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Knowledge Sharing and Management for Better Organisational Outcomes: An Indian Study

Raj Gururajan
University of Southern Queensland, raj.gururajan@usq.edu.au

Heng-Sheng Tsai
University of Southern Queensland, ahernbond@gmail.com

Abdul Hafeez-Baig
University of Southern Queensland, abdul.hafeez-baig@usq.edu.au

Meng-Kuan Lin
University of Southern Queensland, adam.lin@usq.edu.au

KNOWLEDGE SHARING AND MANAGEMENT FOR BETTER ORGANISATIONAL OUTCOMES: AN INDIAN STUDY

Raj Gururajan, School of Information Systems, University of Southern Queensland, QLD, Australia, raj.gururajan@usq.edu.au

Heng-Sheng Tsai, School of Information Systems, University of Southern Queensland, QLD, Australia, ahernbond@gmail.com

Abdul Hafeez-Baig, School of Information Systems, University of Southern Queensland, QLD, Australia, abdul.hafeez-baig@usq.edu.au

Meng-Kuan Lin, School of Information Systems, University of Southern Queensland, QLD, Australia, adam.lin@usq.edu.au

Abstract

In the era of knowledge economy, how to exploit knowledge assets is essential for businesses to improve their competitive advantage. Issues such as how to enable or facilitate knowledge management systems (KMS) in an organisation have proven to be important for academia and industry. For the reason that sharing and managing knowledge involves a series of activities that are related to culture, the findings in a geographic area or a certain industry may not necessarily be applicable to other areas or industries with different cultural backgrounds. Research issues such as what are the enablers for organisations in implementing their knowledge management systems with a focus on reaching better organisational outcomes have been discussed and highlighted in literature. However, a more comprehensive investigation, with an effort on gathering all the enablers and examining them altogether in a certain context, has not been completed. Therefore, this study is motivated to investigate the research issue 'What are the enablers for implementing knowledge management systems in India?' by using both qualitative and quantitative approaches. First, the authors used a multiple case study method to examine whether the enablers identified in the literature still influence the implementation of KMS in India. Second, the results were further tested with a larger sample (400 organisations in four Indian cities) to confirm and consolidate the findings. These findings indicate that all the enabling factors of KMS identified in the literature are applicable in the Indian context.

Keywords: Knowledge Management, KMS, Enabler, Organisational Outcome, India

1. INTRODUCTION

Knowledge management (KM) plays an important role for organisations. It involves activities such as the process of creating, acquiring, sharing and managing knowledge at individual and organizational level (Alavi & Leidner 2001). Knowledge and knowledge management are both multi-faceted concepts and activities, and strongly related to cultural background (Bock, Zmud & Kim 2005). In this context, Srinivas (2009) indicates that the theories of knowledge management generated—based on western cultural background—are not necessarily applicable to eastern cultures such as India.

Currently, KM is providing a better understanding of its success factors and KM approaches are more focused to address particular challenges such as securing knowledge from experts leaving an organisation (Heisig 2009). However, issues and factors that enable or facilitate an organisation to further enhance its knowledge management are essential elements in the decision making process of managers and executives (Emelo 2009; Gan 2006; Khalifa & Liu 2003; Lee & Choi 2003). The enablers for organisations in implementing their knowledge management systems were proposed and discussed in the literature (Lee & Choi 2003; Robbins, Millett & Cacioppe 2001; Yu, Kim & Kim 2004). However, most of the studies focused on only few factors. Therefore, building a theoretical framework to understand these factors and their influences is necessary to form a new starting point for comprehensive understanding (Heisig 2009). Additionally, researchers indicated that a majority of these factors/enablers were based on western countries and this western environment is different from the Asian context (Chaudry 2005; Srinivas 2009). In a rapidly developing country such as India, where the management system in organisations is markedly different to that of western styles, the question of 'whether the enablers still influence the implementation of knowledge management systems in the same way?' is still under debate. This research issue is significant because cultural issues appear to influence aspects of management decision making. Our review of the literature also indicated there is very limited information regarding KM in the Indian context.

The Indian subcontinent is identified with its commercial and cultural wealth in much of its long history (Oldenburg 2007). India is a republic consisting of 28 states and seven union territories, with a parliamentary system of democracy. It has the world's twelfth largest economy at market exchange rates and the fourth largest in purchasing power (India 2009). Long traditions, combined with an advanced educated pool of managers and strong yet conservative management practices, indicate that KM enablers might be different for India. Thus, this study posted the question, 'What are the enablers for implementing knowledge management systems in India?' A theoretical model for KM enablers was constructed in order to reach a more comprehensive understanding of the research issue. This model is based on a review of the literature and a multiple case study with 80 organisations in four Indian cities with an attempt to explore the difference between metro and regional organisations in India.

2. LITERATURE REVIEW

2.1 Knowledge management, knowledge management systems and outcomes

Researchers have provided definitions to better understand the concepts of knowledge and knowledge management. For example, knowledge management has been defined as the process of capturing, storing, sharing, and using knowledge (Davenport & Prusak 1998). KM is also the systematic and explicit management of knowledge-related activities, practices, programs and policies within the enterprise (KM 1997), or the art of creating value to organisations by leveraging intangible assets (Sveiby 1997). Accordingly, knowledge is defined as a justified belief that increases an entity's capacity for effective action (Alavi & Leidner 2001; Huber 2001). Knowledge can be further viewed as a state of mind; an object; a process; a condition of having access to information; or a capability (Alavi & Leidner 2001).

To manage knowledge assets more effectively, knowledge management systems are the IT-based platform designed for facilitating KM by providing larger databases, more powerful computation

ability, higher performance data structures, and smarter query techniques (Weber, Aha & Becerra-Fernandez 2001). Knowledge management systems (KMS) refer to a class of information systems applied to managing organisational knowledge. The main function of KMS is to guide employees in obtaining helpful knowledge from knowledge bases and make existing experiences freely available to other employees of an organisation (Abdullah et al. 2005). According to recent studies (e.g. Li & Tsai 2009), KMS have proven to be efficient and effective in organising knowledge of high complexity and in large amounts.

Determining key outcomes of implementing KMS in organisations appears to be difficult. These outcomes include achieving organisational efficiency, competitive advantage, maximising organisational potential and better management of knowledge assets (Gan 2006). The first organisational outcome can be enhanced by implementing KMS is competitive advantage. A firm's competitive advantage depends more than anything on its knowledge: on what it knows, how it uses what it knows, and how fast it can know something new (Prusak 1997). For example, to ensure continued competitive advantage, organisations need to fully understand both their customers and competitors (Al-Hawamdeh 2002; North, Reinhardt & Schmidt 2004). Customers are an integral component of the organisation's intellectual capital and is the reason for the organisation's existence (Stewart 1997). To ensure that an organisation effectively leverages this intellectual capital with regards to their customers, information technology solutions such as customer relationship management (CRM) are useful to manage whatever knowledge of customers the organisation possesses (Probst, Raub & Romhardt 2000).

2.2 Obstacles and enablers of implementing KMS

Despite the fact that organisations may reward their own employees for effective knowledge management practices, this may create obstacles for knowledge management. One example is that some organisations provide pay-for-performance compensation schemes, plus it can also serve to discourage knowledge sharing if employees believe that knowledge sharing will hinder their personal efforts to distinguish themselves relative to their co-workers (Huber 2001).

Recent studies have attempted to provide guidelines and successful experiences to reduce obstacles. For instance, there are four areas that need to be focused on when implementing knowledge management systems. These areas include (Emelo 2009): understanding who the knowledge sources are; measuring where and how knowledge flows; getting knowledge to flow more rapidly and freely; and reinforcing knowledge with supportive relationships. Additionally, a review of the literature reveals that there are many enablers that are known to influence knowledge management practices (Gan 2006). These enablers can be broadly classified into either a social or technical perspective. The social perspective of knowledge management enablers plays an important role and has been widely acknowledged (Smith 2004). These enablers are further discussed below.

One of the enablers is collaboration. Collaboration is an important feature in knowledge management adoption. It is defined as the degree to which people in a group actively assist one another in their tasks (Lee & Choi 2003). A collaborative culture in the workplace influences knowledge management as it allows for increased levels of knowledge exchange—a prerequisite for knowledge creation. Another enabler is mutual trust. It exists in an organisation when its members believe in the integrity, character and ability of each other (Robbins, Millett & Cacioppe 2001). Trust has been an important factor in high performance teams as explained in organisational behaviour literature. The existence of mutual trust in an organisation facilitates open, substantive and influential knowledge exchange. When team relationships have a high level of mutual trust, members are more willing to engage in knowledge exchange.

In addition, organisational incentives and rewards that encourage knowledge management activities amongst employees play an important role as an enabler (Yu, Kim & Kim 2004). Incentives are something that have the ability to incite determination or action in employees within an organisation (Robbins, Millett & Cacioppe 2001). Organisational structure plays an important role as it may either encourage or inhibit knowledge management. The structure of the organisation impacts the way in

which organisations conduct their operations and, in doing so, affects how knowledge is created and shared amongst employees (Lee & Choi 2003).

Another structural enabler is the level of non-formalisation. It refers to the written documentation of rules, procedures and policies to guide behaviour and decision making in organisations (Wood et al. 1998). When an organisation is highly formalised, employees would then have little discretion over what is to be done, when it is to be done and how they should do it, resulting in consistent and uniform output (Robbins, Millett & Cacioppe 2001). However, formalisation impedes knowledge management activities. This is because knowledge creation requires creativity and less emphasis on work rules, thus, the range of new ideas that emerge from a highly formalised structure is limited.

Lastly, but no less important an enabler, is IT infrastructure. It plays an important role in knowledge management. Technology infrastructure includes information technology and its capabilities which are considered to assist organisations to get work done, and to effectively manage knowledge that the organisation possesses (Holsapple 2005). The information technology infrastructure within an organisation can be broadly categorised into hardware technologies and software systems. The aspects were investigated in this study for their applicability in the Indian context.

3. QUALITATIVE DATA COLLECTION AND ANALYSIS

A multiple case study was conducted to identify the possible enablers for organisations when implementing their KMS. Twenty organisations were chosen in each of the Indian cities: Chennai; Coimbatore; Madurai; and Villupuram. A total number of 80 local and international organisations were interviewed with focus given to the exploration of factors that influence KMS implementation. Hence, the unit of analysis is 'organisation'.

For better understanding of the background of the interviewees, the organisations, and the cities, some background information is provided in this section. Basic information of the interviewees is summarised in Tables 1 and 2. Table 1 indicates that the interviewees cover three main job levels: senior executives; middle managers; and operational staff. Table 2 summarises the seniority of interviewees. The percentage of interviewees who worked in the organisations for more than two years is over 90 percent. This assists the interviewers in better understanding the organisational environment and its working culture.

Job Position of Interviewee	Frequency	Percentage
Proprietors, Partners, & Executives	24	30.00%
Middle Managers & Professionals	39	48.75%
Operational Staff	17	21.25%
Total	**80**	**100%**

Table 1: Job position of the interviewees

Seniority	Frequency	Percentage
2 years or under	5	6.25%
Over 2 and under 5 years	22	27.50%
Over 5 and under 10 years	16	20%
Over 10 years	36	45%
N/A	1	1.25%
Total	**80**	**100%**

Table 2: Seniority of the interviewees

Subsequent to the above, Table 3 depicts the distribution of industry for the 80 organisations that the interviewees worked at. The classification scheme of industries is adopted from the Australian Bureau of Statistics (ABS 1993). The dominating industries included manufacturing (22.50%), finance and insurance (20%), and information technology (10%). The frequency of distribution represents the

economic and social structure of the four Indian cities. The following paragraphs provide some background information related to these Indian cities.

Industry	Frequency	Percentage
Agriculture, Forestry and Fishing	0	0.00%
Mining	1	1.25%
Manufacturing	18	22.50%
Electricity, Gas and Water Supply	1	1.25%
Construction & Design	6	7.50%
Transport and Storage	2	2.50%
Accommodation, Cafe and Restaurant	0	0.00%
Retail Trade	6	7.50%
Wholesale Trade	3	3.75%
Government Administration & Defence	1	1.25%
Education, Training & Research	2	2.50%
Communication	4	5.00%
Property and Business Services	3	3.75%
Finance and Insurance	16	20.00%
Health and Community Services	1	1.25%
Cultural and Recreational Services	1	1.25%
Personal and Other Services	0	0.00%
Information Technology	8	10.00%
Other	7	8.75%
Total	**80**	**100%**

Table 3: Frequency of distribution by industry

The first city is Chennai. It is the capital city of the Indian state of Tamil Nadu. Chennai is the fifth most populous city in India, with a population of 4.34 million in the 2001 census. Chennai's economy has a broad industrial base in the automobile, technology, hardware manufacturing, and healthcare industries. The city is India's second largest exporter of software, information technology and information-technology-enabled services. Chennai Zone contributes 39 percent of the State's GDP. Chennai accounts for 60 percent of the country's automotive exports and is referred to as the Detroit of South Asia (Muthiah 2004). The enablers identified from the cases of Chennai cover the widest range from collaboration to IT infrastructure.

The next city is Coimbatore. It is the administrative headquarters and a major textile and engineering hub of (Southern) India. Coimbatore is also known as Manchester of South India. More recent estimates peg the population of Coimbatore at 1.5 million people. Coimbatore is known for its textile mills, factories, engineering firms, automobile parts manufacturers, health care facilities, educational institutions, pleasant weather, and hospitality. The city's primary industries are engineering and textiles. Although the enablers of KMS implementation vary significantly from one industry to another, in the case of Coimbatore, there is still a wide coverage of the enablers.

The third city is Madurai. It is the oldest inhabited city in the Indian peninsula. With a population of 1,374,838 according to the 2001 Census, Madurai was the capital city of ancient Southern civilization. Madurai district houses reputable organizations in the private sector which are engaged in the production of a variety of goods such as tyres, industrial rubber products, machinery, textiles, conveyor belts, chemicals, etc. (Madurai 2009). The industries for cases in Madurai include construction, mining, property and business services, IT, finance/insurance, manufacturing, wholesale/retail trade, and education. Structural factors such as non-centralisation and non-formalisation were not mentioned by any interviewees, and the factors of collaboration, leadership, and IT infrastructure were only mentioned once by the interviewees. The tendency of centralisation on enablers of KMS becomes more obvious: the size and structure of organisations may be the reason for this difference.

The last city is Villupuram. It serves as the headquarters of Villupuram District, the second largest district in the State. The industries of cases in Villupuram include wholesale and retail trade, communication, finance/insurance, construction, gas, electricity, and water supply, and others. Due to the structure of industry and organisations in Villupuram, the tendency of centralisation on the enablers identified is more obvious than Madurai. Only five of the nine factors were identified, hence, another four factors—collaboration, mutual trust, leadership, and non-centralisation—were not mentioned by any interviewees.

The first two Indian cities (Chennai and Coimbatore) are distinguished as metropolitan and industrial cities. They are grouped as the first team. The structure of society and the level of commercial and industrial developments discriminate the first group from the other cities, including Madurai and Villupuram. These cities are grouped as the second team in this study for their cultural and agricultural characteristics. The different characteristics of the cities were also founded on data collection for this study.

Further, the regional cities (Team 2) house less government offices and more small businesses compared to the metropolitan cities (Team 1). The willingness of the interviewees to allow recording of their conversations varied between these two teams. For instance, in Team 1, 30% of interviewees cancelled their meetings for this reason; and 83% of interviewees turned down the appointments in Team 2. Moreover, in Team 1 the executives of the selected case have a general phobia that their conversations would be exposed to competitors. Based on the statistics and introduction, it is understandable that each of the Indian cities has its unique economic structure, population, history and culture. They cover different economic and geographic areas of India. The four cities can then be grouped into two main categories for further analysis: metropolitan and regional cities. The metropolitan group includes Chennai and Coimbatore, and the regional group includes Madurai and Villupuram.

Table 4 builds the linkages between the body of literature and the case study. The enablers of KMS that have been discussed in previous literature are summarised in this table. The enablers were all identified throughout the multiple case study. The results are illustrated in Table 4.

Enabler Identified	Distributions (Ranked)	Percentage
Learning	49	61.25%
Incentives & Rewards	42	52.50%
Information Technology Infrastructure	19	23.75%
T-Shaped Skills	12	15.00%
Non-Formalisation	11	13.75%
Mutual Trust	9	11.25%
Non-Centralisation	7	8.75%
Leadership	5	6.25%
Collaboration	3	3.75%

Table 4: Distribution of the enablers for KMS implementation

4. THE PROPOSED THEORETICAL MODEL

Based on the literature review and the results of the Indian case study, the following theoretical model was constructed in Figure 1 for further investigation. The concepts of these factors have been discussed in Section 2.3.

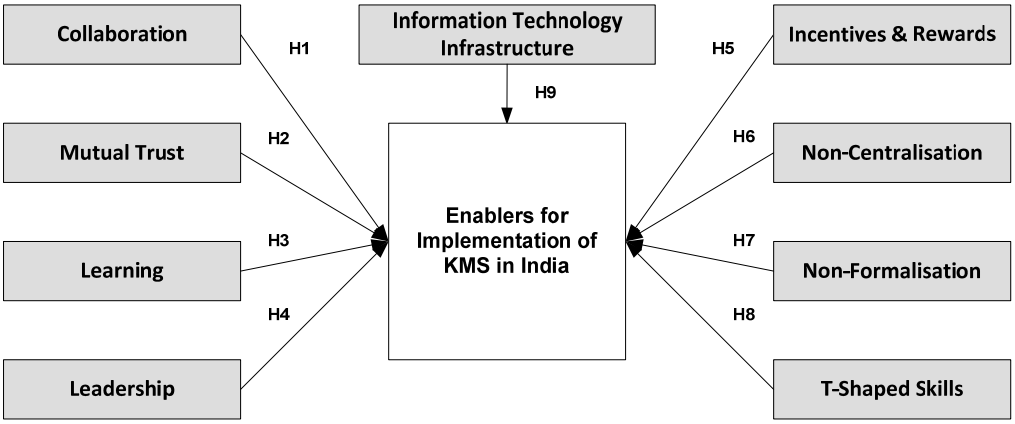

Figure 1: Proposed theoretical model for the enablers of KMS in India

Each of the hypotheses seeks to identify whether it is a significant factor (enabler) for Indian organisations. These potential factors/enablers include collaboration, mutual trust, learning, leadership, incentives and rewards, non-centralisation, non-formalisation, T-shaped skills, and information technology infrastructure. The hypotheses are summarised in Table 5, and have been tested through a survey study, which is discussed in the following section.

Hypothesis	Content of hypothesis
Hypothesis 1	'Collaboration' is an enabler for implementing KMS in Indian organisations.
Hypothesis 2	'Mutual Trust' is an enabler for implementing KMS in Indian organisations.
Hypothesis 3	'Learning' is an enabler for implementing KMS in Indian organisations.
Hypothesis 4	'Leadership' is an enabler for implementing KMS in Indian organisations.
Hypothesis 5	'Incentives and Rewards' is an enabler for implementing KMS in Indian organisations.
Hypothesis 6	'Non-Centralisation' is an enabler for implementing KMS in Indian organisations.
Hypothesis 7	'Non-Formalisation' is an enabler for implementing KMS in Indian organisations.
Hypothesis 8	'T-Shaped Skills' is an enabler for implementing KMS in Indian organisations.
Hypothesis 9	'Information Technology Infrastructure' is an enabler for implementing KMS in Indian organisations.

Table 5: Hypotheses setup for further testing

5. QUANTITATIVE DATA COLLECTION AND ANALYSIS

Subsequent to the multiple case study and model building, a survey was administered in the same Indian cities to further examine and confirm the results of the case study. The survey either adapted measures that had been validated by other researchers, or converted the definitions of constructs into a questionnaire format. A five-point Likert scale was used to measure the extent that each factor influences the respondent's organisation. Opinions from 400 respondents (100 in each city) in the domain of KMS implementation, with a focus on what are the enablers of KMS, were collected and analysed. These organisations were selected with the convenient sampling technique. Those were identified from the business unions and associations by the criteria of previous experiences in using or developing KMS. Table 6 illustrates the demographic information of the survey respondents.

Gender	Frequency	Percentage	Age Group	Frequency	Percentage
Male	342	85.50%	Under 26	39	9.75%
Female	58	14.50%	26-30	92	23.00%
Total	**400**	**100%**	31-35	102	25.50%
Seniority	**Frequency**	**Percentage**	36-40	86	21.50%
2 years or under	96	24.00%	41-45	40	10.00%
Over 2 and under 5 years	149	37.25%	46-50	25	6.25%
Over 5 and under 10 years	76	19.00%	51-55	12	3.00%
Over 10 years	79	19.75%	56-60	4	1.00%
Total	**400**	**100%**	**Total**	**400**	**100%**

Table 6: Frequency Distribution of Survey

The statistical method of comparing mean is appropriate to measure the factors in this study (Garvin 2000; Tsai 2007). The significance of Hypothesis 1 to Hypothesis 9 were tested at $\alpha = 0.05$ with 2-tailed Z-tests. The results of hypothesis test are illustrated in Figure 2. The composite reliability was tested with Cronbach's alpha value by SPSS. The results of reliability analysis are shown in Table 7.

Measures	Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	No. of Items
Collaboration	0.939	0.943	4
Mutual Trust	0.905	0.919	4
Learning	0.957	0.960	4
Leadership	0.980	0.983	4
Incentives & Rewards	0.972	0.973	4
Non-Centralisation	0.963	0.963	4
Non-Formalisation	0.975	0.976	4
T-shaped Skills	0.955	0.962	4
IT infrastructure	0.951	0.958	4

Table 7: Reliability statistics

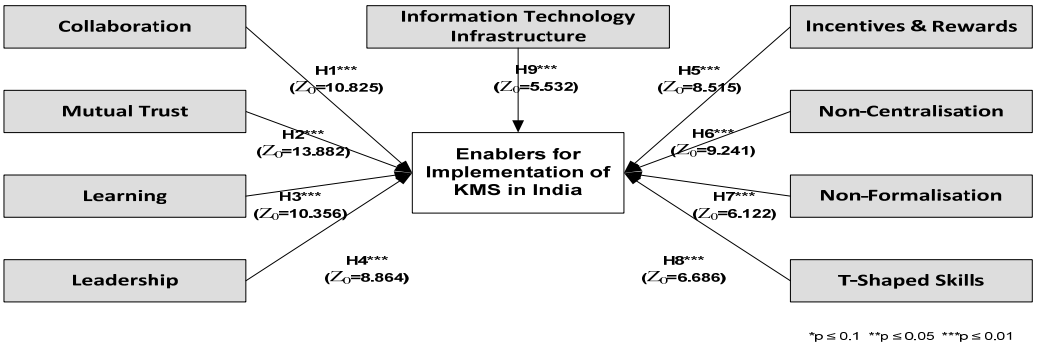

Figure 2: The results of hypothesis test (whole data set)

All the factors were found to be significant as enablers of KMS implementation in India. That is, the enablers identified from the multiple case study and literature were all supported in the survey data. The results of Z-tests are illustrated in Figure 2. The results of hypothesis tests are also summarised in Table 9.

Subsequent to the results of hypothesis tests on the whole dataset, an analysis down to 'level of city group' was conducted. The team of metropolitan cities include Chennai and Coimbatore and the team of regional cities include Madurai and Villupuram. The second-level data analysis divided the whole

dataset into two subgroups accordingly. The nine hypotheses were further tested with the two separate datasets. The results of analysis are listed in Table 8. The results of second-level data analysis indicate that there is a significant difference between the two groups. In the second group, only the factors of collaboration, mutual trust, and learning are tested significant. In addition, the factor 'Information Technology Infrastructure' was significant in the opposite direction. To summarise, results of the hypothesis tests are listed in Table 9.

Hypothesis	Z_0 (Metropolitan)	Significance	Z_0 (Regional)	Significance
H1	14.693	*	2.918	*
H2	21.632	*	3.289	*
H3	14.377	*	2.354	*
H4	15.311	*	-0.476	
H5	15.314	*	-0.851	
H6	14.908	*	0.326	
H7	10.848	*	-0.844	
H8	13.095	*	-0.749	
H9	13.975	*	-2.525	* (in opposite direction)

Table 8: Further analysis for hypothesis test

Hypothesis	Whole data set	Metropolitan data set	Regional data set
H1	Supported	Supported	Supported
H2	Supported	Supported	Supported
H3	Supported	Supported	Supported
H4	Supported	Supported	Not Supported
H5	Supported	Supported	Not Supported
H6	Supported	Supported	Not Supported
H7	Supported	Supported	Not Supported
H8	Supported	Supported	Not Supported
H9	Supported	Supported	Not Supported

Table 9: Summary of hypothesis tests

6. DISCUSSIONS AND CONCLUSIONS

This study summarised the enabling factors previously discovered and discussed in the literature for further identifying and confirming outcomes in the India context with a rigorous two-stage data collection process and analysis. The process included using a multiple case study to explore and identify these factors in Indian organisations, then to further form the proposed model and test it by a broader survey study. A total number of 80 local and international organisations located in four Indian cities were interviewed in the case study, and another 400 organisations were investigated in the survey.

Notwithstanding the above three enablers, other enablers including leadership, incentives and rewards, non-centralisation, non-formalisation, T-shaped skills, and information technology infrastructure are all supported by the whole Indian dataset in the hypotheses tests. This indicates that these factors are generally enabling factors for KMS implementation in India. However, after classifying the whole dataset into metropolitan and regional city subgroups, the results are contrary. The metropolitan dataset indicates that these six factors are all accepted as enablers of KMS implementation in India. The factor of information technology infrastructure is significantly negative. The result indicates that there exists a substantial difference between these city groups, even though they are all in the same nation.

In this study, all the enabling factors of KMS identified from different contexts were significantly supported by the whole Indian dataset. Based on the analysis of case study, a logical inference is that every nation has its unique culture, however, there are still similarities in the areas of business

operation, knowledge management and KMS implementation. This is especially true for large or international organisations. Even with the cultural differences, findings in KM studies may still be useful for a multi-national or multi-cultural context if the findings are built on the basis of a wide range of cases.

This study proposed a theoretical model illustrating the enabling factors of KMS implementation. This model allows researchers and practitioners to understand the enablers of KMS in a more comprehensive and systematic manner compared to previous studies. Secondly, in spite of many studies indicating that culture-related enablers may vary between nations with different cultural backgrounds, all of the nine enablers of KMS identified in different times and places were supported with Indian data. Lastly, the second-level data analysis indicated that various characteristics between cites may lead to substantial differences with regard to what factors actually facilitate their KM. The results would be meaningful for further studies. The limitations of this study include that the data are cross-sectional instead of longitudinal and, thus, the results of this study could only be inferred rather than proven.

References

Abdullah, R., Selamat, M.H., Sahibudin, S. and Alias, R.A. (2005). A framework for knowledge management system implementation in collaborative environment for higher learning institution. Journal of Knowledge Management Practice, 6(1).

ABS (1993). Australian and New Zealand standard industrial classification, Australian Bureau of Statistics, viewed 02 October 2006, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/66f306f503e529a5ca25697e0017661f/acc2f9615290d8eeca25697e0018faf6!OpenDocument>.

Al-Hawamdeh, S. (2002). Knowledge management: re-thinking information management and facing the challenge of managing tacit knowledge. Information Research, 8(1).

Alavi, M. and Leidner, D.E. (2001). Review: knowledge management and knowledge management systems: conceptual foundations and research issues. MIS Quarterly, 25(1), 107-36.

Bock, G.W., Zmud, R.W. and Kim, Y.G. (2005). Behavioral intention formation in knowledge sharing: Examining the roles of extrinsic motivators, social-psychological forces, and organisational climate. MIS Quarterly, 29(1), 87-111.

Chaudry, A. (2005) Knowledge sharing practices in Asian institutions: a multi-cultural perspective from Singapore. paper presented to World Library and Information Congress 71st IFLA General Conference and Council, Oslo, Norway.

Davenport, T.H. and Prusak, L. (1998). Working knowledge, Harvard Business School Press, Boston.

Emelo, R. (2009). The future of knowledge management. Chief Learning Officer, May 2009, 44-7.

Gan, G.G.G. (2006). Knowledge management practices in multimedia super corridor status companies in Malaysia. University of Southern Queensland.

Heisig, P. (2009). Harmonisation of knowledge management – comparing 160 KM frameworks around the globe. Journal of Knowledge Management, 13(4), 4-31.

Holsapple, C. (2005). The inseparability of modern knowledge management and computer-based technology. Journal of Knowledge Management, 9(1), 45-52.

Huber, G.P. (2001). Transfer of knowledge in knowledge management systems: unexplored issues and suggested studies. European Journal of Information Systems, 10(1), 72-9.

India, (2009). viewed 2 October 2009, <http://en.wikipedia.org/wiki/India>.

Khalifa, M. and Liu, V. (2003). Determinants of successful knowledge management programs. Electronic Journal of Knowledge Management, 1(2), 103-12.

KM, W. (1997). Knowledge Management: An Introduction and Perspective. Journal of Knowledge Management, 1(1), 6-14.

Lee, H. and Choi, B. (2003). Knowledge management enablers, processes and organisational knowledge: an integrative view and empirical investigation. Journal of Management Information Systems, 20(1), 179-228.

Li, S.T. and Tsai, F.C. (2009). Concept-guided query expansion for knowledge management with semi-automatic knowledge capturing. Journal of Computer Information Systems, vol. Summer 2009, 53-65.
Madurai. (2009). viewed 2 October 2009, <http://en.wikipedia.org/wiki/Madurai>.
Muthiah, S. (2004). Madras Rediscovered, East West Books (Madras) Pvt Ltd.
North, K., Reinhardt, R. and Schmidt, A. (2004). The benefits of knowledge management: some empirical evidence. paper presented to The Fifth European Conference on Organisational Knowledge Learning and Capabilities, Innsbruck, Austria.
Oldenburg, P. (2007). India history: Microsoft Encarta online encyclopedia, Microsoft Corporation.
Probst, G., Raub, S. and Romhardt, K. (2000). Managing Knowledge - Building Blocks for Success, John Wiley & Sons, UK.
Prusak, L.(ed.) (1997). Knowledge in organizations, Butterworth-Heinemann, Boston.
Robbins, S., Millett, B. and Cacioppe, R. (2001). Organisational behaviour: leading and managing in Australia and New Zealand, 3rd edn, Prentice Hall, Malaysia.

Smith, P. (2004). Knowledge management: people are important. Journal of Knowledge Management Practice.
Srinivas, N. (2009). Mimicry and revival: the transfer and transformation of management knowledge to India 1959–1990, International Studies of Management and Organisation, 38(4), 38-57.
Stewart, T. (1997). Intellectual Capital, Nicholas Brealey Publishing, London.
Sveiby, K. (1997). The new organisational wealth: managing and measuring knowledge-based assets. Berret-Koehler Publishers, San Francisco.
Weber, R., Aha, D.W. and Becerra-Fernandez, I. (2001). Intelligent lessons learned systems. Expert Systems with Applications, 20(1), 17-34.
Yu, S.H., Kim, Y.G. and Kim, M.Y. (2004). Linking Organisational Knowledge Management Drivers to Knowledge Management Performance: An exploratory study. paper presented to 37th Hawaii International Conference on System Sciences, Hawaii, USA.