. Survey messages were posted on a total of 41 virtual communities. Members who have experience in giving information were invited. Respondents were asked to fill out the questionnaire according to the experience in their most use communities. A total of 273 usable responses would be analysis after dropping 72 responses which were filled by the members without experience in giving information. .

Descriptive statistics

The majority (60.8 %) of the sample was male and then 39.2 % was female. Age ranges from under 20 to above 45 years old. The largest group was 20 to 24 years old (53.9 %). The majority of educational background was university or college degree (55.7 %). 56 % of the respondents have over 7 years experience of using Internet. Female members trust in other members' benevolence/integrity more than male members. Male members perceived a higher degree of soft rewards than female in giving information. Among the age groups, the group 30-34 years old has the highest degree of self-efficacy to provide information. Table 1 shows the descriptive statistics of constructs.

Constructs	Mean	S.D.	Composite Reliability
Desire	4.85	1.21	0.89
Intention	4.79	1.17	0.88
Positive anticipated emotions	5.15	1.05	0.95
Social identity	4.43	1.17	0.84
Trust of other's ability	5.34	0.91	0.89
Trust of other's benevolence/integrity	4.86	0.94	0.85
Hard rewards	3.96	1.41	0.92
Soft rewards	4.45	1.12	0.84
Perceived self-efficacy	4.61	1.18	0.91

Table 1. Descriptive Statistics and Composite Reliability of Constructs

Measurement Model Analysis

A two-stage methodology of structural equation modeling was carried out. In the first step of measurement model evaluation, internal consistency, convergent validity, and discriminant validity were examined with a LISREL confirmatory factor analysis (CFA). In the second step of structural model estimation, the hypotheses to the paths between the item and its latent construct were examined, and the goodness-of-fit of the overall model was assessed. To avoid problems in structural equation modeling (SEM) analysis, normality and multicollinearity of data were checked first. The results showed that there are no multicollinearity problems among variables.

The fit indices of the measurement model were mainly examined with the suggestion of Hair, Anderson Tatham, and Black (1998). The indices were within the threshold (χ^2 to degrees of freedom ration of 1:2.07, RMSEA= .064, CFI= .934; NNFI= .924) after dropping the items which factor loadings below 0.6, a recommended value of Nunnally (1978). All indices reached satisfactory levels except for GFI. It was slightly below the 0.90 benchmark. But in practice, GFI value above 0.8 is still considered an acceptable value and indicating a good fit (Seyal, Rahman, and Rahim, 2002).

The lowest composite reliability for constructs was 0.84 (suggestion value is above 0.7, Hair. et al. 1998). It shows the reliability of instrument meet the criteria for analysis. The discriminant validity of model constructs was evaluated with the test suggested by Fornell and Larker (1981). The test is supportive of discriminant validity if the average variance extracted (suggestion value is above 0.50, Hair et al., 1998) by the underlying construct is larger than the squared value of its correlation coefficient with other latent constructs. Comparing the values in Table 2, we obtained a good discriminant validity of each construct.

	Desire	Intention	Emotion	Social	TrustA	TrustB	Hard Reward	Soft Reward	Self Efficacy
Desire	0.74								
Intention	0.70	0.71							
Emotion	0.51	0.46	0.75						
Social	0.56	0.49	0.39	0.64					
TrustA	0.42	0.34	0.33	0.29	0.61				
TrustB	0.40	0.36	0.31	0.38	0.45	0.59			
Hard Rewards	0.08	0.06	0.06	0.06	0.04	0.03	0.85		
Soft Rewards	0.45	0.38	0.39	0.40	0.22	0.16	0.24	0.64	
Self Efficacy	0.45	0.55	0.33	0.39	0.17	0.16	0.02	0.31	0.78

Trust A: Trust in others' ability

Trust B: Trust in others' benevolence/integrity

Table 2. The results of discriminant validity test

Structural Model Analysis

The main purpose of structural model estimation was to test hypotheses and obtain the path coefficients between latent variables. The fit of overall model was also examined first. The fit indices were within accepted thresholds: χ^2 to degrees of freedom ration of 1:2.12, RMSEA= .064, RMR= .048, NNFI= .925, CFI= .934, IFI= .935. Despite the GFI (= .82) was lower than the commonly cited threshold, but GFI values above 0.8 was still considered an acceptable value and indicating a good fit (Seyal et al., 2002). Therefore, the results indicated an acceptable model fit.

Figure 2 shows the standardized LISREL path coefficient and the significant level of each path in the model. All the paths

were significant expect for the path between perceived hard rewards and desire to give information ($\gamma = -0.007$, $t\text{-value} = -0.143$). Considering positive anticipated emotions and social identity first, their effects on desire to give information were significant within 0.05 significant level (positive anticipated emotions: $\gamma = 0.13$, $t\text{-value} = 2.433$; social identity: $\gamma = 0.19$, $t\text{-value} = 2.265$). Trust in other members' ability ($\gamma = 0.17$, $t\text{-value} = 2.891$), trust in other members' benevolence/integrity ($\gamma = 0.20$, $t\text{-value} = 2.976$), and perceived soft rewards ($\gamma = 0.20$, $t\text{-value} = 2.736$) were found to influence desire to give information within 0.01 significant level. Perceived self-efficacy was significant to desire of give information and intention to give information with path coefficient $\gamma = 0.25$ ($t\text{-value} = 5.212$) to desire and $\gamma = 0.23$ ($t\text{-value} = 4.747$) to intention respectively. Desire to give information had a very strong significance of mediating the effects of antecedents on intention to give information ($\gamma = 0.81$, $t\text{-value} = 12.725$). Squared multiple correlations were 83 percent for desire to give information and 85 percent for intention to give information.

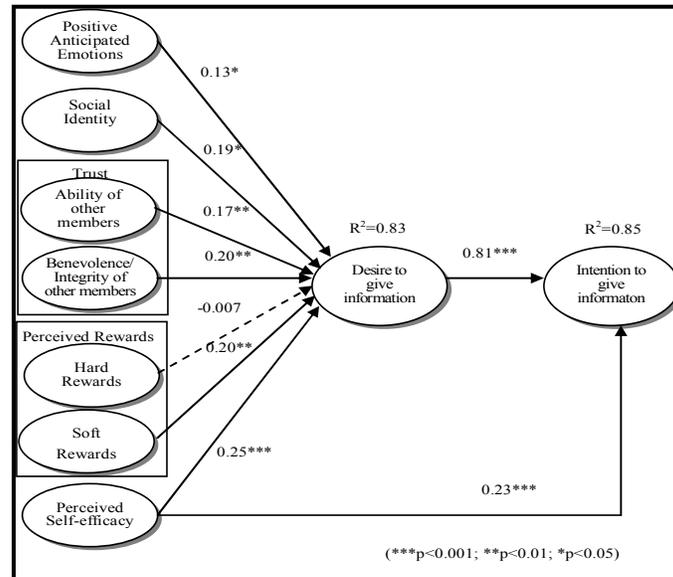


Figure 2. Structural Analysis Result

CONCLUSION

This study develops a comprehensive model and identifies important factors derived from the SCT, trust, and social identity theory in understanding why information providers giving information actively. This study highlights the motivation factors, individual factors and environment factors that impact the information contribution actively. It explains over eighty-five percent of the variance in intention to give information. The proposed model adds more insights in understanding virtual communities.

The results of structure model analysis show the Positive Anticipated Emotions, Social Identity, Trust, Soft Rewards, Perceived Self-efficacy are all significant factors to affect the desire of giving information. Intention, as we expect, is affected by both desire and perceived self-efficacy. The results show that members should not only have the willingness but also the capability to provide information in virtual communities. Among the significant variables, perceived self-efficacy is interestingly found having the highest influence on desire to give information and it also affects intention to give information directly at a very strong level. It shows that people would not contribute the information if they are not familiar with the topics or do not have enough knowledge to share with other members. It implies that community users might take the community as a public place. Even they are not face to face or hide their true identities on the community, most of members still have self-awareness about their behavior in the community.

The rewards that really motivating the information providers to contribute are the soft rewards rather than tangible benefits provided from websites. The soft rewards could be status advancement, reputation enhancement and self-satisfaction. It hints that offering the hard/explicit rewards of accessing information may attract people into a community, but will not necessarily mean that they will give their knowledge to share with other members. The virtual community owners should pay more attention on developing soft rewards mechanism to motivate members to give information continuously.

The two constructs of trust toward other members – ability and benevolence/integrity act significant predictors of desire to give information. Interestingly, the effect of trust in benevolence/integrity is stronger than trust in ability. It implies that the information providers may expect to have higher ability members in the same community but it is not as important as to stay

with a group of benevolence/integrity members. It hints that maintaining a pleasant environment is critical for virtual communities. Joining a virtual community for members is kind of leisure activity. An unpleasant environment such as harsh words or criticism among members may drive members away.

Finally, Social identity and positive anticipated emotions also encourage desire of giving information. An individual who has higher social identity with the virtual community would have much desire in giving information. It hints that positive feedback from other members within the community is essential to help members build sense of belongingness and form positive anticipated emotions to enhance the desire of sharing.

Surprisingly, hard rewards are not significant. A possible reason is that most communities do not offer enough hard rewards. Another possible reason is that the effects of soft rewards for members are too strong and the hard rewards are not important comparatively.

Implications for Research and Practice

The findings of this study have various implications for research as well as practice. The present study confirms that the factors derived from SCT, trust, and social identity theory play important roles on the desire of giving information. This study provides an integrated perspective to study the members' intention on giving give information. It provides relatively complete explanation as the reference for virtual community studies. The results also indicate that the virtual community owners should not only maintain a pleasant environment for members to share but also encourage members to give positive feedback to the members who share. These could help the practitioners better understand the information providers and then make appropriate strategies to foster information exchange.

Limitation and Suggestion for Future Study

Even this study have contribution, it has its limitations. First, the sample size is small compared to the whole virtual community's users on the Internet. However, our sample size meet there requirement for SEM analysis (Hair, et al. 1998). The future study could reexamine the model with larger samples. It will enable the possibility to observe the difference among different type virtual communities. Second, the response rate is unknown. The response rate is difficult to calculate when it comes to online survey. The future study could cooperate with virtual communities to get the panel data to overcome this bias. Third, the samples of this study were collected at the single time frame, given the cross-sectional research. Future research could testify the model in longitudinal method to obtain further details. Thus, the results of this research need to be interpreted with caution. Finally, this study only focus on the members who give information, still most people do not share in virtual communities. It would be interesting to compare the difference between lurkers and contributors in the future study.

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