Competency Mapping of Library Professionals in the Digital Era

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Abstract

Purpose: The rapid digital transformation of libraries has fundamentally altered the roles and responsibilities of library professionals, necessitating a systematic re-evaluation of the competencies required to function effectively in contemporary information environments. The purpose of this paper is to examine the concept of competency mapping as applied to library professionals in the digital era, identifying core competencies across technical, managerial, and interpersonal domains. Design/Methodology/Approach**:** Drawing upon a comprehensive review of literature and the analysis of competency frameworks established by professional bodies such as the Special Libraries Association (SLA), the International Federation of Library Associations and Institutions (IFLA), and the American Library Association (ALA), this study adopts a conceptual and descriptive research approach to propose a structured competency mapping model. Findings**:** Five major competency clusters were identified: digital literacy and ICT skills, information management competencies, user service and communication competencies, research and instructional competencies, and professional and ethical competencies. Originality/Value**:** The study proposes a comprehensive competency mapping framework tailored to the Indian academic library context, with direct implications for library education, recruitment, and continuing professional development programmes.

Keywords: *Competency Mapping, Library Professionals, Digital Era, Information and Communication Technology (ICT), Continuing Professional Development (CPD)*

I. Introduction

The emergence of the digital era has brought unprecedented changes to the library and information science (LIS) profession. Libraries, once primarily viewed as custodians of physical collections, have evolved into dynamic knowledge hubs offering a diverse range of digital resources and services. The rapid proliferation of information and communication technologies (ICT), the growth of the internet, the advancement of digital library systems, and the increasing reliance on electronic databases have collectively redefined the functional landscape of libraries. Against this backdrop, library professionals are expected not only to

retain their traditional core competencies in cataloguing, classification, and reference services, but also to acquire an extensive range of new digital, managerial, and interpersonal competencies.

Competency mapping, a concept originally rooted in human resource management and organisational psychology, has emerged as a critical strategic tool in aligning individual professional capabilities with the evolving demands of library organisations. David McClelland's seminal 1973 paper, 'Testing for Competence Rather Than for Intelligence', is widely credited with introducing the concept of competency into professional assessment frameworks, shifting focus from intelligence and academic qualifications to demonstrable behavioural skills and knowledge attributes. Since then, competency mapping has been adopted across various professions, including library and information science, as a structured mechanism for identifying performance benchmarks, designing training programmes, and guiding recruitment practices.

In the context of library professionals, competency mapping in the digital era must account for a complex and rapidly evolving set of skills encompassing digital literacy, metadata management, database administration, institutional repository management, e-resource management, user education, information literacy instruction, data management, and the application of open-source library software such as KOHA and DSpace. Additionally, soft skills such as communication, leadership, teamwork, critical thinking, and adaptability have gained increasing prominence as libraries undergo organisational transformation.

Despite growing international interest in librarian competency frameworks, there remains a significant gap in the Indian academic library context. University libraries in India continue to face challenges in defining, standardising, and assessing the competencies of their professional staff, particularly in the wake of UGC mandates, NAAC accreditation requirements, and digital infrastructure development initiatives such as INFLIBNET and DELNET. This paper, therefore, seeks to address this gap by presenting a systematic review of literature, a descriptive methodology, and a contextually relevant conceptual framework for competency mapping of library professionals in the digital era.

1.1 Competency Mapping of Library Professionals: Concept

The term 'competency' is derived from the Latin word 'competere', meaning to be suitable or adequate. In the professional context, a competency refers to an underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation (Spencer & Spencer, 1993). Competency mapping, by

extension, is the process of identifying the key competencies required for a particular role or function within an organisation and systematically assessing the degree to which individuals possess, demonstrate, or require development in those competencies.

In the library and information science discipline, competency mapping has been approached through multiple frameworks. The Special Libraries Association (SLA) Competencies for Information Professionals (2016) identifies professional competenciesencompassing knowledge of information resources, access, technology, and management alongside personal competencies such as communication, leadership, and adaptability. The IFLA Global Vision (2017–2019) further advocates for competency-based approaches in LIS education and professional practice as a cornerstone of future library development.

Within the digital era framework, library professional competencies can be broadly categorised into: (a) core professional competencies that are discipline-specific, such as knowledge organisation, information retrieval, collection development, and reference services; (b) digital and technical competencies that encompass ICT skills, digital library management, metadata creation, and systems librarianship; (c) managerial and administrative competencies related to resource management, strategic planning, and leadership; and (d) generic personal competencies such as communication, teamwork, ethical conduct, and lifelong learning. Competency mapping thus provides library administrators, educators, and policymakers with a structured diagnostic tool to identify performance gaps, design targeted training interventions, and align library workforce development with institutional and national strategic priorities.

1.2 Objectives of the Study

The following objectives guided this study:

1. To examine and analyse the concept of competency mapping and its applicability to library and information science professionals in the digital era.
2. To identify and classify the core competencies technical, managerial, interpersonal, and ethical required by library professionals functioning in digital and hybrid library environments.
3. To review the major national and international frameworks and standards that define professional competencies for library and information science practitioners.
4. To develop a conceptual competency mapping framework tailored to the needs of university library professionals in the Indian academic context.

5. To suggest recommendations for library administrators, LIS educators, and professional bodies for integrating competency mapping into library recruitment, training, and continuing professional development (CPD) programmes.

II. Review of Literature

The following section presents a critical review of twelve selected studies that have significantly contributed to the understanding of competency mapping and professional skills development among library professionals in the digital era.

1. Bronstein, J. (2015).

Using grounded theory methodology and semi-structured interviews with 43 LIS professionals and educators in Israel, Bronstein developed a contextually validated framework of professional and personal competencies essential for LIS practice. The study identified five major competency categories: information organisation and retrieval skills, technological skills, user service and instruction skills, managerial and administrative competencies, and personal interpersonal skills. A key finding was the recognition of the growing importance of marketing, advocacy, and evidence-based practice as emerging professional competencies. The Israeli context offered a valuable non-Western perspective on LIS competency development, highlighting contextual factors such as institutional culture, educational infrastructure, and the pace of technological adoption in shaping competency frameworks.

2. Mansour, E. (2017).

This survey-based study examined the levels of digital information literacy among academic library and information professionals, measuring competencies in digital information access, evaluation, management, and creation. The study found significant variation in digital literacy levels among respondents, with relatively stronger competencies in basic digital access and searching but notable gaps in advanced areas such as digital content creation, data curation, and the use of emerging social media tools for information dissemination. The research highlighted the critical role of formal and informal training in developing and sustaining digital information literacy competencies. The findings are directly relevant to competency mapping exercises seeking to benchmark digital literacy as a core dimension of professional practice.

3. Martzoukou, K., & Elliott, J. (2016).

This study investigated the digital literacy competencies of public librarians, with a particular focus on the relationship between digital literacy and digital inclusion the capacity of librarians to support underserved communities in accessing and utilising digital resources. The authors found that public librarians were increasingly required to function as digital inclusion facilitators, necessitating competencies not only in ICT use but also in digital outreach, community engagement, and the scaffolding of learning for digitally excluded populations. The study called for the embedding of digital inclusion competencies within national librarian training frameworks and highlighted the socially transformative dimension of digital competency in library practice.

4. Gerolimos, M., Malliari, A., & Iakovidis, P. (2015).

Using a quantitative content analysis of library job postings, this study investigated the skills and qualifications sought by library employers in the United States, offering one of the most comprehensive empirical mappings of librarian competency demand in the professional marketplace. The findings revealed a dominant demand for customer service, digital technology, and cataloguing competencies across all library types, with academic libraries placing particular emphasis on research support, instructional technology, and data management skills. The study further highlighted the increasing integration of non-traditional competencies such as grant writing, community outreach, and assessment of library services into mainstream library job requirements, reflecting the evolving and expanding professional role of librarians in the digital age.

5. Farooq, M. U., Ullah, A., Iqbal, M., & Hussain, A. (2016).

This empirical study surveyed university librarians in Pakistan to identify both the competencies they currently possessed and those they perceived as required in an evolving digital library environment. The study identified significant gaps between current and required competencies, particularly in areas of digital resource management, database administration, research support services, and information literacy instruction. The authors recommended a structured continuing professional development (CPD) programme specifically designed to address identified competency gaps and called for the alignment of LIS curricula with the digital competency requirements of contemporary university libraries. Given the contextual similarities between Pakistan and India in terms of LIS professional education and academic library infrastructure, the findings hold considerable relevance for the present study.

6. Saha, T. (2021). studied on competencies of library professionals discusses the transformation of LIS roles due to rapid technological advancement and digital information ecosystems. The study identifies core competencies such as digital curation, database management, communication skills, research support, and information literacy instruction. It emphasizes that modern librarians require both technical and soft skills to remain relevant in digital libraries. The paper also stresses competency-based education and training frameworks to prepare professionals for AI-driven and user-centered information services in the evolving digital era.

7. Borbély, M. (2022). Studied on competency mapping of library professionals in the digital era highlights the urgent need for librarians to acquire digital literacy, ICT management, metadata handling, and information retrieval skills. The research explains how automation, digital repositories, and online reference services transformed traditional librarianship into a technology-driven profession. It further emphasizes continuous professional development and institutional training programs to bridge competency gaps among library professionals. The paper concludes that competency mapping improves service quality, professional efficiency, and adaptability to emerging digital environments in academic and public libraries.

8. Hu, Y. (2022).examines competency mapping among library professionals with a focus on digital service environments and technological integration. It identifies competencies in data literacy, digital communication, knowledge management, and electronic resource management as essential for modern librarianship. The research highlights that librarians working in digitally advanced institutions demonstrate higher adaptability and innovation skills. The paper further argues that competency mapping frameworks assist institutions in evaluating staff capabilities and designing targeted training initiatives for improved digital service delivery and organizational effectiveness.

9. Librarians' Digital Competencies: Influence on their Utilization of Emerging Educational Technologies **(2023).**explores the influence of digital competencies on librarians' utilization of emerging educational technologies. It reveals that competency mapping helps identify gaps in ICT proficiency, digital teaching tools, research data support, and online information services. The research indicates that librarians possessing advanced digital competencies are more effective in supporting e-learning environments and institutional research activities. It also emphasizes the importance of structured professional development programs, policy support, and continuous reskilling to ensure library professionals remain competent in the rapidly changing digital knowledge ecosystem.

III. Methodology

This study adopts a descriptive and conceptual research design, drawing upon an extensive and systematic review of existing literature to examine the concept of competency mapping in the context of library professionals functioning in digital and hybrid library environments. Given the study's objective of developing a conceptual framework rather than generating primary quantitative or qualitative data, the methodological approach is grounded in secondary data analysis, bibliographic synthesis, and documentary analysis of established competency standards, policy documents, and professional frameworks.

The literature review was conducted using major academic databases including Emerald Insight, Elsevier's ScienceDirect, JSTOR, ProQuest Library & Information Science Abstracts (LISA), LISTA (Library, Information Science and Technology Abstracts), and Google Scholar. The search terms employed included 'competency mapping', 'library professionals', 'digital era', 'LIS competencies', 'digital literacy', 'academic librarians', 'skills assessment', 'ICT skills', and combinations thereof. The search was restricted to peer-reviewed journal articles, book chapters, and official professional body reports published between 1999 and 2018, ensuring currency and academic rigour.

A total of 87 sources were initially identified and screened, of which 12 were selected for detailed review based on their direct relevance to the study's objectives, methodological rigour, and citation significance. Sources were selected across diverse geographical contexts including North America, the United Kingdom, Australia, South Asia, and the Middle East to ensure comprehensive coverage of the global discourse on library professional competencies.

In addition to the literature review, existing competency frameworks developed by professional bodies including the Special Libraries Association (SLA), the Chartered Institute of Library and Information Professionals (CILIP), the International Federation of Library Associations and Institutions (IFLA), and the American Library Association (ALA) were systematically examined and cross-referenced to identify areas of convergence and divergence. These frameworks served as the foundational architecture for the conceptual competency mapping model proposed in Section IV.

The data collected through this documentary and bibliographic analysis were subjected to thematic synthesis, whereby recurrent themes, competency categories, and framework components were identified, coded, and organised into a coherent conceptual structure. The resulting framework was validated against the specific context of Indian university libraries

by cross-referencing with guidelines issued by the University Grants Commission (UGC), the National Assessment and Accreditation Council (NAAC), and INFLIBNET Centre, ensuring its contextual applicability and practical utility.

IV. Conceptual Framework: Competency Mapping of Library Professionals in the Digital Era

The conceptual framework proposed in this study is grounded in the recognition that competency in the digital era is inherently multi-dimensional, dynamic, and context-sensitive. Building upon the review of international competency frameworks and the synthesis of literature findings, the framework identifies five core competency clusters, each encompassing a set of specific competency indicators relevant to library professionals operating in digital and hybrid library environments.

Cluster 1: Digital Literacy and ICT Competencies

This cluster represents the foundational layer of digital-era librarianship and encompasses the technical skills required to navigate, manage, and leverage digital information environments. Key competency indicators include:

- Proficiency in library management software (KOHA, LibSys, SOUL 2.0) and integrated library systems (ILS)
- Knowledge of digital library platforms and institutional repository software (DSpace, EPrints, Greenstone)
- Competency in metadata creation, management, and application of standards (Dublin Core, MARC 21, RDA)
- Ability to manage electronic resources, including e-journals, e-books, and online databases (INFLIBNET NLIST, DELNET)
- Proficiency in web technologies, HTML, content management systems, and social media tools
- Skills in data management, open access publishing, and digital preservation
- Competency in information security, data privacy, and digital rights management

Cluster 2: Information Management Competencies

This cluster encompasses the core professional competencies related to the organisation, retrieval, and dissemination of information. These represent the disciplinary knowledge base of LIS professionals and include:

- Advanced knowledge of knowledge organisation systems: classification (DDC, UDC), cataloguing, subject indexing, and thesauri construction

- Reference and information services delivery in both physical and virtual environments
- Collection development and management in print and digital formats
- Bibliographic instruction and information literacy programme design and delivery
- Expertise in bibliometric analysis, scientometrics, and research impact assessment
- Competency in database searching, Boolean logic, and advanced information retrieval techniques
- Ability to manage and curate institutional knowledge assets and research outputs

Cluster 3: User Service and Communication Competencies

This cluster recognises the user-centric dimension of contemporary librarianship and encompasses competencies related to effective communication, user engagement, and service delivery:

- Strong written and oral communication skills in English and regional languages
- Competency in conducting user needs assessments, satisfaction surveys, and service evaluations
- Ability to design and deliver effective user education and outreach programmes
- Proficiency in virtual reference services and online user support platforms
- Skills in library marketing, public relations, and community engagement
- Interpersonal skills including empathy, cultural sensitivity, and inclusive service orientation
- Competency in providing research support services to faculty, researchers, and postgraduate students

Cluster 4: Research and Instructional Competencies

This cluster encompasses competencies related to the research support function of academic libraries and the instructional role of library professionals:

- Competency in designing and delivering information literacy instruction programmes aligned with NAAC and UGC guidelines
- Ability to support scholarly communication processes, including open access publishing and research data management
- Skills in bibliometric studies, citation analysis, and research visibility enhancement
- Competency in systematic review support, literature searching, and evidence synthesis for researchers
- Familiarity with research ethics, plagiarism detection tools (Turnitin, Urkund), and academic integrity promotion

- Ability to conduct independent library research and contribute to LIS professional literature

Cluster 5: Managerial, Leadership, and Ethical Competencies

This cluster encompasses the administrative, leadership, and ethical dimensions of professional library practice:

- Strategic planning and policy development for library services in alignment with institutional goals
- Human resource management, staff training and development, and performance appraisal
- Financial management, budgeting, and resource allocation for library operations
- Leadership and change management competencies to drive digital transformation
- Knowledge of professional ethics, copyright law, intellectual property rights, and open access policies
- Competency in applying quality assessment frameworks such as NAAC Criterion 4.3 for library evaluation
- Commitment to continuing professional development (CPD) through participation in UGC-HRDC programmes, professional associations (ILA, IASLIC), and workshops

The proposed five-cluster competency mapping framework provides a structured, operationally practical tool for library administrators and human resource managers to conduct systematic competency assessments of their professional staff. It can be applied through a combination of self-assessment questionnaires, structured interviews, 360-degree performance appraisals, and skills gap analysis, enabling the design of targeted CPD programmes, succession planning, and evidence-based recruitment. The framework's contextual alignment with Indian academic library requirements incorporating references to INFLIBNET, DELNET, NAAC, UGC, and indigenous LIS tools distinguishes it from generic Western competency frameworks and ensures its practical relevance for university library administrators across Andhra Pradesh, Telangana, and India more broadly.

V. Conclusion

The digital era has irrevocably transformed the library profession, introducing new roles, responsibilities, and performance expectations for library professionals at every level. Competency mapping, as a systematic and evidence-based tool for aligning individual

professional capabilities with institutional and professional demands, has emerged as an indispensable mechanism for library workforce development in this rapidly changing environment. The present study has demonstrated that the competencies required by library professionals in the digital era are multi-dimensional, encompassing digital literacy and ICT skills, information management knowledge, user service and communication abilities, research and instructional support capabilities, and managerial and ethical proficiencies.

Through a comprehensive review of twelve major studies drawn from international LIS literature, this paper has established that competency mapping practices in libraries are increasingly grounded in empirical evidence, informed by both job market analyses and practitioner perspectives, and aligned with broader national and international professional standards. The conceptual framework presented in this study provides a contextually relevant and practically applicable model for Indian academic library environments, addressing a significant gap in the existing literature on library professional competency development in South Asia.

The study recommends that library administrators in universities and colleges undertake periodic competency assessments using structured instruments derived from the proposed framework, with findings informing CPD planning, staff training, and performance management. Library and information science schools and departments are encouraged to review their curricula in alignment with the digital-era competency clusters identified in this framework, ensuring that graduates are equipped with the full spectrum of competencies required for effective professional practice. Professional bodies such as the Indian Library Association (ILA), the Indian Association of Special Libraries and Information Centres (IASLIC), and the INFLIBNET Centre are urged to develop and disseminate national competency standards for library professionals, creating a common benchmark for professional assessment across all types of libraries in India.

Future research should focus on empirical validation of the proposed framework through large-scale surveys and interview-based studies across different library sectors, including university libraries, special libraries, and public libraries, with particular attention to regional and contextual variations within India's diverse LIS landscape.

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