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PERFORMANCE MEASUREMENT OF QUALITY SERVICES IN ACADEMIC AND RESEARCH LIBRARIES IN INDIA

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Abstract. A National Assessment and Accreditation Council (NAAC) has been established in India for quality and excellence in higher education. NAAC has developed set of objective indicators for the library, as it is the fulcrum of support for the community of academic and research pursuits. This has resulted in a general consensus for rising demands for evaluation and accountability of academic and research libraries to develop performance evaluation and measure service quality. For this study, a total of 1200 questionnaires were distributed to the user community of ten university libraries of Karnataka, India, of which 768 (64%) were duly received from students, research scholars and faculty members. The quality dimensions in the light of SERVQUAL viz., Reliability, Responsiveness, Assurance, Access, Communication, Tangibles, Empathy and Security have been applied and the results indicate that the service quality dimensions of reliability, responsiveness, assurance, access, communication and tangibles applied to university libraries in Karnataka are found to be satisfactory to a little extent based on the scale techniques. The study suggests several areas for future research and for collaboration among library managers, educational administrators, scholars and measurement theorists towards improving the performance of library and information system in India to meet the high standards of service quality in libraries to serve the users with utmost care and diligence.

Introduction

In the age of a techno-scientific revolution, the sheer quantity of knowledge and information is expanding exponentially and increasingly varied student population are burgeoning, the quality of training for teachers and the quality of teaching in higher education institutions demand top priority. Feigenbaum (1994) believes that “quality of education” is the key factor in “invisible” competition between countries, since the quality of products and services is determined by the way that managers, teachers, workers, engineers, and economists think, act, and make decisions about quality. While Seymour (1992) admits that education, and in particular, higher education itself, is also being driven towards commercial competition imposed by economic forces.

The concept of Total Quality Management (TQM) is an emerging new management technique used in most of the disciplines and the Library and Information Centre is not an exception to it. Its application in service sectors like Library and Information Services (LiS) started in the late 1980's is an American response aiming at customer satisfaction by way of meeting the requirements and expectations of customers. This is a new effort, emphasizing for conformance to the customer expectations. The application of Total Quality Management in Library and Information Centres seems to be a very recent origin but it is not so in the Indian context wherein Dr. S.R Ranganathan, father of Library and Information Science stated in his Fourth Law 'Save the Time of the User' has direct implication to what is advocated in TQM approach as enunciated by Raina (1995).

In India, hardly any studies were conducted on Total Quality Management (TQM) in the University Library System. Certainly we do find few studies attempted on Corporations R&D Libraries and fewer Special Libraries. Stuart and Drake (1993) deals with benchmarking and Total Quality Management in academic libraries focusing on valued service to customers as competition from alternate information sources reveals the inadequacies of traditional service. Georgia Institute of Technology, Library and Information Center devised a version of TQM to focus attention on customer needs and provide content based, value added information services. As the primary agents in customer interaction, front line staffs are driving innovation and the marketing of services. Statistical quality control to as-

sess information transactions adequately are not yet worked out and anecdotal evidence of success or failure is still the primary measure of service success. Rout (1998) states that Total Quality Management (TQM) principles are yet to be applied in the libraries of India and this new approach to library management can be adopted to achieve success in the library operations and programmes. Further discusses the implementation of TQM in university libraries and suggests a TQM model to bring a total quality approach for a customer-focused library and concludes with a remark that TQM is likely to bring about greater participation of employees in information management activities in university libraries. Meera (1998) states that TQM is a people-focused management system that aims at continual increase in customer satisfaction at continually lower cost. It is not a tool in itself, but tools and techniques of Statistical Process Control form an essential part of TQM exercises. The study describes Process flow diagrams, Pareto diagrams and Cause-effect diagrams, and their applications in management of libraries and information centres and other techniques of TQM, which can also be used in the library environment but need statistical computations.

Therefore, this study is an attempt in this direction to exploit the application of Total Quality Management (TQM) in the university Libraries; particularly in Karnataka. This study is undertaken with a hope that Total Quality Management (TQM) is a way of management helps to improve the effectiveness, efficiency, flexibility and competitiveness among the universities as a whole by way of involving everyone in the organization towards improving the ways in which things are done.

Objectives of the Study

The research study aims to go deeper into the realm of Quality Assessment and Use Techniques to assess the performance of academic and research libraries in rendering their quality services and more specifically identify the quality dimensions in the light of SERVQUAL viz., Reliability, Responsiveness, Assurance, Access, Communication, Tangibles, Empathy and Security.

Methodology

As the study of Total Quality Management pertains to Librarians, Profession Staff (i.e. Deputy and Assistant Librarians) and User Community comprising of Faculty members, Research Scholars and Post Graduate Students, three questionnaires were prepared accordingly. A stratified Sampling technique has been adopted to distribute the questionnaire for eliciting the data from the study population. A total of 1200 questionnaires were distributed to the user community of ten university libraries of Karnataka of which 768 (64%) were duly received. Similarly 70 questionnaires were distributed to the Professional Staff of these ten universities out of which 62 were collected and nine out of ten university Librarians have responded. Further to substantiate the data, statistical tests have been conducted namely Skewness and Chi-Square Test of Goodness of Fit Test.

Data Analysis and Interpretations

Institutionalizing TQM in a university library requires a quality culture among the library team that prompts customer delight through continuous improvement involving participatory and creative problems solving approaches and a team ethos. Quality culture provides a framework to explain the way things are done around with a team spirit. These quality culture requirements can be met only in developing and sharing knowledge becomes and part of the library goal and develops a sense of integrity among the library staff to strive for attaining quality management in university libraries. Table 1 shows the Professional Staff attitude towards quality work culture.

The staff attitude towards quality work culture has got an important role to play in extending quality based library and information services. Therefore to highlight the quality management aspect in the work culture of the professional staff in various university libraries of Karnataka; several questions were posed to the Deputy Librarians and Assistant Librarians of different universities for seeking their clear opinion regarding the quality work culture in meeting the expected and anticipated needs of the services by the library users.

From the table it is very clear that none of them are fully satisfied with the work culture in their library as per the skewness value. However, they are satisfied to a greater extent (Level 4) with respect to performance targets of library professionals (sk-0.558), prompt reshelving of books (sk-0.539) and processing of newly acquired books within a month (sk-0.420). This study further highlights that, most of the professional staff has expressed their neutrality towards feeling proud to be part of the library profession (sk-1.707) by developing trust and confidence and healthy atmosphere at workplace (sk-0.177). And further, their commitment to the library goals and values (sk-2.161) accepting the work

assignments (sk-1.620), effective supervision and performance of subordinate staff (sk-1.690) and accountable to the job assigned (sk-2.103). It is happy to note that, the professional staff are desired to work and do not wait for Sunday/holidays (sk0.492). This shows the professional staff interest in the developmental activities of the library in providing services to the library users.

Parasuraman and others identified the most important elements of quality dimensions namely RATER i.e., R-Reliability, A-Assurance, T-Tangible, E-empathy, R-Responsiveness and developed these elements into a scheme called SERVQUAL, to examine and measure the quality in various environment; including library and higher education for investing service quality and establishing a link with the customer satisfaction. Subsequently, Calvert and Hernon have re-casted these parameters into several dimensions and so on.

Table 1. Professional Staff Attitude towards Quality Work Culture (N=62)

Descriptions	Scale					Skewness	Chi-Square
	1	2	3	4	5		
Proudness of Library Profession	4 (6.5%)	8 (12.9%)	14 (22.6%)	36 (58.1%)	0 (0%)	-1.707	39.41
Cordial Atmosphere at Work Place	1 (1.6%)	7 (11.3%)	22 (35.5%)	16 (25.8%)	16 (25.8%)	-0.177	22.35
High Performance Targets	3 (4.8%)	5 (8.1%)	19 (30.6%)	22 (35.5%)	13 (21%)	-0.558	22.51
Prompt Reshelving	4 (6.5%)	5 (8.1%)	19 (30.6%)	16 (25.8%)	18 (29%)	-0.539	17.9
Fast Processing	2 (3.2%)	7 (11.3%)	19 (30.6%)	11 (17.7%)	23 (37.1%)	-0.420	23.80
Staff Commitment	2 (3.2%)	2 (3.2%)	1 (1.6%)	21 (33.9%)	36 (58.1%)	-2.161	78.80
Acceptance of Assignments	3 (4.8%)	2 (3.2%)	5 (8.1%)	22 (35.5%)	30 (48.4%)	-1.620	52.67
Effective Supervision – Subordinate	2 (3.2%)	6 (9.7%)	27 (43.5%)	27 (43.5%)	0 (0%)	-1.690	34.64
Staff Work Accountability	2 (3.2%)	1 (1.6%)	3 (4.8%)	20 (32.3%)	36 (58.1%)	-2.103	75.90
Awaiting for Holidays	26 (41.9%)	8 (12.9%)	11 (17.7%)	9 (14.5%)	8 (12.9%)	0.492	19.12

To measure the quality dimension in the university libraries, the investigator used eight important dimensions in the light of SERVQUAL viz., Reliability, Responsiveness, Assurance, Access, Communication, Tangibles, Empathy and Security, and the same has been incorporated in the user's questionnaire. Further, the questionnaire has been bifurcated according to these eight dimensions to measure the quality effectiveness of the University Libraries of Karnataka. The mean of faculty, research scholars and postgraduate student pertaining to various questions as grouped under these eight dimensions has been computed. To substantiate this average mean has been computed for each of user groups (faculty, research scholars and postgraduates) and questions falling in each of eight dimensions resulting in average mean of each service quality dimensions in the University Library of Karnataka. The tabular form of each quality dimensions are given below:

Table 2 describes the service quality dimensions of reliability in Library and Information Services (LIS) of various University Libraries in Karnataka.

It is observed from the table that, the quality dimensions of Reliability concerned with LIS, the average mean of faculty (3.12) is slightly higher than research scholar (3.02) and postgraduate students (3.01) in different university libraries of Karnataka. The total average mean of user group concerned to reliability dimensions of LIS is just 3.05 which indicates that the faculty, research scholars and postgraduate students of different universities in Karnataka are of the opinion that the dimensions of reliability is satisfied to some extent ranging at level 3 and thus the university libraries are just moving towards the concept of TQM. On the other hand, the questions falling under reliability dimensions of LIS reveals that the different user groups of various university libraries in Karnataka opines that, the collection of information services in the form of books (3.8) have highest mean followed by Reference

Services (3.72), while the collection of microfilm/microfiche (1.96) have the least mean followed by Audio-Video sources (2.04).

To test the service quality dimensions of responsiveness in library and information services, nine items were asked to the user group of different universities in Karnataka is enunciated in Table 3.

Table 2. Quality Management in Library and Information Services: Reliability

<i>Particulars</i>	<i>Faculty</i>	Research Scholars	P.G. Students	Average mean
Collection of Information Sources				
Books	3.97	3.51	3.92	3.8
Reference Books	3.76	3.50	3.66	3.64
Indexing/Abstracting Journals	3.47	3.22	3.10	3.26
Thesis/Dissertation	3.10	3.26	3.06	3.14
Bibliographies	3.03	2.88	2.70	2.87
Manuscripts	2.65	2.53	2.39	2.52
Microfilm/Microfiche	2.12	1.93	1.84	1.96
Audio/Video sources	2.30	1.99	1.85	2.04
CD-ROM Databases	3.06	2.75	2.60	2.80
Internet Access	3.50	3.32	3.08	3.30
Library services				
Indexing/Abstracting Services	3.50	3.30	3.20	3.33
Bibliographies	3.29	3.08	2.94	3.10
Newspaper Clipping	3.04	3.42	3.63	3.37
Current Awareness	3.16	3.22	3.43	3.27
SDI	3.02	2.90	2.73	2.88
Photocopying	3.66	3.48	3.28	3.47
Reference Services	3.64	3.68	3.83	3.72
On-line Catalogue	2.94	2.97	3.07	3.00
CD-ROM	2.91	2.99	2.70	2.87
E-mail	2.87	2.98	2.96	2.94
Internet	3.02	3.21	3.28	3.17
Consistency in Library Classification and Cataloguing	3.57	3.35	3.58	3.56
Hindrance in Search	2.55	2.25	2.57	2.46
OPAC availability	2.78	2.71	2.86	2.78
Attending Query Promptly	3.32	3.27	3.05	3.21
Total	78.23	75.7	75.31	76.46
Average mean	3.12	3.02	3.01	3.05

Table 3. Quality Management in Library and Information Services: Responsiveness

<i>Particulars</i>	<i>Faculty</i>	Research Scholars	P.G. Students	Average mean
OPAC Familiarity	2.71	2.60	2.82	2.71
Proper Shelving	3.40	3.20	3.57	3.39
Prompt Shelving	3.27	3.21	3.46	3.31
Mechanism – Document Status	3.17	3.12	3.32	3.20
Retrieval Efficiency	2.89	2.91	2.97	2.92
Prompt Library Staff in attending queries	3.75	3.68	3.66	3.70
Shirking the responsibilities	3.21	3.09	3.06	3.12
Qualified Library Staff at Service Point	3.53	3.36	3.56	3.48
Complaint Compliance	2.81	2.76	2.74	2.77
Total	28.74	27.93	29.16	28.6
Average mean	3.19	3.10	3.24	3.17

The average mean of postgraduate students (3.24) is rated highest followed by faculty (3.19) and research scholars (3.10). The obtained average mean of users groups related to responsiveness quality dimension in LIS is 3.17 which clearly depicts that the faculty, research scholars and postgraduate students are satisfied to some extent rating at level 3 plus. While describing the various questions coming under the purview of responsiveness of quality dimension, it can be noted that the library staff stands first in attending the queries promptly (3.70), followed by presence of qualified library staff at all ser-

vice points (3.48). But the OPAC familiarity to the users is very poor with a mean of just 2.71 followed by the ability of library professionals to comply the complaints at level 3 with an average mean of 2.77 as rated by different user groups of university libraries in Karnataka.

Table 4 shows the quality dimensions of Assurance in Library and Information Services based on the responses obtained from the customers of the various universities libraries in Karnataka.

Table 4. Quality Management in Library and Information Services: Assurance

<i>Particulars</i>	Faculty	Research Scholars	P.G. Students	Average mean
Users Recommendations Considerations	3.00	2.59	2.70	2.76
Inviting Library Staff	3.58	3.47	3.57	3.54
Library Staff Efficiency	3.56	3.59	3.62	3.59
Staff Encouragement	3.14	2.98	2.91	3.01
Staff Grasping Ability	3.39	3.31	3.24	3.31
Total	16.67	15.94	16.04	16.21
Average mean	3.33	3.18	3.20	3.24

Under this service quality dimension of Assurance, five questions were posed to the library customers and the result tabulated and computed in the form of average mean as shown in the Table. The table reveals that, the user group of faculty (3.33) rates highest average mean to the quality dimension of assurance followed by the postgraduate students (3.20) and research scholars (3.18). On an average of these user groups computed together, the average mean of assurance found to be 3.24 indicating the satisfaction to some extent for the user group of various university libraries in Karnataka.

The response of user groups of various university libraries in Karnataka regarding the quality dimension of Access in Library and Information Services is tabulated in Table 5.

Table 5. Quality Management in Library and Information Services: Access

<i>Particulars</i>	<i>Faculty</i>	Research Scholars	P.G. Students	Average mean
Reliable Printed Catalogue	3.02	3.07	3.37	3.14
Timely Information Availability	3.29	3.20	3.42	3.30
Accessibility of Collection	3.54	3.32	3.46	3.44
Sufficient Photocopiers	3.30	3.21	3.05	3.18
Sufficient Computer Terminals	2.56	2.68	2.76	2.66
Library Hours	3.66	3.79	3.73	3.73
Circulation Services	3.65	3.57	3.46	3.56
Staff at Reference Desk	3.41	3.42	3.48	3.44
Adequate Library Staff	3.51	3.50	3.51	3.51
Total	29.94	29.76	30.24	29.96
Average Mean	3.32	3.30	3.36	3.32

It is revealed from the table that, the postgraduate students rates highest mean of 3.36 to the quality dimension of Access, followed by the faculty (3.32) and research scholars (3.30). The average mean of user group taken together comes to 3.32, which is higher when compared with quality dimension of assurance, responsiveness and reliability and thus the user group are satisfied to some extent. Among the nine question items falling in the umbrella of access dimension, the question related to library hours gains first with average mean of 3.73 followed by library circulation services (3.56). But the availability of sufficient computer terminals to the users is very low with a average mean of 2.66 as per the statements responded by the user group of different university libraries in Karnataka.

The quality management in Library and Information Services considers communication as another important dimension to measure the quality services offered in the university libraries in Karnataka is displayed in Table 6.

The average mean of different user groups namely faculty, research scholars and postgraduate students are calculated and computed as shown in the table. It is observed from the table that, there is hardly any major difference of mean among these three user groups of university libraries in Karnataka as the faculty stands first with a mean of 3.17, Research scholars (3.14) and postgraduate students (3.13) respectively. When we take an average mean of all these three groups, the average mean comes to 3.15 indicating just satisfaction to the users of university libraries in Karnataka. Under communica-

tion dimension of service quality, information service awareness among the user group's rates first with an average mean of 3.57 followed by library signs/guides (3.47) and also staff communicating ability to the users (3.47). However, the user education provided by the teachers is 2.68 and user orientation 2.74.

The quality dimension of Tangibles has been tested to determine the physical infrastructure facilities and good working conditions of electronic-gadgets in the various university libraries of Karnataka and is shown in Table 7.

Table 6. Quality Management in Library and Information Services: Communication

<i>Particulars</i>	<i>Faculty</i>	Research Scholars	P.G. Students	Average mean
Library Sign and Guides	3.46	3.39	3.57	3.47
Service Awareness	3.75	3.60	3.36	3.57
User Education – Staff	3.09	3.11	3.15	3.12
User Education – Self trained	3.17	3.32	3.24	3.24
User Education – Teachers	2.64	2.64	2.77	2.68
Staff Communicative Ability	3.51	3.44	3.45	3.47
User Orientation	3.02	2.88	2.84	2.91
Suggestions/Complaint Box	2.75	2.79	2.69	2.74
Total	25.39	25.17	25.07	25.2
Average mean	3.17	3.14	3.13	3.15

Table 7. Quality Management in Library and Information Services: Tangibles

<i>Particulars</i>	<i>Faculty</i>	Research Scholars	P.G. Students	Average mean
Collection – Physical Good condition	3.41	3.36	3.38	3.38
Good Condition – Photocopiers	3.66	3.46	3.30	3.47
Good Condition – Audio/Visual aids	2.36	2.24	2.33	2.31
Good Condition – Microfilm/Microfiche readers	2.20	2.21	2.40	2.27
Good Condition – Computer Systems	2.80	3.17	3.05	3.00
Good Condition – Printers	2.47	2.67	2.95	2.70
Suitable Library Furniture	3.68	3.84	3.56	3.70
Research Cabins	3.01	3.00	3.23	3.10
Air Conditioners	3.24	3.35	3.60	3.40
Sufficient Lighting/Ventilation	3.57	3.63	3.84	3.68
Silent Reading Halls	3.52	3.56	3.64	3.57
Sufficient Toilet Facilities	2.92	3.03	3.18	3.00
Drinking Water Facilities	3.24	3.21	3.16	3.20
Library Interiors	2.92	3.19	3.00	3.00
Stationary Facilities	1.78	1.84	2.06	1.90
Total	44.78	45.76	46.68	45.68
Average mean	2.98	3.05	3.11	3.04

The table reveals that, postgraduate students rated highest mean of 3.11 for the quality dimension of tangibles, followed by Research scholars (3.05) and faculty (2.98). In toto, the total average mean of all the three groups of users comes to 3.04 mean which is least mean among the other eight dimensions of service quality in the university libraries in question. To discuss in detail about the tangible facets, the suitability of library furniture gains highest mean of 3.70 followed by sufficient lighting/ventilation in university library (3.68) but however stationary facilities and good working conditions of microfilm/microfiche reader gets the lowest mean of 1.90 and 2.27 respectively.

The other two quality dimensions Empathy and Security applied to university libraries in Karnataka in order to measure the personalized approach of library staff towards the user community and safety in the library premises as shown in Table 8.

**Table 8. Quality Management in Library and Information Services:
Empathy and Security**

<i>Particulars</i>	<i>Faculty</i>	<i>Research Scholars</i>	<i>P.G. Students</i>	<i>Average mean</i>
Empathy - Personal approach by Library staff	3.73	3.60	3.66	3.66
Security - I feel safe in library building	3.74	3.81	3.68	3.75

The quality dimensions Empathy gaining an average mean of 3.66 when compared with quality dimensions Security (3.75).

Conclusion

The success and sustenance of libraries in future depends upon their capability to be more dynamic and continually to prove their value in academic and research endeavor. The only alternative left to the university libraries is to adopt Total Quality Management (TQM) in all the integrated library activities and services and thereby contribute to the productivity and accomplishments of the customer expectations. The university library systems had a variety of reasons for implementing and promoting TQM, due to increase demands for quality service from the customers, impact of information technology and rising costs, resulting from inflation were becoming the standard for today's university systems. Greater efficiency, improved service and optimum utilization of resources are the reasons for undertaking TQM in the university library systems. The importance of quality has been in the past and this will march into the future and remain as key strategic importance to the librarianship. But the ultimate goal in obtaining highest quality products and services remain as an integral part of our library profession's ethos and no matter what modern management tools do we apply in search of 'Quality'.

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