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Gender Differences in the Multiple Intelligence Skills of Library and Information Science Professionals in Universities in Tamil Nadu, India

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0 Abstract

This article examined the male and female Library and Information Science (LIS) professionals working in universities in Tamil Nadu. The study reveals that out of 441 respondents surveyed under the study, 73.7% (325) are male respondents and 26.3% (116) are female respondents. This study reveals that the male LIS professionals are very good and good at many skills while female LIS professionals are OK at many skills. The results of levene's test for equality of variances along with descriptive statistics. The test reveals that the p-values for all the nine multiple intelligences are less than 0.05. So, null hypothesis i.e. there is no variation between the male and female respondents with regard to the respective intelligence, is rejected and alternative hypothesis is accepted. Since the population variances are relatively not equal, the research should look at the 'Equal variances not assumed' row for the t-test results. This study suggested the well groomed library professional good at many skills is an asset any institution he/she works in. His/her multiple intelligence skills may bring drastic changes and positive impacts both in the library landscape and library services.

Key words: Multiple Intelligence Skills, Competency, verbal-linguistic skills, musical-rhythmic skills, visual-spatial skills, logical-mathematical skills, bodily-kinesthetic skills, interpersonal skills, intrapersonal skills, naturalistic skills and emotional intelligence skills.

1. Introduction

In order to disseminate knowledge and information available in all current formats: print and electronic, the new era librarians are required to understand the need to learn more about new technologies and be comfortable using them in order to perform their utmost role, which is to organize the vast amount of information and resources in a way that is conveniently accessible to library users. The personal skills listed as vital requirements for young adults librarians are: analytical, creative, flexible, reflective, detective-like, adaptable, responsive to needs, enthusiastic, self- motivated, interactive

and engaging, tolerant, networking skills, practices self- evaluation, multidisciplinary reader, confident, accepting of individual differences and respectful of cultural diversity.

The above mentioned skills are the most important skills that would reflect the librarians' willingness and comfort level to work in a world of technology. In addition to those skills, the knowledge of web 2.0 seems to be essential for librarians to be on track with the huge movement of social networking that appears to be a major attraction for young adults nowadays.

The theory of multiple intelligences is a theory of intelligence that differentiates it into specific (primarily sensory) 'modalities', rather than seeing intelligence as dominated by a single general ability. This model was proposed by Howard Gardner in his 1983 book *Frames of Mind: The Theory of Multiple Intelligences*. Gardner chose eight abilities that he held to meet these criteria: musical-rhythmic, visual-spatial, verbal-linguistic, logical-mathematical, bodily-kinesthetic, interpersonal, intrapersonal, and naturalistic.

2. Need for the Study

The above listed skills or aptitudes or intelligences are very much required in the present day library management. The library professionals need to be multi-faceted, multi-talented and multi-tasking. They should be able to thrive in all spheres of modern library organization. They need to be linguistically, mathematically, spatially, nature-loving, interpersonally, intrapersonally, emotionally, technologically, managerially, communicatively and kinaesthetically strong enough to lead a modern techno-driven 21st century library and information centres.

Professionals working in present day university libraries need continuous grooming by acquiring core competencies and new skills so that they never become obsolete in this fast changing environment. We need to analyse how far, to what extent the LIS professionals of higher education institutions are capable of performing their tasks effectively and efficiently using their multiple intelligence skills so as to create a library of 21st century ambience to possess 21st century information sources to serve the 21st century clients.

Thus, there is a need to understand and analyse the aforesaid skills viz. soft skills and multiple intelligence skills of the LIS professionals, especially among those working in the higher educational institutions like universities. The review of literature performed

by the researcher too discloses that there is a wide research gap in the field of multiple intelligence studies of LIS professionals.

3. Review of Literature

Gardner & Hatch (1989) explained a new approach to the conceptualization and assessment of human intelligences is described. According to Gardner's Theory of Multiple Intelligences, each human being is capable of seven relatively independent forms of information processing, with individuals differing from one another in the specific profile of intelligences that they exhibit. The range of human intelligences is best assessed through contextually based, "intelligence-fair" instruments. Three research projects growing out of the theory are described. Preliminary data secured from Project Spectrum, an application in early childhood, indicate that even 4- and 5-year-old children exhibit distinctive profiles of strength and weakness. Moreover, measures of the various intelligences are largely independent and tap abilities other than those measured by standard intelligence tests. Ramesh Babu (2011) explained that without possessing or acquiring the required information literacy skills, the LIS professionals will not be able to fulfil their role in any Information Centre.

Hyde & Linn (1988) analysed 165 studies that reported data on gender differences in verbal ability. The weighted mean effect size was +0.11, indicating a slight female superiority in performance. The difference is so small that we argue that gender differences in verbal ability no longer exist. Analysis of tests requiring different cognitive processes involved in verbal ability yielded no evidence of substantial gender differences in any aspect of processing. Similarly, an analysis of age indicated no striking changes in the magnitude of gender differences at different ages, countering Maccoby and Jacklin's (1974) conclusion that gender differences in verbal ability emerge around age 11 yrs.

Petrides & Furnham (2000) were conducted 260 participants completed a measure of trait emotional intelligence (EI) and estimated their scores on 15 EI facets on a normal distribution with 100 points as the mean and 15 points as a standard deviation. Females scored higher than males on the "social skills" factor of measured trait EI. Most of the correlations between measured and self-estimated scores were significant and positive, thereby indicating that people have some insight into their EI. Correlations between measured and self-estimated scores were generally higher for males than females, and a regression analysis indicated that gender was a significant predictor of self-estimated EI.

Vogel (1990) analysed substantial body of research confirms higher verbal ability in normally achieving females and higher visual-spatial and mathematical abilities in

normally achieving males. In the population with learning disabilities (LD), research must be interpreted cautiously because LD samples were drawn mainly from the system identified population and may reflect selection bias. They identified females with LD are lower in IQ, have more severe academic achievement deficits in some aspects of reading and math, and are somewhat better in visual-motor abilities, spelling, and written language mechanics than males with LD. In mathematics, however, it is difficult to document consistent differences in computational skills in the elementary school ages. More consistent findings, however, indicate superiority in mathematical reasoning in males with LD. A limited number of studies on research-identified samples indicate that findings from studies of school-identified LD samples must be interpreted cautiously because females with LD identified in the schools may not be representative of females with LD in general.

Katyal &Awasthi (2005)150 students of Xth class from different Government Schools in Chandigarh were selected randomly for assessment of gender differences in emotional intelligence. The data was collected through standardized “Emotional Intelligence Test”. The findings revealed that majority of boys, girls and the total sample had good followed by low emotional intelligence. Girls were found to have higher emotional intelligence than that of boys. However the difference touched only 0.10 level, hence findings are just suggestive of the trend.

Jeyshankar (2015) analysed professionals working in present day university libraries and revealed that they need continuous grooming by acquiring core competencies and new skills so that they never become obsolete in this fast changing environment. The study explored the multiple intelligence skills of randomly selected 441 LIS professionals working in 47 universities of Tamilnadu using questionnaires designed on eight intelligences expounded by Gardner. The study found that: 114 respondents (25.9%) strongly agree that they can prepare informative abstracts and official communications effectively; 112 (25.4%) respondents strongly agree that they can work with Unicode to enter regional language details in software; 38.8 % (171) of the respondents agree that they have working knowledge of metric studies.

Jeyshankar (2018) analysed the multiple intelligence skills of LIS professionals in working in government and private universities in Tamil Nadu. Data were collected through questionnaire method. Totally 441 questionnaire were collected from 114 in traditional, 291 in Professional and 36 in Multi-discipline subjects. The study reveals that the private universities LIS professionals are more compare than government universities.

The respondents from Government Universities are better skilled than their counterparts from private universities in all the 17 linguistic intelligence skills.

4. Objectives

As far as multiple intelligence skills of the LIS professionals are concerned, the present study has the following specific objectives.

- To measure the gender differences in the linguistic intelligence of the respondents
- To measure the gender differences in the logical-mathematical intelligence of the respondents
- To measure the gender differences in the spatial intelligence of the respondents
- To measure the gender differences in the bodily-kinaesthetic intelligence of the respondents
- To measure the gender differences in the musical intelligence of the respondents
- To measure the gender differences in the interpersonal intelligence of the respondents
- To measure the gender differences in the intrapersonal intelligence of the respondents
- To measure the gender differences in the naturalistic intelligence of the respondents
- To measure the gender differences in the emotional intelligence of the respondents

5. Hypotheses

- There is no significant association between gender of the respondents and their linguistic, logical-mathematical, spatial, bodily-kinaesthetic, musical, interpersonal, intrapersonal, naturalistic and emotional intelligence skills.

6. Methodology

The study aims at knowing the multiple intelligence skills of all the universities – state funded, centrally funded and private – of Tamilnadu. So, all the 47 universities of Tamilnadu are placed under the area of operation of the present study. 19 state universities, 2 central universities and 26 deemed universities are included in the list. The study adopted simple random sampling to select the respondents from these 47 universities. 441 respondents are selected from these 47 universities. 325 male and 116 female respondents/ 188 Government University and 253 private university respondents form the sample for the present study. SPSS Ver. 23 was used for performing necessary statistical analysis mean, standard deviation and Levene's Test on the collected data to draw necessary inferences.

7. Data Analysis and Interpretation

Table-1: Nature of Institution Vs. Respondents

Nature of the Institution	Frequency	Percent
Traditional Universities	114	25.9
Professional Universities	291	66.0
Multi-disciplined Universities	36	8.2
Total	441	100.0

Note. Source: Primary Data

Table 1 show the institutional type and the distribution of the respondents. A majority of 291 (66 %) respondents are hailed from professional universities. While 25.9 % (114) of the respondents are from traditional universities, just 8.2 % (36) of them are from multi-disciplined universities. Thus, most of the respondents of the present study are hailed from professional universities of Tamilnadu.

Table- 2: Gender-wise Distribution of the Respondents

Gender	Frequency	Percent
Male	325	73.7
Female	116	26.3
Total	441	100.00

Note. Source: Primary Data

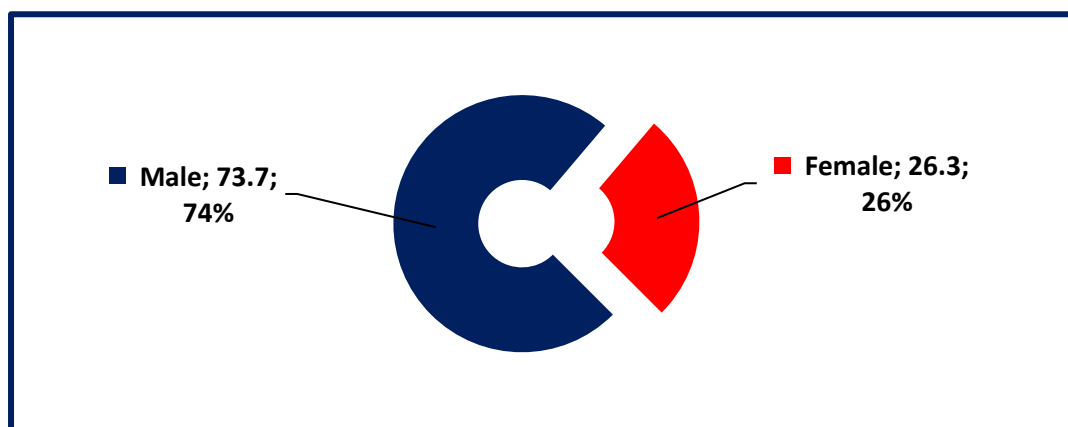


Figure 1: Gender of the respondents

Table 2 and Fig. 1 reveal that out of 441 respondents surveyed under the study, 73.7% (325) are male respondents and 26.3% (116) are female respondents. This makes it clear that most of the library professionals in Tamilnadu universities are males and only 1/4th of LIS professionals are females. Domination of male library professionals over female library professionals is made visible here.

Table 3: Linguistic Intelligence Vs. Male and Female Respondents

Statements / Variables	Male		Rank	Female		Rank
	WAM	SD		WAM	SD	
I can compile index for books	3.41	0.71	XI	3.34	0.70	XIII
I can prepare informative abstract	3.63	0.88	IV	3.49	0.83	III
I can prepare brochure/newsletter/flyers for library	3.65	0.88	III	3.49	0.83	III
I can find suitable words from thesaurus and dictionaries for subject headings	3.43	0.78	X	3.37	0.74	XII
I know the alternative words for searching any classification schedule	3.51	0.84	IX	3.40	0.78	IX
I can give suitable key words for retrieving information	3.63	0.85	IV	3.48	0.80	IV
I know the meaning of connecting symbols in CC & UDC	4.23	0.42	I	4.18	0.39	I
I can identify the BT / NT / RT for a subject heading	3.76	0.83	II	3.67	0.77	II
I can prepare official communications effectively	3.58	0.89	V	3.45	0.83	VI
I can read/ prepare catalogues in more than one language, excluding my mother tongue	3.54	0.75	VII	3.45	0.75	VI
I do work with Unicode to enter regional language details in Software	3.58	0.89	V	3.44	0.82	VII
I translate text from English to Tamil and vice versa	3.53	0.76	VIII	3.46	0.75	V
I can deliver talks in library orientation programmes both in Tamil and English	3.53	0.83	VIII	3.37	0.72	XII
I can handle / process books in various languages other than my mother tongue	3.55	0.73	VI	3.41	0.69	VIII
I attend to the reference queries posed in two/three languages other than my mother tongue	3.53	0.86	VIII	3.38	0.75	XI
I do write for library blogs / Tweets and other social networks	3.39	0.68	XII	3.30	0.62	XIV
I remember various CC/DDC/UDC classification numbers and bibliographic elements in AACR / ISBD/CCF	3.54	0.87	VII	3.39	0.77	X

Note. WAM = Weighted Average Mean; SD = Standard Deviation

Table 3 depict the gender-wise distribution of linguistic intelligence skills of the respondents. Both male and female respondents have greater skills in the connecting symbols used in CC and UDC with a WAM of 4.23. Both male and female respondents

less skilled at: Compiling index for books and finding suitable words from thesaurus and dictionaries for subject headings (3.34); writing for library blogs / twitter and SNS (3.30). They have moderate skills in all other 16 linguistic intelligence skills with the WAM ranging from 3.30 to 3.67. The WAM is more than 3.50 and less than 4.0 for one skill and it is less than 3.50 for 15 skills. The male respondents are better skilled than female respondents in all the 17 linguistic intelligence skills. While the WAM of male respondents are more than 3.5 and less than 4.0 for 13 skills, it is so for just one skill among female respondents. The WAM of male respondents is less than 3.5 for three skills while it is so for 15 skills among the female respondents. All the seventeen linguistic intelligence skills have 12 varying ranks among male respondents and 13 varying ranks among female respondents.

Table 4: Logical-Mathematical intelligence skills of male and female respondents

Statements / Variables	Male			Female		
	M	SD	Rank	M	SD	Rank
I clearly perceive cost effect analysis of each section of the library	2.94	1.22	XI	2.74	1.19	IX
I follow systematic/ logical approach in library management	3.78	.83	II	3.71	.76	II
I introspect about better stock verification methods	3.84	.83	I	3.76	.79	I
I prefer to solve problems related to library administration	3.74	.84	III	3.65	.78	IV
I have working knowledge on Librametry, Bibliometric, Informetrics, Scientometric & Webometric analysis techniques	3.72	.73	IV	3.66	.72	III
I have better experience in IRS (Field search, Boolean, using field term & truncation etc...)	3.69	.87	V	3.56	.83	V
I have experience in the preparation of library annual report	3.49	.72	X	3.40	.70	VIII
I have experience in handling qualitative and quantitative information in the library	3.55	.89	VII	3.43	.83	VI
I can prepare library budget for various funding sources	3.53	.87	VIII	3.40	.78	VIII

I can use SPSS & MSEXCEL software for the statistical analysis of library usage and Information seeking behaviour studies	3.56	.87	VI	3.42	.79	VII
I can conduct user studies and draw inferences using various tools	3.52	.86	IX	3.40	.78	VIII

Male Respondents: Male respondents are best at ‘introspecting better stock verification methods’ (WAM of 3.84) and ‘following systematic approach in library management’ (WAM of 3.78), ‘preferring to solve problems related to library administration’ (WAM of 3.74) and ‘possessing working knowledge of metric studies’ (WAM of 3.72). The WAM of the skills vary from 2.94 to 3.84. The WAM of 10 skills is between 3.50 and 3.85. The WAM of the Skill ‘Experience in the preparation of annual report’ is 3.49 and the WAM of the skill ‘perceiving cost effect analysis of each section of the library’ is just 2.94, the least among the all.

Female Respondents: The female respondents are best at ‘introspecting better stock verification methods’ (WAM of 3.76) and ‘following systematic approach in library management’ (WAM of 3.71). While the WAM of five skills is more than 3.50, it is less than 3.50 but more than 3.0 for five skills. The female respondents are least skilled in ‘perceiving cost effect analysis of each section of the library’ as its WAM is just 2.74.

Male Vs. Female Respondents: Both the male and female respondents are best at the same logical mathematical intelligence skills.

But the WAM of all the eleven skills of male respondents is more than that of the female respondents. Thus, male respondents are better skilled than female respondents as far as their logical-mathematical intelligence is concerned.

While the least WAM is 2.94 for male respondents, it is just 2.74 for female respondents. While the male respondents have the WAM ranging from 3.50 to 3.85 for 10 skills, the female respondents have so for just five skills. While male respondents have given 11 different ranks to logical-mathematical intelligence skills, the female respondents have given just nine different ranks.

Table 5: Spatial Intelligence Skills Vs. Male and Female Respondents

Statements / Variables	Male			Female		
	WAM	SD	Rank	WAM	SD	Rank
I select the necessary colours for painting the library building & furniture	3.61	.86	I	3.44	.76	III
I assist the Architect and the Engineers in the design of library sections and seating& lighting arrangement	3.45	.76	VII	3.37	.74	V
I am able to work in the planning of interior decoration of the library	3.50	.83	V	3.34	.70	VII
I like to fix leaders photos, symbols, maps, flow charts and diagrams along with text of quotations in the library	2.98	1.33	IX	2.74	1.24	X
I can identify the fields in library automation modules	3.48	.83	VI	3.30	.69	VIII
I can design the library websites	3.02	1.35	VIII	2.78	1.26	IX
I can design network topology for the digital library	3.50	.83	V	3.35	.71	VI
I prefer to provide special arrangement for physically challenged users	3.59	.89	II	3.44	.82	II
I work for creating functional spaces in my library	3.54	.88	III	3.39	.77	IV
I can prepare library layout / design / model / sketch	3.59	.90	II	3.45	.83	I
I arrange library furniture to have spatial accommodation	3.53	.83	IV	3.37	.72	V
I plan for to have enough exit space (in case of emergency)	2.82	1.12	X	2.63	1.06	XI

Table 5 discloses the spatial intelligence skills of male and female respondents.

Male Respondents: The male respondents are strong at ‘selecting colours for library building and furniture (WAM = 3.61), ‘providing special arrangement for physically challenged users (WAM= 3.59)’, ‘preparing library layout / design (WAM=3.59)’ and ‘creating functional spaces in the library (WAM=3.54)’. Their skills in assisting the architects and engineers in the design of various library sections (WAM =3.45) and ‘designing library websites (WAM = 3.02)’ are moderate. They are least skilled in ‘fixing the photos, quotations and charts (WAM = 2.98)’ and ‘planning to have enough exit space in the library (WAM = 2.82)’.

Female Respondents: The female respondents are highly skilled at ‘preparing layout / design (WAM = 3.45)’, ‘providing special arrangement for physically challenged users (WAM= 3.44)’ and ‘selecting colours for library building and furniture (WAM = 3.44). They have moderate skills at ‘planning of interior decoration of the library (WAM = 3.34)’ and ‘identifying the fields in library automation modules (WAM=3.30). They have

least amount of skills at ‘designing library websites (WAM=2.78)’, ‘fixing the photos, quotations and charts (WAM = 2.74)’ and ‘planning to have enough exit space in the library (WAM = 2.63)’.

Male Vs. Female Respondents: While male respondents are highly skilled at ‘selecting colours for library building and furniture (WAM = 3.61), the female respondents are highly skilled at ‘preparing layout / design (WAM = 3.45)’. Both are least skilled at ‘planning to have enough exit space in the library (WAM for male is 2.82, WAM for female is 2.063)’.

While male respondents have WAM of 3.5 or more for seven skills, the female respondents have so not even for a single skill. Male respondents have WAM of 3.0-3.49 for 3 skills while female respondents have so for nine skills. The WAM lies between 2.0 and 2.9 for 2 skills in case of male respondents and for 3 skills in case of female respondents. Thus, maximum of male respondents are very good at few skills while maximum of female respondents are moderate at few skills.

The male respondents have given ten varying ranks to their spatial intelligence skills while the female respondents have given 11 varying ranks to their spatial intelligence skills.

Table 6: Bodily-Kinaesthetic Intelligence Skills Vs. Male and Female Respondents

Statements / Variables	Male			Female		
	WAM	SD	Rank	WAM	SD	Rank
I prefer to work in replacing the books in the library racks	3.59	.90	VI	3.45	.83	VI
I conduct library orientation / user education programmes	3.70	.91	II	3.53	.85	II
I am good at imbibing users’ gestures	3.64	.86	IV	3.47	.79	IV
I enjoy arranging computers/ racks/ furniture etc ..	3.60	.85	V	3.46	.78	V
I can scan/upload the documents in the IR/digital library	2.86	1.19	VIII	2.66	1.12	IX
I prepare list of books to be bound / condemned / mended	3.59	.89	VI	3.44	.82	VII
I prepare library communications in computer systems	3.45	.72	VII	3.35	.69	VIII
I arrange books for displays / exhibitions	3.73	.94	I	3.54	.87	I
I do shelf rectification regularly	3.68	.90	III	3.49	.81	III

Male Respondents: The male respondents are highly skilled at arranging books for displays or exhibitions (WAM = 3.73), conducting library orientation or user education programmes (WAM = 3.70) and doing shelf rectification regularly (WAM =3.68). They are least skilled at preparing library communications in computer systems (WAM = 3.45) and scanning/uploading the documents in the institutional repository / digital library (WAM =2.86). Their skills are moderate at arranging computers / racks / furniture’s

(WAM =3.60) and preparing list of books to be bound / condemned / mended (WAM = 3.59).

Female Respondents: The female respondents are least skilled at scanning/uploading the documents in the institutional repository / digital library (WAM = 2.66) and preparing library communications in computer systems (WAM = 3.35). They are moderate at ‘arranging computers / racks or furniture (WAM =3.46) and ‘replacing the books in the library racks (WAM =3.45). Their skills are high at ‘arranging books for displays or exhibition (WAM = 3.54) and ‘conducting library orientation or user education programmes (WAM =3.53)’.

Male Vs. Female Respondents: The table 6 shows that male respondents are better than female respondents in all the 9 skills of their bodily-kinesthetic intelligence.

While the highest WAM for male respondents is 3.73, it is just 3.54 for female respondents. The least WAM for male respondents for a skill is 2.86 and the same is 2.66 for female respondents.

While WAM is more than 3.50 for 7 skills in case of male respondents, it is so only for two skills in case of female respondents. WAM is between 3.00 and 3.49 for one skill in respect of male respondents and it is so for 6 skills in respect of female respondents. The WAM is below 3.0 for just one skill in respect of both male and female respondents.

Male respondents have allotted 8 varying ranks to their bodily-kinesthetic intelligence skills and female respondents have given 9 varying ranks to such skills.

Table 7: Musical Intelligence Vs. Male and Female Respondents

Statements	Male			Female		
	M	SD	Rank	M	SD	Rank
I can classify music materials into classic, folk & modern / western	3.37	.51	V	3.28	.47	IV
I collect, preserve, disseminate (both print & electronic) music records	3.43	.63	III	3.32	.55	II
I can upload the music materials in the IR/digital library	3.41	.53	IV	3.30	.48	III
I like doing things in rhythmic way	3.51	.75	II	3.37	.65	I
I can group/ remix the music scores and repeat wherever required	2.82	1.06	VI	2.62	.98	V
I play light music in the reference hall	3.54	.74	I	3.37	.63	I
I know the biographies on musical composers	3.51	.75	II	3.37	.65	I

Table 7 disclose the gender-wise distribution of musical intelligence skills of the respondents.

Male Respondents: The male respondents are highly skilled at playing light music in the reference hall (WAM = 3.54) followed by knowledge of biographies of musical composers (WAM = 3.51) and performing things in rhythmic ways (WAM = 3.51). They are moderately good at collecting, preserving and disseminating music records (WAM = 3.43) and uploading the music materials in the IR/digital library (WAM = 3.41). They are least skilled at classifying music materials into classic, folk or modern (WAM = 3.37) and grouping or remixing the music scores (WAM = 2.82).

Female Respondents: The female respondents have high level intelligence on the biographies of music composers (WAM = 3.37) and inclination to play light music in the reference hall (WAM=3.37). Their skills are moderate in uploading the music materials in the IR/digital library (WAM= 3.30) and classifying music materials into classic, folk or modern (WAM = 3.28). They are least skilled at grouping or remixing the music scores (WAM = 2.62).

Male Vs. Female Respondents: Both male and female respondents have ranked their musical intelligence almost same. The comparison of WAM values of all the seven skills shows that male respondents are better than female respondents in their musical intelligence.

While 3.54 are the highest WAM for a skill in respect of male respondents, it is just 3.37 for female respondents. While WAM is more than 3.50 for three skills in case of male respondents, it is not so for even a single skill in case of female respondents. WAM is between 3.0 and 3.49 for three skills in respect of male respondents and it is so for 6 skills in respect of female respondents. The WAM is below 3.0 for a single skill in case of both male and female respondents.

Table 8: Interpersonal Intelligence Vs. Gender of the Respondents

Statements	Male			Female		
	WAM	SD	Rank	WAM	SD	Rank
I enjoy working with other LIS professionals	4.29	.46	I	4.19	.39	I
I can easily manage the rush hour in library	3.64	.89	IV	3.49	.83	IV
I like to share my knowledge with others through Conference, Seminars, workshops and training courses about Govt GOs./UGC communications and other related information	3.13	1.44	IX	2.86	1.35	VIII
I would patiently listen to the views of my fellow LIS professionals & library users	3.70	.94	III	3.51	.85	III
I make friends easily with LIS professionals	3.56	.90	VI	3.43	.83	VII
I am happy to serve as a member, secretary, president in the LIS Association and/or working place	3.71	.96	II	3.55	.90	II

I have a good number of LIS professionals friends and a circle of close contacts	3.52	.76	VIII		.75	VII
I prefer to participate in LIS forum, e-groups, face book, twitter etc.. and other social networks	3.62	.88	V	3.48	.82	V
I appreciate other LIS professional's attitudes / views / aptitudes / achievements	3.54	.75	VII	3.44	.74	VI

Male Respondents: Male respondents are very good at enjoying working with other LIS professionals (4.29), serving as member or secretary of LIS associations / working place (3.71) and listening to the views of colleagues and library users (3.70). They are least good at sharing their knowledge with others through conferences and seminars (3.13). Their skills are moderately good at easily managing the rush hours in the library (3.64) and participating in LIS forums and other social media networks.

Female Respondents: Female respondents are very good at enjoying working with other LIS professionals (4.19), serving as member or secretary of LIS associations / working place (3.55) and listening to the views of colleagues and library users (3.51). They are least good at sharing their knowledge with others through conferences and seminars (2.86). Their skills are moderately good at easily managing the rush hours in the library (3.49) and participating in LIS forums and other social media networks.

Male Vs. Female Respondents: The ranks given as per the mean values indicate that both male and female respondents have given I to V ranks to the same interpersonal intelligence skills but the magnitude of their skills vary to a little extent. Both have the mean value of more than 4.0 for one skill. The male respondents have mean value of more than 3.5 and less than 4.0 for 7 skills while female respondents have so for just 2 skills. The mean value is less than 3.00 for one skill in case of female respondents. The male respondents have one skill with the mean value of 3.00 – 3.50 while the female respondents have five skills so.

Table 9: Intrapersonal Intelligence among Male and Female Respondents

Statements	Male			Female		
	WAM	SD	Rank	WAM	SD	Rank
I can set vision & mission for the development of library	4.22	.41	II	4.16	.36	III
I can work alone & get things done in the library	3.71	.92	V	3.54	.87	V
I use my personal experience to solve problems/ issues in library	4.20	.40	III	4.18	.39	II
I am aware of my capacities/limitations in LIS knowledge	3.66	.88	VI	3.50	.82	VII
I wish to be honest and frank in my feelings, thoughts and actions	4.17	.37	IV	4.14	.35	IV

I have clear notion about myself and my objectives	2.94	1.22	X	2.72	1.16	X
I learn from my errors and mistakes committed	3.71	.92	V	3.53	.86	VI
I maintain a daily record about my LIS activities	4.32	.47	I	4.25	.43	I
I put conscious efforts in satisfying my users	3.62	.84	VII	3.50	.82	VII
I can understand readers' mind and act suitably	3.48	.66	IX	3.39	.66	IX
I let readers express / share (conversation, suggestion box etc)	3.62	.84	VII	3.50	.82	VII
I employ various methods (survey, observation etc) to know my readers	3.60	.82	VIII	3.48	.80	VIII

Table 9 disclose the gender-wise distribution of Intrapersonal Intelligence Skills of the Respondents.

Male Respondents: The WAM of 4 intrapersonal intelligence skills of male respondents are more than 4.0 - 'I maintain a daily record about my LIS activities' (4.32), 'I can set vision & mission for the development of library' (4.22), 'I use my personal experience to solve problems/ issues in library' (4.20) and 'I wish to be honest and frank in my feelings, thoughts and actions' (4.17) – indicating that they are highly skilled at these 4. They are moderately skilled at working along and getting things done in the library (3.71), realizing their own capacities and limitations of LIS knowledge (3.66) and placing conscious efforts in satisfying their users (3.62). They are least skilled in understanding readers' mind and acting suitably (3.48) and having clear notion about themselves and their objectives (2.94).

Female Respondents: The WAM of 4 intrapersonal intelligence skills of female respondents are more than 4.0 - 'I maintain a daily record about my LIS activities' (4.25), 'I can set vision & mission for the development of library' (4.16), 'I use my personal experience to solve problems/ issues in library' (4.18) and 'I wish to be honest and frank in my feelings, thoughts and actions' (4.14) – indicating that they are highly skilled at these 4. They are least skilled at understanding readers' mind and acting suitably (3.39) and having clear notion about themselves and their objectives (1.16).

Male Vs. Female Respondents: The female respondents too are highly skilled with a WAM of more than 4.0 in the same 4 intrapersonal intelligence skills as that of male respondents. Bu there is a slight variation in the degree of skills i.e. female respondents is slightly less skilled than male respondents in all these four skills.

Both male and female respondents are least skilled at two skills namely understanding readers' mind and acting suitably and having clear notion about themselves and their objectives with a slight difference in their magnitude of skills.

Thus, ranking of intrapersonal intelligence skills by both the male and female respondents is almost the same. But male respondents are slightly highly skilled than by the female respondents.

Table 10: Naturalistic Intelligence Skills among Male and Female Respondents

Statements	Male			Female		
	WAM	SD	Rank	WAM	SD	Rank
I am good at perceiving nature with all its diversity in the library	3.70	.92	III	3.54	.87	II
I spread awareness about the conducive environment	3.77	.97	I	3.58	.91	I
I have capability to transform the conventional library	3.07	1.37	X	2.79	1.26	VIII
I like to allow the natural breeze & ventilation enter into the library	3.77	.97	I	3.58	.91	I
I like to keep Indoor plants in the library for pleasant atmosphere	3.63	.85	VI	3.47	.77	V
I like to have a beautiful garden in library premises	3.13	1.44	VII	2.86	1.35	VI
I would like to focus on environmental awareness programmes on TV	3.72	.93	II	3.54	.87	II
I like to display the new arrivals of books & journals in a beautiful / decorative and creative	3.09	1.39	VIII	2.82	1.30	VII
I have installed rainwater harvesting in my library	3.64	.86	V	3.48	.80	IV
I keep the library neat and tidy to avoid pollutants	3.08	1.38	IX	2.82	1.30	VII
I like to have a water fountain in the library	3.66	.88	IV	3.50	.82	III

Table 10 discloses the naturalistic intelligence skills of male and female respondents of the study.

Male Respondents: The male respondents are highly skilled at allowing natural breeze and ventilation enter the library and spreading awareness about the conducive environment (3.77) followed by focussing on environmental awareness programme on TV (3.72) and perceiving nature with all its diversity in the library (3.70). They are moderately skilled at installing rainwater harvesting in the library (3.64) and keeping indoor plants in the library for pleasant atmosphere (3.63). They are least skilled at keeping the library neat and tidy to avoid pollutants (3.08) and having capability to transform the conventional library (3.07).

Female Respondents: The female respondents are highly skilled at allowing natural breeze and ventilation enter the library and spreading awareness about the conducive environment (WAM of 3.58) followed by focussing on environmental awareness programme on TV (3.54) and perceiving nature with all its diversity in the library (3.54).

They are moderately skilled at installing rainwater harvesting in the library (3.48) and keeping indoor plants in the library for pleasant atmosphere (3.47). They are least skilled at keeping the library neat and tidy to avoid pollutants (2.82) and having capability to transform the conventional library (2.79).

Male Vs. Female Respondents: Neither male nor female respondents have mean value of 4.0 and above for any of their naturalistic intelligence skills. Both male and female respondents have ranked the naturalistic intelligence skills almost same. While the WAM of male respondents lie between 3.5 and 4.0 for 7 skills, it is so for only 5 skills in case of female respondents. The WAM ranges from 3.0 to 3.49 for 4 skills for male respondents while it is so for 2 skills in the case of female respondents. The male respondents have the WAM of less than 3.0 for no skill but the female respondents have the WAM of <3.0 for 4 skills. Thus, male respondents are highly skilled than female respondents as far as their naturalistic intelligence is concerned.

Table 11: Emotional Intelligence Vs. Gender of the Respondents

Statements	Male			Female		
	WAM	SD	Rank	WAM	SD	Rank
I am able to handle queries by the users/clientele	3.66	.88	IX	3.50	.82	IX
I am comfortable in sharing novel ideas and new information with the library users/ clientele	4.31	.46	I	4.23	.42	I
I feel helpless while managing library activities	3.70	.91	VII	3.53	.85	VI
Many of the works assigned by superiors are difficult to understand	4.30	.46	II	4.22	.42	II
I get mostly negative comments to my individual activities	3.66	.88	IX	3.50	.82	IX
I don't get appreciation of my works in the Library	3.69	.91	VIII	3.50	.82	IX
I respect the feelings of library staff and users	3.58	.79	XII	3.47	.77	X
What about weapon conflicts?	3.65	.87	X	3.50	.82	IX
I tackle the typical, uncomfortable situations taking place in the library	3.71	.92	VI	3.52	.84	VII
I know how to touch the feelings of library committee / authorities	4.21	.41	III	4.21	.41	III
I control my anger in dealing with tough / rough users	3.30	1.15	XIII	3.09	1.12	XI
I escape from complicated situations by leaving the place then	4.11	.31	V	4.12	.33	V
I attend to users' queries without hurting their feelings	3.63	.85	XI	3.47	.77	X
I share my joy / happiness with colleagues and users	3.65	.87	X	3.51	.83	VIII

When books are lost, orders were misplaced, OPAC gets crashed ..., I keep myself cool and think about solving the issue	4.19	.39	IV	4.14	.35	IV
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Table 11 shows the gender- wise distribution of emotional intelligence skills of the respondents.

Male Respondents: The male respondents possess higher skills in 5 emotional intelligence skills as their WAM is more than 4.0. They are : ‘I am comfortable in sharing novel ideas and new information with the library users/ clientele’ (4.31); ‘Many of the works assigned by superiors are difficult to understand’ (4.30); ‘I know how to touch the feelings of library committee / authorities’ (4.21); ‘When books are lost, orders were misplaced, OPAC gets crashed ..., I keep myself cool and think about solving the issue’ (4.19) and ‘I escape from complicated situations by leaving the place then’ (4.11). They possess moderate skills in 9 emotional intelligence skills as the WAM is more than 3.5. Their skills are the least (WAM = < 3.5) in case of ‘I control my anger in dealing with tough / rough users’.

Female Respondents: The female respondents possess higher skills in 5 emotional intelligence skills as their WAM is more than 4.0. They are : ‘I am comfortable in sharing novel ideas and new information with the library users/ clientele’ (4.23); ‘Many of the works assigned by superiors are difficult to understand’ (4.22); ‘I know how to touch the feelings of library committee / authorities’ (4.21); ‘When books are lost, orders were misplaced, OPAC gets crashed ..., I keep myself cool and think about solving the issue’ (4.14) and ‘I escape from complicated situations by leaving the place then’ (4.12). The WAM of 7 skills range from 3.5 to 3.9. They have least skills in attending users’ queries without hurting their feelings (3.47) and controlling anger in dealing with rough users (3.09).

Male Vs. Female Respondents: The first five ranks assigned by both the male and female respondents to their emotional intelligence skills are the same. The skill level of both male and female respondents is same (WAM of 4.21) for ‘I know how to touch the feelings of library committee / authorities’. The female respondents are better skilled than male respondents in escaping from complicated situations by leaving the place then. In the case of all other emotional intelligence skills, male respondents are better skilled than female respondents. Male respondents have given 12 varying ranks to their emotional intelligence skills while female respondents have given 11 varying ranks.

Independent ‘T’ Test for Multiple –Intelligence Skills and Gender of the Respondents

To find out the difference between the multiple intelligence skills and the gender of the respondents, independent ‘t’ test was used. To analyse the objective, it is converted into a general hypothesis and it is split up into specific ones. The details have been presented in the following pages.

Hypotheses

There is no significant difference between the multiple intelligence skills and the gender of the respondents

Verification of the hypothesis

For the verification of the above hypothesis, it is split up into various components of the multiple intelligence skills as given below:

- i. There is no significant difference between linguistic intelligence skills and gender of the respondents.
- ii. There is no significant difference between logical-mathematical intelligence skills and gender of the respondents.
- iii. There is no significant difference between spatial intelligence skills and gender of the respondents.
- iv. There is no significant difference between bodily-kinesthetic intelligence skills and gender of the respondents.
- v. There is no significant difference between musical intelligence skills and gender of the respondents.
- vi. There is no significant difference between interpersonal intelligence skills and gender of the respondents.
- vii. There is no significant difference between intrapersonal intelligence skills and gender of the respondents.
- viii. There is no significant difference between naturalistic intelligence skills and gender of the respondents.
- ix. There is no significant difference between emotional intelligence skills and gender of the respondents.

To verify the above hypotheses the respondents are classified into two groups namely, male and female. Further, the multiple intelligence skills which consist of various statements were concatenated using the compute variable option in SPSS into a

single factor. To find out the significant difference, the Independent ‘t’ Test is applied and the details are presented in the Table 11.

Table 12: Multiple –Intelligence Skills of Male and Female Respondents: Descriptive Statistics and Levene’s Test for Equality of Means

Gender	Group Statistics					Levene's Test for Equality of Variances	
	N	Mean	Std. Deviation	Std. Error Mean	F	Sig.	
Linguistic	Male	325	61.0215	12.68917	.70387	5.121	.024
	Female	116	59.0776	11.85356	1.10058		
Logical	Male	325	39.3692	8.78405	.48725	4.844	.028
	Female	116	38.1207	8.18392	.75986		
Spatial	Male	325	40.6000	10.96346	.60814	9.001	.003
	Female	116	38.6121	9.84821	.91438		
Bodily	Male	325	31.8369	7.69487	.42683	8.258	.004
	Female	116	30.3966	7.13336	.66232		
Musical	Male	325	23.5969	4.67136	.25912	14.292	.000
	Female	116	22.6379	4.21879	.39170		
Interpersonal	Male	325	32.7138	7.61626	.42247	7.796	.005
	Female	116	31.3879	7.13932	.66287		
Intrapersonal	Male	325	45.2523	8.08621	.44854	5.632	.018
	Female	116	43.8966	7.81123	.72525		
Naturalistic	Male	325	38.2523	11.71357	.64975	15.402	.000
	Female	116	35.9828	10.93696	1.01547		
Emotional	Male	325	57.3538	10.10658	.56061	8.840	.003
	Female	116	55.5000	9.60570	.89187		

Table 12 shows the results of Levene’s test for equality of variances along with descriptive statistics. The test reveals that the p-values for all the nine multiple intelligences are less than 0.05. So, null hypothesis i.e. there is no variation between the male and female respondents with regard to the respective intelligence, is rejected and alternative hypothesis is accepted. Since the population variances are relatively not equal, the research should look at the ‘Equal variances not assumed’ row for the t-test results.

8. Major Findings and Conclusion

- It is found that 441 respondents are from 23 government universities and 25 private universities. There are 16 traditional universities, 38 professional universities and 5 multi-disciplined universities. It is discovered that 73.7% (325) are male respondents and 26.3% (116) are female respondents. The study shows that male respondents have greater skills in the connecting symbols used in CC and UDC with a WAM of 4.23.

They are very good at: identification of BT, NT and RT for a subject heading(3.76); preparation of brochures and newsletters (3.65); preparation of informative abstracts (3.63) and official communications (3.58). Female respondents are most skilled in the connecting symbols used in CC and UDC with a WAM of 4.18. The male respondents are better skilled than female respondents in all the 17 linguistic intelligence skills.

- It is discovered that male respondents are best at ‘introspecting better stock verification methods’ (WAM of 3.84) and the female respondents are best at ‘introspecting better stock verification methods’ (WAM of 3.76) and ‘following systematic approach in library management’ (WAM of 3.71). Male respondents are better skilled than female respondents as far as their logical-mathematical intelligence is concerned. It is brought to the light that the male respondents are highly skilled at arranging books for displays or exhibitions (WAM = 3.73), conducting library orientation or user education programmes (WAM = 3.70). The female respondents are least skilled at scanning/uploading the documents in the institutional repository / digital library (WAM = 2.66) and preparing library communications in computer systems (WAM = 3.35). They are moderate at ‘arranging computers / racks or furniture (WAM =3.46) and ‘replacing the books in the library racks (WAM =3.45). Male respondents are better than female respondents in their bodily-kinaesthetic intelligence skills.
- It is observed that the male respondents are highly skilled at playing light music in the reference hall (WAM = 3.54) followed by knowledge of biographies of musical composers (WAM = 3.51) and performing things in rhythmic ways (WAM = 3.51). The female respondents have high level intelligence on the biographies of music composers (WAM = 3.37) and inclination to play light music in the reference hall (WAM=3.37). Their skills are moderate in uploading the music materials in the IR/digital library (WAM= 3.30) and classifying music materials into classic, folk or modern (WAM = 3.28). It is identified that male respondents are very good at enjoying working with other LIS professionals (4.29), serving as member or secretary of LIS associations / working place (3.71). Female respondents are very good at enjoying working with other LIS professionals (4.19), serving as member or secretary of LIS associations / working place (3.55) and listening to the views of colleagues and library users (3.51). They are least good at sharing their knowledge with others through conferences and seminars (2.86).
- It is inferred that the WAM of 4 intrapersonal intelligence skills of male respondents are more than 4.0 - ‘I maintain a daily record about my LIS activities’ (4.32), ‘I can

set vision & mission for the development of library' (4.22), 'I use my personal experience to solve problems/ issues in library' (4.20). The WAM of 4 intrapersonal intelligence skills of female respondents are more than 4.0 - 'I maintain a daily record about my LIS activities' (4.25), 'I can set vision & mission for the development of library' (4.16), 'I use my personal experience to solve problems/ issues in library' (4.18) and 'I wish to be honest and frank in my feelings, thoughts and actions' (4.14) – indicating that they are highly skilled at these 4.

- It is found that the male respondents are highly skilled at allowing natural breeze and ventilation enter the library and spreading awareness about the conducive environment (3.77) followed by focussing on environmental awareness programme on TV (3.72) and perceiving nature with all its diversity in the library (3.70). The female respondents are highly skilled at allowing natural breeze and ventilation enter the library and spreading awareness about the conducive environment (WAM of 3.58) followed by focussing on environmental awareness programme on TV (3.54) and perceiving nature with all its diversity in the library (3.54). Male respondents are highly skilled than female respondents as far as their naturalistic intelligence is concerned.
- It is unearthed that the male respondents possess higher skills in 5 emotional intelligence skills as their WAM is more than 4.0. They are : 'I am comfortable in sharing novel ideas and new information with the library users/ clientele' (4.31); 'Many of the works assigned by superiors are difficult to understand' (4.30); The female respondents possess higher skills in 5 emotional intelligence skills as their WAM is more than 4.0. The female respondents are better skilled than male respondents in escaping from complicated situations by leaving the place then. In the case of all other emotional intelligence skills, male respondents are better skilled than female respondents.

The nature and variety of multiple intelligence skills possessed by LIS professionals vary from environment to environment, library to library and individual to individual. They have to recognize the need for coning their multiple intelligence skills, find out the opportunities for development, and utilize the opportunities effectively to become better in handling various library operations and services. It is the duty of the LIS professionals to create a welcoming atmosphere to their clients. This study indicates the need for initiating certain solid steps both from the professionals and from the universities. The researcher suggested professional bodies / learned societies in the field of library and information science may join hands with universities and other non-governmental

organizations to organize various soft skills / multiple intelligence skills training programmes taking a survey beforehand. A well groomed library professional good at many skills is an asset any institution he/she works in. His/her multiple intelligence skills may bring drastic changes and positive impacts both in the library landscape and library services.

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