



Knowledge management competencies required among library and information science professionals

An Indian perspective

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Abstract

Purpose – The purpose of this paper is to identify and validate the competencies perceived to be essential for library and information science (LIS) professionals keeping in view the needs of knowledge management (KM) applications in Indian academic libraries.

Design/methodology/approach – After reviewing relevant literature on the topic, a list of 25 competencies was prepared and organized in five categories. A link for attending the survey (list of KM competency statements) for the validation of competencies was sent via electronic mail to the teachers (95 in numbers) of 65 LIS schools where post-graduate courses in LIS were offered. Respondents were asked to nominate the level of importance for validation of each proposed KM competency.

Findings – Findings of the study show a minor difference in the mean scores of five categories of competencies, but all the competencies were validated as needed. However, respondents were of the opinion that development of competencies in the field of management by LIS professionals is the most essential requirement for effective application of KM in Indian academic libraries.

Practical implications – Competencies validated by the respondents may be used as the groundwork for evaluation of current LIS educational programmes and revision of LIS curricula to impart a wide range of competencies to LIS students for working in KM environment.

Originality/value – Since no empirical study on required competencies for KM in India has been carried out before, this study closes this gap and provides guidelines to modify existing LIS curricula or LIS educational programmes to impart skills and competencies as validated by the academic community.

Keywords Knowledge management, India, Academic libraries, Competences, Skills, Library and information science professionals, Library and information science education

Paper type Research paper



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Introduction

Knowledge management (KM) has emerged as an interdisciplinary discipline, which includes human resource management (HRM), information and communication technology (ICT), information science and information management (IM). Librarianship is often described as the organisation of recorded knowledge (Corrall, 1998), while KM:

[. . .] involves the management of explicit knowledge (i.e. knowledge that has been codified in documents, databases, web pages, etc.) and the provision of an enabling environment for the development, nurturing, utilization and sharing of employees' tacit knowledge (i.e. know-how, skills, or expertise) (Ajiferuke, 2003, p. 1).

Although library and information science (LIS) professionals played the role of information managers in handling organisations' documents and explicit knowledge, to establish a strong position in KM environment they have to extend their roles by managing employees' tacit knowledge on the basis of their distinctive information and knowledge handling skills (Al-Hawamdeh, 2005). However, to help LIS professionals be involved more successfully in KM activities and to maximise their prospects for success in what is a very competitive field, the acquisition of a number of additional competencies in the field of management, business operations and ICT could be considered.

Competencies are defined as the descriptions of skills, know-how, abilities and personal qualities acquired through deliberate, systematic and sustained efforts to smoothly and adaptively perform a particular role and carry out complex activities or job functions successfully (Todd and Southon, 2001). Competencies that emanate from the deliberate use and management of the organisation's knowledge resources with the aim of gaining competitive advantage are referred to as KM competencies (Zheng, 2005; Luthra, 2008). According to Sarrafzadeh (2005), if LIS professionals remain reluctant to gain new skills, they will become irrelevant to their organisation and will probably lose out in competition for employment to people of other fields like scientists, engineers and IT professionals. Thus, LIS professionals must encounter rapidly changing environments that require diverse skills, new thinking and broader perspectives and must be prepared to develop innovative ideas for the capture, process and sharing of knowledge and demonstrate good management practices if they want to remain relevant in the emerging knowledge age (Smythe, 1999). Accordingly, the present study aims to investigate the perceptions of LIS faculties toward the requirements of KM competencies among LIS professionals in India to involve in KM practices.

Review of literature

KM as a mainstream discipline operates in a largely different context and differs significantly from the theory and practice of librarianship, IM and information resource management. According to Rehman and Chaudhry (2005), LIS professionals need to develop additional competencies if they wish to have any effective role in the field of KM. Abell and Oxbrow (2001) point out that the LIS sector needs to develop a range of interpersonal and business skills in its staff to add value to a knowledge-based environment. Koenig (1999) highlights the importance of both traditional skills of librarianship in the information environment and additional skills in the business environment. Further, he explains that skills in indexing, cataloguing, authority

control and database management for the organisation and structuring of information are still relevant for the management of information. However, skills such as managerial, leadership, interpersonal are required for leveraging intellectual assets, fostering innovation and change and developing an organisational culture of sharing knowledge. In a similar vein, Rooi and Snyman (2006) argue that librarians have the opportunity to play an important role in KM on the basis of their training and experience, developed and used for many years. However, they need to extend and renew these skills and link them with the processes and core operations of the business in order to be successful in KM. Morris (2001) also points out that LIS professionals already possess the essential theoretical and practical skills to work with KM. They have opportunities to use these skills in creative and imaginative ways to influence information strategies at boardroom level and corporate decision making, but they have to gain other skills related to management, business operations and ICTs to take advantage of the emerging roles in the knowledge economy.

According to Khoo (2005), traditional skills of LIS professionals are still in demand, but these skills have to be expanded to handle new digital formats and the online (especially internet) environment to use new metadata schemes and cataloguing of digital and internet resources. Bishop (2001) points out that managing knowledge in academic libraries requires a mix of technical, organisational and interpersonal skills. In making knowledge more accessible, it is useful to have knowledge of the organisation, user service orientation and training skills (Koina, 2003). Teng and Hawamdeh (2002, p. 195) summarise [...] different types of skills needed for the LIS professional in a knowledge-based environment into four categories:

- (1) IT literacy, that is knowing how to use the appropriate technology to capture, catalogue and disseminate information and knowledge to the target audience and knowing how to translate that knowledge into a central database for employees of the organisation to access.
- (2) A sharp and analytical mind.
- (3) Innovation and inquiring.
- (4) Enables knowledge creation, flow and communication within the organisation and between staff and public.

Todd and Southon (2001) tried to identify the skills required for KM practice through the viewpoint of LIS professionals in Australia. Six specific categories of skills were identified:

- (1) people-centred skills, such as those of negotiation, sharing, team-working and communication;
- (2) skills associated with aspects of management of the organisation as a whole (management skills);
- (3) information processing skills;
- (4) cognitive skills;
- (5) organisation and business skills; and
- (6) information technology skills.

Another study conducted in Canada by Ajiferuke (2003) investigated the required skills for KM through the viewpoint of information professionals. Ajiferuke identified

team working, communication and networking skills as the key organisational skills required for information professionals in order to participate in KM programmes.

In the developing country region, we can also find works dealing with needed competencies for KM. A study conducted by Mahmood (2003) has identified a set of KM competencies for entry-level professionals of academic libraries in Pakistan. The findings of this study show that seven out of the ten most essential KM competencies validated for academic librarians belonged to the information technology category. Most of the respondents, whether they possess these competencies themselves or not, expect skills like information technology, interpersonal communication and leadership skills from academic librarians of Pakistan to involve in KM practices. Findings of a study on “competencies for successful knowledge management applications in Nigerian academic libraries” conducted by Ugwu and Ezema (2010) show that cultural skills, leadership skills, strategic skills and restructuring skills are the most essential requirements for LIS professionals to involve in KM. Further, they suggested that for effective applications of KM in Nigerian university libraries, it is important that librarians are trained to acquire the identified KM skills to face the challenges of knowledge economy. Siddike and Islam (2011) carried out a survey to identify core competencies needed for information professionals to involve in KM in the libraries/information institutions of Bangladesh. Most of the respondents believe that competencies including those in communication, facilitation, coaching, mentoring, networking, negotiating, consensus building and team working are essential for KM in the libraries of Bangladesh. The authors, on the basis of findings of the study, suggested that the Department of Information Science and Library Management of Dhaka University and Rajshahi University should introduce KM course(s) either in the graduate level or in the post-graduate level. According to Yaacob *et al.* (2010), middle and top managers of the large libraries of Malaysia perceive that inadequacy in leadership and IT skills is the most deficient area in Malaysian librarians which influence the organisation’s knowledge sharing efforts in a positive way.

In India, no such study has been conducted on the requirements of skills and competencies among LIS professionals to involve in KM practices. However, an analytical study by Gulati and Raina (2000) justifies a set of professional competencies that need to be developed among LIS professionals of India in their various areas of operations and services such as knowledge capture, knowledge processing (and dissemination) and knowledge application. Further, they have also recommended the development of need-based and tailor-made short-term training programmes for existing professionals, for honing their skills and developing their expertise.

Purpose and objectives of study

It has emerged from the review of literature that traditional skills of librarianship among LIS professionals are still relevant for the management of information but they need to acquire other types of competencies to prove themselves as knowledge managers. Previous studies suggest the need of formal education and training programmes to develop a strong and shared understanding of the nature of KM, its underpinning assumptions and values and its multi-faceted relationship to existing information work (Todd and Southon, 2001; Jain, 2007; Rehman, 2006; Hazeri *et al.*, 2007; Martin, 1999). A few studies in India (Gulati and Raina, 2000; Subramanian, 2007; Thanuskodi, 2010) acknowledge the importance of developing skills and competencies among LIS

professionals in order to perform their job more effectively in the knowledge age; however, no empirical study has been conducted to examine the requirements of skills and competencies for the involvement of LIS professionals in KM practices.

According to Rehman *et al.* (1997), competence identification and validation processes provide an objective framework for the design of education and training programmes. They also provide guidelines for determining appropriate educational and training levels for intake and graduation. Education and training programmes can be evaluated against validated sets of competencies. The LIS curriculum has always been criticised in India, as it has been implemented without any feedback from the LIS community (Singh, 2009). According to Chakraborty and Sarkhel (2009), the courses offered by LIS schools in India are not sufficient to develop proper understanding of the concept of KM as well as necessary skills among LIS students to practically involve in KM practices. Identification and validation of the KM competencies may help the academic community to re-consider LIS curriculum and teaching methods and modify the existing curriculum to impart a wide range of competencies among students. Therefore, in the present study, an attempt was made to prepare a list of KM competencies and to validate the list of competencies based on the perceptions of the academic community in India. The specific objectives of this study are to:

- prepare a list of KM competencies required among LIS professionals; and
- validate the list of KM competencies based on the perceptions of the academic community in India.

Methodology

The web-based questionnaire survey method was used to achieve the objectives of the study. A questionnaire was designed and distributed through FreeOnlineSurveys.com. For this purpose a list of 78 universities offering up to master degree level courses in LIS was prepared using a latest available directory (i.e. *Universities Handbooks*, published by Association of Indian Universities, 2010). The sample size was identified by navigating the internet and consulting the web sites of LIS schools to identify those teachers who had some sort of specialisation in KM and its related areas. The details of 65 LIS schools and their faculty were available on the internet. After consulting the web sites of LIS schools of 65 universities, details (including name, designation, e-mail, specialisation, etc.) of LIS teachers were noted. As of 30 June 2011, this number represented 177 teachers from 65 universities. Out of 177 teachers, the present study chooses all those 95 teachers who mentioned their specialisation in KM and its related areas as sample for this study.

A list of 25 competencies was prepared based on an extensive review of literature. Special attention was given to those competencies that were already validated in Asian or other devolving countries, including in Pakistan by Mahmood (2003), Malaysia by Yaacob *et al.* (2010), Bangladesh by Siddike and Islam (2011), Nigeria by Ugwu and Ezema (2010) and Thailand by Tanloet and Tuamsuk (2011). The list was divided into five categories:

- (1) KM culture competencies;
- (2) management competencies;
- (3) interpersonal competencies;
- (4) leadership and strategic competencies; and
- (5) IT competencies.

Respondents were asked to nominate the level of importance to each proposed KM competency a holder of a Master of Library and Information Science (MLIS) degree should possess, keeping in view the needs of KM applications in academic libraries in India. The level of importance of each competency was measured using a five-point Likert scale, where 1 was for “not needed” and 5 for “most needed”. For validation purpose, the mean value 3.45 (based on a method designed and used by Sarrafzadeh *et al.* (2010)) was fixed as the cut-off point, meaning that a competency would be considered “needed” if it received an average mean score greater than 3.45.

A link for the survey (list of KM competency statements) for the validation of competencies was sent via electronic mail to the teachers (95 in numbers) of 65 LIS schools. A total of 43 or approximately 45 per cent responses were received. Of the 43 respondents, 24 (55.8 per cent) were assistant professors (including two lecturers), 13 (30.2 per cent) were associate professors (including three readers) and six (14.0 per cent) were professors. Out of total 43 respondents who completed the questionnaire, 27 (62.8 per cent) were male and 16 (37.2 per cent) were female. Their length of teaching experience was between four months and 35 years with the majority (71.1 per cent) having between six and 30 years length of employment in teaching. The majority of the respondents (81.4 per cent) had PhD as the highest degree, followed by Master’s degree (16.3 per cent) and MPhil degree (2.3 per cent) in LIS. Table I illustrates the demographic profile of the respondents.

Findings

Although the perceptions of respondents on each competency statement were different, they validated all competencies because the smallest mean score a competency statement obtained was 3.56, above the cut off point, i.e. 3.45. 13 competencies got mean scores of four or more (the list is presented in Table II). This trend of validation shows that respondents anticipated the need of interpersonal and management competencies among LIS professionals, as communication skills from interpersonal competency category was rated number one in the list of 25 competencies, with a mean score of 4.67.

	Frequency	%
<i>By designation</i>		
Assistant professors (including lectures)	24	55.8
Associate professors (including readers)	13	30.2
Professors	6	14.0
<i>By gender</i>		
Male	27	62.8
Female	16	37.2
<i>By year of experience</i>		
0-5	8	18.6
6-10	10	23.2
11-19	15	34.9
20-29	6	14.0
30 and over	4	9.3
<i>By highest degree</i>		
Master degree in LIS	7	16.3
M Phil degree in LIS	1	2.3
PhD degree in LIS	35	81.4

Table I.
Demographic profile
of the respondents

Rank	Category	Competencies	Mean
1	Interpersonal	Communication skills	4.67
2	Management	Human resource management skills	4.58
3	Management	Change management skills	4.53
4	Management	Project management skills	4.51
5	KM culture	Team work skills	4.42
6	Interpersonal	Mentoring skills	4.40
7	Management	Leadership skills	4.33
8	KM culture	Skills for fostering knowledge sharing and learning environment	4.30
9	KM culture	Skills to motivate employees	4.26
10	Leadership and structural	Ability to develop social networks or communities of practice	4.19
10	IT	Skills to design and develop web-based content for online use	4.19
11	Leadership and structural	Ability to develop performance-based reward system	4.16
12	IT	Skills to develop web-based portals or gateways	4.12

Table II.
Top 13 competencies

Three competencies from management competency category, which got second, third and fourth position in the list of top 13 were HRM skills, change management skills and project management skills, with mean scores of 4.58, 4.53 and 4.51, respectively.

KM culture competencies

The validation data of 25 KM competencies belong to five categories are presented in Tables III-VII. As Table III shows, the most needed KM competency, from five in the KM culture competency category, was team work skills. With mean score of 4.30, skills for fostering knowledge sharing and learning environment was the second most important competency in this category which is closely followed by skills to motivate employees, with a mean score of 4.26. Skills to build trust and relationship and skills to resolve conflict were placed at comparatively low ranks.

Competencies	Mean
Team work skills	4.42
Skills for fostering knowledge sharing and learning environment	4.30
Skills to motivate employees	4.26
Skills to build trust and relationship	3.98
Skills to resolve conflict	3.56

Table III.
Requirement of KM cultural competencies

Competencies	Mean
Human resource management skills	4.58
Change management skills	4.53
Project management skills	4.51
Leadership skills	4.33
Knowledge about marketing and publicity of information products and services	3.98

Table IV.
Requirement of management competencies

Management competencies

In the management competency category, HRM skills topped the list of five competencies, with a mean score of 4.58 (Table IV). The other important competencies validated in this category were change management skills, project management skills and leadership skills, with mean scores of 4.53, 4.51 and 4.33, respectively. Knowledge about marketing and publicity of information products and services was given low importance, receiving mean score 3.98.

Interpersonal competencies

Good interpersonal skills such as communication and mentoring were given high rating among the competencies belonging to the interpersonal category, with mean scores of 4.67 and 4.40, respectively (Table V). Other competencies, which were given a lower rating, in the interpersonal competency category include interviewing skills (mean 3.93) and judgment and evaluation skills (mean 3.91) and presentation skills.

Leadership and strategic competencies

Table VI shows the competencies needed for the strategic planning and restructuring of academic libraries. As shown in Table VI, ability to develop social networks or communities of practice and ability to develop performance-based reward system were validated as the important competencies for LIS professionals with mean score of 4.19 and 4.16, respectively. These were closely followed by ability to link knowledge with strategic

Table V.
Requirement
of interpersonal
competencies

Competencies	Mean
Communication skills	4.67
Mentoring skills	4.40
Interviewing skills	3.93
Judgment and evaluation skills	3.91
Presentation skills	3.61

Table VI.
Requirement of
leadership and strategic
competencies

Competencies	Mean
Ability to develop social networks or communities of practice	4.19
Ability to develop performance-based reward system	4.16
Ability to link knowledge with strategic results	3.88
Ability to develop KM policy	3.77
Skills to create value from organisation's knowledge-based assets	3.72

Table VII.
Requirement of
information technology
competencies

Competencies	Mean
Skills to design and develop web-based content for online use	4.19
Skills to develop web-based portals or gateways	4.12
Skills to use digital library software to create institutional or knowledge repositories	3.98
Skills to design and maintain in-house databases	3.95
Expertise to evaluate performance of information systems	3.58

results, ability to develop KM policy and skills to create value from organisation's knowledge-based assets, with mean scores of 3.88, 3.77 and 3.72, respectively.

IT competencies

Table VII shows the competencies needed for the use and application of IT for the implementation of KM systems in academic libraries in India. Competencies which received high mean scores were design and development of web-based content for online use, development of web-based portals or subject gateways and use of digital library software to create institutional or knowledge repositories, with mean scores of 4.19, 4.12 and 3.98, respectively. Competencies that were given comparatively less importance were the design and maintenance of in-house databases and expertise to evaluate performance of information systems, with mean scores of 3.95 and 3.58, respectively.

Comparison of the mean scores of KM competencies (five categories)

An average mean of each competency category was analysed. The results, presented in Table VIII, show that there is a minor difference in the average mean scores of five types of competencies, but respondents validated the requirements of competencies in five areas. However, respondents were of the opinion that the requirement for management competencies among LIS professionals is the most essential requirement (mean 4.38). This is closely followed by interpersonal competencies (mean 4.25); KM culture competencies (4.18) and leadership and strategic competencies (mean 4.08). It is important to note that use of information technology has been recognised in the literature as the foundation of KM, but requirements of competencies related to the use and application of IT got a low mean (3.98) among the five categories of competencies identified and validated.

Discussion

The present study has identified KM competencies needed in the five areas of competency building (management, KM culture, interpersonal, leadership and strategic and information technology) for the practice of KM in Indian academic libraries. Findings on the requirements of KM competencies in these areas indicate that, although there are minor differences in the mean scores of five categories of competencies, all of these were validated as needed. This means the academic community believes that LIS professionals in India need to develop competencies in all five areas. However, respondents were of the opinion that development of management competencies is the most essential requirement among LIS professionals.

It is important to mention here that IT has been recognised as one of the most important enablers of KM by the respondents of a study conducted in India by Nazim and Mukherjee (2011), but requirements of competencies related to the use and

Competencies	Mean
Management competencies	4.38
Interpersonal competencies	4.25
KM cultural competencies	4.10
Leadership and strategic competencies	4.08
Information technology competencies	3.98

Table VIII.
Requirement of different
types of competencies

application of IT was rated the lowest among the five types of competencies identified and validated in the present study. Martens and Hawamdeh (2010) rightly remark that IT skills are necessary but not sufficient to KM as a profession. Five categories of KM competencies investigated and validated clearly emphasise managerial, interpersonal and organisational/cultural factors over IT. Although use and application of IT is essential, it alone does not ensure successful KM in the absence of skills related to the organisational culture, business and leadership to develop a strategy for the implementation of KM in academic libraries. Roknuzzaman *et al.* (2013), based on the findings of a study on “incorporating KM education into LIS curriculum”, remark that since KM is being developed through inputs from many other disciplines, it would be a tough challenge for LIS professionals to succeed in incorporating KM unless they have knowledge of business and management.

The findings of the study show that the list of needed KM competencies, based on the work already done in developed as well as some developing countries, is absolutely acceptable by the academic community of India. When comparing the findings with previous studies, it may be observed that competencies in the areas of communication, HRM, change management and project management, which are validated with the high mean rating in the present study, are closely associated with the findings of earlier studies on the requirements of KM competencies among LIS professionals as investigated by Abell (2000) and Ajiferuke (2003). They found that these competencies are required for collaboration within an organisation to facilitate the process of sharing, exchange and use of knowledge. The findings of the present study are also closely associated with the findings of other studies conducted to investigate the requirements of KM competencies among LIS professionals in Africa by Maponya (2004); in Malaysia by Yaacob *et al.* (2010); in Nigeria by Ugwu and Ezema (2010); in Bangladesh by Siddike and Islam (2011); and in Thailand by Tanloet and Tuamsuk (2011).

Competencies which are identified and validated in the present study are essential for the proper repositioning of LIS professionals to face the challenges of the present day realities. A focus on the transfer of traditional LIS skills, for example, in knowledge organisation to the management of tacit knowledge could greatly enhance the influence of LIS professionals in the KM field and contribute to their overall understanding of the need for knowledge both at organisational and personal levels. These competencies may also be objectively applied for the evaluation of current LIS educational programmes and starting new courses to impart such competencies among LIS students.

Conclusion

It was identified from the review of literature that traditional LIS skills may be the basis of initiating KM practice in academic libraries, but these are not sufficient and there is need to develop additional competencies by LIS professionals for KM practice in academic libraries. The findings of the present study suggest the requirements of several competencies which are needed by LIS professionals for KM practice in academic libraries in India, including those related to communication, HRM, change management, project management, team work, mentoring, presentation and leadership.

Requirements of the wide range of competencies may be considered as an indication of the multidisciplinary nature of KM, and with this there is need for integrated and comprehensive KM educational programmes. A partial or improper understanding of KM among LIS professionals and lack of realisation of the value of KM education

among LIS students and academic community are key issues facing KM education in the LIS sector. To solve these problems, LIS schools need either to restructure the existing LIS curricula or to provide courses in KM for the development of competencies among LIS students. The sets of competencies validated by the respondents in the present study may be used as the groundwork for a redefinition of the curricula of LIS educational programmes. These can also be objectively applied for the evaluation of current LIS educational programmes.

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