

## Subject specialization of librarians of science and technology libraries in Sri Lanka

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### Abstract:

*This paper aims to explore the attitudes of librarians towards the important of subject librarians in the Science and Technology libraries of Sri Lanka especially this study analyses the need for subject specialization to provide excellent services and to identify the challenges associated with the recruitment of subject librarians. A survey was carried out among 120 Sri Lanka Scientific & Technical Information Network (SLSTINET) member libraries in Sri Lanka, of them 36 libraries (30%) were selected as sample. Questionnaire was used as research instrument and in addition an interview was carried out to get the qualitative information from librarians. In addition documentary analyses were carried out to investigate the scheme of recruitment of librarians and the qualifications required for the post. This study selected a purposive sampling technique. The originality of this paper is to provide an overview of subject specialization of librarians in Sri Lanka and to describe challenges faced by library selection committee in the past. Data was analyzed qualitatively and quantitatively to get a good result. The survey showed that majority of the librarians have emphasized that appointing subject Librarians are important to faculty Libraries and other Science and Technology Libraries as they are able to deliver best reference services and collection management activities to the specific library patrons. They also strongly believe that subject librarians are very comfort enough to be a member of the research committee of faculties, liaising with departments and delivering discipline oriented Information Literacy programmes. However there are some arguments that subject experts are not so important and any librarians can gain knowledge and skills on the disciplines of their institutions and work accordingly. In addition, majority agreed that pre training in Library and information Science is also important to carry out the technical services of the Libraries. This study suggests some important measures that should be taken by the authorities to avoid problems in appointments and to develop librarians in order to work for the specific communities of the institution/ faculties. It also recommends the SLSTINET member libraries to recruit librarians with specialization at least one of the particular*

*disciplines of the institution in order to get very effective and efficient services, thus in turn will support to develop the scientific activities of the country.*

**Key words:** *Subject Librarians, Subject specialization, SLSTINET members, Academic Libraries, Recruitment, Training, Sri Lanka*

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## **Introduction**

Sri Lanka is a beautiful, small and developing island located at the Indian Ocean. The literacy rate of Sri Lanka is 91.4% in 2009 (Central Bank Report, 2011). The National Science Council of Sri Lanka was established in 1968 (It was renamed as National Science Foundation in 1998). Sri Lanka Scientific & Technical Information Centre (SLSTIC) of National Science Council was created in 1977 with the objectives of collecting, processing and disseminating information related to Science and Technology and to coordinate with other libraries in the island. In order to coordinate with all Science and technology libraries of Sri Lanka an Information network named 'Sri Lanka Scientific & Technical Information Network' (SLSTINET) was created by the SLSTIC in 1979. This is the major information network in Science and Technology in Sri Lanka. The main objective of this network is resource sharing and networking. It was started with 30 libraries and now has a membership of 120, comprising of 12 governments, 19 University (including faculty libraries), 68 special and 21 miscellaneous types of libraries such as NGOs and private sector organizations. Especially all Science, Technology, Engineering and Medicine libraries are members of SLSTINET. This information network serves successfully and very actively under the leadership of National Science foundation, till today. This study identifies the perception of librarians at Science and Technology libraries of Sri Lanka and their level of competencies in providing very effective and efficient services to the scientific communities. In addition this investigates the challenges in recruitment of librarians with relevant subject specialization.

## **Problem Statement and Significance of the Study**

As far as Sri Lanka is concerned; librarians are appointed based on specific recruitment scheme of the particular parent institution. Subject Librarianship is not much popular in Sri Lanka. Even the university system does not have specific cadres like in other developed countries. Subject specialization is considered for appointment in academic libraries, but in designating to faculty libraries such as Science, Agriculture, Medicine, Engineering etc. there are mismatching. There is no restriction to say that the specific faculty library should have a librarian with same disciplinary backgrounds. Similarly, in research and other special libraries also subject specialization is not much emphasized in recruitment. Nowadays leading library professionals and expertise have realized the importance of subject librarianship in order to provide very effective and efficient services towards research and development of the country and also to be in par with the international arena.

Significance of this study is to emphasize the importance of subject librarians for Science and Technology libraries in Sri Lanka and recommending relevant subject specialization in recruitment in order to provide excellent services to the specific patrons.

## **Objective**

This paper aims to explore the attitudes of librarians towards the importance of subject specialization of librarians to provide excellent services to particular clients among the SLSTINET libraries of Sri Lanka including faculty libraries of universities and to identify the challenges associated in recruiting subject librarians.

## **Methodology**

A survey was carried out among the Sri Lanka Scientific & Technical Information Network (SLSTINET) member libraries to identify their attitudes and views toward subject librarianship and to analyze the challenges they faced in recruiting librarians. There are 120 SLSTINET member libraries in Sri Lanka and 30% (36 libraries) of the population was selected as sample. Questionnaire was used as research instrument and in addition an interview was conducted to get the qualitative information from the expertise librarians. Respondents were asked to state their qualifications, details of staff, description of library users and the courses offered by the institution. They were asked to select responses from a five point Likert scale in six constructs, on Efficiency of Library services, discipline oriented information literacy programme, liaison, research activities, reference services, collection development and training. In addition they were given open ended questions in order to express their perception and views regarding subject specialization and the challenges in recruitment.

This study has selected a purposive sampling technique and considered all university libraries which are under SLSTINET, the National Science Foundation which is the focal point of the network and some other Science and Technology libraries that are very active and popular. University Librarians and the Librarian of National Science Foundation were interviewed as they are directly involved in the selection committee of librarians to their faculty libraries and other special, research libraries, too. The originality of this paper is to provide an overview of subject librarianship in Sri Lanka and to describe challenges faced by library selection committee in the past. Data was analyzed qualitatively and quantitatively to get a good result. SPSS Statistical software was used to analyze the data quantitatively.

Questionnaires were distributed to some librarians at the beginning as pilot test and after getting their suggestion it was refined. Also, reliability of the measures in each construct was tested before administering the questionnaire to the sample.

## **Literature review**

A subject librarian has been defined as ‘a librarian with special knowledge of, and responsibility for, a particular subject or subjects’, (Feather and Sturges, 2003). Subject Librarian was first introduced at first Oxford and Cambridge Universities and followed by University College, London in 1940s. Appointment of professional staff with subject specialization was realized in UK since then. Babcock (1941) said “Libraries to be staffed with librarians who really know ‘what is what’ in their subject and the staff could be so chosen (trained) to cover as wide field of specialized knowledge as possible”. Functional

lines or functional hierarchy was underwent many critics, mainly it was pointed that qualification of librarians are not potentially utilized and thus resulted inadequate services and frustrated staff. Librarians are unacquainted with users' field of interests. Then, they organized university library staffs by subjects rather than by functions. Bastianpillai and Harvard-Williams (1987) identified three basic types of organizational pattern in university libraries. The first one is 'functional', the second is 'subject oriented' and the third division is 'combined functional and subject pattern'. Among these three they prioritized 'subject oriented' pattern in which they emphasized qualified graduate member having the following objectives.

- To get to know personally the teaching staff in departments and their scholarly interest.
- To know as many research students as possible
- To be aware about the ongoing courses and plan for new courses
- To develop the collection with fullest cooperation of staff
- Assist in bibliographical search and handle all reference enquiries of users

Bastianpillai and Harvard-Williams(1987) say a subject Librarian is a member of library staff appointed to develop one or more aspects of library's technical or reference services in a particular subject field. They justified subject specialization in terms of services. Larger libraries created subject divisions within the library. In modern libraries, too importance of readers' services was highly realized and for better services subject specialization has been the best approach though it has some critics.

Embedded Librarianship is now popular in the modern era. Here embedded librarianship is

"Focusing on the needs of one or more specific groups, building relationships with these groups, developing a deep understanding of their work and providing information services that are highly customized and targeted to their greatest needs. In effect, it involves shifting the basis of library services from the traditional, transactional, question and answer model of reference services to one in which there is a high trust, close collaboration, and shared responsibility for outcomes". (Shamakur and Talley (2007) In King-man Ho, K. and Sau-Ping Wong, E.(2012).

This is also emphasizes the collaborate activities, reference services and indirectly liaison with departments. Many researches have been carried out to explore the roles of subject librarians in the modern era. Corral, S. and Keates, J.(2011) emphasize the crucial role played by subject librarian even in virtual learning environment.(VLE).

### ***Rationale of Subject Librarian***

Reviewed literature shows that subject knowledge is important to provide reference services, research assistance, and teaching information literacy, liaison with user departments and collection development of the faculty or research institution. As librarians have to play innovative roles in addition to the conventional roles, they should have adequate knowledge at least one of the major disciplines of the institution. Libraries have to change with technological change/ revolution. Collection Management has more diversity in both subject matter and formats. Subject librarians will play a major role in meeting the requirements of

specific user communities. He should help them in accessing information whether it is digitized, print or multimedia. Librarians with subject knowledge can do presentations on library resources and information issues before the academics or researcher and these are highly beneficial as he/she can focus on subject specificity. Discipline oriented library instruction will also be very useful in Information literacy teaching and user education programmes. Subject librarians have a vast knowledge and experience in selecting information that is appropriate for institution. Subject Librarians can understand the curriculum and of various campus constituencies from a disciplinary and interdisciplinary perspectives.

Kirsten (1995) carried out a research on “Status of specialization in Major professions”. In this study agriculture development was also considered. Information flow from researcher to farmer takes a great time lag. They realized that major constraint in agricultural development is due to small extensionist and the need for more specialized knowledge. He argued that to reduce the time lag between the source and application of information required that the services on extensionist be augmented, expanded, or replaced. Duvel(1989) in Kirsten (1995) investigated this issue and came to a conclusion that ‘a subject matter specialist be interposed between the researcher and extensionist or generalist to provide a supportive or complimentary service to the generalist and a feedback service to the researcher’. In addition he concluded that specialist should take care of regional specialization concerning their specific subjects or commodities.

### ***Participative in Research Process***

Librarianship is a challenging profession and it is no longer a librarian’s job is to recommend and select a suitable resource for the researcher approaches him, rather he has to participate in research process, be part of research projects and research clusters of the institution. Ptak-Danchak(2012) says “flexibility, ability to participate and constructively engage in discussions of research projects and information needs are currently needed skills for subject Librarians”. From this statement it is clearly understood that how far the subject librarians be participative in research and scholarship of the institution. In addition Rapple, B.A.(1997) says that in many cases librarians themselves will be expected to possess the credentials of a scholar. In the technological age, a terminal degree in the particular subject will increasingly be a necessary requirement for those librarians who will work closely with faculty members in their research. Sulouff, P.et al(2005) says that subject specialist librarians are an important source of expertise about grey literature.

### ***Quality Reference Services***

Wolfe A. Judith et al (2010) say that subject librarians might provide in depth research assistance often by appointment. In addition Rodwell (2001) says increasing complexity of reference work in a digital environment, subject expertise who has the ability to uncover advanced information in a complex area, is vital for reference librarians in serving the research community. There are many more supporting literatures were found. For instance “In dealing with more complex reference queries the subject specialist can do better jobs of using more specialized reference titles or databases and helping a researcher find the

necessary material” (Gebhard, 1997). This is more applicable to libraries supporting specialized programmes such as Science and technology for example, engineering, medicine, applied sciences and veterinary science, etc. Porter, S.(2003) says that subject librarian should do literature search on behalf of a remote or off campus nursing students.

### ***Information Literacy***

Pinfield (2001) argued that subject librarians have a significant and expanded role to play in contemporary higher education and to provide information literacy to the clients in emphasizing the idea of Johnston & Webber (2003) that in developing Information Literacy program the role of subject Librarian is crucial. A case study at HKUST university in Hong Kong by King-man Ho, K. and Sau-Ping Wong, E.(2012) indicates that how an embedded librarian collaborates with the faculty to design and deliver information literacy to the engineering students, and it was a success story.

### ***Critics Regarding Subject Specialization of Librarians***

However some other reviewed literature showed many more arguments and criticisms against subject librarianship. As per their point of view reference librarian is better able to provide quality reference services. (Hill 2001, Coppola (2001), Gebhard (1997), Rodwell (2007) In Smith and Oliva(2009). Benefiel et al (1997) in Smith and Oliva (2009) reported that even without a formal subject background, basic competencies in the life, physical and social sciences or in the humanities should enable reference librarians to function effectively at the academic reference desk. Heseline (1995), Trysome (2005) In Hardy (2007) say that functional specialist can provide a range of services rather than subject specialist and their specific services. The major critics now is increasing interdisciplinary courses do not restrict disciplinary specialized services. Guttsman (1973) concluded that traditional hierarchical staff structure in libraries should be maintained. Rotational administrative roles, senior posts, scholarships and involving in decision making processes are emphasized and put forwarded as conditions in appointing subject librarians.

There is a lack of literature created in Sri Lanka regarding subject librarianship and the outcome of this research will find a path in understanding the rationale of subject librarianship and to introduce some conditions in recruitment of librarians to Science and Technology libraries.

### **Conceptual Frame work**

Conceptual framework explains the key concepts used in this study and how they are linked to one another. From the reviewed literature and the experience of the researcher the following variables were identified as important for this study. Those are ‘Effective and Efficient Services, Specialization, Generalist, Information Literacy, Liaison, Collection Development, Reference Services and Engage in Faculty Research activities, professional training on LIS and cross disciplinary training.

## **Defining the Variables:**

**Specialization:** Excellence with exclusiveness in the sense of devoted pursuance of the particular discipline. (Kirsten, 1995). Babcock, (1941) defined specialization in Libraries as acquaintance with general works knowledge of the special works and the ability to locate specific titles in their chosen fields.

**Generalist:** One who has broad general knowledge and skills in several areas, whose skills, interests, or habits are varied or unspecialized.

**Information Literacy:** This is defined as ‘a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information’ (ACRL, 2000).

**Liaison:** Connecting Library to its clientele, information consulting, contact with academic departments, training and teaching about research resources, proactive in offering help and creating highly subject specific resources (Hardy, 2007).

**Collection development:** Identification, selection, acquisition, and evaluation of library resources (e.g., print materials, audiovisual materials, and electronic resources) for a community of users.

**Reference Services:** Information about the library and its resources, quick answers to factual questions, citation verification and directional assistance, especially services are provided in person or by telephone or e-mail.

**LIS Training:** Professional Training on Library and Information Science

**Cross Disciplinary Training:** Training is given toward helping professionals to expand their scope of knowledge and skills beyond the confines of their own professional disciplines.

## **Conceptual Model**

There are two independent variables, two moderating variables, five sub variables and one dependent variable is identified as interest to this study.

Dependent variable: Effective and Efficient services

Independent variable: Specialization, General knowledge (Generalist)

Sub variables: Information literacy, Liaison, Collection Development, Reference Services, Research Activities

Moderating Variables: LIS Training, Cross disciplinary Training

The dependent variable is ‘Effective and Efficient services’ of Science and Technology Libraries which is the primary interest of the study. This is influenced directly by the independent variables; those are ‘Specialized knowledge and General knowledge.

On the other hand ‘Discipline oriented information literacy program’ ‘Liaison’, ‘Engage in Faculty/Institutional research forums’, ‘Collection Development’ and ‘Reference Services’ are considered as important which mediates the relationship between ‘Specialization’ and ‘Effective and Efficient Services’. Professionals with specialized knowledge can successfully prepare IL programmes, like wise they can liaison with academic departments and researchers in case of special libraries. They will engage in research committees of the institution and contribute positively in collection development, too. They also will be able to serve proper reference services (bibliographical search, literature survey, etc.) to the clients. A librarian with specialized knowledge of the particular discipline of the research institute will be successful in services as he is able to perform well in the areas mentioned as mediators.

Library professional with no subject specialization (Generalist) also can provide Effective and Efficient services if they were trained on the specific discipline of interest to the institution. So General Knowledge is moderated by Cross disciplinary Training. Cross disciplinary training influence their level of expertise on subject related knowledge thus leading to Effective and Efficient Services. However LIS knowledge is compulsory to

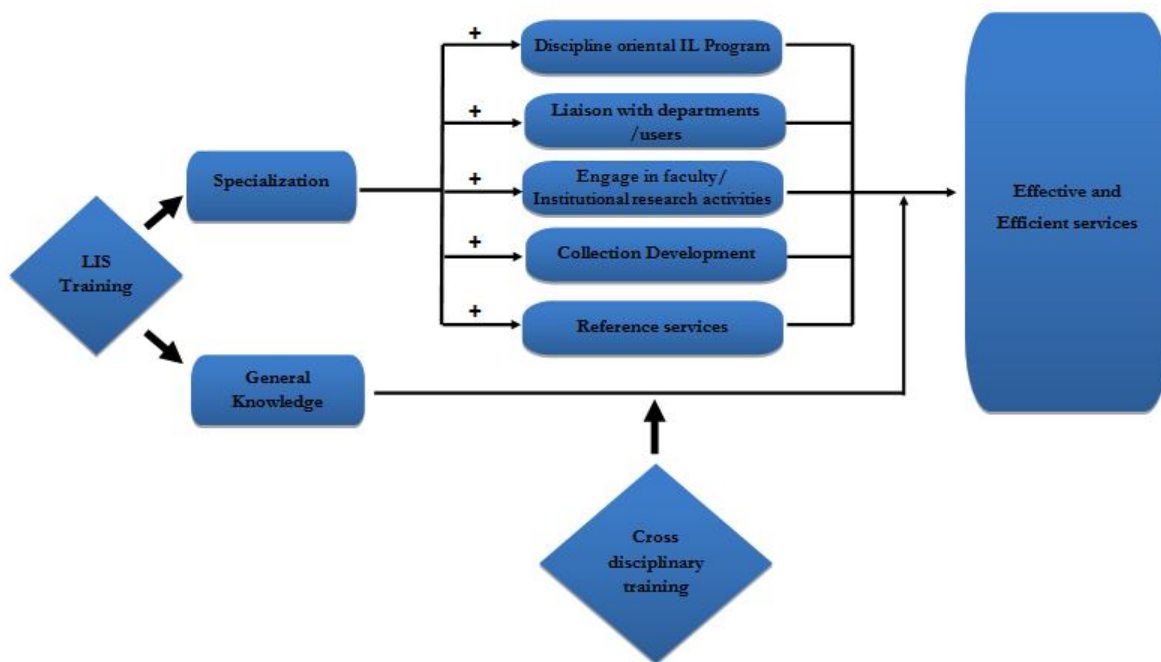


Figure 1: Conceptual Model created by the author for this study.

perform library functional areas such as classification, cataloguing, periodicals and pamphlets. Therefore LIS training moderates both library professionals with specialized knowledge as well as library professionals with general knowledge towards Effective and Efficient Services.

Based on the model many hypotheses can be created, but the researcher identifies the most important three hypotheses as follows.



H<sub>1</sub>: Subject specialization positively related with discipline oriented information Literacy programs

H<sub>2</sub>: Subject specialization positively related with liaison with departments

H<sub>3</sub> : Subject specialization positively related with effective and efficient services

Though there are many variables are studied the foremost important variables are Subject Specialization and Effective and Efficient Services while the sub variables Information Literacy and Liaison are also considered important.

## Results and Discussion in brief

### *Respondent Profile:*

Altogether 36 questionnaires were distributed and received only 21 filled questionnaires as a response rate of 58.33%. Respondents profile was compiled by gender, age group and highest qualification achieved. Among the respondents 13(61.9%) are female while 8(38.1%) male. Majority 12 (57.1%) falls within 40-49 age group whilst 5(23.8%) are 50-59 years and 3(14.3%) are between 30-39 years and only one (4.8%) respondent is more than 60 years old.

### *Description about the institution*

Among the respondents 9 (42.85%) are from university libraries and the other 12(57.15%) are from special libraries. Considering their user communities 10 (47.6%) are researchers and 5(23.8%) are professionals whilst 3(14.3%) undergraduates and 1(4.8%) postgraduates. Terminal degree offered by their institution was also identified. Among the respondent 9(42.9%) do not provide any degree level courses. Mainly they serve for researchers of special interest, whilst 8 (38.1%) institutions provide doctoral degrees as well as 3(14.3%) provide masters degree and only one (4.8%) provide professional degree.

### *Library Professionals*

Respondents were asked the number of professional librarians in their libraries. Responses are tabulated in Table 1.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-3	16	76.2	76.2	76.2
	4-6	2	9.5	9.5	85.7
	7-9	1	4.8	4.8	90.5
	More	2	9.5	9.5	100.0
	Total	21	100.0	100.0	

Table 1: Number of Professional Librarians in their libraries

The results indicate that 16(76.2%) libraries have only 1-3 professional staff whilst 2(9.5%) has 4-6, only one (4.8%) has 7-9 and the rest 2(9.5%) has more than 9 professional Librarians. It was noted that all special libraries have 1-3 number of Librarians whilst the universities have more. Again they were asked how many of them are subject specialist. The responses indicate 10(47.6%) have no specialization whilst 9(42.9%) said they have one specialist and others (4.8%) have 2 and 3 specialist in each.

Almost all librarians have qualifications in Library and Information Science at various levels such as certificate, diploma, degree and Master Degree. Considering their qualification 11 (52.4%) professionals have postgraduate degree and 2(9.5%) have undergraduate degree whilst the others 7 (33.3%) have Diploma and only one has (4.8%) some other qualification. The Following table shows their qualifications.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Diploma	7	33.3	33.3	33.3
Degree	2	9.5	9.5	42.9
Post graduate degree	11	52.4	52.4	95.2
Any other	1	4.8	4.8	100.0
Total	21	100.0	100.0	

Table 2: Highest Qualifications in Library and Information Science

The most important question is to explore whether they have advanced degree other than Library and Information Science. It was indicated that 5(23.5%) has advance degree whilst the others do not have. So, it can be assumed that the librarians who have qualifications on post graduate level have advanced degree in other disciplines, too.

They were asked again how many of them are engaged in reference services of the library. Majority Libraries 15(71.4%) have only one reference librarian while 3(14.3%) have two reference librarians and the rest has 3 and 4 reference librarian.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	15	71.4	71.4	71.4
2	3	14.3	14.3	85.7
3	1	4.8	4.8	90.5
4	1	4.8	4.8	95.2
More	1	4.8	4.8	100.0
Total	21	100.0	100.0	

Table 3: Librarians engaged in Reference services of the Libraries.

A series of questions were asked in order to measure the variables of interest in five point Likert Scale to identify to what extent the respondents are agree or disagree to the statements given and the results have been tabulated below in table 4.

	Strongly agree	Agree	Unable to decide	Disagree	Strongly disagree	Total
Do you agree that Subject knowledge is important to design and deliver discipline oriented <b>information literacy</b>	5(23.8%)	8(38.1%)	2(9.5%)	1(4.8%)	5(23.8%)	21(100%)
Do you feel that subject background is important to <b>liaisons</b> with the faulty members/staff of the institution	6 (28.6%)	9 (42.9%)	1(4.8%)	0	5(23.8%)	21(100%)
Do you agree that Subject knowledge is greater requirement to involve in faculty/ <b>institution research activities</b>	7 (33.3%)	9(42.9%)	1(4.8%)	1(4.8%)	2(9.5%)	20(95.2%)
Do you agree Subject knowledge is important in <b>collection development</b> of the faculty/ institution?	5(23.8%)	12(57.1%)	1(4.8%)	1(4.8%)	2(9.5%)	21(100%)
Do you agree that Subject Knowledge is important for <b>Reference services?</b>	2(9.5%)	7 (33.3%)	5(23.8%)	3(14.3%)	4(19%)	21(100%)
Do you think that <b>pre-training at LIS</b> schools is important to work at STEM libraries.	1(4.8%)	12(57.1)	0	7(33.3%)	1(4.8%)	21(100%)
Do you agree <b>cross disciplinary training</b> is enough to serve for a generalist at Science and Technology Libraries	1(4.8%)	7(33.3%)	7(33.3%)	2(9.5%)	4(19%)	21(100%)
Do you agree that A <b>generalist</b> is able to serve well	1(4.8%)	1(4.8%)	5(23.8%)	3(14.3%)	11(52.4%)	21(100%)

Table 4: The Extent of Agreeing level of Librarians towards important aspects investigated.

According to the perception of librarians; subject specialization is important for design and deliver discipline oriented information literacy programs, to liaisons with faulty members/staff of the institution, involve in faculty/institution research activities, reference services and collection development of the institution. LIS Training is also considered by the respondents as important while cross disciplinary training is considered only by 6(28.5%) as agreeing and strongly agreeing level. Majority respondents have denied that a generalist is able to serve well.

Subject Specialization the primary interest of the study was measured the same way as five point Likert scale and the results have been tabulated below in Table 6

	Strongly agree	Agree	Unable to decide	Disagree	Strongly disagree	Total
Do you agree that librarians at Science and Technology Institute should have <b>basic degree in relevant field?</b>	8(38.1%)	8(38.1%)	2(9.5%)	1(4.8%)	2(9.5%)	21(100%)
Do you agree that librarians at Science and Technology Institute should have an <b>advance degree in addition to LIS?</b>	1(4.8%)	9 (42.9%)	8(38.1%)	0.00	3(14.3%)	21(100%)
Do you agree that librarians at Science and Technology Institute should have <b>basic degree in LIS</b>	2(9.5%)	4(19%)	5(23.8%)	2(9.5%)	8(38.1%)	21(100%)
Do you agree that Librarians at Science & Technology institute should have <b>strength</b> at least one of the particular subject of the faculty?	4(19%)	12(57.1%)	0.00	3(14.3%)	2(9.5%)	21(100%)

Table 5: The Extent of Agreeing level of Librarians towards Subject Specialization

This result clearly shows that Specialization is important (Basic degree and Advance degree in relevant field) whilst LIS degree is not much considered but pre-Training on LIS is emphasized. Background knowledge or strength at least one of the discipline is highly realized by majority librarians.

The overall efficiency of the services was tested by a direct and single question that is “do you think that subject specialization is important for very effective and efficient services”? The result has been shown in the following table.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly agree	11	52.4	52.4	52.4
Agree	5	23.8	23.8	76.2
Unable to decide	1	4.8	4.8	81.0
Disagree	4	19.0	19.0	100.0
Strongly disagree	0	0	0	
Total	21	100.0	100.0	

Table 6: Shows Efficiency and Effective Services through Subject Specialization

### Hypotheses Test

Correlation test was carried out to test hypotheses. The first hypothesis is subject specialization positively related with discipline oriented information Literacy programs was tested at 2-tailed test and found a positive correlation value (0.478) at 0.05 confidence level which was accepted.

		Subject Specialization	Information Literacy
Subject Specialization	Pearson Correlation	1	.478*
	Sig. (2-tailed)		.028
	N	21	21
Information Literacy	Pearson Correlation	.478*	1
	Sig. (2-tailed)	.028	
	N	21	21

\*. Correlation is significant at the 0.05 level (2-tailed).

Table 7: Association between Information Literacy and Specialization

The second hypothesis; Liaison with Specialization also underwent a two –tailed correlation test and found that there is significant positive relationship (the value is 0.660) at 0.01 confidence level.

		Subject Specialization	Liaisons with the faulty
Subject Specialization	Pearson Correlation	1	.660**
	Sig. (2-tailed)		.001
	N	21	21
Liaisons with the faulty	Pearson Correlation	.660**	1
	Sig. (2-tailed)	.001	
	N	21	21

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 8: Association between Liaison and Specialization

Finally the third hypothesis; Correlation between the most important variables subject specialization and Effective and Efficient services was tested.

		Eff. & Effective Services	Specialization
Eff. & Effective Services	Pearson Correlation	1	.912**
	Sig. (2-tailed)		.000
	N	21	21
Specialization	Pearson Correlation	.912**	1
	Sig. (2-tailed)	.000	
	N	21	21

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 9: Association between Liaison and Specialization

This result shows that there is a positive relationship with Specialization and Effective and Efficient Services at 0.01 significance level at a higher correlation value that is 0.912.

## **Recruiting Librarians to Science & Technology Libraries**

Recruiting Librarians to all Science and Technology libraries depend on the specific recruitment schemes. Especially University Libraries highly stick to the circular of University Grants Commission. According to this circular special degree with honors is the first and second preference and the third is general degree with post graduate qualification. Though it is strictly adopted in selection there are mismatches. Librarians face challenges while selecting a Science graduate to a Science Faculty Library while another special degree holder is there with specialization in Arts/ Humanities and first class honors.

Considering the special libraries especially libraries at research institutions they recruit librarians as per their own recruitment scheme. Many Institutions have advertised for librarians with any degree with English proficiency while some other institutions called for candidates with bachelors degree in Science or IT (Information technology). Some other institutions' requirement is just G.C.E. Advanced Level qualification with Professional Course (Certificate or Diploma) in Library and Information Science. The following arguments were put forwarded by librarians.

“I can't agree with the specialization concept. Basic knowledge on the subject is enough to serve well, but LIS qualification is compulsory”. Another one says “If science and technology libraries can run with subject specialist, it is better and effective. However most of the people especially from Medicine and Engineering are reluctant to apply for the post of Librarian. This may be the main reason for recruiting people from other disciplines”. However this argument has been clear with another Librarian's point of view. She mentioned that “the librarian with basic science and technology degree is easier to serve in a science and technology libraries than a non scientific basic degree librarian. But for medical and engineering libraries any science base degree person can serve effectively. But still through experience any person can serve well in any library without having a basic science and technology degree. We already know many such cases” Another librarian is also supporting this view and she mentioned that “General Science graduate will be able to serve well in Science and Technology libraries (Medicine, Engineering, veterinary Science, Dental and Agriculture). Any librarian irrespective of the discipline is interested in doing job well or he/she will somehow catch up the relevant knowledge base in which he/she works. Today ICT and Language competencies will be an advantage for non-subject based librarian to overcome the discipline barrier”. It is better to have LIS graduate with ICT skills and knowledge for STEM Libraries, too. “A pre-training or short course at least 3-6 months on LIS should be recommended to provide functional skills and knowledge to newly recruited librarians”.

However the following quotes of Librarians under this survey indicate that Subject specialization is important for Science & Technology Libraries.

A librarian commented that “knowledge in a subject field or area is necessary to work in a special library, but not specialization in basic degree or advance degrees. She argued that background knowledge on the specific subject (for example Agriculture) is enough with LIS skills and knowledge to provide effective and efficient services”.

Another librarian of a special library says “Basic degree in specific discipline is important for a librarian of Science and Technology institute rather than Masters or Ph.D. But Master degree or Ph.D in LIS is important to run the technical services and administration of the library”. Other highlighted comments are as follows.

“Service of subject librarian is required to develop collection and to provide excellence service to clients”.

“Basic degree with specialization is important. For example an Engineering faculty Librarian should have a degree on engineering, related subjects or at least Mathematics”.

“Basic degree should be made mandatory in recruiting librarians to special libraries. with LIS qualifications, Diploma or certificate level”.

“No subject Librarian cadre in Sri Lankan University systems and such cadre should be created”.

## **Conclusion & Recommendation**

Majority librarians have emphasized that appointing subject librarians are important to faculty libraries and other Science and Technology Libraries as they are able to design and deliver best IL programmes, reference services, liaison with departments and collection management activities to the specific library patrons. They also strongly believe that subject librarians are very comfort to be a member of the research committee of faculties though there are some arguments that any librarian can gain knowledge and skills on the disciplines of their institutions to function well. ICT skills and knowledge should be made mandatory, too. In case of academic libraries; they face some challenges in recruitment as the recruitment scheme has not included a condition of relevant degree rather than it has any special degree with class or general degree with post graduate qualification. In case of special libraries selection committees should consider at least scientific background though degree is not a requirement.

Subject specialization and Effective and Efficient services are closely associated. If the librarians have specialized knowledge he will be able to provide such services through properly designed Information Literacy program, liaison, participating in research forums etc. However cross disciplinary training will enhance the knowledge of generalist on the particular area and thus facilitate excellence services.

This study recommends the relevance authorities to create a common circular for recruiting librarians to special libraries that should carry a relevant special degree with ICT and English Qualification. After selection pre- training can be arranged for LIS skills and knowledge.

In case of academic libraries subject librarian cadre should be created and while appointing librarians to faculty libraries professionals with same disciplinary backgrounds can be proposed as mandatory.

While generalists are adhered to work at science and technology libraries, they should be exposed to cross disciplinary training to improve their knowledge on particular discipline.

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