

AWARENESS AND USE OF RFID TECHNOLOGY BY THE STUDENTS OF TATA INSTITUTE OF SOCIAL SCIENCES: A STUDY

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The present study aims to assess the awareness and use of RFID technology by the students of Tata Institute of Social Sciences (TISS), Tuljapur campus. A survey method was adopted to collect data using questionnaire technique. The questionnaire was designed in Google Form and circulated to all the students on institute's group email ID. The results of the study revealed that majority of the students are aware of RFID Technology implemented in the library. It is also found from the survey that there is a demand from students for self check-in/check-out KIOSK. Overall, students are satisfied with the RFID facility provided by the library.

Keywords: Radiofrequency, Academic Libraries, RFID Technology, Library Security System, TISS.

INTRODUCTION

Since 1980s the RFID (Radio Frequency Identification) is widely used in many innovative ways and it has become more popular in business organizations and recently in libraries as the cost of RFID technology has decreased rapidly. The RFID system is made of three parts; an RFID reader, an RF antenna and an RFID tag. With the inclusion of processors and sensors these tags have become more 'intelligent'. The RFID is Auto-ID data collection system surveillance, using radio frequency. In generic term, it is a technology that uses radio waves to automatically recognize people or objects. It is a combination of radio frequency and microchip based technology. The technology used in RFID system can replace both Electro-Mechanical or Radio Frequency tags of older security systems and the barcodes of library management system (Sumi and Kumar, 2007). Though the RFID technology has provided considerable benefits by cutting many time consuming & monotonous activities but at the same time institutions are facing funds problem. As a result one need to be cautious while adopting technology (Madhusudhan, 2010). As far as cost constraints are concerned, once the library implements RFID technology, its benefits can be realized in terms of "Return On Investments" (Singh and Mahajan, 2014). Though the cost is one of the main factors but benefits and advantages of RFID have the edge over the cost (Hasan and Saini, 2017).

Now, the stage has come where traditional libraries have to automate

their services and try to disseminate information using cutting edge technologies (Patil et al. 2006). RFID technology offers great potential for broadcasting access to library services and security in ways never before conceived (Hasan and Saini, 2017). This study explores the prospective of Radio Frequency Identification Technology in facilitating efficient and effective library operations. An attempt has been made in this study to assess the awareness and use of RFID technology by the students of TISS Tuljapur campus.

ABOUT TISS TULJAPUR CAMPUS LIBRARY

TISS Tuljapur Campus Library is well equipped with modern technologies. It supports and facilitates teaching, learning & research activities of the institute and acts as a catalyst in attaining institute's mission to become one of the pioneer institutes with the state of the art research and best quality education in the field of Rural Development. In addition to books, the collection of the library includes theses & dissertations, back volumes, documentary films, classical project/research reports, and prominent e-resources in the field of social sciences and allied subjects.

To strengthen the existing services and facilities the library has planned to implement RFID technology phase wise. Accordingly, in the first phase it has implemented basic RFID technology viz., Security Gates, RFID Reader (Staff Station), Hand Held Reader, Smart Card Printer, RFID Tags (HF), Middleware Software, Library Membership Card (Smart Cards). The implementation of RFID technology in TISS Tuljapur Campus library has reduced duplication of work, increased speed of work, saved considerable time, increased security to resources, and thus enabled library staff to attend individual user's queries more effectively.

REVIEW OF LITERATURE

The published literature on RFID technology from

various sources is referred to gain insights into the subject. Kern (2004) presents a report of three installations in Europe and highlights that the non-proprietary systems can be used for libraries since the generation of RFID chips are available. This will reduce the reliance on one company for a life time. In their study Curran and Porter (2007) state that the RFID enabled library system will help in identifying and finding library materials quickly for users. Hasan (2012) provides elaborate information as to implementation of RFID in library. It also provides comparative study of Barcode, EM Stripes, Hybrid technology with RFID. The findings of the study conducted by Ezeabasili (2018) reveal that RFID is not on use in any of the Federal University Libraries in Southern Nigeria. The author identified the main reasons responsible are; occasional use of electronic security systems, poor maintenance, inadequate funding & incessant power supply. However, Anuragi (2014) states that RFID technology is cost effective and efficient technology for library security. It is found from the study conducted by Madhusudhan (2010) that after adoption of RFID technology in Indian Law Institute and National Social Science Documentation Centre, New Delhi the self issue/return transaction time has come down to less than 20 seconds per item.

Although the use of RFID by libraries over the last few years has grown dramatically but the cost factor, non-availability of standards and user privacy are the major barriers to implement RFID technology in libraries (Singh and Mahajan, 2014). The survey of use and impact of RFID at IIT Delhi, conducted by Hasan and Saini (2017) reveals that 92% of users find RFID technology far better than any other technologies like manual, bar coded, EMI etc., and 86% of users see a good future of this technology in libraries. Madhusudhan and Gupta (2017) report that the RFID system has enhanced the quality of services, pattern of usage and satisfaction of users to a greater extent.

Singh (2014) states that besides providing security to library resources RFID technology has reduced duplication of work to a larger extent.

Sevukan and Vijaykumar (2015) reports that RFID system in library has increased the accuracy, speed, reliability and requirement of more human resources apart from controlling theft in the library. The advancement of RFID technology increased the accuracy of the system and enhanced the user's services and experience (Warrier et al. 2015). Further, it has minimized errors and improved library services (Gupta & Madhusudhan, 2017). Today, many libraries are using RFID systems which enable users to self-issue and return books, prevent thefts, and send alerts to users a day before books become due (Rajaraman, 2017). RFID technology greatly improves library services mainly circulation and security to resources (Chhetri and Thakur, 2019).

OBJECTIVES OF THE STUDY

The main aim of the study is to assess student's satisfaction towards RFID technology implemented by the TISS Tuljapur campus library. The objectives of the study are to;

1. know the students awareness towards RFID technology implemented in the library
2. identify the benefits of RFID System
3. examine the problems faced by the students
4. assess the level of satisfaction towards RFID technology by the students

SCOPE AND LIMITATION OF THE STUDY

The present study is conducted to know the awareness and use of RFID technology by the students of TISS Tuljapur campus. The scope of the study is limited to students of the TISS Tuljapur campus. It doesn't include other library members such as faculty, staff members, alumni, individual and institutional members.

METHODOLOGY

A structured questionnaire was designed using Google Form and administered to the students on

the institute's students group email. The population of the study consists of students who are pursuing their studies in nine (four Masters, Two Bachelors, One PG Diploma, MPhil & Ph.D) programmes of the institute. Of the total 520 students respondents 447 respondents have submitted duly filled in questionnaires online, thus the response rate is 85.96%.

DATA ANALYSIS AND INTERPRETATION

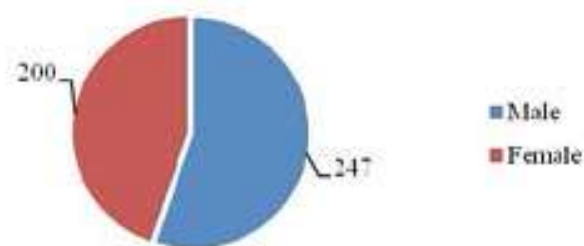


Figure 1: Demographic Profile of the Respondents

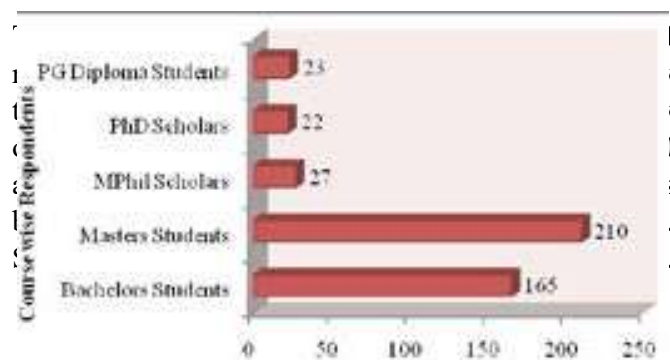


Figure 2: Course wise Distribution of Respondents

Library Visit

To a question on library visit, the figure 3 reflects the results of the responses of the respondents. Majority of the respondents (116) said they visit library Once in Two days, whereas considerable number of respondents (104) said they visit Weekly and 78 respondents said they visit 'everyday'. However, 52,

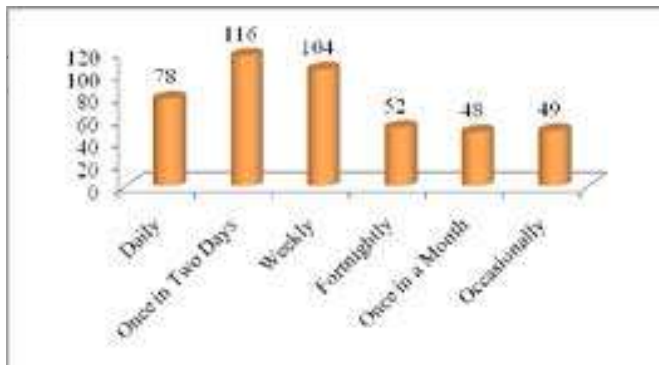


Figure 3: Library Visit

Awareness of RFID Facility among the Students

The figure 4 reveals the students awareness about implementation of RFID Technology in library. Of the total 447 respondents, majority of them (398) said that they are aware of RFID facility provided by the library and negligible number of respondents (49) said they don't know the same.

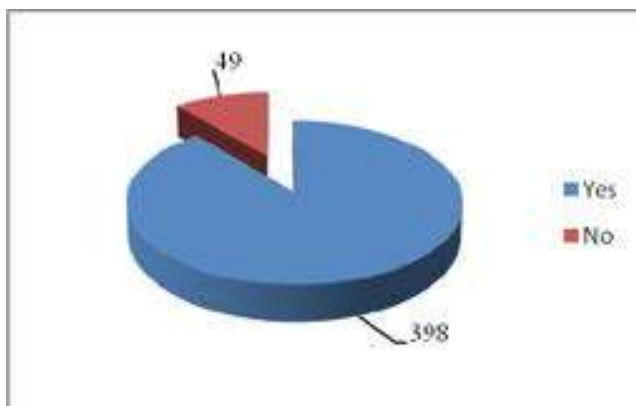


Figure 4: Awareness of RFID Facility in Library

Mode of Awareness

A question was asked to the respondents about how they came to know RFID facility provided by the library. The figure 5 shows the responses for the same. Majority of the respondents (145) said they know it from Library Staff and considerable number of (111) respondents said they know

through Library Orientation and good number of them (82) said they know from Friends. Whereas, 30 each respondents said they know from Teachers and Library Brochure.

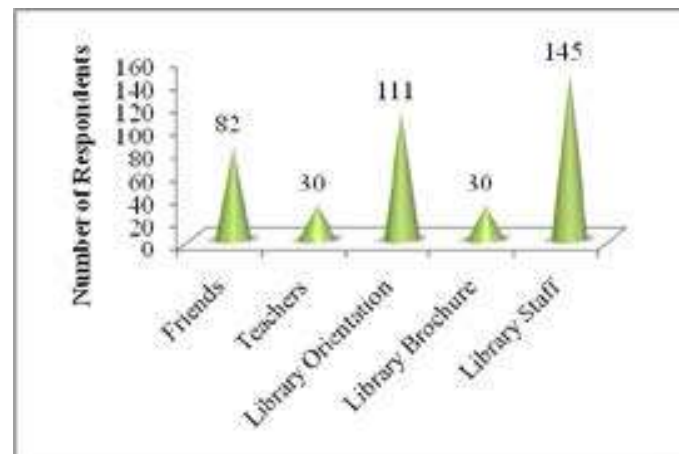


Figure 5: Mode of Awareness

Benefits of RFID Technology

The figure 6 reveals the benefits of RFID facility to the students. It is clear from the data that the implementation of RFID technology in library has benefitted the students tremendously. The figure itself is self explanatory.

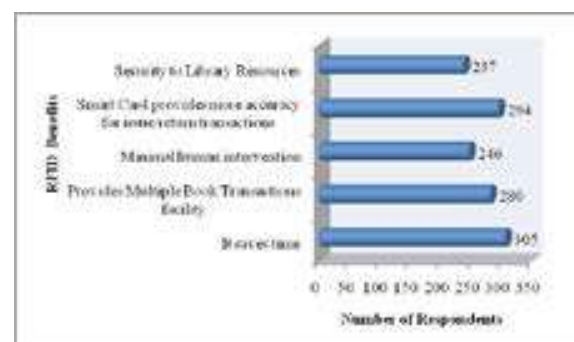


Figure 6: Benefits of RFID Technology

Problems Faced by the Students

A question was asked whether the students

have faced any problem from RFID Technology. The responses of the students are given in figure 7. Majority of the respondents (61.06%) said they have not faced any problems with regard to RFID technology. However, 31.4% of respondents could not say whether they have faced any problem or not and very negligible number of respondents said they have come across problems with regards to RFID facility provided by the library.

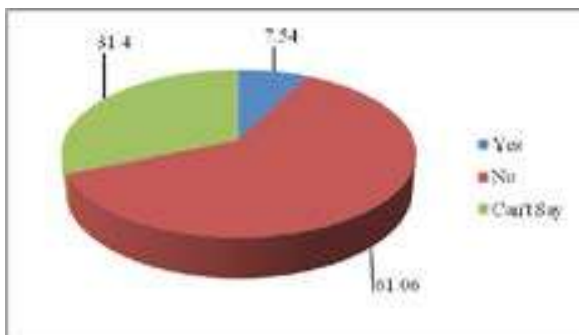


Figure 7: Problems faced by the students

Problems faced by the Students with regard to RFID Technology

The respondents were asked a question on the problems they have faced with regard to RFID technology implemented by the library. The figure 8 reveals that majority of the respondents (326) said No Self Check-in/Check-out KIOSK followed by 146, 96 & 43 for Low Internet Bandwidth, Irregular Power Supply & Inadequate IT Infrastructure respectively.

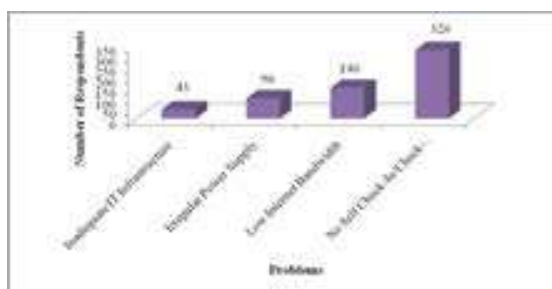


Figure 8: Problems faced by the students with regard to RFID Technology
Need for Self Check-In/Check-out KIOSK

the respondents (328) said they want Self Check-in/Check-out KIOSK, whereas, only 119 respondents were uncertain and said may be it is needed and none of them said it is not needed.

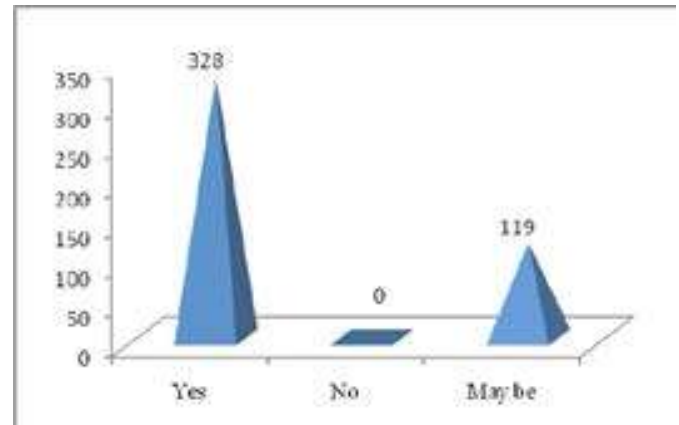


Figure 9: Self Check-in/Check-out KIOSK

Reasons for Self Check-In/Check-out KIOSK

A question was asked to the students that why do they need Self Check-in/Check-out KIOSK. The figure 10 reveals the reasons for the same. It is very clear from the data that majority of the respondents, i.e. 278, 267 & 221 said Longer Circulation Timings, It allows independent issue/return of books & It reduces reliance on library staff respectively.

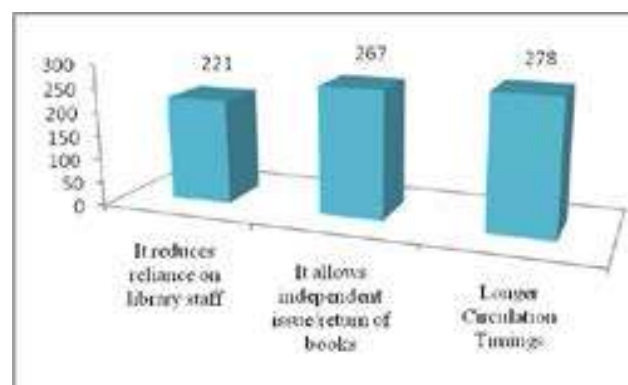


Figure 10: Reasons for Demand of Self Check-in/Check-out KIOSK
Level of Students Satisfaction towards RFID Technology Facility

It is found from the figure 9 that majority of

A question was asked to the students about the level of satisfaction towards RFID facility extended by the library. The result of the survey is as follows. It is found from the results of the survey that 28.14% of students are satisfied, 27.39% of them are Highly satisfied with regard to RFID facility extended by the library. However, 26.88% of respondents said they Can't say whether they are Satisfied or Dissatisfied. A considerable percentage of students said they are Dissatisfied and very small percentage of students said they are Highly Dissatisfied.

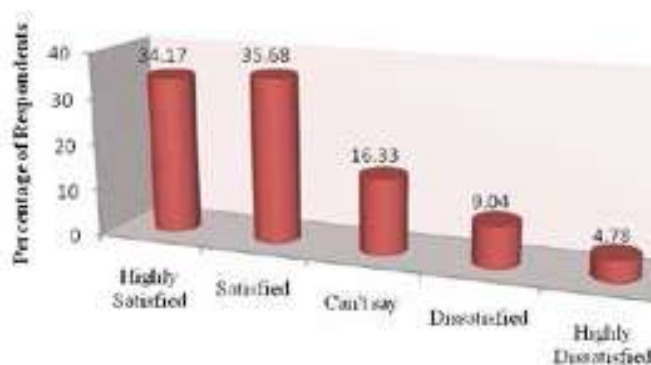


Figure 11: Students Satisfaction towards RFID Technology

DISCUSSIONS AND CONCLUSION

Borrowing books from Pass Book system to Smart Card is the biggest transformation TISS Tuljapur community has ever witnessed. It demonstrates that RFID can be implemented in libraries to ensure security to resources and facilitate innovative services. RFID brings many benefits to user community apart from saving users and circulation staff's time, it protects resources from theft, effective shelf management, stock verification, RFID tags can be read faster than Bar code and several tagged items on stack can be read at the same time.

The results of the survey reveal that majority of the students (398) are aware of the RFID facility of the library. Acceptance of this technology by the students is positive sign which also shows the adoptability of

the users towards the change and new technology. It is significant to mention that Library staff (145) & Library Orientation (111) were the main source of information to know about the RFID. The study also presents that RFID provide several benefits to the students apart from saving time. However, majority of the respondents i.e. 326 said there is No self Check-in/Check-out KIOSK facility in the library and 328 respondents said they need this facility. Library is already planned for this facility in its second phase of implementation of RFID. This would help them ease of doing issue/return of books in addition to increased circulation time and non reliance on staff for circulation work. It is observed from the data that majority of the respondents i.e. 35.68 percentage are satisfied & 34.17 percentage of them are highly satisfied with RFID facility. It is very clear from the results of the survey that majority of the students are satisfied with the RFID facility of the library.

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