The Cognitive Selection Framework of Knowledge Acquisition Strategy in Virtual Communities

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Abstract
As a significant source of knowledge, virtual communities have stimulated interest in knowledge management research. Nonetheless, very few studies to date have examined the demand-side knowledge perspective such as knowledge acquisition in virtual communities. In order to explore the knowledge acquisition process within virtual communities, this study proposes the cognitive selection framework of knowledge acquisition strategy in virtual communities. The proposed framework identifies how knowledge recipients select their strategy for acquiring specialized knowledge, emphasizing cognitive perspectives such as cognitive goals (cognitive replication and innovation) and cognitive motivators (virtual community self-efficacy, heightened enjoyment, and time resources) at the individual level. On analyzing the preliminary data, we obtain findings that suggest that knowledge recipients’ cognitive motivators differentially influence their cognitive goals for selecting knowledge acquisition strategy. However, in order to empirically examine the hypotheses identified in this study, further research is still needed.

1. Introduction
With the change from a production-based economy to a knowledge-based economy, knowledge plays a critical role in enhancing individual and organizational effectiveness as the business environment evolves [19, 25]. According to a market intelligence and advisory firm, AMR Research [3], it has been estimated that business spending on knowledge management software and services has grown from $73 billion in 2007 to $85 billion in 2008. The federal government also increased knowledge management spending from $850 million in FY 2004 to almost $1.1 billion in FY 2009 [21]. Reflecting these current business and government endeavors, many studies have investigated the impact of knowledge management in organizations over recent years [2, 5].

In spite of the growth and development of knowledge management, many organizations still have experienced the lack or failure of knowledge transfer to the detriment of their operations [7, 27]. Organizations can be more successful when they facilitate the conditions in which knowledge providers effectively share their knowledge and knowledge recipients effectively acquire and apply that knowledge [39, 4]. While there has been extensive research on knowledge transfer from various perspectives, most studies to date have neglected the knowledge recipient aspect, and have instead targeted the knowledge provider aspect such as knowledge contribution and sharing. Thus, there is a critical need to examine how knowledge recipients select their strategy for acquiring the specialized knowledge needed to do their work.

A significant knowledge source is virtual communities, which are defined as social networks of individuals who share and acquire information and knowledge using Internet technologies [11]. Virtual communities provide unprecedented opportunities for individuals to participate in interactions with others even when no previous social ties exist [8]. Thus, a number of individuals participate in virtual communities for acquiring the knowledge required for their work. Many organizations have also recognized the importance of virtual communities as a valuable system to meet their business objectives [20]. In this sense, virtual communities can offer an ideal context for studying knowledge transfer from the perspective of knowledge acquisition.

The present study has the following research questions: in the virtual communities, (1) “What are the salient factors which influence knowledge acquisition in terms of the knowledge recipient’s perspective?”, and (2) “How do knowledge recipients select their strategy for effectively acquiring the knowledge they need?” In answering these research questions, we focus on the knowledge recipients’ cognitive motivations, drawing on two theoretical
perspectives: social cognitive theory and goal-setting theory. In doing so, this study aims to develop and test the cognitive selection framework of knowledge acquisition strategy in virtual communities, as influenced by salient cognitive factors of the knowledge recipients.

Emphasizing knowledge recipients’ intentions (e.g., the selection of knowledge acquisition strategy) for optimally acquiring the knowledge in virtual communities, this study theoretically contributes to the elucidation of the knowledge transfer phenomenon from the knowledge demand-side perspective. This research also practically contributes for virtual communities to effectively construct their knowledge structure, repositories, web design, and management systems in balance between knowledge demand- and supply-side.

The rest of paper is organized as follows: In the next sections we provide the theoretical background for the conceptual framework, which is followed by the conceptualization of the knowledge acquisition strategy and individual cognitive perspectives, and present our conceptual framework and hypotheses. After introducing our hypotheses, we discuss our research method, describe our data collection, and present our preliminary data analysis. We conclude by discussing the implications, limitations and future direction, and conclusion of our study.

2. Theoretical background

2.1. Knowledge acquisition in virtual communities

Among various knowledge management processes such as knowledge creation, storage, and application, knowledge transfer refers to the knowledge exchange process between knowledge providers (i.e., source, sender, or contributor) and knowledge recipients (i.e., receiver and seeker) [44, 29]. Knowledge resides in multiple repositories such as individual members, organizational structures, operating procedures, organizational culture, and the actual physical workplace [4, 28]. Thus, knowledge could be transferred directly by communication between individuals or indirectly from knowledge archive. Moreover, knowledge transfer can occur explicitly, as when a knowledge provider communicates with a knowledge recipient about tasks or practices for improving performance, or implicitly, as through norms and routines which are integrated or coordinated by organizational members.

For our purposes focusing on knowledge acquisition, knowledge consists of a state of mind, as distinct from free-standing data or information. In this sense, when an individual acquires knowledge, that person’s knowledge set has expended or application of knowledge has been enabled. Information technology plays a role in facilitating the access to the knowledge sources [2]. Therefore, in the knowledge demand-side perspective, in contrast to the knowledge supply-side, knowledge acquisition is regarded as the important activity in knowledge management. Hence, it is critical to investigate where and how people access and acquire the knowledge they need. Although knowledge may be acquired in many ways such as reading, sharing, observing, and experiencing, people strive for an optimal investment of their effort and time in each knowledge acquisition strategy as they attempt to optimally obtain the specialized knowledge related to their own tasks.

2.1.1. The sources of knowledge acquisition. When individuals obtain knowledge, the selection of knowledge sources is the critical part of knowledge acquisition process [48, 15, 16]. There are many potential sources of knowledge available for individuals to use such as culturally embedded practices, documents, policies, knowledge repositories, virtual communities, and with individuals themselves [2, 48]. In the present study, we define knowledge source as the source selected by the knowledge recipient in order to look for or access other people’s knowledge such as expertise, experience, insights, and opinions [15]. Getting the right knowledge on a timely basis is one of the major challenges of knowledge acquisition. If appropriate knowledge sources are not accessible, for example, knowledge recipients may seldom find the person who possesses the knowledge required to perform their tasks, and in such case the best available knowledge can be of limited value. Therefore, where individuals choose to look for knowledge can be an important consideration in knowledge acquisition processes. Especially regarding decision making processes, the selection of knowledge sources is important [48].

Based on the communication-based learning model [18], knowledge sources are categorized into three forms: dyadic knowledge sources, published knowledge sources, and group knowledge sources [15, 16]. A dyadic knowledge source is defined as a knowledge source where a knowledge recipient engages in one-to-one dialogue with a knowledge provider via direct communication. A published knowledge source is based on many-to-one or one-to-many relationships between knowledge providers and knowledge recipients. Examples of published sources include documents stored in knowledge repositories, printed in books, or posted in virtual communities [15].
Finally, a group knowledge source refers to the exchange of knowledge amongst multiple knowledge recipients and multiple sources in an open venue. Knowledge recipients can access and obtain the knowledge through group knowledge sources such as open or public conversation in the communities, question-and-answer systems, or work teams [16].

2.1.2. Virtual communities as knowledge sources. Virtual communities are online social networks in which people with common interests, goals or practices interact to share information and knowledge, and engage in social interactions [17]. In virtual communities, for instance, community members may acquire knowledge through postings which include information from other community members as well as bundled information from the virtual community providers such as wikis, blogs, and manuals.

Knowledge sources in virtual communities can be distinguished as static knowledge sources or dynamic knowledge sources [15, 48]. A static knowledge source consists of web pages where knowledge flows from the source to the knowledge recipient, and the knowledge recipient does not give any responses to the knowledge sources or providers on the site. On the other hand, a dynamic knowledge source consists of web pages where information can flow bidirectionally. In dynamic knowledge sources (e.g., newsgroups, bulletin boards, and online forums), the knowledge recipients can directly post their problem or question, and then some community members who know the solution to the problem serve as knowledge providers by answering the knowledge recipients’ posting. Therefore, we regard the virtual community as a significant knowledge source in which knowledge recipients can access and acquire the knowledge.

2.1.3. Knowledge acquisition strategies in a virtual community. According to activity theory, individual activities and mental processes inevitably depend on the specific situation the individual finds himself or herself in, such as task structure, prior experience, cognitive ability, work process, exchange relationships with others, and so forth [38]. Similarly, knowledge recipients can obtain specialized knowledge through three learning processes: learning-by-self-investment, learning-by-doing, and learning-from-others [40]. Among these learning processes, we focus solely on the learning-from-others process since virtual communities provide knowledge sources by interconnectedness between community members. The learning-from-others perspective can be a major strategy for acquiring the specialized knowledge, because knowledge transfer is mostly dyadic exchanges between individuals, especially in the “source-recipient” generic model [29], and because a significant knowledge is embedded in individual members [4].

When people acquire knowledge, they consider which knowledge sources and learning processes will be optimal. Based on knowledge sources and the learning-from-others perspective, we employ the concept of knowledge acquisition strategy in virtual communities as constituting a static acquisition strategy or a dynamic acquisition strategy. First of all, in a static acquisition strategy knowledge recipients unidirectionally acquire the knowledge from virtual communities. This strategy enables knowledge recipients to seek and obtain the knowledge provided by other people without any direct communication (e.g., traditional web pages, web-blogs, search engine, FAQs etc.). On the other hand, in a dynamic acquisition strategy knowledge recipients bidirectionally obtain the knowledge through bulletin boards, questions-and-answer systems, or direct communications such as email, message, and telephone with actual or potential knowledge providers. This strategy has the potential to provide the knowledge recipients with more in-depth and customized knowledge than a static acquisition strategy.

2.2. Cognitive perspectives in knowledge acquisition strategies

In this study, our concern is how each individual selects the knowledge acquisition strategy in virtual communities in order to effectively obtain specialized knowledge. According to prior research, individuals anticipate their desired future outcomes, and then develop their strategies and plans which enable them to achieve the desired outcomes [24, 9]. The desired future outcomes are commonly called goals [10]. Furthermore, individuals modify and monitor their behaviors to attain their goals. In our quest to better understand the selection of knowledge acquisition strategies, we will link two theoretical bases, social cognitive theory and goal-setting theory, to develop the cognitive selection framework of knowledge acquisition strategy in virtual communities at the individual level.

2.2.1. Social cognitive theory. In a number of studies concerned with human motivation and action, social cognitive theory (SCT) postulates that human behaviors are determined by the continuous, reciprocal interaction among behavioral, cognitive, and environmental factors [34]. In particular, SCT is concerned with how environmental and cognitive factors interact to influence human behaviors such as knowledge acquisition in the specific context.
According to SCT, individuals can influence changes in themselves and their situations through their efforts, because judgment and actions are partly self-determined. In this regard, Bandura et al. (1989) averred that “individuals are neither autonomous agents nor simply mechanical conveyer of animating environmental influences (pp. 1175).” That is, in order to achieve higher performance, individuals make causal contribution to their motivation and actions through the reciprocal causation of behavioral, cognitive, and environmental factors.

Reciprocally interacting with knowledge sources in virtual communities, individuals’ cognitive motivations regulate their actions and behaviors such as the selection of knowledge acquisition strategy. Therefore, SCT can be useful for understanding the cognitive perspectives in knowledge acquisition at the individual level.

2.2.2. Goal-setting theory. According to goal-setting theory, both motivation and subsequent performance increase when individuals set specific, difficult goals that have high valence, and individuals react or change their behaviors when a discrepancy is perceived between their goal and the current state of the environment. Thus, the basic assumption of goal-setting theory is that much of human action is purposeful and is directed by conscious goals [31]. Goal-setting theory is useful in predicting performance and understanding the cognitive mechanisms involved in setting performance goals [37], particularly providing the motivational explanation of why some people perform better than others on work tasks. People have different performance goals, and their different goals subsequently lead to their different behaviors resulting in different qualities of performance.

According to Locke and Latham (2002), goals motivate individuals to achieve better performance through four primary mechanisms: direction, effort, persistence, and strategies. Among them, the last one is especially critical when individuals face complex problems. Goals affect action indirectly by leading to the arousal, discovery, and/or use of task-relevant knowledge and strategies from a variety of knowledge sources [39, 31]. Thus, individuals’ actions are the result of their cognitive motivation which can interact in complex ways. Under different types of goals depending on assigned tasks, individuals are most likely to formulate effective strategies, and to accurately predict the conditions that would be most likely to facilitate the selection of suitable strategies [31].

Therefore, we propose that individuals cognitively set the goals depending on the salient factors which facilitate individual cognitive motivation, and that they select the proper strategies for effectively achieving their cognitive goals.

3. Conceptual framework and hypotheses

Based on two theoretical bases, Figure 1 depicts our conceptual framework. It elucidates that in virtual communities the knowledge recipients use different types of knowledge acquisition strategy, depending on the cognitive goals they set. Additionally, their goals can be influenced by salient cognitive motivators such as virtual community self-efficacy, heightened enjoyment, and time resources they recognize in virtual communities. The posited constructs and their relationships shown in Figure 1 have been identified because of their theoretical relevance and managerial importance, as subsequently described.

Figure 1. A Conceptual framework

3.1. The influence of cognitive goals on knowledge acquisition strategy

Cognition has traditionally been thought of as individually created and structured [46], and cognitive structures, which are mental representations of a person’s knowledge, serve to guide both individual perception and inference [6, 12]. Previous studies have particularly dealt with the changes of individual cognitive structure, regarding such change as the outcome of knowledge acquisition [6, 15]. According to this view, knowledge acquisition entails changes in cognitive structures, and therefore the modifications of cognitive structures play a critical role in the knowledge acquisition.

In the present study, we employ the concept of cognitive structures and changes [15] to understand individuals’ cognitive goals. Individuals are more likely to set their goals which result in cognitive changes before they decide to acquire the knowledge [32]. Therefore, goal-setting can be an important
means of providing the necessary motivation to actively seek out and acquire knowledge.

Two types of cognitive changes are relevant to our research: cognitive replication and cognitive innovation [15]. A third type of cognitive change, cognitive adaption is not included in this research because it is hard for people to distinguish from cognitive innovation [13, 32] and because it may be a result (rather than antecedent) of knowledge acquisition.

Cognitive replication refers to the propagation of existing cognitive structures. This means knowledge exploitation that generates value through productive repetition or recreation of knowledge that already exists. Thus, knowledge recipients acquire and apply the knowledge (e.g., usually explicit knowledge) from knowledge sources, replicating the essential elements of the sources’ knowledge [32, 45]. On the other hand, cognitive innovation refers to radical and discontinuous changes of cognitive structures [47]. For attaining the innovative goals, knowledge recipients make an effort to not only acquire the knowledge but also integrate the knowledge with their existing knowledge. Transferred knowledge for cognitive innovation is likely to be ambiguous, complex or tacit knowledge [32]. Thus, the cognitive innovation can often substitute for old knowledge, encouraging radical improvement of existing knowledge.

In our framework, an individual’s cognitive goal of replication or innovation influences the selection of how to create and apply the appropriate knowledge acquisition strategy [39]. Therefore, cognitive goals which people set can be the proximate causes of their behaviors, including selection of knowledge acquisition strategy in virtual communities. We hypothesize that goal and strategy will share similar levels of (dis)continuity. In sum, we posit the following hypotheses below:

H1a: The knowledge recipient who sets a cognitive replication goal is more likely to select a static knowledge acquisition strategy than a dynamic knowledge acquisition strategy.

H1b: The knowledge recipient who sets a cognitive innovation goal is more likely to select a dynamic knowledge acquisition strategy than a static knowledge acquisition strategy.

3.2. The influence of cognitive motivators on cognitive goals

The present study emphasizes the salient cognitive factors influencing the knowledge recipients’ knowledge acquisition. According to Payne et al. (1993), cognitive factors such as prior knowledge, experience, cognitive ability, and perceived benefits affect the frequency and recall of available and particular strategies, when people face the specific problems or tasks. Different cognitive beliefs of individuals have an impact on their reactions or behaviors when people decide how to acquire the specialized knowledge.

The knowledge recipients’ cognitive goals can be influenced by the recipients’ motivation about how to use available new knowledge for their task [39, 44]. As a result, the knowledge recipients set their goals to be consistent with their motivations. Therefore, we draw on virtual community self-efficacy, heightened enjoyment, and time resources as the salient cognitive factors which motivate the knowledge recipients’ cognitive goal-setting.

3.2.1. Virtual community self-efficacy. Self-efficacy is defined as individuals’ personal beliefs in their own ability to organize and execute courses of actions, functioning as the critical determinant of human motivation, judgments, and behaviors [9]. This plays a pivotal role as socio-cognitive determinants influencing human action, adaptation, and change [42].

In this study, we redefine self-efficacy as virtual community self-efficacy. Virtual community self-efficacy is defined as individual judgments of a person’s capabilities to perform tasks in virtual communities. Virtual community self-efficacy encourages knowledge recipients to effectively acquire the knowledge through the utilization of virtual communities. Therefore, individuals who have higher virtual community self-efficacy have a tendency to mentally or physically invest the optimal efforts in knowledge acquisition strategies, facilitating high levels of learning goals.

This view is consistent with the argument that self-efficacy facilitates high levels of knowledge acquisition. Gist et al. [14] maintained that self-efficacy has positive influences on the knowledge acquisition, specifically during the selection processes of knowledge acquisition [24]. That self-efficacy influences individual intentions for effort allocations may be applied to cognitive goal setting to pursue the appropriate knowledge acquisition strategy, in affecting the direction of effort and task persistence [33]. Hence, individuals who have greater virtual community self-efficacy are more likely to pursue the higher level of cognitive goals with their higher self-confidence.

H2a: The greater the virtual community self-efficacy, the more likely the knowledge recipient is to
pursue a cognitive innovation goal rather than a cognitive replication goal.

3.2.2. Heightened enjoyment. To capture the pleasurable aspects as cognitive motivators, we adopt the concept of heightened enjoyment. The heightened enjoyment means the perceived degree to which the knowledge recipient is involved in his or her activity (e.g., knowledge acquisition activity itself or virtual community activities) for the pleasure and enjoyment it provides [1]. Moreover, the heightened enjoyment is closely related to cognitive absorption, and plays an important role as a core component of flow such as the knowledge acquisition process [1]. Therefore, we hypothesize that individuals who find virtual community activities or knowledge acquisition itself as cognitively pleasurable have a tendency to set the innovation-oriented goal rather than simple repetition of the existing knowledge.

H2b: The greater the heightened enjoyment, the more likely the knowledge recipient is to pursue a cognitive innovation goal rather than a cognitive replication goal.

3.2.3. Time resources. The amount of time available to perform the task plays a critical role in decision making process, and many decisions in reality are made under time pressure. Individuals have some feelings of stress for coping with the limited time, and as a result, time pressure influences their judgments and choices by restricting the cognitive capacity [43]. Under time pressure, individuals are more likely to speed up executing their decision strategies or switch to simpler strategies [35, 22].

The amount of time has been regarded as one of the critical resources for knowledge acquisition [36], providing enough cognitive resources available for performing the task. Time resources enable knowledge recipients to browse for the knowledge since seeking and acquiring the appropriate knowledge is time-consuming tasks. Therefore, when knowledge recipients have enough time resources, they are more likely to expect to get more knowledge, as well as to have the opportunities for applying innovative ideas to the task. We thus propose that having greater time resources can provide the knowledge recipient with more chances to pursue innovative goals without cognitive time pressure.

H2c: The greater the time resources, the more likely the knowledge recipient is to pursue a cognitive innovation goal rather than a cognitive replication goal.

4. Methodology

4.1. Experimental design and procedure

The experimental design was as follows. All participants actually visited a particular virtual community website in which they participated in acquiring knowledge. The research protocol we provided helped participants become familiar with using the virtual community where they could find the knowledge or solutions for their tasks. Next, the post-experiment survey was provided after participants completed the exercise.

The survey instrument had two parts. The first part included items for the assessment of: (1) individual cognitive motivators (virtual community self-efficacy, heightened enjoyment, and time resources), (2) the cognitive goals and knowledge acquisition strategies, and (3) control variables (perceived task significance and complexity, perceived past experience, participants’ habit, propensity to trust). These items used a one to seven Likert scale, anchored with “strongly disagree” (1) and “strongly agree” (7). The second part solicited participants’ general background such as gender, age, education level, and, virtual community usage.

The experimental sessions were conducted in a computer laboratory in which every computer had Internet access. Participants were seated at a computer and given verbal instructions about the experimental procedure, emphasizing the point that they were to work through the material in sequence without returning to a prior page. Following our research protocol, participants actually experienced the knowledge acquisition in the virtual community through various knowledge sources and acquisition strategies. In the research protocol, we presented a specific task description to participants (e.g., iTunes troubleshooting). In order to resolve the task, it was required to acquire the knowledge from the task-related virtual communities (e.g., Apple virtual discussion community). Subjects spent 10.16 minutes on average to complete the task. Then, the participants answered survey questions according to a survey instrument. The survey instrument was constructed for the purpose of measuring the participants’ cognitive motivation, preferences of cognitive goals and knowledge acquisition strategies, while they acquired the knowledge in virtual communities.

4.2. Participants

For this study, 93 participants were drawn from a pool that comprised senior-undergraduate and MBA
students in a large university in the U.S. Participation was voluntary: participants received extra course credits to increase the seriousness of participation and to encourage their participation in the experiment. Table 1 shows the profiles of the participants.

**Table 1. Profiles of participants (N=93)**

<table>
<thead>
<tr>
<th>Construct</th>
<th># of Items</th>
<th>Alpha</th>
<th>Sample item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive replication</td>
<td>3</td>
<td>.812</td>
<td>I want to incorporate more established knowledge into my work.</td>
</tr>
<tr>
<td>Cognitive innovation</td>
<td>3</td>
<td>.776</td>
<td>I will try to obtain the knowledge which can make a number of substantial improvements in the way I do my work.</td>
</tr>
<tr>
<td>Static acquisition strategy</td>
<td>4</td>
<td>.849</td>
<td>I will prefer to obtain useful knowledge by reading written materials in the virtual community.</td>
</tr>
<tr>
<td>Dynamic acquisition strategy</td>
<td>4</td>
<td>.754</td>
<td>I prefer to communicate one-on-one with other people who may have encountered similar problems.</td>
</tr>
<tr>
<td>Virtual community self-efficacy</td>
<td>6</td>
<td>.874</td>
<td>I am confident I could acquire the knowledge I need by using a virtual discussion community.</td>
</tr>
<tr>
<td>Heightened enjoyment</td>
<td>3</td>
<td>.939</td>
<td>Using the virtual community will provide me with a lot of enjoyment.</td>
</tr>
<tr>
<td>Time resources</td>
<td>4</td>
<td>.726</td>
<td>I expect to have enough time to conduct the task on a timely basis.</td>
</tr>
</tbody>
</table>

5. Preliminary data analysis and results

Our data collection and analysis is ongoing, so in this paper we report the results of a preliminary test of a subset of the relationships identified by the framework.

Using one-way ANOVA analyses, parts of hypotheses were examined in this study. Table 3 shows descriptive statistics of variables used in this study. Table 4 reports the result of one-way ANOVA among three cognitive motivators in terms of cognitive goals – cognitive replication and cognitive innovation.

Hypothesis 2 posited differences between high and low cognitive motivators on cognitive goals. The mean value of cognitive replication with three low cognitive motivators (VSE, mean=5.36; TR, mean=5.10) and high cognitive motivators (VSE, mean=5.95; HE, mean=5.83; TR, mean=6.19) are different as shown in Table 3. Except
for heightened enjoyment ($F=3.45$, $p=.066$), the differences between high and low cognitive motivators are significant since each $F$-value ($p$-value) is $8.29$ (.005) for virtual community self-efficacy and $23.5$ (.000) for time resources.

**Table 3. Means and (standard deviation) scores for cognitive goals for cognitive motivators**

<table>
<thead>
<tr>
<th>Cognitive motivators</th>
<th>Dependent variables</th>
<th>Cognitive replication</th>
<th>Cognitive innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual community self-efficacy (VSE)</td>
<td>Low</td>
<td>5.26 (1.27)</td>
<td>4.99 (1.26)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>5.95 (1.05)</td>
<td>5.65 (0.96)</td>
</tr>
<tr>
<td>Heightened enjoyment (HE)</td>
<td>Low</td>
<td>5.36 (1.24)</td>
<td>4.98 (1.22)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>5.83 (1.15)</td>
<td>5.61 (1.04)</td>
</tr>
<tr>
<td>Time resources (TR)</td>
<td>Low</td>
<td>5.10 (1.29)</td>
<td>4.84 (1.21)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>6.19 (0.80)</td>
<td>5.86 (0.85)</td>
</tr>
</tbody>
</table>

For cognitive innovation, the mean value between low cognitive motivators (VSE, mean=4.99; HE, mean=4.98; TR, mean=4.84) and high cognitive motivators (VSE, mean=5.65; HE, mean=5.61; TR, mean=5.86) are different as shown in Table 3. In addition, the differences between low and high cognitive motivators are significant since each $F$-value ($p$-value) is $7.89$ (.006) for virtual community self-efficacy, $7.23$ (.008) for heightened enjoyment, and $22.32$ (.000) for time resources.

**Table 4. Results of the one-way ANOVA analyses: between subject effects**

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>MS</th>
<th>$F$</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive replication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VSE</td>
<td>11.28</td>
<td>11.28</td>
<td>8.29</td>
<td>.005</td>
</tr>
<tr>
<td>HE</td>
<td>4.94</td>
<td>4.94</td>
<td>3.45</td>
<td>.066</td>
</tr>
<tr>
<td>TR</td>
<td>27.75</td>
<td>27.75</td>
<td>23.5</td>
<td>.000</td>
</tr>
<tr>
<td>Cognitive innovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VSE</td>
<td>9.90</td>
<td>9.90</td>
<td>7.89</td>
<td>.006</td>
</tr>
<tr>
<td>HE</td>
<td>9.14</td>
<td>9.14</td>
<td>7.23</td>
<td>.008</td>
</tr>
<tr>
<td>TR</td>
<td>24.45</td>
<td>24.45</td>
<td>22.32</td>
<td>.000</td>
</tr>
</tbody>
</table>

These results support that the knowledge recipients differently set and pursue their cognitive goals depending on the extent to which they recognize the salient factors such as virtual community self-efficacy, heightened enjoyment, and time resources. However, in order to empirically support H2a, H2b, and H2c, which posited that cognitive motivators such as virtual community self-efficacy, heightened enjoyment, and time resources differently influence knowledge recipient’s cognitive goal setting whether cognitive replication or innovation, we need further data collection and additional data analysis. Moreover, in order to empirically support the hypotheses (H1a and H1b) about the relationships between cognitive goal and knowledge acquisition strategy, we need further study as well.

## 6. Discussion

This study addressed the importance of the knowledge recipient aspect by deepening the understanding of knowledge acquisition. For this purpose, we hypothesized that individuals would select appropriate knowledge acquisition strategy – static or dynamic acquisition strategy, depending on their cognitive goals, and that these cognitive goals are motivated by their salient cognitive factors – virtual-community self-efficacy, heightened enjoyment, and time resources. The findings of this study partially provided empirical support for the proposed conceptual framework. In this view, the knowledge recipients’ cognitive factors play a key role in setting their cognitive goals. These results can be important in that knowledge recipients’ acquisition strategy can be influenced by their cognitive goals, as described in the conceptual framework.

### 6.1. Theoretical and practical implications

This study has contributed to both theory and practice. The present study extends the extant knowledge management literatures, emphasizing the knowledge recipients’ demand-side perspective. Prior research has addressed the knowledge supply-side question of how to encourage people to contribute or share their knowledge with other people, whereas this research gives an explication of the knowledge transfer phenomenon from the knowledge recipients’ perspective. To accomplish this goal, this study integrates two cognitive perspectives, social cognitive theory and goal-setting theory, to develop insights into the cognitive framework in which knowledge recipients select their knowledge acquisition strategy. We found that knowledge recipients’ cognitive factors were more likely to motivate their cognitive goals which have an impact on selecting how to acquire the knowledge. Particularly, our framework explains that, for optimally obtaining the knowledge needed for their work, knowledge recipients set goals influenced by their cognitions, and then they select their acquisition strategy to attain their goals.

More specifically, the concept of knowledge acquisition strategy used in this study contributes to previous research on knowledge sourcing [15, 16] and information seeking behavior [23]. That is because the knowledge acquisition strategy highlights the knowledge recipients’ intention for optimally acquiring the knowledge required in their work, as previously...
determined by knowledge recipients’ goals before actual knowledge acquisition occurs.

This study also has several practical implications. First, virtual communities try to facilitate a social network of knowledge providers and knowledge recipients via Internet technologies, supporting various knowledge sources such as wikis, blogs, bulletin boards, search engine, and so forth. Most communities to date have focused on how to stimulate knowledge contribution in the communities. However, our conceptual framework shows the significance of knowledge demand-side, highlighting the knowledge recipients’ cognitive factors such as cognitive motivators and goals. Thus, this research imply that virtual communities should construct effective knowledge structure, repositories, web design, and management systems, complemented by the knowledge demand-side.

Another practical implication is based on our findings that the knowledge recipients’ cognitive factors motivate individuals’ innovative goal-setting. This implies that it is important for senior managers to encourage individuals to facilitate more innovative goals which lead to acquiring enough knowledge and utilizing it well. That is because innovative goals enable individuals to generate new combinations of existing knowledge as combinative capability [26], rather than to just accept only pre-existing knowledge. As a result, such capability is used as strategic, useful resource in a competitive environment.

6.2. Limitations and future research

This study is subject to several important limitations. First, it is possible that there are other factors to affect knowledge recipients’ goal-setting and the selection of knowledge acquisition strategy. For example, the absorptive capacity and task are non-negligible motivating factors at the knowledge demand-side. Therefore, we encourage further research that includes other possible factors influencing the selection framework of knowledge acquisition strategy. Second, since this study reported only preliminary data analysis, additional analysis is needed in order to deeply understand the selection framework of knowledge acquisition strategy. Furthermore, although a virtual community was presented as an IS-related context, the proposed framework does not contain IT artifacts in the concrete. Therefore, we suggest that future research pays attention to IT artifacts as differentiated from other contexts.

7. Conclusion

Virtual communities provide individuals with unprecedented sources for knowledge acquisition, even though there are not previous social ties or direct interactions with other people in the communities. In this context, the current study presents a conceptual framework that investigates how the knowledge recipients select their acquisition strategy for effectively acquiring the knowledge. Analyzing the preliminary data, our findings suggest that the knowledge recipients’ cognitive goals can be differently determined by their cognitive motivators such as virtual community self-efficacy, heightened enjoyment, and time resources. However, in order to exactly examine the hypotheses presented in this study, further study is still needed.

8. References