Impact of Cyber Applications on Total Quality Management (TQM) of A.C. Joshi Central Library of Panjab University, Chandigarh

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ABSTRACT

The cybernetics has been playing a vital role in boosting up the capacity building process of the library. The present paper examines the capacity building process through cybernetics by making use of the RIFD and CCTV and other electronic devices in the university library of Panjab University, Chandigarh. In this context, different applications of the library system such as cataloging system, and installation of the electronic devices such as alarming electronic devices, CCTV cameras, alarming electronic device at the main gate of the A.C.Joshi Library of P.U. Chandigarh have been proved conducive to the problems of the theft and tearing of books, less working efficiency of the staff members, checking on unauthorized entry in the library, over burden of the library working of the library staff. Further, the empirical study carried out on the basis of the primary information, acquired from the students, teachers, and the personnel of library staff members who have responded in accordance with varied functional areas of the university library. The applications of the various electronic devices have been proved conducive to attain the apex position of TQM, Total Quality Management of the University library. The t-test on the observed data shows a significant of the cyber applications on enhances the efficiency of the various functional areas of the University library under TQM system.

Keywords: Capacity building, Cyber applications, efficiency, TQM system, Library efficiency.

INTRODUCTION

Modernization is a continuous process of transformation aimed at improving the system over time. The Cyber Age has resulted in significant changes in the field of library and information science. The use of information and communication technology assists libraries in fulfilling their role as national development centers by better serving their user community. In order to meet their information needs, Indian libraries are heavily reliant on web resources. On the other hand, it unfortunately provides opportunities for criminal activity on this platform, which poses a threat to national development. In this context, the goal of this paper is to examine the current state of supportive issues, namely the rise in cybercrime in India, as well as potential efforts to prevent such crimes in the library setting. TQM known as the "Total Quality Management Approach" was emerged in the early 50s and evolved crossed the periods. In the Total Quality which is a composite form of work culture and the organizational behavior which strives to renders its services to satisfy in accordance with its requirements. "It is a combination of the quality management tools aimed at increasing business and reducing losses due to wasteful practices" (Mukharzee, P.N. 2006). The total quality management is dealt with the services, rendered by the staff members of a library. It is an integral part of the 'Capacity building' programme of a library. To ameliorate the efficiency of the varied functional areas of the library systems like acquisition, book transition, cataloging, the matters of the safety and the security of the books and other establishments of the library; various and manual and electric library management devices are used in the University libraries. Amongst all these various library management tools, the role of the cyber applications has been very significance to boost up the services for personnel for various functional areas of the University library. In order to manage the University library in an effective way, the cyber applications in the various functional areas like Book acquisition section, book Issue and Receive, periodical section, Technical section' which led to expedite the process of 'capacity building' so that the TQM position may take place in the University library (Borgman, C 1999). "The library relating technology is an integral part for automation of library system to expedite the capacity building process of the modern library" (Dilip Man Sthapit, 2014).

The department of the "Library and Information" has been playing a very significant role to disseminate the various types of the information for an individual; as well as for the research and development oriented institutions. In this context, there were various studies; have been carried out by the scholars; belonged to various streams of the library management and the information relating professionals across the periods (Bipasha, Vishwas&Datta, 2017). "The knowledge dissemination through libraries and the information centers depend upon the capacity of information, inserted through digitalization (Suresh L. 2010)". The Cyber applications like CDs and the sources of the online information have given rise to acquire the any type of information within the shortest duration of time. The 'Search Engine 'likes 'Google' has proved conducive for the scholars, researchers and the other professionals; belonged to different streams.. The searching devices like online information, CD-ROM have paved the way for acquiring the desired information within the seconds (Chaudhry, G.G & Chaudhry, and S. 2001).To enhance the efficiency of the library, the applications of the cyber devices have been proved conducive to expedite the managing the gigantic information by making use of the "Management Information System" (Covi, M.L. 1999). In this cyber age, IT professionals have enhanced the image of library science and information, by adopting the "Professionalism" in this area. Now, now it has become a well knit, cohesive and integrated discipline like other applied sciences (Cronin, B.1998). In this context, various periodic reviews show that there is an ample scope of "Research & Development" in this area. A significant relevant of these studies in accordance with the prevailing current scenario (Jansen, B and Pooch, U 2001) In order to overcome the problematic areas of the theft of books from the library, the cyber application such as 'Deploying Radio Frequency Identification Systems' have been proved conducive to reduce the probability of this problem in the libraries (Kern, C 2004). Further, making use of the cyber application like RFID has enhanced the efficiency of the University libraries. Further, various reports on 'Library technology' shows an ample growth in the process of the capacity building of the University libraries (Boss, R.W & Yu, S.C, 2007). Presently, there are numerous of the library packages which are easily available in the cyber market of India which may prove very helpful to expedite the process of the automation of the University library systems (Ahmad, Dawood, 1993).

Objectives of the Study
1. To know the attitude of the respondents towards the cyber applications' Impacts and to attain the Total Quality Management (TQM) position in the University library.
2. To know the attitude of the library users towards the cyber applications as feasible solution for various problems of the University library.

Statement of the problem
The Panjab University, Chandigarh library was established in the year 1963. Since its establishment, the library has been facing numerous of the problems such as low efficiency problem; relating to personnel of the library in the various functional areas of the library such as book distribution system, book acquisition section, technical section, periodical section and other miscellaneous sections during the pre-installation system. Subsequently, during post installation different cyber applications, as a result, a significant change was experienced by the library users like teachers, students, and the library staff members. Keeping in view different problematic areas, a study shows that the library users have observed significant reforms in various functional areas. Further, the impact of the cyber applications; applied to different functional areas have shown a significant impact on the flaws in the functioning of the University library.

RESEARCH METHODOLOGY

There were 100 respondents which include the respondents; belonged to the students community were taken 50 in numbers. The other respondents were the University teachers and other library users. On the contrary, there were other 50 respondents; belonged to other professionals and the other staff members and engaged in the every-day schedule of the library. In order to get the desired objectives of the study, a stratified sampling technique has applied to know the views on the impact of the cyber application on various problematic areas of the University library. In this context, a structured questionnaire has prepared and interviewed from various sample respondents. In order to know the "Total Quality Management (TQM)" a t-test has applied to know the impact of the cyber applications in the University library. The findings of the study showed that a significant impacts of the cyber applications have been observed the respondents; taken for the study. Lastly, some of the respondents have failed to give their answers on these various issues. In order to evaluate the impact of the cyber applications on various functional areas of the library, there are some of the variables have been taken as follows:

1. The efficiency in book-transition and Reduction of duration of the time;
2. Increase in the capacity building of the library.
3. Reducing the instances of the books thefts and Reducing the instances of the tearing of the books.
4. Relief from busy-schedule of the staff members and achieving the TQM position of the library.

5. Increase the capacity building for the library professionals.
6. Impact of CCTV camera, to put a check on the outsiders in the library and Impact of installation of other surveillances such as RFID in the library.

In the open ended questions, the respondents were free to give their views on various problematic areas and the levels of mitigation after the computerization and installation of other electronic devices for attaining the TQM position of the university library.

RESULTS AND DISCUSSION

On the basis of observed data which has been taken from the respondents belonged to different categories, show the varied impact of cyber applications on the efficiency of the library and other impacts have observed which are as follows:

Attitude of Respondents towards Cyber Applications on the performance of A.C. Joshi Central Library of Panjab University, Chandigarh

Sr. No	The variables of the Performance Of the Panjab University library	Slightly decreased or increased	Considerable increased/ strongly Agreed	Very much Decreased/ increased/	No Impact/ Strongly agreed	No Opinion	Total No of the Respon- dents
1	Efficiency in Book Transaction	14(14)	26(26)	47(47)	11(11)	2(2)	100(100)
2	Decrease in the duration of Time	46(46)	29(29)	14(14)	8(8)	3(3)	100(100)
3	Enhancing in the Capacity Building	51(51)	33(33)	8(8)	7(7)	1(1)	100(100)
4	Reduce in the instances of Theft of the Books	27(27)	25(25)	34(34)	9(9)	5(5)	100(100)
5	Reduce in the instances of the Tearing of Books	22(22)	27(27)	25(25)	14(14)	12(12)	100(100)
6	Impact of CCTV Camera on the entry of outsiders	23(23)	24(24)	46(46)	6(6)	1(1)	100(100)
7	Impact of Installation of the Surveillances system	23(23)	28(28)	14(14)	16(16)	19(19)	100(100)
8	Relief on Library staff members	8(8)	22(22)	67(67)	3(3)	0(0)	100(100)
9	Impact onTQM of the University Library	7(7)	31(31)	57(57)	5(5)	0(0)	100(100)

Source: Field survey Percentages are given in brackets

Keeping in view the observed data on various perceptions, it was observed that in order to increasing the "efficiency of book transaction" there were 14 percent of the respondents who were the respondents, belonged to students and the teachers community have pointed out that that the "efficiency of book transition" which was slightly increased. On the other hand, there were 26 percent of the respondents of the library users; had their views on this 'perception' as 'Considerable increased.' However, 47 percent of the respondents were mainly students were taken as 'Very much enhanced.' On the contrary, the 11 percent of the respondents had felt 'No Impact' at all. Lastly, only 2 percent of the respondents; belonged to various categories had failed to give any answer on this perception. On the 'perception' of the 'Decreased the time duration' after installing the cyber application devices, as a result, it shows that there were 46 percent of the respondents have agreed on this "perception". However, they have pointed out that making use of the 'Card-system' which has become obsolete which used to cataloging the books which was very much time consuming.

Now it was observed a slight difference after making use of the cyber applications for books cataloging system in the University library. Further, there were 27 percent of the respondents have pointed out that it was "time consuming" rather than 'card system' which used to practice earlier in the University library. In this context, there were 15 per cent of the respondents who have taken it as "Very much increased" whereas, 8 per cent of the respondents who have pointed out that there was 'not impact at all' of making use of the cyber applications on enhancing the efficiency of the University library. Lastly, there were 3 per cent of the respondents who did not give any answer on this "Perception". On the "Perception" of the 'capacity building programme of the University library, it was observed that there were 51 percent of the respondents who have experienced a 'slightly increased' whereas; there were 33 percent of the respondents who showed their "Perception" as 'considerable increased'. Further, there were 8 per cent of the respondents who have experienced a 'very much increased,' whereas, 6 per cent of the respondents who have felt it as 'No impact at all'. Lastly, there were only one per cent of the respondents who have failed to any answer on this 'perception'. On the view point of reduce the instances of book theft incidence perception of the on reducing reduce in the instances of theft of the books which shows that there were 27 percent of the respondents who have brought out with their answers that the probability of the theft of books has been reduced to a 'to some extent; whereas, there were 25 percent of the respondents who have considered it as a 'considerable extent.' Whereas, there were 34 percent of the respondents have complaint on the tendency of the 'Books theft' has been reduced to a very much extent. On the contrary, there was 'No impact' which has been noticed by the considerable number of the respondents. Lastly, there were only 8 respondents who did not any answer on it.With regarding to perception on the instances of the tearing of books; it was observed that there were 22 percent of the respondents who have complaint about the tendency of the students; who often indulged in the tearing of the books was felt 'no strong impact'. On the contrary, there were 27 percent of the respondents who were mainly students who have considered as 'considerable extent,' but there were 25 percent of the respondents; mainly students and the teachers who have told that the probability of the tearing of books has declined to a 'very much extent.' In this context, there were 14 percent of the respondents who were mainly research scholars who have considered that the impact of making use of the cyber application had failed to make much difference. Lastly, there were 12 percent of the respondents who have failed give any answer on this perception.

On the 'Perception' making appraisal of the impact of CCTV cameras and other cyber applications, to keep the outsiders away from the library, as a result, it was observed that the 23 percent of the respondents have pointed out that it was a 'little-bit impact,' whereas, 24 percent of the respondents have taken this perception as 'considerable extent impact' of installation of the CCTV camera which has been playing a vital role to combat the entry of unauthorized persons in the University library. On the contrary, there were 46 percent of the respondents who were most of the students, felt a 'very much impact.' of this cyber application. In this context, only 7% of respondents thought the library administration's efforts were "futile." Finally, only 1% of respondents were unable to form an opinion on the various effects of installing cyber applications on the security issue of the University library.With regarding to impact of installation of surveillances of the cyber application on the overall performance of the University library, there were 23 percent of the respondents who have pointed out that the installation of surveillances of equipments has reduced to prevent the entry of 'undesirable elements' to a considerable extent in the library. On the contrary, there were 28 percent of the respondents have been considered as 'very much impact' Of this device, but 14 percent of the respondents have formed their 'opinion' by saying "No Impact at all." Lastly, 19 percent of the respondents have been failed to form any opinion in this regard. With regarding to commenting on 'relief to the library staff members,' there were 8 per cent of the respondents, who have considered as 'little-bit relief.' On the other hand, 22 percent of the respondents, who have taken as 'Considerable extent' whereas, the 63 percent of the respondents; who were mainly the members of the library staff; were felt 'relief to a very much extent.' Lastly, 7 percent of the respondents, the library staff members have complaint against this 'perception' of relief to a very much extent by installing this cyber application of the library.

Lastly, on the 'perception' of TQM, of the library, which shows that there were 7 percent of the respondents who were mainly research scholars and other library users who have observed as a' Little-bit' amelioration in the "Library Management System". On the contrary, 28 percent of the respondents have taken it as a 'considerable extent.' On the other hand, 57 per cent of the respondents of all the categories have pointed out that it have achieved a good TQM position of the Panjab University library. Lastly, only 5 percent of the respondents have pointed out that no impact on the per caption of the TQM in the library. Lastly, there were few suggestions which were made such as periodic review of impact of automation, a continuous ameliorating the process, periodic assessment of the users of the library and periodic training for the new users is some of suggestions and the recommendations to ameliorate the process of the TQM in the university library. Hence, it is obvious from the varied responses, given by the respondents, belonged to various classifications In order to find the outcome of the response of the respondents, belonged to various categories a Hypothesis was developed as follows:

Suppose there is no difference between the opinion of the students and the library professionals, and to test the attitude of the 100 respondents of the students and the library professionals the t-test has been applied to the observed data.

Testing of Hypothesis: In order to testing the hypothesis a 't-test' technique has applied to get the desired inferences which is as follows:

Test   t- test

$$t = \frac{\overline{x} - \overline{x}_2}{S} \sqrt{\frac{n_1 + n_2}{n_1 + n_2}}$$

Here is 't' is based on (n - 2) degree of freedom. If the calculated value of 't' exceed 0.05 for d.f. we say that the value 'r' is significant at 5 per cent level.

Suppose the Null Hypothesis Ho = $\mu_1 = \mu_2$

Sample	Students	Library staff	calculated value	Tabulated value
Mean	27.69	22.87		
			5.67	2.49
S.D.	12.09	3.76		

V= 50 + 50 -- 2= 98

According to t-test, **"calculated value"** which is more than the **"tabulated value"**; it is, therefore the hypothesis is rejected. Hence, the attitude of the students and the library professionals towards the Total Quality Management (TQM) is differ to significant extent. By using the t-test, which demonstrates significant variability among respondents belonging to various categories; which have been tested at 5% samples of observations to obtain the desired results.

FINDING AND CONCLUSIONS

The present study which is based on the 100 samples of the respondents; belonged various categories such as students, teachers and other library users have responded in a varied ways towards the various problematic areas which have been proved varied barriers to attain the TQM position of the P. U. Library. However, according to varied responses, which have showed that their views on this perception of increasing the efficiency in transaction of the books in the library. Similarly, significant numbers of respondents; belonged to various categories have pointed out on 'time efficiency' achieved by the library professionals of this University library. Further, significant numbers of the respondents have advocated for the process of the 'capacity building' which has been speed up to a significant extent. On the problem of the tendency of students of tearing and theft of the library books has; as a result, it was observed that it was declined to a considerable extent. On installation of the CCTV camera and other cyber applications, the most of the respondents have pointed out that all these applications have been proved helpful to mitigate the unauthorized entry in the Panjab University library. On review of the view point of the library professionals; it has been observed that the most of the library professionals have told that they have received the relief to a 'little-bit extent' and the Panjab University library has attained the TQM position in accordance with selected variables. Lastly, there were some of recommendations, given by the respondents to ameliorate the capacity and the efficiency in accordance with changing professional scenario of the University library.

REFERENCES

[1]. Ahumad, Dawood (1993), " *Common Library Packages Available in India* : A Comparative study " An Unpublished PhD Dissertation Submitted to Indian National Dissertation submitted to Indian National Sciences Documentation Centre, New Delhi.
[2]. Borgman, C. (1999), "*What are Digiting libraries*? *Competing visions*," Information Processing & Management, Vol. 35 No 3, pp.227-43.

[3]. Bhuptani, M., Moradpour, S. (2005), *RFID Field Guide*: *Deploying Ratio Frequency Identification System*" *Sun Micro-systems* /Prentice Hall PTR, Upper Saddle River, NJ.

[4]. Chiang, H. (2013). Continuous usage of social networking sites. : The effect of innovation and gratification Online *Information Review*, *37*(6), 851-871.

[5]. Chowdhury, G.G and Chowdhary, S (2001b), "*Information Sources and Searching on* the *World Wide Web*, Library Association Publishing House, London.

[6]. Chowdhury, G.G and Chowdhary, S (2001a), "Searching CD-ROO Mandon Line Information Sources, Library Association Publishing, London.

[7]. Dilip Man Sthapit (2014), "*Information Technology and Library Technology: Library Automation Systems"* An unpublished PhD thesis, submitted at Department of Library Science & Information, Kathmandu, Nepal.

[8]. Coffman, S. and Saxton, M.L (1999),"*Staffing the Reference Desk in the Largely Digital Library"* Reference Librarian*, Vol. 66,* pp.*141-61.*

[9]. Covi, L.M. (1999), "*Material Mastery: Situating Digital Library use in University Research Practices"* Information Practices Management, Vol. 35, No 3, pp.293-316.s

[10]. Cronin, B, (1998), "*Informational Professionals in the Digitinal Age,"* International Information and Library Review, Vol. 30, pp. 37-50.

[11]. Gaikwad, S. V., &Bodke, P. S. (2014). Scholarly Use of Social Networking Sites among Library& Information Science Professional of Nasik District. *Journal of Library & Information and Communication Technology (JLICT), 6*(1-2).

[12]. Janes, J., Hill, C. and Rolfe, A. (2001), "*Ask for an expert services Analysis'' Journal of American Society for Information Science and Technology*, Vol. 52 No. 3, pp.293-316.

[13]. Jansen, B. and Poonch, (2001), "A Review of *Web searching Studies and a Framework for Future research,"* Journal of the American Society for Information of Science & Technology, Vol. 52 No 3, pp.235-246.

[14]. Kern, C. and Ennis, L.A. (2001)," Radio-*frequency-identification for security and Media Circulation* in *Libraries,"* The Electronic Library, Vol. 22, No 4, pp.317-24.

[15]. Koppel, T. (March 2004), "*Standards in Libraries: What's Ahead: A Guide for Library Professional about the Library Standard of Today and* the Future. The Library Corporation. Retrieved from http://www.tlcdelivers.com/tlc/pdf/satandardswp.pdf

[16]. Mukharzee, P.N. (2006), "*Total Quality Management* "Prentice-Hall of India, New Delhi.

[17]. Nagalakshmi, L. &Trividi, M. (2014) Success of RFID technology in Indian academic libraries- A studies. International Journal Res. J. Sci. IT Management. 3, (7) 51-58

[18]. Sheppard, S. (2005), "*RFID Radio Frequency Identification*" Mc Graw-Hill, New York.

[19]. Sahu, H. K. (2017). Use of Social Networking Sites among Undergraduate students of art and commerce Colleges, Raipur, Chhattisgarh. *Indian Association of Special Libraries & Information Science*, *62*(1), 51-58.

[20]. Syed, S., (2005) Use of RFID Technology in libraries: A new approach to circulation, tracking, inventorying and security of library materials. *Library Philosophy and Practice.* 8(1), 15-21

[21]. Suresh, L. (2010)"*Knowledge Dissemination through Libraries and Information Centre (Ist Edition)* KBDPublication RFID*,* New Delhi.

[22]. R.W. (2003), "RFID technology for Libraries (Monograph) Library Technology Reports" November-December.