# FACTORS INFLUENCING USERS' KNOWLEDGE SEEKING INTENTION IN THE VIRTUAL COMMUNITY

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## ABSTRACT

In recent years, with the popularity of the Internet, the online virtual community has become one of the most popular platforms for users to share and seek knowledge. Past related studies have mostly focused on the knowledge provider and largely ignored the knowledge seeker. Thus, this study adopted related variables from three dimensions, i.e. users, system and environment, to explore the key factors that affect a knowledge seekers' intention in a virtual community. A web survey was conducted to distribute questionnaires to three popular virtual programming communities in Taiwan. The results indicate that knowledge growth, seeking efforts, computer self-efficacy, perceived usefulness, compatibility, future obligation, norms of reciprocity, community influence, and shared values significantly affect the knowledge seeker's knowledge seeking intention. Implications for academics and practitioners are also discussed.

## INTRODUCTION

With the thriving of the virtual community in Taiwan, people are using it as a media for communication, searching for information and entertainment. The virtual community has become an important platform for people to search for and share knowledge.

A successful sharing of knowledge means that knowledge sellers provide their own valuable knowledge and knowledge buyers acquire this knowledge by seeking correct methods or channels. Therefore, both knowledge sellers and buyers are important for successful knowledge sharing in the virtual community. However, previous studies have focused mainly on the topic of knowledge sellers. The role of the knowledge buyer has largely been ignored.

Recently, some scholars have observed this phenomenon. Hence, some studies have now been conducted from the perspective of knowledge seeking. For example, Kankanhalli, Tan and Wei [20] conducted a study to investigate the factors that influenced the employee to use Electronic Knowledge Repertories (EKR); meanwhile, Sharma and Bock [33] used the decomposed Theory of Planned Behavior (DTPB) as a theoretic foundation to explore influencing factors of the usage of EKR. In other related studies of virtual communities, Phang, Kankanhalli and Sabherwal [30] have attempted to understand two main activities for maintaining the operation of the community.

Although, these previous outstanding studies shed light on knowledge seeking, we found that there were still only a few studies that focused on knowledge seeking behaviour. Thus, this study tries to propose a comprehensive model to investigate the relevant influential factors in the virtual community from the point of view of users, the system, and the environment.

## LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

### Virtual community

With the rapid development of the Internet, many people now use this new means to communicate with each other in order to share knowledge, information and emotions. People with similar interests can interact at anytime, anywhere in a virtual community. It is composed of people who communicate with each other by various electronic media (e.g. computer, telephone) [7]. Hagel and Armstrong [16] believe that the real meaning of a virtual community is to gather people in this space to conduct sustained interaction to satisfy their needs of interest, relationship, fantasy and trading, and eventually, spawn a trustworthy atmosphere. In sum, a virtual community can be seen as a group with a common interest, experience and need, interacting through a virtual platform which is constituted by computer network technologies.

This study explores the factors influencing knowledge seeking from the perspective of the users, the system and the environment.

### Users Characteristics

Knowledge growth refers to seekers who perceive the benefit of acquiring new knowledge or gaining experience from others [19]. It can be viewed as intrinsic motivation for the knowledge seeker [36]. Knowledge growth enables the flexibility for personal job switching, the opportunity for engaging in more meaningful jobs [33] and improves users' expertise [6]. Hence, we propose the first hypothesis:
H1: In a virtual community, the knowledge seeker's perception of knowledge growth will positively influence his/her knowledge seeking intention.

Seeking effort can be viewed as the effort one makes during knowledge seeking [12]. It is an obstacle to knowledge seeking [14]. It is also a cost in that the knowledge seeker must devote his time and energy to it [24]. Therefore, the less the seeking effort, the more the intention to seek in a virtual community. Hence, we propose the second hypothesis.
H2: In a virtual community, the knowledge seeker's perception of seeking effort will negatively influence his/her knowledge seeking intention.

Computer self-efficacy refers to the judgment of one's capability to use a computer [10]. It implies the ability of the knowledge seeker to use the computer to search for required knowledge. So, computer self-efficacy has a positive impact on the intention to seek for knowledge in the virtual community.
H3: In a virtual community, the knowledge seeker's computer self-efficacy will positively influence his/her knowledge seeking intention.

Prior knowledge will expedite the exchange of knowledge. Davenport and Prusak [11] also pointed out that one of the obstacles of knowledge transformation is the lack of absorptive capacity. In seeking knowledge, a person can not seek, absorb and use it efficiently if he does not have some related prior knowledge [29]. Thus, the following hypothesis is proposed:
H4: In a virtual community, the knowledge seeker's prior knowledge will positively influence his/her knowledge seeking intention.

### System characteristics

Perceived usefulness has a direct impact on the intention to use technology [12] [21]. In the study of Kankanhalli [19], the concept of perceived utility is similar to perceived usefulness, and motivates the seeking intention on EKR. Wasko and Faraj [36] also came to a similar conclusion . Hence, we propose our hypothesis as follows:

H5: In a virtual community, the knowledge seeker's perception of usefulness will positively influence his/her knowledge seeking intention.

In the seeking of knowledge, the seeker must pay out his time and energy persistently until he discovers the desired knowledge or gives up [20]. Thus, perceived ease of use will improve the intention of knowledge seekers. So, we argue that perceived ease of use is positively related to knowledge seeking intention.

H6: In a virtual community, the knowledge seeker's perception of ease of use will positively influence his/her knowledge seeking intention.

"Compatibility is the degree to which an innovation is perceived as consistent with existing values, past experiences, and the needs of potential adopters" [32, p.224]. Following the thought of related studies [26] [32], the more compatibility, the more positive the attitude to the technology. So, we propose the seventh hypothesis.

H7: In a virtual community, the knowledge seeker's perception of compatibility will positively influence his/her knowledge seeking intention.

**Environment characteristics**

Because the members of a virtual community interact with each other and form their interpersonal relationships and society via the Internet, it is like the epitome of human society. Thus, the study tries to explore the contextual factors from the viewpoint of social capital theory. Based on the argument of Nahapiet and Ghoshal [27] , this study proposed the following hypotheses from the relational, structural, and cognitive dimension.

From the viewpoint of the social exchange theory, when someone receives help, he has an obligation to reciprocate and give help back to others in the future [19]. In the knowledge market, it means that the knowledge seeker must return the help in the future after using the knowledge offered to him [36]. This future obligation may increase the cost of knowledge seeking [19] and in turn, affect the seeking intention negatively. So, the following hypothesis is proposed.

H8: In a virtual community, the knowledge seeker's perception of future obligation will negatively influence his/her knowledge seeking intention.

Trust plays a critical role in efficient knowledge exchange [11]. Trust is also necessary for knowledge sharing on the Internet [23]. In a virtual community, where there is no real interaction among members, and no compulsory rules to constrain members' behaviour, trust becomes indispensable. Thus, we propose the following hypothesis.

H9: In a virtual community, the knowledge seeker's perception of trust will positively influence his/her knowledge seeking intention.

Reciprocity is a behaviour based on the anticipation of reward from others, this behaviour will stop when the reward is not forthcoming [5]. The norm is a level of social consensus [9], it can be seen as an expectation of sharing behaviour, and it becomes steadier over time and users' interaction [4]. The lack of norms of reciprocity may reduce the motivation to share, and in turn, block knowledge transformation [14] [28]. Therefore, the next hypothesis is proposed.

H10: In a virtual community, the knowledge seeker's perception of the norms of reciprocity will positively influence his/her knowledge seeking intention.

The moderator can be viewed as the manager of the on-line society [22], and as such he plays a critical role in maintaining the appropriate operation of it [15]. His responsibility is to manage the interaction of all the members [22] [31], guide the discussion, and encourage interplay among them. This should lead to more knowledge seeking and sharing [30]. So, the next hypothesis is proposed.

H11: In a virtual community, the knowledge seeker's perception of the influence of the moderator will positively influence his/her knowledge seeking intention.

Engel, Blackwell and Miniard [13] divided reference groups into primary and secondary. The primary group refers to the people with whom you connect in real every-day life, such as family, friends and colleagues. Both of you have similar beliefs and behaviours. The secondary group refers to the people whom you do not associate with in real life, e.g. friends in the virtual community. According to a related study, the primary group has significant influence on a user's behaviour [18]. Similarly, the secondary group also has an influence on a user's continuing behaviour [34]. In sum, the above discussion demonstrates the importance of the internal and the community influence. Thus, we propose the following two hypotheses.

H12: In a virtual community, the knowledge seeker's perception of internal influence will positively influence his/her knowledge seeking intention

H13: In a virtual community, the knowledge seeker's perception of community influence will positively influence his/her knowledge seeking intention.

Facilitating conditions can be classified as resource and technology facilitating conditions [35]. Resource facilitating conditions will expedite the adoption of new technology [35], however, technology facilitating conditions have had an insignificant affect in past research [35]. This study focuses on the virtual community, where users must use computer and network equipment to interact with each other, so technology facilitating conditions are taken into consideration.

H14: In a virtual community, the knowledge seeker's perception of facilitating conditions will positively influence his/her knowledge seeking intention.

A common language, symbols or stories are conducive to mutual understanding. Consistent opinion or differing points of view encourages discussion, communication and knowledge in society [27]. Following this school of thought, the study investigates the influence of shared values among members of a virtual community. A common language is needed to exchange knowledge efficiently [27], and shared values are developed when members have similar experiences or backgrounds [25]. Both are conducive to the coherence of the society [8]. Since members may come from different areas or countries, have different languages and cultural backgrounds, these differences may affect their seeking attention. Thus, the final hypothesis is proposed.

H15: In a virtual community, the knowledge seeker's perception of shared values will positively influence his/her knowledge seeking intention.

## RESEARCH METHOD

### Measurement development

The measurements for this study were adapted from previous studies, but in order to fit the context , some minor modifications were made. A pretest and pilot test were conducted after the questionnaires had been prepared. Items of knowledge growth and future obligation were measured with the 5-point Likert scale, the others with the 7-point Likert scale.

### Subjects and survey

The users are recruited from three professional virtual communities [1] [2] [3]( http://www.blueshop.com.tw/, http://www.javaworld.com.tw/jute/, http://phorum.study-area.org) where the main topic of discussion was programming language. Two of them had more than 100,000 members. All the participants were recruited via the Internet for one month. In order to encourage their participation, some

incentives were provided. Finally, there were 615 respondents and after screening, 513 usable respondents remained. The valid rate was 83.41%.

## RESULTS

### Demographic Statistics

The results indicated that the majority of respondents were male (70.57%), most of them between 21 to 30 years old (79.92%). Their educational level was bachelor or higher (97.27%), and their major expertise backgrounds were information management or information technology (53.8%), and science and engineering (16.18%). The time spent in a virtual community was - over 2 years (51.07%), 1 year to 2 years (16.18%) and so on. The knowledge seeking frequency was many times per week (43.67%), many times per day (32.16%) and others. When asked why they joined the activities of the community, 81.48% of respondents explained that they intended to seek knowledge in the community.

### Reliability and Validity

The results of the reliability tests indicated that Cronbach's α values of all variables were between 0.72 to 0.91, all were higher than 0.7. As regards the validity, 5 IS professionals were invited to do the pretest, and 16 participants were recruited for the pilot test. The results of KMO (Kaiser-Meyer-Olkin) test and the Bartlett Test of Sphericity proved they were suitable for factor analysis The sample was tested by the PCA and the Varimax method for discriminant and convergent validity. After deleting 3 items, the loadings of all the others were higher than 0.43, and distributed appropriately. These results demonstrate a good construct validity.

### Hypotheses Testing

Because both the independent and dependent variables were metric , the multiple regression method was used to analyze the sample. The multiple regression equation was :

Knowledge seeker's seeking intention = $b_0$ + $b_1$knowledge growth + $b_2$+seeking effort + $b_3$computer self-efficacy + $b_4$prior knowledge + $b_5$perceived usefulness +$b_6$+ perceived ease of use + $b_7$compability + $b_8$future obligation + $b_9$trust + $b_{10}$+ norms of reciprocity + $b_{11}$+ influence of moderator + $b_{12}$+ internal influence + $b_{13}$community influence + $b_{14}$facilitation conditions + $b_{15}$shared value +$\varepsilon$.

Before conducting this analysis, some fundamental assumptions had been tested, i.e. the normal distribution of the sample, linearity, homoscedasticity, and the independence of the residuals. The results showed that no serious problems existed. Next, the study conducted multiple regression analysis. The total explanation power of the regression model was 65.7%(Adj. $R^2$ =0.657). The significant independent variables were knowledge growth(p=0.007), seeking effort(p=0.037), computer self-efficacy(p=0.000), perceived usefulness(p=0.000), compatibility(p=0.020), future obligation(p=0.006), norms of reciprocity(p=0.000), community influence(p=0.010) and shared value(p=0.013), while the insignificant independent variables were prior knowledge(p=0.405), perceived ease of use(p=0.319), trust(p=0.308), influence of moderator(p=0.650), internal influence(p=0.554) and facilitation conditions(p=0.963).

## DISCUSSION

According to the analytical results, 9 hypotheses were supported and 6 were not. In regard to the users characteristics, 3 hypotheses were supported, i.e., knowledge growth, seeking effort and computer self-efficacy. Among these variables, computer self-efficacy was the most significant, as the subjects were very familiar with the computer and the Internet, and had had experience of virtual communities for over

1 year. However, prior knowledge was not supported. It may have been due to the fact that the topics discussed in these communities were too specialized and widespread; prior knowledge can be helpful only when the seeker meets the same situation as the contributor, but it seldom happens. Thus, it was not supported. As regards the system characteristics, perceived usefulness and compatibility were supported, in accordance with past related studies[17] [21] [26], but perceived ease of use was not. A possible explanation could be that most of the subjects were experienced users with over 1 year, even 2 years, experience in virtual communities; they were familiar with these websites and their operation, therefore, the influence of perceived ease of use was not supported. From the perspective of environmental characteristics, 4 hypotheses were validated, i.e., future obligation, norms of reciprocity, community influence and shared values, yet trust, the influence of the moderator, internal influence and facilitating conditions were not supported. Norms of reciprocity is the most important variable that affect knowledge sharing.

As to the insignificant hypotheses, the plausible explanation of trust was that the major target of the seekers was to search for solutions they needed, they did not intend to interact with other users regularly in these virtual communities. So, the trust relationship was not as important as in real life. As to the influence of the moderator, on these particular websites they did not appear to involve themselves in the activities very much, did not guide the users or novice users frequently and thus their influence was not perceived to be of any significance. Internal influence refers to the influence from family, friends and colleagues; the topics or solutions that users searched for may have been too specialized for these closer ones to give any suggestions or opinions. So, it was not validated in the study. Finally, facilitating conditions had no significant influence; it may be inferred that Taiwan has a good and robust IT infrastructure, thus, resource and technological facilitating conditions are no longer a concern.

## CONCLUSION AND IMPLICATIONS

This study proposed a comprehensive model and tested it empirically. Previous studies have focused on knowledge contributors, the role of knowledge seekers being ignored. This study explored the important factors that influence knowledge seekers from the perspectives of users, the system and the environment. The findings point the way to another school of thought.

Based on the findings, the following implications and recommendations are provided for practitioners. For virtual community managers, most of the users are students or freshmen in their career in this study, so they need a KMS to search and share knowledge. But they do not generally have a KMS. A well designed and professional virtual community could benefit from such a system. Additionally, norms of reciprocity are very important for a virtual community, managers can develop their own atmosphere, context, rules and norms of reciprocity to improve interaction, knowledge seeking and sharing among members.

Last but not least, although this study was conducted elaborately and carefully, some limitations could not be avoided. First, the subjects were recruited from the Internet, and anonymously, albeit we declared the conditions in advance, there may have been some fake respondents who could not be screened out. Second, the sample size may not have been large enough, impacting on the statistical analysis. Finally, in order to improve the generality of this study, future studies on other virtual communities are needed.

(Due to the page limitation, references are omitted. Please feel free to contact the corresponding author if you need them).