Association for Information Systems
AIS Electronic Library (AISeL)

July 2009

CHOICE OF KNOWLEDGE SOURCE IN SITUATIONS OF EQUIVOCALITY: IMPACT OF CULTURAL TRAITS

Ya Ni Shi
USTC-CityU Joint Advanced Research Center, ynshi@mail.ustc.edu.cn

Choon Ling Sia
City University of Hong Kong, iscl@cityu.edu.hk

Probir Banerjee
City University of Hong Kong, pkbanerj@cityu.edu.hk

Chuan Luo
USTC-CityU Joint Advanced Research Center, luochuan@mail.ustc.edu.cn

B.C.Y. Tan
National University of Singapore, btan@comp.nus.edu.sg

See next page for additional authors

Follow this and additional works at: http://aisel.aisnet.org/pacis2009

Recommended Citation

Authors

Ya Ni Shi, Choon Ling Sia, Probir Banerjee, Chuan Luo, B.C.Y. Tan, and Huaping Chen

CHOICE OF KNOWLEDGE SOURCE IN SITUATIONS OF EQUIVOCALITY: IMPACT OF CULTURAL TRAITS

Ya Ni Shi
> USTC-CityU Joint Advanced Research Center
> Ren'ai Road 166#, Suzhou, P.R.C.
> ynshi@mail.ustc.edu.cn

Choon Ling Sia
> City University of Hong Kong
> Tat Chee Avenue, Hong Kong
> iscl@cityu.edu.hk

Probir Banerjee
> City University of Hong Kong
> Tat Chee Avenue, Hong Kong
> pkbanerj@cityu.edu.hk

Chuan Luo
> USTC-CityU Joint Advanced Research Center
> Ren'ai Road 166#, Suzhou, P.R.C
> luochuan@mail.ustc.edu.cn

Bernard C. Y. Tan
> National University of Singapore
> 21 Lower Kent Ridge Road, Singapore
> btan@comp.nus.edu.sg

Huaping Chen
> University of Science and Technology of China
> Jinzhai Road, Hefei, P.R.C.
> hpchen@ustc.edu

Abstract

Apart from sourcing formal knowledge ratified and stored in corporate sources such as organizational best practices etc., the Internet and advanced information/collaborative technologies also allow knowledge workers to tap informal knowledge from networks such as discussion boards, SIG-based Wikis, communities of practice, Email/Listserv, etc.. However, some knowledge may reside implicitly within the organization and may not be available in organizational repositories, or in formal knowledge repositories outside of the organizational boundaries (e.g. published case descriptions). In such situations, the knowledge worker may need to use discretion in deciding whether to use formal or informal knowledge source, particularly when faced with equivocal knowledge from the two sources. We formulate testable theoretical propositions to explain the influence of cultural traits of the knowledge worker such as Individualism-Collectivism, Power Distance and Uncertainty Avoidance on choice of the source in such situations. An experiment is designed to investigate how knowledge source would affect perceptions about knowledge usability to knowledge workers from different national cultures. This study would provide knowledge management researchers and practitioners with insights on how culture affects the value of knowledge from different sources through the use of Internet-based technologies.

Keywords: Knowledge management, knowledge source, national culture, individualism/collectivism, power distance, uncertainty avoidance.

INTRODUCTION

Before an individual could exploit knowledge for work performance, it must first be acquired, evaluated on its usability, and then assimilated (Holsapple and Joshi, 2004). An example of such a knowledge worker is a consultant tasked to design a new eBusiness system for a client in a new industry that he/she is unfamiliar with. An effective and efficient work strategy for the consultant would be to learn from the expertise of others who have experience in the unfamiliar industry, and to seek their advice or tap into their knowledge. The growing popularity of the Internet and other advanced information/collaborative technologies is offering an unprecedented array of sources through which information and knowledge can be disseminated and acquired. Besides formal sources of knowledge that are officially ratified by organizations (e.g. organizational policies, best practices, intranets, and organizational knowledge bases), knowledge workers can now also tap into the experience and expertise of their social contacts or professional peers through Internet based public sites such as discussion boards, SIG-based Wikis, communities of practice, Email/Listserv, etc.. Seeking of such informal advice is being increasingly recognized as a legitimate form of knowledge acquisition (Sussman and Siegal 2003; Harvey, Harries and Fischer 2000). Tapping on the expertise of social contacts is significant to the knowledge acquisition process because of the greater levels of trust and lower levels of uncertainty associated with knowledge exchange between people with social ties (Argote et al., 2003; Cross and Sproull, 2003).

During knowledge seeking, knowledge workers would probably face with the problem of equivocality which means ambiguity, the existence of multiple and conflicting interpretations (Daft, Lengel and Trevino 1987). In such situations, the knowledge worker may need to use discretion in deciding whether to use formal or informal knowledge source. For the individuals who prefer knowledge from formal sources, it is possible that more valuable knowledge might be residing in informal social networks, and vice versa. This could in turn affect the extent to which the acquired knowledge would be leveraged upon to increase work performance and create new knowledge. As a result, the choice of knowledge sources would influence this knowledge sourcing process (acquisition, selection and assimilation) which is fundamental to the whole knowledge management phases (Gray and Meister, 2004). Based on the premise that knowledge management impacts corporate performance (Tanriverdi, 2005), it becomes important for organizations to understand knowledge worker's knowledge sourcing behavior.

Current research on knowledge management in the information systems field is diverse, and there is a lack of research from knowledge seekers' perspective that enables us to understand how individuals in an organizational setting are likely to use knowledge when employees have access to both formal and informal knowledge and there is inconsistency in the knowledge from these two sources. We aim to fill this gap by investigating the impact of the cultural context in which knowledge is managed. The importance of cultural sensitivity has been documented in technology-mediated communication (e.g., Tan et al. 1998; Watson et al. 1994). Thus cultural traits such as individualism-collectivism, uncertainty avoidance, and power distance (Hofstede 2001) that the knowledge worker subscribes to could determine the manner in which ambiguous knowledge is obtained and assimilated from the two sources. The objective is to answer the following question:

How do cultural traits impact the choice of source when equivocal knowledge is obtained from formal and informal sources?

This paper is organized as follows: the next section presents a general literature review. The following section proposes testable propositions that aim to provide an insight and possible answer to the research question. Research design and methodology is followed then. The concluding section discusses future extensions of our concept and implications for both researchers and practitioners.

LITERATURE REVIEW

2.1   Knowledge Management

The need for firms to leverage on the intellectual capital of knowledge workers to enhance organizational effectiveness and learning is documented in past knowledge management research (e.g. Alavi and Tiwana 2002; Cross and Sproull 2004; Gray et al. 2004; Reagans and McEvily 2003). Such intellectual capital comprises insights, opinions, experiences and expertise. The formation of the intellectual capital takes place through five main phases: knowledge acquisition (identification of sources and knowledge capture), selection (evaluating knowledge utility), assimilation (structuring and appropriating new knowledge into existing knowledge structures), generation (application of assimilated knowledge and creation of new knowledge), and emission (transferring knowledge) (Holsapple and Joshi 2004).

Current knowledge management research in information systems field largely focused on themes such as factors encouraging people to contribute knowledge (e.g. Bock et al. 2005; Kankanhalli et al. 2005; Ko et al. 2005; Wasko and Faraj 2005), organizational challenges of knowledge management (e.g. Garud and Kumaraswamy 2005), roles of information and partnership configurations in knowledge transfers (e.g. Lin et al. 2005; Malhotra et al. 2005), and factors facilitating effective use of knowledge management systems (e.g. Chen and Edgington 2005; Cheung et al. 2004; Poston and Speier 2005; Tanriverdi 2005). However, very few studies have delved into understanding knowledge management from the knowledge acquirer's perspective, excepting Gray and Meister (2004) and Ryu et al. (2005). The latter takes an economic modeling perspective in comparing three learning processes on learning cost/investment and productivity, whereas the former examines the impact of task demands and individual learning disposition on knowledge sourcing within a single organization.

To manage knowledge, it must first be acquired, evaluated on its utility and validity, and assimilated into organizational knowledge bases (Holsapple and Joshi, 2004). Acquisition and selection of knowledge before assimilation depends on how usable the knowledge is perceived by the knowledge acquirer (Holsapple and Joshi, 2004). The theory of knowledge usability proposed by Holsapple et al. (2004) posits that usability is dependent on whether the knowledge is viewed as valid and of utility. Validity is a function of the accuracy, consistency and certainty of the acquired knowledge, whereas utility arises from positive perceptions of clarity, meaning, relevance and importance. In this research, we confine our investigation to the acquisition, selection and assimilation phases and argue that validity and utility perceptions would influence the choice of knowledge for these three intellectual capital formation activities.

2.2   Formal vs. Informal Knowledge Sources

Internet and advanced information/collaborative technologies have offered knowledge workers with access to knowledge resources and facilitated their knowledge sourcing activities. Based on the degree of formality, knowledge sources could be formal and informal. Formal knowledge sources refer to knowledge stored in a formal knowledge repository and officially ratified by the relevant authorities (e.g. organizational management, consultants). Conversely, informal knowledge sources refer to grapevine information, personal opinions/advice, individual experiences, that may or not conform to the officially endorsed versions.

While many knowledge management scholars have emphasized on the usefulness of formal sources such as organizational documents, firm best practices, etc., (e.g. Alavi et al. 2002; Gray et al. 2004; Holsapple et al. 2004; Sabherwal and Becerra-Fernandez 2003), increasing attention is being paid to informal knowledge seeking from colleagues, peers and friends in their social networks (e.g. Argote, McEvily and Reagans 2003; Cross et al. 2004; Menon and Pfeffer 2003; Reagans et al. 2003; Thomas-Hunt, Ogden and Neale 2003). Informal knowledge allows workers to benefit from knowledge residing in peers (e.g. Hansen 1999), either within or outside the organization (Argote et al. 2003). Informal relationships are based on past quality interactions, shared history or socializing, which could lead to more effective knowledge exchange because in such circumstances people may

be more willing and feel safe in sharing knowledge (Cross et al. 2004). There is indication in past research that informal communication tends to be valued more, and may be regarded as more effective than formal communication (Johnson et al. 1994; Stevenson and Gilly 1991), because participants tend to experience greater mutual trust during knowledge exchange compared to the out-group (Brewer 1979; Liebeskind et al. 1996). With greater trust, apprehension about the veracity and corresponding scrutiny of acquired knowledge would decrease (Argote et al. 2003). Results however are mixed, with some stressing the importance of formal communications, and others arguing for more informal means.

2.3   Cultural Traits

Past research indicates that national culture influences values and personality (Probst 1999; Triandis and Suh 2002), how people behave (e.g. Cohen 1991; Cohen et al. 1996), communicate (Holtgraves 1997), and how people process information (Hofstede 2001; House et al. 2002). National culture has been conceptualized in terms of five dimensions, viz. individualism-collectivism, uncertainty avoidance, power distance, masculinity-femininity, and temporal orientation[+] (Hofstede 2001), while other dimensions have also been identified such as future orientation (long-term orientation), performance orientation (performance is rewarded) and humane orientation (altruistic behavior is rewarded) (House et al. 2002). The importance of cultural sensitivity has also been documented in technology-mediated communication (e.g., Tan et al. 1998; Watson et al. 1994) and in Internet shopping behaviors (Lim et al. 2004). Norms and values shared in the national culture could determine individual behavior (House et al. 2002). In determining the validity and usefulness of knowledge, national culture can exert a significant impact. Thus national culture can be a critical consideration in the acquisition and assimilation of knowledge from online sources in the digital economy.

THEORETICAL PROPOSITIONS AND FRAMEWORK

This research aims to extend the understanding of individual knowledge worker's sourcing behavior beyond existing research by investigating how people of different national cultures source knowledge in situations of equivocality, especially when facing with inconsistent knowledge from formal and informal sources. National culture is likely to influence individual's perceived usability of knowledge because the differences between formal and informal sources are significant to people with certain cultural traits. Of the cultural dimensions mentioned above, we choose the dimensions which would influence people's perception of formal and informal sources to study in this research. People with collectivistic tendencies experience greater mutual trust and reliability in informal than formal communications. Officially ratified formal knowledge, which is of low uncertainty, would be preferred by people of high uncertainty avoidance and high power distance. As a result, we believe individualism-collectivism, uncertainty avoidance and power distance are expected to have a more direct impact on the knowledge workers' views toward ambiguity and inconsistency. Accordingly, our investigation is confined to these three aspects of culture only.

3.1   Individualism-Collectivism and Knowledge Sources

The Individualism-collectivism dimension of culture is the extent to which people's self-concept revolves around the individual, or member of a group (Hofstede 2001). More specifically, in-group

---

[+] Individualism-collectivism measures whether the self-concept of people revolves around that of an individual, or a member of a group (Hofstede, 2001). In individualist cultures, the needs, values, and goals of the individual take precedence over the group's. Collectivist cultures tend to emphasize the group over the individual (Gudykunst et al. 1992; Gudykunst, 1997). Uncertainty avoidance is the extent that people seek to avoid uncertainty and ambiguity, instead preferring orderliness, consistency and structure. Power distance is the extent that unequal distribution of power/authority is accepted in a society. Masculinity-femininity is the extent that performance, achievement and success are valued, compared to nurturing, care and quality-of-life. Temporal orientation is whether a culture takes a long-term, future-oriented perspective that values perseverance, thrift, and inner peace, or a short-term perspective.

collectivism is the extent of preference for members of the in-group rather than out-group (House et al. 2002). At the individual level, people who exhibit predominantly individualistic characteristics are idiocentrics, whereas those with collectivistic characteristics are allocentrics (Triandis et al. 1985). Allocentrics emphasizes interdependence and sociability, and tend to have more trust in people from their in-group (peers and friends) compared to people from the out-group (Doney, Cannon and Mullen 1998). They are strongly influenced by opinions of referent others, have more positive attitudes towards and greater preference for interacting with in-group rather than out-group members (Gudykunst et al. 1992; Lee and Ward 1998; Oyserman, Coon and Kemmelmeier 2002; Wheeler, Reis and Bond 1989). Conversely, idiocentrics are characterized by autonomy, self-reliance, and emotional distance from in-groups. They emphasize efficiency and directness (Grimm et al. 1999; Triandis 2001), consistency and stability of attitudes (Iyengar, Lepper and Ross 1999; Triandis et al. 2002; Triandis 1972).

Research on knowledge exchange has shown that informal communication tends to be preferred and viewed as being more effective than formal communication (Johnson et al. 1994; Stevenson et al. 1991) since participants experience greater mutual trust and reliability in the knowledge exchange process (Liebeskind et al. 1996). When gathering knowledge in situations where the knowledge is emerging or unstructured, the greater preference and trust that allocentrics have for in-group members is likely to lead to a bias for the source of the knowledge in forming perceptions of validity and utility of knowledge, leading to higher preference for knowledge acquired from social networks of peers and friends (in-group) compared to knowledge from authoritative formal sources (out-group). On the other hand, idiocentrics, who emphasize autonomy and distance from in-groups are likely to be guided by perceptions of validity and usefulness of the knowledge rather than the source from which the knowledge originates. Thus, with inconsistencies between formal and informal knowledge sources, allocentrics who place high value on opinions of referent others and greater preference for interacting with in-group rather than out-group members (Gudykunst et al. 1992; Lee et al. 1998; Oyserman et al. 2002; Wheeler et al. 1989) are likely to favor the informal knowledge source. Idiocentrics however, with their preference for autonomy, self-reliance, and emotional distance from in-groups, because of concern for efficiency and directness (Grimm et al. 1999; Triandis 2001) and consistency and stability of attitudes (Iyengar et al. 1999; Triandis et al. 2002; Triandis 1972), would be guided by the value of the knowledge, irrespective of the source. Thus our first set of propositions is:

Proposition 1a: With inconsistent knowledge from formal and informal sources, workers with collectivistic tendencies (allocentric) are more likely to opt for knowledge obtained from informal sources compared to formal sources.

Proposition 1b: With inconsistent knowledge from formal and informal sources, workers with individualistic tendencies (idiocentric) are likely to be indifferent to the source of the knowledge.

3.2   Uncertainty Avoidance and Knowledge Source

The second cultural dimension-Uncertainty Avoidance (UA)-is the extent to which people in a society seek orderliness, consistency and structure, and avoid ambiguous situations (Hofstede 2001). In cultures higher on UA, people have more trust in, and feel greater loyalty towards institutional and organizational norms than cultures lower in UA (Hofstede 2001). People higher on UA are viewed as being intolerant towards ambiguity and uncertainty (Budner, 1962; Myers, Henderson-King and Henderson-King 1997) and thus have lesser tolerance for risk and risky decisions (Keil et al. 2000). In unstructured situations, where organizational knowledge may not be codified and sanctioned, people high on UA would still like to go with the knowledge that is more likely to meet the organizational norm, for example knowledge from sources within the organization that may be considered formal. Thus when the two sources, informal and formal, provide inconsistent knowledge, people with high uncertainty avoidance/intolerance tendencies are likely to reject/avoid the ambiguous situation by relying more on knowledge from formal than informal sources (Bhushan and Amal 1986; Budner 1962). It is likely that the source would moderate the perceptions of utility and validity of the knowledge. On the other hand, in ambiguous situations, people low on UA (with some tolerance for

uncertainty/ambiguity) may be indifferent to the knowledge source and they would be influenced by the validity and utility of the knowledge per se rather than the source. As a result,

Proposition 2a: With inconsistent knowledge from formal and informal sources, workers with high uncertainty avoidance tendencies are more likely to opt for knowledge from formal sources compared to informal sources.

Proposition 2b: With inconsistent knowledge from formal and informal sources, workers with low uncertainty avoidance tendencies are likely to be indifferent to the source of the knowledge.

3.3   Power Distance and Knowledge Source

Power distance is the extent of inequality between superiors and subordinates (Hofstede 2001; House et al. 2002). In high power distance cultures, subordinates are dependent on superiors for guidelines and tend to follow rules set by them. These subordinates tend to be more heavily influenced by formal authority. Conversely, in low power distance cultures, subordinates and superiors are treated more as equals, with less dependence of subordinates on the guidance of superiors. They tend to rely more on their own or a peer's experiences in decision making. With inconsistencies in knowledge sources, the perceptions of validity and utility may therefore be moderated by the extent of power distance in the two sources of knowledge and are likely to prefer formal knowledge sources. However, people in cultures where there is low power distance may not be influence by the power; they would be more concerned with the validity and usefulness of the knowledge per se. Thus our third set of propositions is:

Proposition 3a: With inconsistent knowledge from formal and informal sources, employees in high power distance organizational environments are more likely to opt for knowledge from formal sources compared to informal sources.

Proposition 3b: With inconsistent knowledge from formal and informal sources, employees in low power distance organizational environments are likely to be indifferent to the source of the knowledge.

3.4   Research Framework

The framework below depicts the theoretical tenets of the propositions:

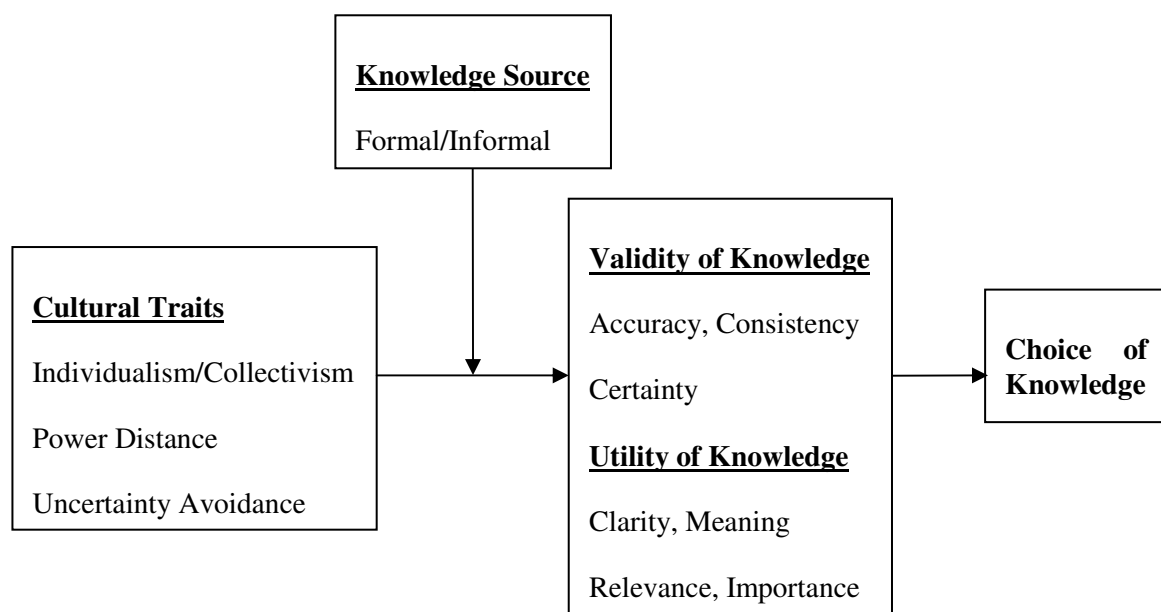

Figure 1.   Research model

The framework indicates that the source from which knowledge originates would moderate the perceptions of validity and utility of knowledge. In cultures that are collectivist, high power distance and high uncertainty avoidance, the source from where knowledge originates would exert significant moderating impact on perceptions of validity and utility and ultimate choice of the knowledge source. In cultures that are individualistic, low on power distance and low on uncertainty avoidance, moderating impact of the source of knowledge on perceptions of validity and utility of knowledge would be insignificant; choice of the knowledge source would be based on the validity and utility of the knowledge per se irrespective of the originating source.

RESEARCH METHODOLOGY

This research is proposed to understand sourcing patterns and access preferences when formal and informal sources offer inconsistent knowledge to knowledge workers. The independent variables are cultural traits (individualism/collectivism, uncertainty avoidance and power distance). The dependent variable is perceived knowledge usability with two dimensions of validity (with sub-dimensions of accuracy, consistency and certainty) and utility (with sub-dimensions of clarity, meaning, relevance, and importance). Knowledge source (formal vs. informal) serves as moderator.

The research comprises a pilot study and a laboratory experiment. The purpose of the pilot study is to ensure the experimental manipulations of formal versus informal knowledge sources, and inconsistent knowledge could be effectively differentiated by the target subjects. The experiment task requires the participants who serve as a newly-hired consultant of a local company to prepare a consulting report of a new e-Business venture in China. The consultant would have little actual experience and knowledge to develop advice. As a result, he/she would refer to an electronic discussion board on e-Business experiences including best practices and advices relating to new e-Business.

In the experiment, subjects of various cultural traits will be exposed to a formal knowledge source from an officially endorsed intra-organizational electronic discussion board and an informal knowledge source from an electronic discussion board of a professional association with topics on e-Business ventures. Inconsistent knowledge of both knowledge sources will be presented. The subjects have to ultimately prepare a consulting report. For the purpose of this study, they will make assessment of the perceived usability of the knowledge gathered.

The experiments will be conducted in national cultures that differ along the dimensions of individualism-collectivism, uncertainty avoidance, and power distance. The national cultures in this study comprise Hong Kong, US, India, Philippines, and Thailand. US is selected because the majority of knowledge management studies were conducted there, and could provide an instructive benchmark for comparing findings. India, Philippines and Thailand are selected because each of these Asian cultures differs significantly from that of Hong Kong in one cultural dimension, but not substantially in other dimensions. This would permit attribution of differences in findings across countries to be isolated to a specific cultural dimension. The instruments measurement of allocentrism-idiocentrism (Triandis et al. 1985), intolerance of ambiguity/uncertainty (Budner 1962), and power distance (House et al. 2002) at the individual levels, will be administered to subjects at each country site to ensure consistency with their corresponding cultural dimensions of national level. Manipulation check questions assess the success of the cultural dimensions, informality manipulations and knowledge inconsistency. Probing questions on the underlying cultural values include preferences for in-group and out-group, trust, social ties, attitude towards ambiguous and uncertain situations, attitude towards unequal sharing of power. Controlled variables include subjects' characteristics and expertise, e-Business ventures experience, Internet discussion group experience, gender, time spent for task and so on.

DISCUSSION AND CONCLUSION

As increasingly wide variety of knowledge resources such as best practice, experience and expertise becomes available through Internet and advanced information/collaborative technologies, knowledge workers are likely to tap into this wide base of knowledge for improved performance. With increased

globalisation, organisations now face the challenge of managing and utilising knowledge in diverse cultural domains. Understanding the influence of knowledge workers' cultural traits and their perceived knowledge usability is therefore important. However it is still not clear how the source of knowledge influences knowledge utilisation behavior, of knowledge workers, especially when inconsistent knowledge is obtained from formal and informal sources. This research attempts to fill this gap. The basic premise of our research is that cultural traits would have significant influence on the choice of knowledge source. In collectivism cultures where individuals are predominantly characterized as allocentrics, the usability and validity perception of knowledge would be significantly moderated by the source of knowledge. Specifically, in such cultures, knowledge workers would tend to prefer informal knowledge to formal sources because of their interdependence and preference for in-group members. Due to high preference for uncertainty avoidance and high power distance, they would be more likely to rely on formal sources in situations of inconsistency in knowledge from formal and informal sources. However, in individualist cultures with low power distance and low uncertainty avoidance, knowledge workers are likely to be indifferent to the source of the knowledge. They are less likely to be influenced by knowledge from in-group members or superiors due to strong individualistic cultural characteristics and the source of knowledge would therefore be based in perceptions validity and utility of the knowledge.

Theoretically, this research would provide knowledge management researchers and practitioners with insights on how culture affects the value of knowledge acquired from formal and/or social knowledge sources through Internet-based technologies. The practical utility of this research is that the findings would lead to more effective configuration of organizational knowledge management policies, processes and systems, enabling enhancement of the knowledge workers' performance across diverse cultures. For example, organization managers could adjust their knowledge management policies to make good use of useful and valid knowledge from various sources within and outside the organization to suit the cultural traits of the user group. There may be need for organisations to provide knowledge workers with access to comprehensive informal knowledge stored formally in corporations as well as in discussion boards, SIG-based Wikis, communities of practice, etc.. Depending on the sourcing tendencies of the knowledge workers, organisations may provide the right mix of formal and informal knowledge to support organisational work. If necessary, in situations where there is a tendency to tap informal knowledge, sources that generate informal knowledge could be officially approved to encourage its application. Internet-based knowledge management systems could be accordingly designed in global organizations with knowledge workers spread across the global in diverse cultural settings.

While this study focuses on three important dimension of national culture: individualism/collectivism, power distance and uncertainty avoidance which have more direct impact on the choice of source, the impact of other individual cultural traits, organizational cultures and even group culture on knowledge utilisation and its management in organisations could be investigated in future research.

References

Alavi, M. and Tiwana, A. (2002). "Knowledge Integration in Virtual Teams: The Potential Role of KMS," *Journal of the American Society for Information Science and Technology*, 53(12): 1029-1037.

Argote, L., McEvily, B. and Reagans, R. (2003). "Managing Knowledge in Organizations: An Integrative Framework and Review of Emerging Themes," *Management Science*, 49(4): 571-582.

Bhushan, L., and Amal, S. B. (1986). "A Situational Test of Intolerance of Ambiguity," *Psychologia: An International Journal of Psychology in the Orient*, 29(4): 254–261.

Bock, G. W., Zmud, R. W., Kim, Y. G., and Lee, J. N. (2005). "Behavioral Intention Formation in Knowledge Sharing: Examining the Roles of Extrinsic Motivators, Social-Psychological Forces, and Organizational Climate," *MIS Quarterly*, 29(1): 87-111.

Brewer, M. B. (1979). "Ingroup Bias in the Minimal Intergroup Situation: A Cognitive-Motivational Analysis," *Psychological Bulletin*, 86(2): 307-324.

Budner, S. (1962). "Intolerance of Ambiguity as a Personality Variable," *Journal of Personality*, 30, 29–50.

Chen, A. N. K. and Edgington, T. M. (2005). "Assessing Value in Organizational Knowledge Creation: Considerations for Knowledge Workers", *MIS Quarterly*, 29(2), 279-309.

Cohen, D., Nisbett, R. E., Bowdle, B. F., and Schwarz, N. (1996). "Insult, Aggression, and the Sourthern Culture of Honor: An Experimental Ethnography", *Journal of Personality and Social Psychology*, 70, 945-960.

Cohen, R. (1991). "Negotiating Across Cultures". US Institute Peace Press, Washington D.C..

Cross, R. and Sproull, L. (2004). "More Than an Answer: Information Relationships for Actionable Knowledge", *Organization Science*, 15(4), 446-462.

Doney, P. M., Cannon, J. P., and Mullen, M. R. (1998). "Understanding the Influence of National Culture on the Development of Trust", *Academy of Management Review*, 23(3), 601-620.

Garud, R. and Kumaraswamy, A. (2005). "Vicious and Virtuous Circles in the Management of Knowledge: The Case of Infosys Technologies", *MIS Quarterly*, 29(1), 9-33.

Gray, P. H. and Meister, D. B. (2004). "Knowledge Sourcing Effectiveness", *Management Science*, 50(6), 821-834.

Grimm, S. D., Church, A. T., Katigbak, M. S., and Reyes, J. A. (1999). "Self-described Traits, Values, and Moods Associated with Individualism and Collectivism: Testing I-C Theory in an Indvidualistic (U.S.) and a Collectivistic (Philippine) Culture", *Journal of Cross-Cultural Psychology*, 30, 466-500.

Gudykunst, W. B., Gao, G., Schmidt, K. L., Nishida, T., Bond, M. H., Leung, K., Wang, G. and Barraclough, R. A. (1992). "The Influence of Individualism-Collectivism, Self-Monitoring, and Predicted-Outcome Value on Communication in In-group and Out-group Relationships", *Journal of Cross-Cultural Psychology*, 23, 196-213.

Hansen, M. (1999). "The Search-Transfer Problem: The Role of Weak Ties in Sharing Knowledge Across Organizational Subunits", *Administrative Science Quarterly*, 44, 82-111.

Harvey, N., Harries, C, and Fischer. I. (2000). "Using Advice and Assessing Its Quality", *Organizational Behavior and Human Decision Processes*, 81(2), 252-273.

Hofstede, G. (2001) Culture's Consequences (2nd ed.). Thousand Oaks, CA: Sage.

Holsapple, C. W. and Joshi, K. D. (2004). "A Formal Knowledge Management Ontology: Conduct, Activities, Resources, and Influences", *Journal of the American Society for Information Science and Technology*, 55(7), 593-612.

Holtgraves, T. (1997). "Styles of Language Use: Individual and Cultural Variability in Conversational Indirectness", *Journal of Personality and Social Psychology*, 73, 624-637.

House, R., Javidan, M., Hanges, P., and Dorfman, P. (2002). "Understanding Cultures and Implicit Leadership Theories Across the Globe: An Introduction to Project GLOBE", *Journal of World Business*, 37, 1, 3-10.

Iyengar, S. S., Lepper, M. R. and Ross, L. (1999). "Independence from Whom? Interdependence with Whom? Cultural Perspectives on Ingroups versus Outgroups", In D. A. Prentice & D. T. Miller (Eds.), Cultural Divides: Understanding and Overcoming Group Conflict, Russell Sage Foundation, New York, 273-301.

Johnson, D. J. Donohue, W. A., Atkin, C. K. and Johnson, S. (1994). "Differences Between Formal and Informal Communication Channels", *Journal of Business Communications*, 31(2), 111-122.

Kankanhalli, A., Tan, B. C. Y. and Wei, K. K. (2005). "Contributing Knowledge to Electronic Knowledge Repositories: An Empirical Investigation", *MIS Quarterly*, 29(1), 113-143.

Keil, M., Tan, B. C. Y., Wei, K. K., Saarinen, T., Tuunainen, V. and Wassenaar, A. (2000). "Cross-Cultural Study on Escalation of Commitment Behavior in Software Projects", *MIS Quarterly*, 24(2), 299-325.

Keppel, G. Design and Analysis: A Researcher's Handbook. Prentice-Hall, Upper Saddle River, NJ, 1991.

Ko, D. G., Kirsch, L. J., and King, W. R. (2005). "Antecedents of Knowledge Transfer From Consultants to Clients in Enterprise System Implementations", *MIS Quarterly*, 29(1), 59-85.

Lee, L. and Ward, C. (1998). "Ethnicity, Idiocentrism-Allocentrism, and Intergroup Attitudes", *Journal of Applied Social Psychology*, 28(2), 109-123.

Liebeskind, J. P., Oliver, A. L., Zucker, L., and Brewer, M. (1996). "Social Networks, Learning, and Flexibility: Sourcing Scientific Knowledge in New Biotechnology Firms", *Organization Science*, 7(4), 428-443.

Lim, K. H., Leung, K. Sia, C. L. and Lee, M. K. O. (2004). "Is eCommerce Boundary-Less? Effects of Individualism-Collectivism and Uncertainty Avoidance on Internet Shopping", *Journal of International Business Studies*, 35(6), 545-559.

Lin, L. Geng, X., and Whinston, A. B. (2005). "A Sender-Receiver Framework for Knowledge Transfer", *MIS Quarterly*, 29(2), 197-219.

Malhotra, A. Gosain, S. and El Sawy, O. A. (2005). "Absorptive Capacity Configurations in Supply Chains: Gearing for Partner-Enabled Market Knowledge Creation", *MIS Quarterly*, 29(1), 145-187.

Menon, T. and Pfeffer, J. (2003). "Valuing Internal vs. External Knowledge: Explaining the Preference for Outsiders", *Management Science*, 49(4), 497-513.

Myers, J. R., Henderson-King, D. H., and Henderson-King, E. I. (1997). "Facing technological risks: The importance of individual differences", *Journal of Research in Personality*, 31, 1–20.

Oyserman, D., Coon, H. M. and Kemmelmeier, M. (2002). "Rethinking Individualism and Collectivism: Evaluation of Theoretical Assumptions and Meta-Analyses", *Psychological Bulletin*, 128(1), 3-72.

Poston, R. S. and Speier, C. (2005). "Effective Use of Knowledge Management Systems: A Process Model of Content Ratings and Credibility Indicators", *MIS Quarterly*, 29(2), 221-244.

Probst, T. M. (1999). "Cultural Values in Intergroup and Single-Group Social Dilemmas, Organizational Behavior and Human Decision Processes", 77(3), 171-191.

Reagans, R. and McEvily, B. (2003). "Network Structure and Knowledge Transfer: The Effects of Cohesion and Range", *Administrative Science Quarterly*, 48, 240-267.

Ryu, C., Kim, Y. J., Chaudhury, A., and Rao, H. R. (2005). "Knowledge Acquisition Via Three Learning Processes in Enterprise Information Portals: Learning-By-Investment, Learning-By-Doing, and Learning-From-Others", *MIS Quarterly*, 2005, 29(2), 245-278.

Sabherwal, R. and Becerra-Fernandez, I. (2003). "An Empirical Study of the Effect of Knowledge Management Processes at Individual, Group, and Organizational Levels", *Decision Sciences*, 34(2), 225-260.

Stevenson, W. B. and Gilly, M. C. (1991). "Information Processing and Problem Solving: The Migration of Problems through Formal Positions and Network Ties", *Academy of Management Journal*, 34(4), 918-928.

Straub, D., Loch, K., Evaristo, R., Karahanna, E. and Srite, M. (2002). "Toward a Theory-Based Measurement of Culture", *Journal of global information management* 10(1), 13-23.

Sussman, S. W. and Siegal, W. S. (2003). "Informational Influence in Organizations: An Integrated Approach to Knowledge Adoption", *Information Systems Research*, 14(1), 47-65.

Tan, B. C. Y., Wei, K. K., Watson, R. T., Clapper, D. L., and McLean, E. R., (1998). "Computer-mediated Communication and Majority Influence: Assessing the Impact in an Individualistic and a Collectivistic Culture", *Management Science*, 44(9), 1263-1278.

Tanriverdi, H. (2005). "Information Technology Relatedness, Knowledge Management Capability, and Performance of Multibusiness Firms", *MIS Quarterly*, 29(2), 311-334.

Thomas-Hunt, M. C., Ogden, T. Y. and Neale, M. A. (2003). "Who's Really Sharing? Effects of Social and Expert Status on Knowledge Exchange Within Groups", *Management Science*, 49(4), 464-477.

Triandis, H. C. (1972). "The Analysis of Subjective Culture", Wiley, New York.

Triandis, H. C. (2001). "Individualism-Collectivism and Personality", *Journal of Personality*, 69(6), 907-924.

Triandis, H. C. and Suh, E. M. (2002). "Cultural Influences on Personality", *Annual Reviews of Psychology*, 53, 133-160.

Triandis, H. C., Leung, K., Villareal, M. and Clark, F. L. (1985). "Allocentric versus Idiocentric Tendencies: Convergent and Discriminant Validation", *Journal of Research in Personality*, 19, 395-415.

Wasko, M. M. and Faraj, S. (2005). "Why Should I Share? Examining Social Capital and Knowledge Contribution in Electronic Networks of Practice", *MIS Quarterly*, 29(1), 35-57.

Watson, R. T., Ho, T. H. and Raman, K. S. (1994). "Culture - A 4th Dimension of Group Support Systems", *Communications of the ACM*, 37(10), 44-55.

Wheeler, L., Reis, H. T. and Bond, M. H. (1989). "Collectivism-Individualism in Everyday Social Life: The Middle Kingdom and the Melting Pot", *Journal of Personality and Social Psychology*, 57(1), 79-86.