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Competencies needed for future academic librarians in Pakistan

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The changing environment of academic libraries in Pakistan demands new competencies for future academic librarians. This study defines and validates competencies for entry-level professionals keeping in view the needs of the next five years. Top-level library managers of selected universities and post-graduate level colleges participated in the study. A scale of perceived importance of each competency was used for validation of competencies organized in six categories: management, resource development, technical service, reference & information services, information technology and general. A distinct preference is noted for information technology competencies. A significant overlap between the opinion of public and private sector librarians is also observed. The validated competencies can be used for the evaluation and revision of the curricula of formal education programs.

1. Introduction

With a growth of 100 to 200 percent during the last 20 years, presently there are 43 universities and about 1600 general, professional and vocational colleges in Pakistan [1]. A library with professionally qualified staff is a legal requirement for establishment as an educational institution. Therefore, each university or college, both in the public and private sectors, has a library with the necessary facilities and at least one qualified librarian. Post-graduate (a post-bachelor one or two year qualification) library and information science education is a pre-requisite for the position of librarian throughout the country. Academic libraries appear to be the primary consumer of graduates of library and information science departments in the seven universities that offer education in the field. These seven universities, representing various provinces, are conducting master's degree programs (the Allama Iqbal Open University has started its MLIS program through distance education in Spring 2001), and most of them call their first year program a postgraduate diploma/bachelor's degree in library and information science. The estimated number of annual graduates is in the range of 250 to 300.

2. Changing environment of academic libraries in Pakistan

In the last two decades, academic libraries throughout the world are undergoing great change. Pakistan is no exception. The most revolutionary change libraries face is the speedily growing information and communication technology. In a country with a very low per capita income of $480, which is not even sufficient to survive, the use of information technology is increasing rapidly. The growth rate in the use of personal computers is 30 percent per year while the annual growth rate of the use of the Internet in Pakistan is 60 percent [2]. In Pakistan, the ISPs started to provide Internet services in 1996. Now there are 122 ISPs in the country. By 2000, there were 250,000 Internet subscribers in Pakistan [3].

Although, according to a survey, educational and research institutions in Pakistan ranked last in using computers [4], the government is taking special interest in this matter. It has started to implement its new IT policy. The major points of this policy, applicable to academic institutions, include: 1) Provision of free leased line Internet access to the public-sector universities; 2) establishment of a wide-band Intranet, the Pakistan Educational Intranet (PEI) consisting of all public and private educational institutions, for sharing teaching and research resources; 3) establishment of IT labs at major public and private sector universities, colleges, government training institutes and schools; and 4) inclusion of a compulsory course on IT in programs in all subjects [5].

According to a survey, 26% of the university libraries in Pakistan were using technology in their housekeeping routines [6]. Another survey revealed that half the university libraries in Pakistan were using the Internet [7]. Although the new kinds of information technologies such as computer, multimedia and CD-ROM are bringing unprecedented opportunities to Pakistani libraries, these same technologies are also bringing greater responsibility to current library staff. The automation and networking of libraries demand a group of librarians with some command of the software and hardware aspects of information technology.

Economic recession is another problem faced by academic libraries throughout the developing world. The federal and provincial governments are the major funders of tertiary education in Pakistan. Academic libraries have never been properly financed. Lack of staff, lack of updated reading material and lack of other facilities are the common problems among academic libraries. To gain their share in the parent institution's meager budgets, libraries have to compete with other academic units. With decreasing budgets, accountability is increasing.

Good governance is also a problem for all public sector organizations including educational ones. Government institutions are victims of corruption, sluggishness, red tape and nepotism exercised by the bureaucracy [8]. Keeping in view their poor performance, the government has started to privatize public sector organizations. The government found decentralization of public institutions another alternative to achieve good governance [9]. A number of large educational institutions have been given administrative autonomy. To overcome the problem of poor quality education,

the recent education policies have recommended private/industrial participation in the decision-making processes of public sector educational institutions [10].

On the recommendation of the IMF and the World Bank, and to put the country's economy back on track, the Pakistan government has started a massive downsizing in public sector organizations. Starting with financial institutions this policy is rapidly spreading to all ministries and departments. The government has planned to get rid of an estimated 200,000 employees [11]. To cope with the financial pressure, the government compels educational institutions to become self-reliant. The government has allowed public sector universities to raise their fees at the rate of ten percent every year. Moreover, they are allowed to offer ten percent admissions on a self-finance basis. This is also a step towards privatization of public sector institutions.

The growing education industry in the private sector is another issue librarianship is facing. In the 1990s, a large number of universities and colleges were opened in the private sector. The government has planned to shift the public-private ratio of higher education institutions from 85:15 to 60:40 by 2010 [9]. Moreover, foreign universities have established their campuses at various big cities in the country. This growing education industry demands a large LIS work force competent enough to fulfill the client's needs in a changing information environment.

3. Competencies for library and information professionals: A literature review

According to Corbin, the definition of competency is controversial. In earlier times (a decade or so ago), competence was considered in terms of the personal characteristics one had; competence was judged on the basis of the quality of one's character, virtue, innate abilities, and underlying attributes [12]. Today, however, competence is considered more in terms of skill-oriented behavior and observable actions measured against quantitative standards; competence is judged on the basis of whether or not learned mental and physical tasks can be performed. Current thinking, however, asserts that competency can be taught and measured. One current definition is that competency is having the capacity, skills, and knowledge to function in a particular way; another is that competency is what a person knows; while still another is that competency is evidence that one can produce desirable outcomes [12]. The Council of Europe defined competency as "the set of knowledge and skills that enable an employee to orient easily in a working field and to solve problems that are linked with their professional role" [13]. The literature of library and information science is full of studies on competencies needed for various types of librarians. A number of competency lists are available.

The guidelines from the International Federation of Library Associations and Organizations (IFLA) for professional library/information educational programs recommended that the core elements in a LIS curriculum should include: 1) The information environment, information policy and ethics, the history of the field; 2) Information generation, communication and use; 3) Assessing information needs and designing

responsive services; 4) The information transfer process; 5) Organization, retrieval, preservation and conservation of information; 6) Research, analysis and interpretation of information; 7) Applications of information and communication technologies to library and information products and services; 8) Information resource management and knowledge management; 9) Management of information agencies; and 10) Quantitative and qualitative evaluation of outcomes of information and library use [14].

The American Library Association's Standards for Accreditation of Master's Programs in Library and Information Studies described the curriculum as encompassing information and knowledge creation, communication, identification, selection, acquisition, organization and description, storage and retrieval, preservation, analysis, interpretation, evaluation, synthesis, dissemination, and management [15]. In a congress on professional education, the American Library Association resolved that the core of librarianship includes: information access skills; the ability to deal with information technology; communication skills; management skills; and the ability to deal with change [16].

The Association of College and Research Libraries recommended that library schools should train graduates in the theory, principles, and history of librarianship; in-depth knowledge of the higher education environment; preparation for scholarly work; understanding technological issues; conducting information literacy programs; planning and management; assessing library effectiveness; knowledge of legal and policy issues; consideration of ethical issues; and understanding and appreciation of diversity [17]. The Library & Information Technology Association recommended that LIS graduates should possess various skills regarding effective use of information technologies in libraries and communication with users [18].

Some state library associations in North America have developed their own lists of required competencies. The California Library Association adopted a list of core competencies for its member librarians including professional competencies (customer-centered, assessment, organizational skills, knowledge of information sources, information management, advocacy, collaboration, political awareness, administration) and personal competencies (service commitment, flexibility, leadership, ethics, vision, communication, and self-motivation) [19]. The New Jersey Library Association (NJLA) adopted an updated version of competencies designed by the Canadian Library Association and the Special Libraries Association. Technical competencies designed by the NJLA include online catalogs; electronic resources and databases, Internet; instruction; e-mail; applications software; computer troubleshooting/preventive maintenance; and awareness of evolving technology [20]. The New Hampshire Library Association classified its list of core competencies into philosophies and ethics; personal attributes; administration; collection management; public services; technical services; and technology [21]. Yale University Library has set core competencies for future job performance of its staff, covering five areas: resources, interpersonal skills, information, systems, and technology [22].

The Association of Southeastern Research Libraries prepared a list of competencies required for research librarians. The major issues covered are: developing and managing effective services that meet user needs and support the research library's mission; supporting cooperation and collaboration to enhance service; understanding the library within the context of higher education and the needs of students, faculty, and researchers; knowing the structure, organization, creation, management, dissemination, use, and preservation of information resources, new and existing, in all formats; and demonstrating commitment to the values and principles of librarianship [23].

The Special Library Association recommended competencies for future special librarians that are equally useful for academic librarians working in professional institutions. They include: 1) Professional competencies related to the special librarian's knowledge in the areas of information resources, information access, technology, management and research, and the ability to use these areas of knowledge as a basis for providing library and information services; and 2) Personal competencies representing a set of skills, attitudes and values that enable librarians to work efficiently; be good communicators; focus on continuing learning throughout their careers; demonstrate the value-added nature of their contributions; and survive in the new world of work [24].

Corbin classified competencies required for providing electronic information services into personal characteristics, basic skills, general knowledge, and specialized knowledge [12]. Koenig noted that the information industry was seeking candidates who not only have the requisite technical and operational skills, but also possess the language skills, interpersonal and communication skills, and the breadth of background and knowledge that allow them to operate effectively in the new international marketplace. Library and information education programs must consciously prepare themselves to educate students to work in the marketplace [25].

Morgan grouped competencies future academic librarians should possess, in addition to core library skills, into four areas: credibility with academic staff; teaching and training; IT-related skills; and management skills [26]. Buttlar and Du Mont asked 736 alumni of library schools what competencies were most valuable in their professional lives. The five competencies most highly rated by academic librarians in the sample were: Knowledge of sources in all formats; Conducting an appropriate reference interview; Applying critical thinking to library problems; Communicating effectively in writing; and Utilizing oral presentation skills to make presentations [27].

In a focus group, twenty-five students, LIS faculty, and academic librarians determined the role of academic librarians as information professionals. They must: 1) Be good communicators, 2) Use good judgment to determine what kind of information and how much information each client needs, and 3) Either serve as or construct a "bridge" linking the information and the user [28]. Woodsworth emphasized that nowadays every professional must be equipped with Internet skills and evaluation skills, and be familiar with the basics of computing, networking and information science concepts. Professionals also need to develop competency for leading change

within their organizations and to develop a systems approach for reassessment of their roles and reexamination of their values [29].

According to Griffiths, new information professionals should: guide in the face of an uncertain future; collaborate; prioritize and maintain agility and flexibility in the face of changing goals; empower; and understand the core capabilities of one's organization, work group and colleagues [30]. Bates listed skills an MLS degree holder should possess. Her list includes basic librarian skills; proficiency in the traditional online services; Internet skills; selection and use of information sources; value-added services; teaching skills; working in teams; marketing library services; entrepreneurship; leadership skills; change management; and innovation [31]. In an *American Libraries* article, Intner provided a list of characteristics of future good professionals. According to her, a new kind of good professional who will be effective in the 21st century will be someone who: gets the most patron service for the library's buck, meets deadlines, acts objectively, shoulders responsibility, keeps an open mind, welcomes learning from others, seeks new ideas, reads widely, wants to experiment, empowers staff, and inspires trust [32]. While discussing the preparation of information professionals for the next century, Stueart recommended that, in addition to basic professional skills, such as cataloging, reference and bibliographic searching, there should be information-related skills. These may include: information and referral services; information seeking behavior; information systems; and standards and standardization [33].

Giesecke and McNeil provided a list of core competencies for university librarians. This includes: analytical skills/problem solving/decision making; communication skills; creativity/innovation; expertise and technical knowledge; flexibility/adaptability; interpersonal/group skills; leadership; organizational understanding and global thinking; ownership/accountability/dependability; planning and organizational skills; resource management; and service attitude/user satisfaction [34]. Bonnice recommended a mandatory internship (practicum) for MLIS students [35]. In a survey of the course contents of 44 MLIS programs accredited by the American Library Association, Beheshti found that the main knowledge and skill-based competencies taught were: technology management; organization of information; searching and database development; collection development; mathematical methods and research; sociocultural aspects; non-print media; rare materials and conservation; sources of information; reference materials; archives; children's literature and services; and professional issues [36].

In a survey, Thomas determined computer skills required by academic librarians. Searching OPAC and searching Web interface databases were the most highly demanded skills of entry-level academic librarians [37]. Weir suggested that, in addition to the traditional library skills, future information professional should posses the following skills: adaptability; creativity; willingness to take risks; self-starting; project management; change management; interpersonal and communications skills; and a sense of humor [38].

In a recent article, Curran listed tasks librarians and information scientists do. These include acquisition, classification, organization, storage, retrieval, interpretation, dissemination and use of information [39]. Park and O'Connor emphasized the need of research methods as a core competency for LIS programs [40].

In the Asia/Pacific region, we can also find works dealing with needed competencies. Rehman, Majid and Baker interviewed 60 top and middle level managers of academic libraries in Malaysia to validate a list of competencies (knowledge and skills) required of entry level academic librarians. They divided the list into six operational areas: foundation, cataloguing, circulation, information services, collection development, and serials [41]. According to Rehman, Baker and Majid, middle and top managers of the large libraries of Malaysia perceived that inadequacy in IT skills was the most deficient area in Malaysian librarians [42]. Rehman, Chaudhry and Karim carried out a survey to see if there were significant differences between competencies accepted at undergraduate and postgraduate levels. Senior library managers (50 total respondents; 41 working in academic libraries) in the Arabian Gulf region identified 48 higher level competencies (performance evaluation, policy development, designing databases, planning for automation) out of a total of 70 – the remainder not being significantly different for either level, except for 'acquiring materials' that was favored at the undergraduate level. The competencies were classified into six functional areas: management; information technology; resource development; information service; technical service; and general competencies [43].

Keeping in view the needs of the Asia-Pacific region, Moore et al prepared a detailed curriculum for information education. They covered three elements – knowledge, skills and tools – for the creation, collection, communication and consolidation of information [44]. A recent survey of library graduates in Australia, conducted by Middleton, identified 189 skills grouped into nine categories: collection building and management; communication; facilities and equipment; information organization; information services; information systems; management; marketing; and research. The findings show that seven of the top ten ranked skills were in the information service category [45].

In Pakistan, no study has been conducted about the competencies needed of librarians. However, an analysis of recent job advertisements of academic librarians, particularly in the private sector, shows that competencies mostly needed consisted of managing automation of libraries, using electronic databases, having knowledge about library software packages, using the Internet, and having good interpersonal skills.

4. Methodology of the study

Rehman et al. [41] emphasized the need for a study on needed competencies in these words:

> 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. In this context, competencies provide a sound base for manpower planning in a given field (p. 384).

Naylor mentioned eight advantages of developing and improving core competencies in libraries: better human resource planning; more effective training programs; a list of critical technological capabilities; an opportunity for a strength-weakness analysis; help with outsourcing options; guidance for development or change; vision of the whole organization; and innovation [46]. According to Ceppos, failure to consider market demand was one of the reasons for library school closures in North America [47]. In Pakistan, the LIS curriculum has always been criticized as it has been implemented without any feedback from the library community [48].

The present study was conducted with the following objectives:

1. To prepare a list of competencies needed by entry-level academic librarians.
2. To validate the list of competencies based on the perceptions of top-level academic library managers in Pakistan.

To achieve the objectives of this study, it was decided to conduct a postal survey of senior academic librarians. For this purpose a list of 150 universities and postgraduate level colleges/institutes was prepared using the latest available directories [49–51]. A list of 75 competencies was prepared based on an extensive literature review. Special attention was given to those competencies that were already validated in Asian countries (i.e., Malaysia and the Arabian Gulf region). This list was divided into six categories: 1) Management Competencies; 2) Resource Development Competencies; 3) Technical Service Competencies; 4) Reference and Information Services Competencies; 5) Information Technology Competencies; and 6) General Competencies. Chief librarians of selected institutions were asked to indicate the competencies a holder of an MLIS degree should possess, keeping in view the needs of academic libraries in Pakistan during the next five years. Perceptions of the respondents were identified using a scale of 1–9, where 1 was for "not needed" and 9 for "most needed". For validation purpose, the scale value 5 was fixed as the cut-off point, meaning that a competency would be considered 'needed' if it received an average score greater than 5.

5. Findings

For validation, the questionnaire (list of competency statements) was sent to 150 heads of university and postgraduate-level college libraries. In spite of a reminder, only seventy-two librarians (48%) responded to the survey. Seventy usable responses

Table 1
Top ten competencies

Rank	Category	Competency	Mean
1	Info Tech	Using relevant developments in information technology like e-mail, Internet, Intranet, multi-media, imaging, interconnectivity, full-text databases, in-house CD-ROM publishing, etc.	8.53
2	Info Tech	Converting the functions of cataloging, circulation, acquisition, serials from manual to an automated mode	8.40
3	Info Tech	Planning for library automation: assessing needs, system specification and procurement of resources, etc.	8.30
4	Info Tech	Training staff and users in using automated systems	8.29
5	Management	Leadership skill	8.09
6	Info Tech	Comprehending the impact of information technology on libraries	8.07
7–8	Info Tech	Managing automated systems (input, file maintenance, back-up, security, etc.)	8.06
7–8	General	Demonstrating good interpersonal skills and effective verbal and writing communication skills	8.06
9	Ref & Info Serv	Developing a sound knowledge of ready reference sources	8.03
10	Info Tech	Designing and developing Web-based materials and documents for online use	8.00

are analyzed here. Of the respondents, 41 (59%) represented public sector organizations while 29 (41%) were from private sector institutions. The respondents also well represented all types of general and technical universities/colleges/institutes.

Although, the respondents had differences in their perceptions about each competency statement, they validated all statements given to them, because the smallest mean score a statement obtained was 5.84. The reliability analysis of the list of 75 competency statements showed that it was highly internally consistent (Cronbach's Alpha $= 0.9663$).

Ten competencies got mean scores of 8 or more (The list is presented in Table 1). Seven out of the ten most essential competencies validated for academic librarians belonged to the information technology category. This trend of validation shows that all managers anticipate the use of information technology in academic libraries in the near future. With a mean score of 8.53, Using relevant developments in information technology like e-mail, Internet, Intranet, multimedia, imaging, interconnectivity, full-text databases, in-house CD-ROM publishing, etc., was rated number one in the list of 75 competencies. The second most essential competency was Converting the functions of cataloging, circulation, acquisition, and serials control from manual to automated mode, with a mean score of 8.40. Three competencies from other categories in the top ten list were Leadership skill (Management), Demonstrating good interpersonal skills and effective verbal and writing communication skills (General) and Developing a sound knowledge of ready reference sources (Reference & Information Services) with scores of 8.09, 8.06 and 8.03 respectively.

The validation data of 75 competencies belonging to six categories are presented in Tables 2 to Table 7. As Table 2 shows, the most important competency, from 15 in the Management category, was Leadership skill. With a mean score of 7.79, Defining

Table 2
Management competencies

Rank	Competency	Mean
1	Leadership skill	8.09
2	Defining mission, role and objectives of an academic library	7.79
3	Public relationing to ensure community support (library friends, fund raising, rapport development with faculty and administrators)	7.77
4–5	Preparing library budgets and their fiscal management	7.71
4–5	Supervising subordinate staff	7.71
6	Working in teams	7.60
7	Marketing and promotion of library services and products	7.47
8	Collecting library use and performance data, conducting statistical analysis, and applying it in planning and decision making	7.43
9	Evaluating library performance qualitatively and quantitatively	7.40
10	Managing libraries by developing appropriate organizational structure, communication patterns, and human resource development	7.34
11	Strategic planning (developing long-range plans and translating them into medium range and operational plans)	7.24
12	Organizing extension activities for academic community like displays, talks, seminars, etc.	7.20
13	Time management	7.19
14	Comprehending the role of knowledge management in libraries	7.06
15	Change management by integrating library resources and services with environmental changes	7.00

Table 3
Resource development competencies

Rank	Competency	Mean
1	Collection development according to academic or research programs of the parent organization	7.71
2	Using bibliographic systems (OCLC, etc.) and other online tools for acquisition	7.54
3	Developing policies and managing activities for preservation and conservation of library materials	7.51
4–5	Managing the functions of weeding, storage, and gifts and exchange	7.50
4–5	Acquiring materials (ordering, receiving, claiming, invoice processing, etc.)	7.50
6	Developing policies for collection development	7.43
7	Reviewing documents (information sources) and user requests for selection decisions	7.13
8	Developing policies for government documents related to collection development, organization of materials and specialized services	6.81
9	Understanding the processes of printing, publishing and book distribution	5.99
10	Assessing the capabilities of booksellers and distributors	5.90
11	Understanding the international, national and discipline-oriented publishing industry	5.84

mission, role and objectives of an academic library was the second important skill in this category. This is closely followed by public relations skill that got a mean score of 7.77. Library extension activities, time management, knowledge management and change management were placed at comparatively low ranks.

In the Resource development category, collection development topped the list of

Table 4
Technical service competencies

Rank	Competency	Mean
1	Managing serials (acquisition, subscription, union lists, services, preservation, etc.)	7.80
2	Conceptualizing philosophic foundations for retrieval, classification, indexing and cataloging	7.74
3	Developing mastery over information analysis and cataloging systems, rules, and tools (codes, schemes, thesauri, etc.)	7.66
4	Cataloging resources available through Internet	7.46
5	Analyzing content of documents to determine class numbers and subject terms	7.34
6	Original cataloging of materials	7.17
7	Cataloging government documents, organizing collection, and providing services	6.97
8	Cataloging of non-print and specialized materials (like serials, AV, electronic media, maps, manuscripts, etc.)	6.90
9	Developing authority files for cataloging	6.71
10	Cataloging archives, managing archival collection and providing services	6.44
11	Copy cataloging (by using bibliographic utilities like OCLC, Bibliofile, etc.)	6.36

Table 5
Reference and information services competencies

Rank	Competency	Mean
1	Developing a sound knowledge of ready reference sources	8.03
2	Developing literature searching systems and services (manual and electronic in online or CD-ROM media)	7.99
3	Acquiring mastery on computerized searching for conducting search interview, formulating search strategy, using search tools, conducting and evaluating searches	7.93
4	Assessing information needs and interests of users	7.90
5	Understanding the primary concepts and terminology in the areas of specialization of a special academic library	7.77
6	Helping users in searching catalog and other bibliographic sources/utilities	7.71
7	Developing policies for reference and information services	7.63
8	Developing specialized information services like SDI, vertical file, content page, clippings, bulletin boards, referral, etc.	7.56
9	Developing policies for resource sharing and cooperation with other libraries (Using documents delivery services)	7.44
10	Preparing plans for effective space utilization and furnishing	7.43
11	Developing circulation and collection management policies and managing operations	7.40
12	Developing user education literature and products (brochures, handbooks, pathfinders, videos, slide-tape show, etc.)	7.30
13	Indexing and abstracting	7.13
14	Designing and conducting user education programs	7.01
15	Managing conducive conditions for in-house use (temperature, lighting, seating, etc.)	6.86
16	Information manipulation and repackaging	6.77
17	Providing library services to distance learners	5.94

11 competencies, with a mean score of 7.71 (Table 3). The other important validated skills were using bibliographic systems for acquisition, and policy formulation for preservation and conservation of library materials. Knowledge about printing, publishing and book-selling was not given much importance, receiving mean scores even

Table 6
Information technology competencies

Rank	Competency	Mean
1	Using relevant developments in information technology like e-mail, Internet, Intranet, multi-media, imaging, interconnectivity, full-text databases, in-house CD-ROM publishing, etc.	8.53
2	Converting the functions of cataloging, circulation, acquisition, serials from manual to an automated mode	8.40
3	Planning for library automation: assessing needs, system specification and procurement of resources, etc.	8.30
4	Training staff and users in using automated systems	8.29
5	Comprehending the impact of information technology on libraries	8.07
6	Managing automated systems (input, file maintenance, back-up, security, etc.)	8.06
7	Designing and developing Web-based materials and documents for online use	8.00
8	Evaluating the performance of the existing automated systems	7.94
9	Designing and participating in larger information systems and networks (LAN and WAN)	7.77
10	Designing and maintenance of in-house databases	7.73
11	Using word-processing, graphics, spreadsheets and similar software packages for office management	7.70
12	Utilizing digitization technology to create documents for online use	7.66

Table 7
General competencies

Rank	Competency	Mean
1	Demonstrating good interpersonal skills and effective verbal and writing communication skills	8.06
2	Demonstrating a knowledge and commitment to the ethics and values of the profession	7.73
3	Having practical experience of working in an academic library	7.59
4	Participating in professional activities outside the library	7.53
5	Understanding information theory and dynamics related to information generation, organization and delivery; structure and formats of information in various types of materials and media	7.06
6	Comprehending library and information legislation (national and international)	6.93
7	Editing library publications	6.64
8	Understanding historical background of library and information services in the world	6.37
9	Developing desk-top publishing capability	6.21

less than six.

Table 4 reveals that serials management topped the list of technical service competencies. This was closely followed by philosophic foundations for technical services. Competencies with lower mean score were developing authority files, managing archives and copy cataloging.

Of 17 competencies belonging to the reference and information services category, Developing a sound knowledge of ready reference sources got a high mean score of 8.03 (Table 5). Next came Developing literature searching systems and services, Acquiring mastery on computerized searching, and Assessing information needs and

Table 8
Top five competencies for public sector ($n = 41$)

Rank	Category	Competency	Mean
1	Info Tech	Using relevant developments in information technology like e-mail, Internet, Intranet, multi-media, imaging, interconnectivity, full-text databases, in-house CD-ROM publishing, etc.	8.46
2	Info Tech	Training staff and users in using automated systems	8.32
3	Info Tech	Converting the functions of cataloging, circulation, acquisition, serials from manual to an automated mode	8.22
4	Info Tech	Planning for library automation: assessing needs, system specification and procurement of resources, etc.	8.20
5	Info Tech	Comprehending the impact of information technology on libraries	8.05

Table 9
Top five competencies for private sector ($n = 29$)

Rank	Category	Competency	Mean
1	Info Tech	Converting the functions of cataloging, circulation, acquisition, serials from manual to an automated mode	8.66
2	Info Tech	Using relevant developments in information technology like e-mail, Internet, Intranet, multi-media, imaging, interconnectivity, full-text databases, in-house CD-ROM publishing, etc.	8.62
3	Info Tech	Planning for library automation: assessing needs, system specification and procurement of resources, etc.	8.45
4	General	Demonstrating good interpersonal skills and effective verbal and writing communication skills	8.41
5	Management	Leadership skill	8.38

interests of users. Competencies that got a low mean score (below 7) included Managing conducive conditions for in-house use, Information manipulation and repackaging, and providing library services to distance learners.

As Table 6 shows, all 12 competencies in the Information technology category got high mean scores (i.e., 7.66 to 8.53). Relevant developments in IT, automation of library housekeeping routines, planning for library automation, and training for library automation topped the list. Competencies that were given comparatively less importance were using office management software packages and utilizing digitization technology.

Good interpersonal skills and effective verbal and writing communication skills were given most importance in General competencies (Table 7). Next came professional ethics/values, and a practicum in academic libraries. LIS history and desk-top publishing got minimum attention in this category.

A comparative preference of competencies was analyzed for public and private sector librarians. The results, presented in Table 8 and Table 9, show that the top five competencies preferred by librarians from the public sector were from the information technology category. On the other hand, for private sector librarians, only three out of the top five competencies belonged to this category. Two competencies that they ranked at fourth and fifth positions were interpersonal/communication and leadership skills.

Table 10
Significantly different mean scores for public and private sector librarians

Competency	Public mean	Private mean	t-Value	2-Tail sign.
Working in teams	7.22	8.14	−2.181	0.033
Time management	6.83	7.69	−2.108	0.039
Change management by integrating library resources and services with environmental changes	6.68	7.45	−2.017	0.048
Developing mastery over information analysis and cataloging systems, rules, and tools (codes, schemes, thesauri, etc.)	8.02	7.14	2.436	0.018
Designing and conducting user education programs	6.66	7.52	−2.146	0.035

In order to identify those competencies that are associated with statistically significant differences in their desirability by public and private sector librarians, a two-tailed t-test was performed. The criterion of 0.05 was used to identify such statements. The results show that there was a very strong overlap in ratings of competencies by both groups of librarians. The mean scores of 70 out of 75 statements had no significant difference in them. Only the five competencies that showed a significant difference in their means are presented in Table 10. Working in teams, time management, change management, and designing and conducting used education programs were more preferred more by private sector librarians than the other group. On the other hand, developing mastery over information analysis and cataloging systems was more preferred by public sector librarians.

6. Conclusion

This study has identified sets of competencies for entry-level professionals of academic libraries in Pakistan. The results of this study show that a list of needed competencies, based on the work already done in advanced as well as some developing countries, is absolutely acceptable for academic librarians in Pakistan. The responses of this survey are mostly in line with the previous studies conducted in other countries (for example [27,41–43,45]). The list of top-ranked competencies shows the preferred expectations of top-level academic library managers about future LIS graduates. Most of the respondents, whether they posses these competencies themselves or not, expect skills like information technology, interpersonal communication and leadership skills from future academic librarians. Academic librarians are clear that future library services will not be possible without the use of technology. Another noteworthy fact revealed from this study is the agreement among librarians working in public and private sectors. No significant difference is found in the opinion of the two groups on 70 out of 75 statements. However, good interpersonal/communication and leadership skills are slightly more demanded by private sector librarians. On the other hand, public sector librarians prefer information technology to all other competencies.

The sets of competencies prepared and validated in this study provide the groundwork for a redefinition of the curricula of LIS education programs. They can also be objectively applied for the evaluation of current education programs. The future is uncertain, but subjecting our present curricula and programs to a systematic review may help us in setting directions for framing the future. Adequate appreciation of competency data is crucial for the preparation of future information professionals in Pakistan.

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