

3 EXPLORING THE INFLUENCE OF SOCIO-EMOTIONAL FACTORS ON KNOWLEDGE MANAGEMENT PRACTICES: A Case Study

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Abstract

The objective of this empirical study is to explore the influence of socio-emotional factors, with a focus on shyness, on knowledge management practices in a Thai organization. The research adopts an interpretive stance and employs a case study approach involving multiple data collection methods. The paper is based on one author's personal expertise and close involvement, for over a decade, in the selected case study organization for over a decade. Using a grounded theory research approach, the study indicates that while shyness is overall perceived as a positive Thai cultural feature, it critically influences (1) the social network ties and relationship between employees within and across teams, (2) the resulting level of trust, including with management and senior staff, and (3) the ability to share and create knowledge effectively in the organizational socio-cultural environment. The study is limited to a Thai organization, but can be generalized to other organizations that exhibit similar characteristics. This empirical study provides a foundation to further the research and the validation of the summary of themes that emerged from this empirical study.

Keywords

Knowledge management, shyness, interpretive case study, grounded theory, Thailand

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1 INTRODUCTION

Knowledge management (KM) has become an important ingredient to sustain competitiveness in developing countries (Wagner et al. 2003). Very few articles, unfortunately, have reported KM implementations and strategies in developing countries. The ones that do include China (Burrows et al. 2005), Malaysia (Wei et al. 2006), India (Chatzkel 2004), and sub-Saharan Africa (Okunoye 2002). These studies have identified several distinctive features, including varying levels of expertise to adapt and adopt technologies, distinctive socio-cultural features, and lack of availability of human and financial resources to nurture KM practices (Okunoye 2002). A call has been made for further research to explore KM in different organizational and cultural (regional, national, and international) contexts in developing economies.

Although technology plays an important role in the successful implementation of KM initiatives (Koenig 2002), a number of distinctive socio-emotional features such as shyness have an equally important role and influence (Chaidaroon 2004), in particular in the cultural context of developing countries. Shyness in the study is defined as the presence of inhibition and discomfort (such as tension, worry, awkward behavior, and gaze aversion) in social situations (meeting strangers, for instance) (Cheek and Buss 1981).

Thailand is an example of a developing country where a number of distinctive cultural features have been identified, including shyness (Chaidaroon 2004). Therefore, it represents an interesting case to conduct a study on the influence of shyness on KM practices within an organizational context. While KM practices in Thailand have been reported on later than in other countries in the region, several private and public organizations have already initiated ambitious KM programs and initiatives (Vorakulpipat and Rezgui 2006). There is an interesting trend in the region to promote a competitive economy through technology and knowledge infused practices at a societal level. For example, the Ninth Malaysian Plan (2006-2010) has as one of its objectives to raise the capacity for knowledge and innovation, whereas the Ministry of Research and Technology (MRT) of Indonesia has identified information and communications technologies as a priority field to add value to its industries.

The aim of the paper is to explore the influence of shyness on KM practices in a selected Thai organization. As such, the core research question is, how does *shyness* (as a socio-emotional characteristic) influence, and how is it influenced by, knowledge management practices in an organizational context? The paper makes two main contributions. First, drawing on the rich data of a Thai IT research service organization, it generates a grounded understanding of the influence of shyness on KM. Second, the paper proposes a summary of themes developed from the grounded analysis of gathered primary data evidence from the case study, using social capital and related literature. This will allow researchers and practitioners to conceptualize and research further the influence of shyness on KM. The paper is organized into seven sections. Following this introduction, the paper presents related literature, and then the research methodology employed in this study, which involves a case study approach. The research results are then given, followed by the discussion. Finally, recommendations for further research are presented and conclusions are drawn.

2 RELATED RESEARCH

Previous research has highlighted the idea that technology adaptations in developed countries occur continuously in response to misalignments, gradually leading to a successful alignment (Leonard-Barton 1988). This is in contrast to developing countries, which tend to rapidly adopt technology created by developed countries, often in an *ad hoc* way (Archibugi and Pietrobelli 2003). In 2002, the National Science Foundation reported that more than 84 percent of the world's scientific and technological production is concentrated in developed countries. Developing countries have only marginally increased their participation, which emphasizes the scientific and technological gap that exists with the developed world. Also, in several of the information technology installations that were created and adapted for organizations in developing countries, local (regional and national) factors were not taken into account. This has resulted in outcomes that do not fit the needs of the direct beneficiaries in the developing nations (Cyamukungu 1996).

While the above is applicable to KM, the crucial issue might not relate only to technology but also include other factors, such as cultural-based resistance: "technology, designed and produced in developed countries, is likely culturally-biased in favor of industrialized socio-cultural systems, technology transferred to developing countries meets cultural resistance" (Straub et al. 2001). Moreover, it is reported that there is a significant gap in the understanding and maturity of KM between Asian developing companies and those in developed countries. This can be explained by the fact that American and European companies have had KM strategies and initiatives in place for over a decade, while Asian developing companies are still attempting to understand and apply the concept of KM (Yao et al. 2007).

Chaidaroon (2004) indicates that shyness is a national characteristic that distinguishes Thai culture and communication styles from Western (developed countries) counterparts. Thai people tend to place high value and responsibility in interactions through the process of receiving messages—in fact, Thai silence is a positive sign of respect (Knutson 2003). Chaidaroon (2003) argues that shyness or not speaking up can sometimes be strategically performed by Thai people to gain recognition from others. In addition, Thai culture is more hierarchical than in Western societies (McCampbell et al. 1999), which can engender a large gap between people due to personal barriers such as shyness. Based on this secondary evidence drawn from the literature, conducting an exploratory study in a national context (Thailand) is beneficial to further research and understanding of the role and impact of shyness on KM in a different socio-cultural context. This justifies the use of shyness as a national cultural variable as opposed to an individual characteristic in the context of this exploratory study, as argued by Choo (2003).

To be more general, research on human and organizational aspects related to KM has focused on understanding the socialization and organizational dimension of KM (Becerra-Fernandez and Sabherwal 2001). The concept of social capital has recently been adopted within the discipline (Huysman and Wulf 2006; Lesser 2000; Nahapiet and Ghoshal 1998), emphasizing the roles of trust, motivation, and social cohesion within the organization. Clearly, the higher the level of social capital, the more communities are stimulated to connect and share knowledge (Huysman and Wulf 2006).

3 RESEARCH APPROACH

The research aims at investigating the role of socio-emotional factors in the context of knowledge management in a Thai organization. The authors thus needed to gain an in-depth understanding of KM practices in the selected case study. Empirical studies that collect such data can be broadly classified as *interpretive case studies* (Walsham 1995). This type of approach has been selected since it aims to understand human thoughts and action in social and organizational contexts and to produce deep insights into information systems phenomena (Klein and Myers 1999). However, there are significant differences of methodology and theory under broad, interpretive case studies. The remainder of this section is devoted to describing the specific approach adopted in the research and the reasons for the choices.

The research methodology is based on grounded theory (Glaser and Strauss 1967). This is motivated by the facts that (1) grounded theory “is an inductive, theory discovery methodology that allows the researcher to develop a theoretical account of the general features of a topic while simultaneously grounding the account in empirical observations or data” (Martin and Turner 1986, p. 141), (2) grounded theory facilitates “the generation of theories of process, sequence and change pertaining to organizations, positions and social interaction” (Glaser and Strauss 1967, p. 114), and (3) there are few guidelines for analyzing qualitative data (Miles and Huberman 1994) and it has been argued that grounded theory approaches are particularly well-suited to dealing with the type of qualitative data gathered from interpretive field studies (Martin and Turner 1986; Oates 2005).

Site selection was guided by a technique of theoretical sampling (Strauss and Corbin 1998, p. 201): “data gathering driven by concepts derived from the evolving theory and based on the concept of making comparisons.” BETA (the name of the organization has been disguised), a service organization in Thailand that conducts research in information technology was thus selected as a case study for the investigation as the authors believe that BETA exhibits a KM-rich environment to address the research question. Also, site selection depends on easy access for the case study. It is worth noting that one of the authors was not only employed by BETA, but had a close involvement and critical role, for over a decade, in BETA’s IS and KM implementation initiatives. Indeed, the researcher has, over the years, acquired substantial personal knowledge of the organization’s culture and work environment. Therefore, the organization welcomed the researcher to conduct this in-depth case study, and provided adequate support throughout the research. Also, because of personal involvement and role in the organization, the researcher chose to analyze the collected data in an interpretive way based on his own experiences.

BETA was founded over 20 years ago. It employs more than 600 people, a majority of whom are highly educated and work in research and development production departments. BETA initially acted as a research supplier to Thai industries for over a decade. Following an increasing demand for R&D, BETA has transformed itself from a supply-driven to a demand-driven organization. This demand-focused strategy has helped BETA address and meet the needs of Thai organizations more effectively. In the late 1990s, management initiated a large KM program. In the first stage, a collaborative system was deployed and adopted to help staff collaborate more effectively while

promoting knowledge-friendly practices. Also, physical and virtual social spaces have been provided for sharing knowledge. Later, management deployed a knowledge repository system to encourage staff to codify tacit knowledge and experience into a reusable form. A number of incentives have been introduced, including monetary rewards and recognition to motivate people to share and create knowledge. While KM initiatives have been underpinned by IT, it was found that the organization was not successful in achieving the objectives of those initiatives and the overall results were less than desired. It is believed that a socio-cultural feature, shyness, has critically influenced the achievement of BETA's KM initiatives. This justifies the need for research on the influence of shyness on KM in the context of BETA.

Data were collected through a variety of methods: semi-structured interviews, observation, and documentation. An interview guide was developed to collect critical qualitative data from all four "core" production (R&D) departments. The interview questions addressed a number of areas, including organization nature, teamwork and organization environment, information technology adoption, knowledge sharing and creation, and organizational change.

Before interviewing, the selected interviewees were encouraged to explain their knowledge background including their level of previous education, work experience, KM experience, etc. Twelve top management and key persons from the production departments were subjectively selected as interviewees as they were perceived to have permission to provide critical (or sensitive) data and constructive comments. Tape recording was used for nine interviewees, while the others requested not to be recorded during the interview.

Besides collecting sensitive data from management staff, additional data from employees were captured in the mode of direct observation (Yin 2003) throughout the entire study. The researcher was provided an opportunity to observe employees' working styles, environments, and reactions. Moreover, as the researcher had worked in BETA for over a decade, he had a chance to discuss informally some underlying issues among his colleagues and other employees. Also, documentation about the organization was examined in-depth.

The data triangulation technique was chosen to analyze data collected from multiple sources (Yin 2003), since "it is particularly beneficial in theory generation as it provides multiple perspectives on an issue, supplies more information on emerging concepts, allows for cross-checking, and yields stronger substantiation of constructs" (Orlikowski 1993, p. 312). The research involved multiple realities that were interpreted by different viewpoints, therefore, a broad variety of these have been particularly made in the field study. The BETA case was supposed to illustrate differing viewpoints among employees, managers, and the researcher. As an interpretive stance was adopted, the findings of this study would comprise the researcher's own interpretations and those of others (respondents: employees and managers) who were involved in the study. However, as the researcher controlled the study, the work is ultimately presented from the researcher's perspective, a typical criticism of interpretive studies. Moreover, since the interpretive study may require sensitivity to possible biases and systematic distortions in the narratives collected from the participants (Klein and Myers 1999), the researcher might not take the informants' views at face value.

Finally, the process of data collection, coding, and analysis is iterative (Glaser and Strauss 1967). This iterative process only finishes when it becomes clear that further data

no longer triggers new modifications to the data categories and emerging theory, that is, the research has reached *theoretical saturation* (Strauss and Corbin 1998). Eisenhardt (1989) notes that overlapping data analysis with data collection can allow researchers to take advantage of flexible data collection and make adjustments freely during the data collection process. In the research, this process of data collection, coding, and analysis was taken to validate that the researcher had captured the perspectives of the informants on the topic. Pattern coding techniques of qualitative analysis (Miles and Huberman 1994) were used to summarize segments of the data from interview transcripts and observation notes, and then to determine categories or pattern codes.

4 RESEARCH RESULTS

A number of categories emerged from the data analysis using pattern coding techniques of qualitative analysis (Miles and Huberman 1994). These are information and communications technology (ICT), team working, structure and culture, training, sharing knowledge, and motivation for knowledge management. The pattern coding here is processed iteratively. These categories are discussed below.

4.1 Information and Communications Technology (ICT)

Analysis of the interview transcripts suggest that ICTs help address shyness barriers as employees feel more at ease when communicating via electronic means as opposed to face-to-face in social or work contexts. Moreover, e-mail plays an important role and seems to be preferred to telephone and face-to-face interactions, in particular when these involve interactions between employees and their senior staff. Also, intranets and extranets are highly valued as they promote flexible work, including access to document repositories and knowledge, while minimizing physical social interactions between employees. However, it is observed that this can have the adverse effect of hindering social cohesion between employees, which is essential to develop trust and sustained relationships.

4.2 Team Working

Gathered data suggest that tasks and R&D in BETA are achieved through teamwork, and this emerges as the preferred mode of working across the organization. Hence, strong social relationships among employees are critical to promote effective working. It has been reported that a bureaucratic (hierarchical) organizational structure is perceived to inhibit positive social relationships among employees, in particular when teams involve members at various levels of the organizational structure. The interviewees have reported that a number of socio-emotional factors, including shyness (not speaking up) and seniority, inhibit teamwork effectiveness as employees usually believe that they should act in a receiver role in their team and should not elaborate and argue their own ideas against the ones of older or senior staff. Some respondents suggest that a more participative culture should underpin team working to gradually overcome the overall

bureaucratic environment that characterizes work at BETA. Promoting the appropriate teamwork environment and atmosphere helps staff reduce their shyness and fears by encouraging them to contribute effectively through constructive comments to managers or team leaders. One interviewee confirms this and provides a suggestion to reduce shyness:

The problem is that my employees are very shy and thus often reluctant to present their ideas. This is a Thai behavior. But if I force them to do so, they can. In our meetings, I always allow my employees to ask and comment about everything. I hope they, especially young employees, will be at ease and brave enough to expose and present their innovative suggestions and ideas to me.

Moreover, another interviewee states that shyness may make employees miss an opportunity to sustain ties with others:

When we've got some guests wanting to visit our offices, our colleagues tend to be shy and nervous to meet them. The problem is that they try to avoid discussing with them and present our work to them. I recognize that this is a Thai behavior, but it would be better if they could get to socialize and know others. Keeping up ties with significant people who visit us is always good.

4.3 Structure and Culture

It is observed that the dominant bureaucratic (hierarchical) organizational structure within BETA may inhibit effective communication and employee participation and contribution, also leading to personal barriers. This is reflected in existing working procedures (e.g., reporting layers) and may generate conflicting corporate cultures. Although the hierarchical structure and culture in place is perceived to help increase trust and respect for senior staff, it inhibits self development as this amplifies employees shyness instead of helping it. One respondent confirmed this:

The ideas are always finalized by only senior members. Young members usually keep quiet, as they tend to be concerned about, and fear, the negative impact of criticizing ideas expressed by older members.

Nevertheless, the respondents perceive that this bureaucratic structure is widely accepted in Thai organizations, and it is a non-changeable organizational feature. Despite this, they feel that promoting participation within a hierarchical organization can improve a sense of collectiveness and help remove shyness barriers.

4.4 Training

The interviewees perceive that fostering a learning organization culture promotes employee development. A variety of training methods such as formal training courses, on-the-job training, and learning from documents can encourage staff to develop their self-learning skills. Informal internal training (such as an informal forum during tea

break) seems to be increasingly promoted as it allows people to exchange knowledge within a casual environment while addressing personal communication barriers due to shyness. While training is supposed to encourage lively interactions among trainers and trainees, and create strong relationships among employees during and after the training, in practice the impact tends to be limited, as trainees tend to be too shy, as reported by one interviewee:

Training would be ineffective if most trainees do not interact effectively with trainers such as not asking any questions and keeping quiet because of their reluctance and nervousness to speak in public.

4.5 Sharing Knowledge

The respondents perceive that sharing knowledge by informal or traditional face-to-face interaction is preferred to virtual means (supported by technology) despite acknowledged shyness barriers. It has been reported that collective knowledge sharing in informal (face-to-face) contexts, such as discussion forums and coffee breaks, is highly valued as this method can break shyness barriers between employees and management by (1) establishing stronger relationships to develop trust among them, and (2) practicing and improving their presentation skills to gain confidence. One interviewee clearly explains that gaining confidence to remove shyness should be addressed before sharing knowledge in a team.

Firstly our objective is not knowledge sharing. We just want to practice their [employees'] presentation skills to reduce shyness and gain self-confidence. I'm quite sure they have good knowledge of their work, but this has always been difficult to share with others. They need to practice how to speak confidently in public and make the audiences understand them.

The same interviewee adds a solution to improve presentation skills.

Another objective is to archive knowledge. I use a technique whereby I record their knowledge experience so that it becomes reusable. Then I invite my colleagues to watch the recording and be self-critical by identifying their weaknesses and thus improve further their presentation skills.

On the other hand, virtual contexts also have been developed to break shyness barriers, as participants do not need to identify themselves and thus express their facial emotions. While this method seems promising, some interviewees believe that it is too informal and facial emotions cannot be expressed through this channel, as it is very important in formal interactions to avoid misunderstanding during communication.

4.6 Motivation for Knowledge Management

The respondents perceive that rewards are not always motivating them to share knowledge, as they do not feel that rewards impact their work performance. However,

if reward systems are used in the organization, these should be reliable, reasonable, and fair enough to motivate people to share knowledge. It is observed that employees are still reluctant to share knowledge because they do not believe that the organization has sufficient financial resources to provide rewards. There is an overall feeling that the reward system/norm is unfair and does not factor in employees potential socio-emotional barriers that prevent them from adopting effective knowledge management practices. In addition, one interviewee has reported the following:

Perceived inappropriate criteria to get rewards lead to unfairness among staffs and cause them to feel embarrassed to not qualify for rewards. The criteria judge the employee performance based on the number of published research papers, and the same criteria are used for all employees. Therefore, these criteria encourage employees from R&D departments only, whereas it is very difficult for those from other non-research areas such as administrative departments to be rewarded. These are reported as unfair.

Nevertheless, it is observed that although employees feel that this reward system is unfair, they are still shy enough to voice their concerns. They prefer to say nothing so as not to upset their hierarchy. This is because senior people are perceived to be the decision makers in Thai organizations, and it is very common that Thai junior employees are too shy to challenge their hierarchy. It is worth noting that management in BETA has initiated an anonymous informal online discussion to allow employees to comment or criticize anything they feel unsatisfied with in the organization. However, it has been reported that anonymity considerations are still an issue in this type of interaction. Senior staff should preserve the anonymity of participants in the discussion, and thus establish trust in relation to the use of such techniques.

5 DISCUSSION

As grounded theory facilitates “the generation of theories of process, sequence and change pertaining to organizations, positions and social interaction” (Glaser and Strauss 1967, p. 114), it is essential to base the discussion on existing relevant theories. This discussion will be based on social capital theory. Nahapiet and Ghoshal (1998) suggest that social capital should be considered in terms of three dimensions. First, the structural dimension refers to the opportunity to connect with each other. Second, the relational dimension refers to the character of the connection between individuals and motivation to share knowledge. This is best characterized through trust, norms, obligation, and respect. Third, the cognitive dimension refers to the ability to cognitively connect with each other in order to understand what the other is referring to when communicating and sharing knowledge. The discussion of shyness elaborates on how shyness is (1) affecting network ties and relationships, (2) affecting trust between people, and (3) affecting the ability to share and create knowledge. Thus, this section will involve the three dimensions of structural opportunity, relational motivation, and cognitive ability.

5.1 Structural Dimension

The concept of the structural dimension of social capital is used to refer to the overall pattern of connections between actors affected by shyness. The results confirm that shyness at work is perceived to inhibit the creation of strong social relationships among employees. It is observed that employees feel nervous when working with people they have not worked with previously. They usually believe that they should act in a receiver role in their team and shyness can sometimes be strategically performed to gain recognition from others, as argued in related literature (Chaidaroon 2004).

To reduce shyness in a team, the results suggest that promoting adequate environments (informal, casual, and in smaller groups) and providing opportunities to staff to practice their presentation skills can yield promising results, as confirmed by findings related to the concept of open-mindedness (Al-Saggaf 2004). Employees are offered informal forums during tea break, leading to the opportunity of speaking with each other, especially visitors, without the potential of reducing shyness. It is suggested that a more participatory culture should be promoted in BETA.

Beyond pure communication, a virtual space that allows the creation and development of online collaboration may foster the structural dimension of social capital. The results suggest the adoption of virtual spaces (such as online discussion forums) to help boost confidence and reduce shyness barriers, leading to the initiation of effective online communities. Also, this virtual space can help employees direct themselves to strengthen existing social ties or build up new ones (Huysman and Wulf 2006). A substantial amount of research suggests that the use of the virtual space has the potential to break down some barriers to participation by removing certain psychological elements including shyness encountered by employees when expressing their views in public meetings (Al-Saggaf 2004). Additionally, Al-Saggaf (2004) notes that online communities help people become more open-minded in their thinking, and be more aware of the wider characteristics of individuals within their society.

5.2 Relational Dimension

The relational dimension here is based on a socially attributed characteristic of the relationship including trust and norm. This sub-section aims to discuss how shyness affects trust between people.

The results show that shyness may lead to a lack of motivation including trust, or simply a lack of awareness or lack of value being ascribed to sharing information with others as confirmed in Clayton and Fisher (2005). It is observed that employees are shy when they do not achieve the same work objectives as their colleagues. They sometimes believe that the organizational norm to evaluate them is unfair and this may have the result that they feel paranoid and do not trust others.

In terms of trust development among shy people, BETA has promoted an informal forum in physical social spaces to motivate employees to speak out publicly without shyness. This method leads them to establish good relationships, resulting in the development of trust. On the other hand, the relational dimension is also characterized through trust of others in virtual environments. Although the above discussion (structural dimension) emphasizes the advantages of a virtual space to reduce shyness, on the nega-

tive side, it is argued that participants in the virtual world may neglect trust within their family or social commitments and may become confused about some aspects of their culture and religion (Al-Saggaf 2004). This can be explained by the fact that human networks in Thai physical contexts (including face-to-face interactions) play the pivotal and strategic role of developing trust and relationships, as reported in related literature (Choo 2003; Thanasankit and Corbitt 2000).

5.3 Cognitive Dimension

The cognitive ability dimension of social capital here refers to the ability of the human actors to cognitively connect with each other with shyness. This subsection aims to discuss how shyness is affecting ability to share and create knowledge.

The results demonstrate that most employees in BETA are shy to participate in the discussion in a team because they are nervous when speaking in public. Also, shyness possibly is perceived to cause unwillingness to receive any assistance about information transfer and knowledge acquisition when it is offered even when needed (Nahl 2001). To foster the cognitive dimension of social capital, an appropriate representation of the history of knowledge-sharing activities may be useful since it allows the human actors to better understand and refer to past interactions (Huysman and Wulf 2006). As reported in the results, the idea of recording all presentations on digital archives for subsequent viewing by the presenters and other staff has been suggested. This idea is perceived to improve their shyness problems and thus their presentation performances, leading to improved knowledge sharing and creation.

5.4 Initial Theory Generation

The analysis of the case study for this research reveals how shyness influences KM in a Thai organization. While, the discussion portrays shyness as problematic, it has generated a number of interesting findings.

- Although shyness is a Thai positive cultural characteristic and communication competence notion, it seems to inhibit KM practices and creation of social relationships.
- ICT is perceived to help gain confidence and break shyness barriers, but it may not help develop trust among people, and may not be suitable in a bureaucratic culture.
- Trust and self-confidence are perceived to motivate shy people to share and create knowledge rather than any other rewards.
- Improving staff communication and presentation skills are a prerequisite before addressing effective knowledge sharing and creation.
- A bureaucratic culture as observed in BETA (or hierarchical structure), which causes seniority concerns, is likely to result in shyness barriers.

However, the discussion also opens up areas where shyness is very much subject to interpretation. The fact that it is perceived as difficult to change an organizational culture in Thailand does not necessarily equate with negativity. Some perceptions are accepted as a key and non-changeable feature of Thai culture. People in the organization prefer to preserve their culture (e.g., bureaucratic structure) regardless of the impact on KM.

Table 1. Summary of Themes Including Variables of the Influence of Shyness on KM Practices

Perspective	Variable
Technology	Impact of technology in breaking shyness barriers
Organization	Perceived influence of organizational structure and management in addressing shyness barriers
People	Perceived role of human networks and KM socialization activities in addressing shyness barriers

Using the concept of social capital, the study can characterize Thai people's experiences with KM. A summary of themes including variables of the influence of shyness on KM practices (Table 1) conceptualizes the thinking presented in this study in the general form, using three perspectives analyzed from the pattern codes and discussion: technology, organization, and people.

First, the variable "impact of technology in breaking shyness barriers" in the technology perspective refers to the level of impact of adopted technology in reducing shyness barriers. Technology, for example, includes virtual environment and knowledge management systems. Second, the variable "perceived influence of organizational structure and management in addressing shyness barriers" in the organization perspective refers to the level of influence of organizational issues including organizational structure, policy, and change in reducing shyness barriers. Last, the variable "perceived role of human networks and KM socialization activities in addressing shyness barriers" refers to the level of role of social networking, social capital, knowledge sharing and creation, and KM motivation in addressing and breaking shyness barriers. Each variable in the summary of themes helps researchers determine the level of KM influence in each perspective whereas practitioners may find it useful to take into account the levels measured by researchers to implement and adopt KM in their organization. The recommended future research is detailed in the next section.

6 RECOMMENDATIONS FOR FURTHER RESEARCH

Further investigation in other Thai organizations is highly recommended to validate and test the summary of themes, and then attempt to generalize it to Thailand. Further studies in Thailand may take into account the following issues:

- **Validation:** The need for the validation of the theory developed in this research is essential to determine the level of KM influence variables in each perspective. The levels can be measured by survey questionnaire using a scale. Each variable is assumed to develop a number of questions. For example, a variable "impact of technology in breaking shyness barriers" may involve many questions in relation to intention to use, perceived usefulness, voluntariness, client satisfaction, etc. Moreover, this further research aims to test whether the selected organization will represent the same culture as BETA, influencing or influenced by the KM practices, and whether the shyness feature is representative of the entire country.

- **Extension or simplification:** During an investigation, the variables in the theory could be extended or simplified if the researcher thinks them a subjective fit for the case, depending on many factors such as duration of field study, organizational culture, the researcher experience, appropriation, etc. For example, three perspectives (technology, organization, and people) could be subjectively extended to eight new attributes including technology, organizational structure and policies, change process, human network, social capital, knowledge sharing and creation ability, and KM motivation, where appropriate.

Besides shyness, further studies on different distinctive characteristics are important. Other distinctive cultural aspects such as collectivism, power distance, conscientiousness, and masculinity/femininity are reported to appear in Thailand and some developing countries. It would be interesting to further the research on the influence of these aspects on KM practices. In addition, further studies within the context of developing countries are highly recommended to manifest the status of KM practices in these countries, to test the extent to which there is a positive or negative trend toward KM awareness, and to investigate the need for the theory developed in this research. However, the extent to which richness of data can be captured about KM practices within an unfamiliar organization by case study method remains unclear. Further studies may be conducted by using alternative research methodologies such as action research and ethnography.

7 CONCLUSION

The research has investigated the influence of shyness on KM practices in BETA, a Thai organization. It demonstrates that an exploratory study on KM within a specific organization is far from being objective as the multiple realities associated with KM practices play out in various ways, resulting in the need for an interpretive case study to conduct the research. The use of the grounded theory approach has helped generate a set of insights, concepts, and interactions that address the critical organizational KM elements—elements from the cases in developing countries largely overlooked in the KM literature.

The summary of themes generated from the empirical findings suggests that shyness, a distinctive characteristic of Thai culture, critically influences, and is influenced by, a number of KM attributes in terms of technology, organization, and people perspectives. The research demonstrates how shyness influences, and is influenced by, KM practices which people in BETA have experienced. The study is limited to a Thai organization, leading to the recommendations for further research. Validation of the theory, and extension or simplification of the variables is suggested.

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