

A Study on Motivations of Graduate Students' Knowledge Hiding Based on *Wuli-Shili-Renli* System Approach*

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Abstract - Knowledge hiding is a forefront topic in knowledge management field of management science. Knowledge hiding is ubiquitous among graduate students, which impedes knowledge sharing and transfer, influences knowledge learning and scientific researches. Systematical study on the complex motivations of graduate students' knowledge hiding contributes to find out how to solve or diminish knowledge hiding in educational context. Combining with questionnaire survey, statistical analysis, and indepth interviews, this paper finds that graduate students' knowledge hiding motivations are multidimensional, and consist of three aspects: *Wuli*-characteristics of knowledge, *Shili*-organizational regulation, environment, and *Renli*-knowledge seeker, hider, and interpersonal dynamics. Implications for practice are discussed.

Index Terms - Graduate students, knowledge hiding, motivations, *Wuli-Shili-Renli* system approach

1. Introduction

Knowledge hiding refers to an intentional attempt by an individual to conceal or withhold knowledge that has been requested by another person (Connelly et al. 2012). It is a forefront topic in knowledge management field of management science. Research has demonstrated that knowledge hiding, or withholding is ubiquitous among students (Wang et al. in press). Knowledge hiding is an obstacle of knowledge sharing and transfer among students, which influences students' knowledge learning and scientific researches. As a complex multidimensional concept, Knowledge hiding involves the attributes of knowledge, organizational regulations, knowledge hider and seeker. However, knowledge hiding and sharing are not the opposites of each other; they are two conceptually distinct constructs (Connelly et al. 2012). The motivations behind them are different (Webster et al. 2008). Previous researches pay much attention to motivations of knowledge sharing; and little attentions are paid to why people hiding knowledge, let alone what drives graduate students' knowledge hiding in educational context. Webster et al. (2008) have ever analysed reasons why enterprise workers hide knowledge. They point out that power and political gain is the most important reason of their knowledge hiding. However, graduate students' learning environment is very different from enterprise workers' working environment. The competition between enterprise workers is much fiercer than that of graduate students, such as power, position, and payment. There are clear organizational structure and incentive mechanism in enterprise; however, research collaborations

between graduate students are formed spontaneously. Knowledge hiding is highly situational specified (Connelly et al. 2012). Different surroundings determine that motivations behind knowledge hiding between graduate students and enterprise workers have some differences, as well as similarities.

Based on previous researches on knowledge hiding and *Wuli-Shili-Renli* system approach, this paper explores the motivations of graduate students' knowledge hiding through the combination with questionnaire survey, statistical analysis, and indepth interviews. This research should help to find out how to solve or diminish knowledge hiding in educational context, which in turn will facilitate knowledge sharing, promote graduate students' knowledge learning and scientific research performance.

2. Research Foundations

A Knowledge Hiding

Knowledge hiding is a newly developed construct, refers to employee's intentional attempt to conceal or withhold knowledge that has been requested (Connelly et al. 2012). Connelly et al. (2012) identified three ways people can engage in knowledge hiding, playing dumb, rational hiding, and evasive hiding. Playing dumb is one method of knowledge hiding. People who use this method pretend that they are ignorant of the knowledge that others inquired. People who employ rational hiding tell the knowledge seeker that he or she cannot tell the knowledge because of its confidentiality or team norms. Rational hiding may contain deception or not. Evasive hiding includes providing some other information instead of the knowledge seeker really wants, or giving a misleading promise to tell in the future. Wang et al. (in press) empirically testified how students' big five personality traits influence knowledge withholding intention. By using empirical and experimental methods, Cerne (2014) confirmed that when one hid knowledge, one triggered a reciprocal distrust loop in which the colleague would be unwilling to share with him or her in the future. Finally, knowledge hiding, the seemingly interests-protecting behavior, will have a negative effect on knowledge hider's creativity. Knowledge hiding is a recently discovered construct, lots of research topics are to be studied, including antecedents, outcome variables, and motivations.

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B Wuli-Shili-Renli System Approach

Wuli-Shili-Renli system approach was first proposed by Chinese scholars Gu & Zhu (1995). *Wuli* emphasizes objective existence; *Shili* underlines the ways of doing; *Renli* refers to human relations. Based on oriental philosophical thinking, they argue that one must take into account of *Wuli*, *Shili*, and *Renli* systematically to deal with issues, in other words, “knowing *Wuli*, sensing *Shili*, caring *Renli*” (Gu and Zhu, 2000). Applying *Wuli-Shili-Renli* system approach to knowledge management field, *Wuli* emphasizes the characteristics of knowledge, *Shili* underlines organizational context, and *Renli* contains the participants in knowledge activity. Lin et al. (2009) introduced the procedures of how to apply *Wuli-Shili-Renli* system approach to knowledge management field. Liu et al. (2009) summarized the influencing factors of intra-organizational knowledge transfer by application of *Wuli-Shili-Renli* system approach.

3. Research Design

The research methods in this paper contain questionnaire survey, statistical analysis, and indepth interviews. First, the questionnaires are issued to graduate students in two Chinese key universities. By doing this, we want to verify the occurrence of knowledge hiding among graduate students; explain how and why they hide knowledge. Questionnaires are issued and recycled via E-mail. The questionnaire contains two parts. In the first part, respondents’ personal information are asked, such as gender (male or female), education background (master degree candidates or PHD candidates), and specialty (natural science or humanities and social science). In second part, we first explain what we mean by knowledge hiding, playing dumb, rational hiding, and evasive hiding. Then, respondents are asked to answer if they have encountered the following scenario: “Some other graduate students seek knowledge from me. Although I know about it, I still hide my knowledge”. Answers “Yes, I have”; “No, I haven’t”; “I don’t know” are placed to be chosen. If respondents choose “No, I haven’t”, or “I don’t know”, part two is closed; if respondents choose “Yes, I have”. They continue to be asked how they hide their knowledge, “playing dumb”, “rational hiding”, or “evasive hiding”. Last, why do respondents hide knowledge are asked. We have listed several possible reasons for respondents to choose, for example “The knowledge is confidential, I cannot tell him/her”, “I’m afraid I mislead him/or if I explain wrong”. Respondents can choose multiple reasons. Certainly, respondents can report other reasons if no appropriate answers are to be chosen.

Furthermore, in order to better understand graduate students’ knowledge hiding motivations, we have indepth interviews with several students who once had hide knowledge and did not response to our questionnaire. We try to help interviewees to recall the knowledge hiding situations, for example, identity of knowledge seeker, characteristics and contents of knowledge, their relationship, etc.

4. Research Results and Discussions

A Research Results

A total number of 150 questionnaires were sent to graduate students by E-mail, and 123 questionnaires were collected back. After getting rid of 6 unfinished questionnaires, we finally got 117 valid questionnaires. In the final samples, 75 graduate students admitted they once hid knowledge, 33 participants did not, and 9 unknown. The ratio of knowledge hiding among graduate students is 64%. Table 1 has shown the descriptive statistics of knowledge hidiers. Table2 has shown statistical results of graduate students’ knowledge hiding motivations.

Table 1. Descriptive statistics of knowledge hidiers

| Item | Contents | Number | Ratio(%) |
|---------------------------|-------------------------------|--------|----------|
| Gender | Male | 43 | 57.3 |
| | Female | 32 | 42.7 |
| Education background | Master degree candidate | 51 | 68 |
| | PHD candidate | 24 | 32 |
| Specialty | Natural science | 27 | 36 |
| | Humanities and social science | 48 | 64 |
| Knowledge hiding strategy | Playing dumb | 13 | 17 |
| | Rational hiding | 23 | 31 |
| | Evasive hiding | 39 | 52 |

Table 2. Statistical results of graduate students’ knowledge hiding motivations

| Motivation | Frequency |
|---|-----------|
| The knowledge is too complex to explain. (Complexity of knowledge) | 26 |
| The knowledge is confidential, and I cannot tell. (Confidential norm, or team norm) | 25 |
| I lack confidence about my knowledge, and I’m afraid I tell some incorrect information, which will mislead them. (Low knowledge contribution self-efficacy) | 23 |
| Our relationship is not so good, and I will not tell him/her. (Particpants’ relationship) | 21 |
| I think disclosing the knowledge will have negative effects on someone others. (Protecting third party’s interests) | 19 |
| We are competitors, for example, scholarship, and telling him the knowledge will cause pressure for me. (Competitive pressure) | 16 |
| He/she always likes to ask for knowledge, and doesn’t even think about it, I don’t like to help someone like this. (Knowledge slacker) | 15 |
| There are no other reasons. I don’t tell him/her, because it is my knowledge. (Knowledge-based psychological ownership) | 13 |
| This is my unique knowledge, and I won’t tell others. (Knowledge-based psychological superiority) | 11 |
| Other reasons. (Knowledge is hard to express; afraid my idea is stolen; have no time; high competitive climate; low knowledge absorptive capability of the seeker etc.) | 8 |
| Total | 177 |

From table 1, we can see that 39 times of evasive hiding reach to 52%, much higher than 17% of playing dumb, and 31% of rational hiding. Graduate students who engage in evasive hiding tell others some unimportant information, and

conceal the core knowledge. Or they give a misleading promise to explain in the future, but not really intend to. To interpret this phenomenon, we argue that knowledge hiding has its risk. Once knowledge seeker perceived knowledge owner's hiding behaviour, it may harm hider's prestige, position, and cooperation in the organization. To tell something not everything can reduce the risk, and maintain the relationship between seeker and hider to some extent.

From table 2, we can see that complexity of knowledge is the most important reason why graduate students hide knowledge, followed by confidential norm, or team norms. It is interesting to recognize that low knowledge contribution self-efficacy is another important knowledge hiding motivation. Strikingly, unlike the employees in enterprises, the competitive pressure among graduate students is not the top one motivation of knowledge hiding.

With the permission of interviewees (2 postgraduate students and 3 PHD candidates) who once have hid knowledge, and did not take part in our questionnaire, we had indepth interviews with them to dissect their knowledge hiding motivations. The interviewees were asked to tell the detailed knowledge hiding process. The interview time is over one hour to make sure the effectiveness.

B Discussions

According to the questionnaire results and interview records, following the *Wuli-Shili-Renli* system approach, we contend that graduate students' knowledge hiding motivations are multidimensional, and should consider *Wuli*-characteristics of knowledge, *Shili*-organizational regulation and environment, as well as *Renli*-knowledge hider and seeker. At last, we construct the graduate students' knowledge hiding motivations analysis framework based on *Wuli-Shili-Renli* system approach, as shown in Fig. 1.

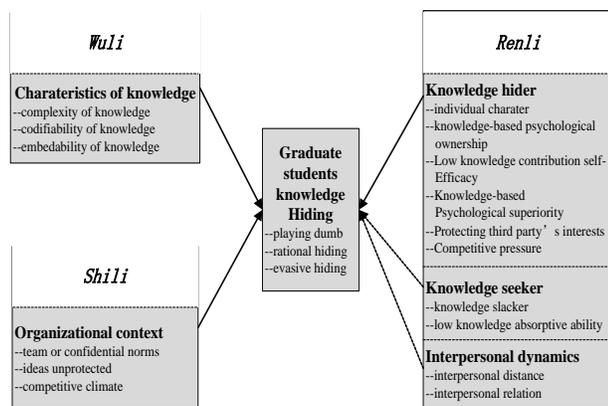


Fig. 1. The analysis framework of graduate students' knowledge hiding motivations

1) *Wuli-Characteristics of Knowledge*: The characteristics of knowledge are reasons why graduate students hide knowledge. These include the complexity of knowledge, codifiability of knowledge, and embeddability of knowledge. Complexity of knowledge means the difficulty and quantity of knowledge, the more difficult, the more complex. The

knowledge owner will spend much more time and energy to transfer the complex knowledge instead of doing his own business. This will impede knowledge sharing. One of our interviewee said: "what he asked me is too complex, and I can't explain it in a short time. So, I answered evasively. In fact, what I said is meaningless." Codifiability of knowledge refers to whether knowledge can be expressed clearly by words or images. Compared with easy codified explicit knowledge, the tacit knowledge, such as experience, skills, are more likely to be hidden. The embeddability of knowledge refers to some knowledge are embedded into people, machine, or organization design. Once embedded knowledge departs from original objects, its effect will diminish. High embedded knowledge is more likely to be hidden.

2) *Shili-Organizational Context*: Individual's behaviours are largely influenced by surroundings. Motivations of graduate students' knowledge hiding comes from organizational level, including team norms, ideas unprotected, and organizational competitive climate. To obey team norms, or confidential norms, graduate students choose to conceal knowledge. Graduate students need to publish quality papers, especially PHD candidates. Hence, before finishing paper, they try not to dispose their ideas to distrust ones for fear of their ideas stolen. One PHD candidate said: "I try not to reveal my ideas, especially creative ideas, to someone I'm not familiar with. If someone steals my creative ideas, and publishes paper before me, my loss will be great. In fact, knowledge hiding is for our own interest." Organizational competitive climate is another consideration. Under a strong competitive climate, performing better than others will be deemed to be successful. Students consider knowledge hiding a beneficial option because such a behaviour will not help them in improving their capabilities and quality of knowledge (Swift et al. 2010).

3) *Renli-knowledge Hider and Seeker*: Knowledge hiding involves knowledge hider and seeker. Behaviour, psychology, and relationship of both sides would lead to knowledge hiding. Knowledge owner's individual character, knowledge-based psychological ownership, low knowledge contribution self-efficacy, knowledge-based psychological superiority, competitive pressure, and protecting third party's interests are the motivations of knowledge hiding.

Researchers have already confirmed that individual character is an important antecedent of knowledge hiding (Webster 2008). Selfish person concerns for own interests, and they are more likely to hide knowledge. On the contrary, unselfish person would be willing to help, share knowledge. Knowledge-based psychological ownership is a psychological state that one perceives knowledge to be "mine". According to Pierce et al. (2001) psychological ownership comes from control and long-time investment to the objects. Graduate students spend lots of time and energy in acquiring knowledge and doing creative researches. It is very easy for them to form knowledge-based psychology, which will impede knowledge sharing. One of our interviewee said: "That is my knowledge,

and I have spent one month to learn that method. How can I easily tell him?" Low knowledge contribution self-efficacy graduate students doubt about their knowledge, which will lead them to hide knowledge. One of our interviewee said: "Once, one classmate asked me to elaborate how to use some software to their team. Although I did use it before, I lack confidence. I'm afraid I will make mistake in front of them. That is an embarrassing thing. So, I said I have no time."

Knowledge-based psychological superiority is one feels one can have a competitive advantage for having some unique knowledge. Graduate students, who have this knowledge-based psychological superiority, are likely to hide unique knowledge. Competitive pressure is another consideration. In order to get scholarship, graduate students may hide critical knowledge. Some graduate students hide knowledge because they do not want to harm others' feelings.

Knowledge hiding is an interactive process between knowledge seeker and hider, in which the identity of knowledge seeker matters. Specifically, knowledge owner is more likely to hide knowledge from "knowledge slacker" who always wants to get knowledge from others, and do not want to learn himself. Graduate students acquire profession knowledge through long-time learning and accumulation. They disagree with knowledge slacker. The knowledge absorptive capability of knowledge seeker is another obstacle for knowledge owner to share. Knowledge owner needs more time and energy to explain knowledge to someone with low knowledge absorptive capability.

The interpersonal dynamic between knowledge seeker and owner is another motivation for knowledge owner to hide knowledge. These include interpersonal distance and interpersonal relation. Interpersonal distance refers to some potential difference, such as explicit distance of geography and implicit distance of knowledge background, affectual knowledge. Affectual knowledge emerges as affection and attitude, and is a comprehensive presentation of values (Yang 2003). Knowledge owner is likely to hide knowledge because of far interpersonal distance. Interpersonal relation refers to credibility and stability of their relationship. Distrust and unstable relationship will make knowledge owner have defensive psychology, which will lead to knowledge hiding.

5. Conclusions and Implications

A Conclusions

Previous studies mainly focus on why people share knowledge, few studies focus on why people hide knowledge, especially in educational context. This research has made the first step to explore motivations of graduate students' knowledge hiding based on *Wuli-Shili-Renli* system approach. Through questionnaire survey, statistical analysis, and interviews, this paper finds that graduate students' knowledge hiding motivations are multidimensional, and consist of three aspects: *Wuli*-characteristics of knowledge, *Shili*-organizational regulation, environment, and *Renli*-knowledge seeker and hider. What we found significantly contributes to solve or diminish knowledge hiding in educational context. This

research has also expanded the application range of *Wuli-Shili-Renli* system approach into knowledge management field, specifically knowledge hiding. The future research could explore how these three aspects "*Wuli, Shili, and Renli*" influence knowledge hiding, through what mechanism.

B Implications for Practice

Understanding why graduate students hide knowledge can help us to solve knowledge hiding in educational context. Just as the causal factors of knowledge hiding involving three aspects of *Wuli, Shili, and Renli*, we can take measures from *Wuli, Shili, and Renli* aspects to diminish knowledge hiding. First, *Wuli* aspect, the complexity of knowledge may lead to knowledge hiding. So, it would be wise for knowledge seeker to break down the complex question to some simple ones. Second, *Shili* aspect, the organization is a non-ignorable factor of graduate students' knowledge hiding. The college could encourage intergroup research collaboration by giving extra credits in order to build a good knowledge sharing climate. The college can also organize formal or informal activities for graduate students to participate. Through activities, they may develop friendship, establish a trust relationship, and reduce their psychological distance. Third, *Renli* aspect, the knowledge seekers should always keep in minds that do not give others the impression of a knowledge slacker and what they can reciprocate to knowledge contributors.

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