Emerging Aspects of Redefining Tourism & Hospitality

Evolution of User Satisfaction with RFID in Libraries: Case Study of NITHM Library

N. YADAGIRI

Ph.D. Scholar, Dept. Library & Information Science,
Osmania University, India
eMail: yadagirinirudi@gmail.com

Dr. K. Nageshwar Rao
Director, DESIDOC, India
eMail: kamasani.nr@gmail.com

Yarlagadda Anjaneyulu
PhD Research scholar, Dept.of Management,
Graphic Era Hill University, India.

ABSTRACT

Application of Radio Frequency Identification (RFID) new technology adopted in the in Library and information centers in different Areas to provide advance level user services, preset study on "Evolution of User Satisfaction with RFID in Libraries: A Case Study of NITHM Library" RFID Based Library service and Operation concept of RFID Application, Finding User Satisfaction for Implementing RFID in the Library, conducted Random sampling Questionnaire survey on User Satisfaction RFID working at NITHM Library, Library User participated in the survey given voluble feed back in five (1-5) star rating scale and to improve and the same represented in my paper we used SPSS Software to data analysis results.

Key Words*: RFID, KOHA, Automation, Self-Check, LMS, NITHM*

1. INTRODUCTION

Librarians are playing key role for Information gathering and dissemination Information in form of Book, Journals, Magazines, and electronic form E-Books, E-Journals, Online resource etc. this type of Library works will be done by the Library professional. The Library Professional follows the three Major Service methods that is 1.Traditional Library method, 2.Modern Library method and 3.Advance Library Methods. Traditional to Advance Library Methods adopting Information and Communication Technology (ICT) In Advance Library Services depends on the Information Technology, by Using ICT in Libraries rapid changes taken place in Library Users Services and Library Management.

2. LITERATURE REVIEW

Nisha (2018) in her paper entitled "implementation of RFID technology at Defense Science library, DESIDOC: a case study" discuss the different parts of RFID system, their standards, advantages, disadvantages, overall requirement. She also opined that RFID system improves stock taking and circulation process.

Kumar and Kaur (2017) studied components, technical features, advantages, disadvantages of an RFID System in a library. They also suggest the relevant cost of implementing RFID system in a library and state the role of the librarian.

Nainan Sumita (2013): The study has identified and explained the key benefits of RFID technology. RFID will open doors to a pool of applications from a plethora of industries. Although the focal challenge to thwart the adoption is its investment cost,RFID technology provides an ocean of lucrative business opportunities that could convince several firms adopt it .The first part of the paper explains the evolution of RFID technology and the role of its individual components within the system. The second part of the paper discusses the feasibility of employing RFID technology and how it is benefactor of improved efficiency at lowered costs. The

last part of the paper highlights one of the numerous practical implementations of RFID technology.

Dwivedi Y, Kapoor K and Williams M (2013) this research develops a conceptual model to examine factors affecting the use of RFID-based systems, and user satisfaction. If the system quality is good, it triggers increased usage of RFID-based systems and results in higher user satisfaction. Information quality has a significant positive influence on RFID system use and user satisfaction. Service quality is likely to play an insignificant role once the system has been used a few times by library users. Use of the system has a significant positive influence on user satisfaction. They can also reduce data entry errors, enhance customer service, and lower book theft and can provide a constant record update of media collections.

Galhotra, M.K. and Galhotra, (2009) M.A., (in their paper studied that application of RFID in libraries, its different components, benefits of RFID, disadvantages, RFID in the Indian scenario. It is the latest technology to be used in libraries for book identification, for self checkout, and for sorting and conveying of library books and also for theft detection. These applications can lead to significant savings in labour costs and increase in efficiency.

Kern and Nauer (2004) opined that, by implementing RFID in 20 libraries in Switzerland, observed that more than 90% users towards RFID stations. They also studied that by implementing RFID two main things are happened, one is the development of prices and another is the availability of standard. They also state that due to the increase of RFID application in other sectors such as supply chain, personal identification etc. in 2003-2004 prices of RFID decrease more than 50%.

3. METHODOLOGY

Questionnaire survey methods: NITHM, Hyderabad Library Using RFID Technology from 2016 onwards to check user satisfaction we conducted Questionnaire prepped, following point s User category, Aware of RFID

Technology, Major Key point for Survey 1. Use of self check machine (KIOSK) 2. User saving Time by RFID Technology in Library, 3. RFID handhold reader helps to locating Book 4. RFID Security gates respect user honesty and integrity 5. Using of Advance RFID Technology Library Service quality improvement etc. The survey use Random sampling Technique survey Online Questioner share through Google Docs over all 65 members participated in user responses convert in to Excel spread sheet and Data Analysis and Tested on SPSS Version.

4. DATA ANALYSIS AND RESULTS

1. Did you belong to which category of users in the library?
65 responses

- Students
- Faculty
- Others

84.6%   9.2%

2. Did you have aware about RFID in the NITHM library
65 responses

- Yes
- No
- Others

85.9%   10.9%

Major Key point for Survey Results
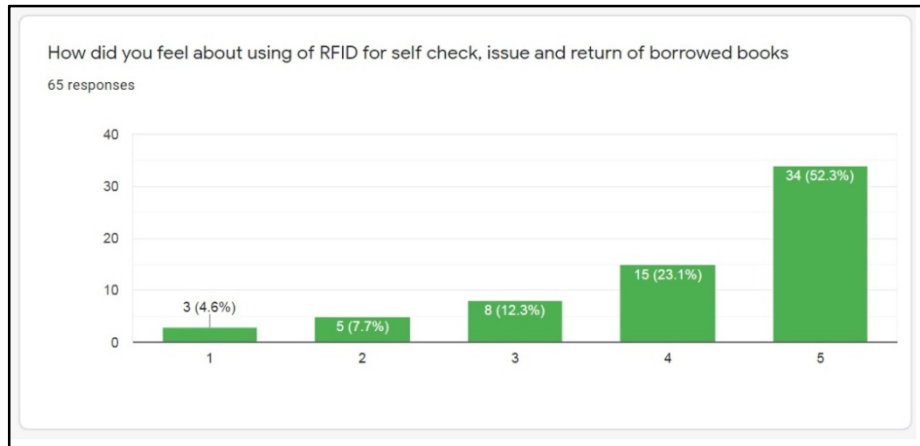
      4.1 Use of self check

      4.2 Time saving

      4.3 Locating item

      4.4 RFID respects user's honesty and integrity

4.5 Service quality improvement

4.1 Use of self check

Null Hypothesis (H_0): There is no significant difference of satisfaction with regards to self check machine between students and faculties

Alternate Hypothesis (H_1): There is a significant difference of satisfaction with regards to self check machine between students and faculties

Table 1.1 : Showing Statistics of Use of self check				
	users category	N	Mean	Std. Deviation
Use of self check	Students	55	4.0364	1.23174
	Faculty	6	4.5000	.54772
	Students	55	4.5364	1.23174
	Others	4	3.9000	1.00000
	Faculty	6	4.5000	.54772
	Others	4	4.5000	1.00000

Source: Data compiled and processed through IBM SPSS 20.

From the table 1, it has been noticed that the mean of satisfaction of students and faculty with regards to self check machine is differentiated slightly the same has been witnessed their respective standard deviations. Coming to students and others it has been noticed that the mean of satisfaction of students and others with regards to self check machine is differentiated slightly. When it comes to the faculty and others, it has been noticed that the mean of satisfaction of faculty and others with

regards to self check machine is no difference the same has been witnessed their respective standard deviations.

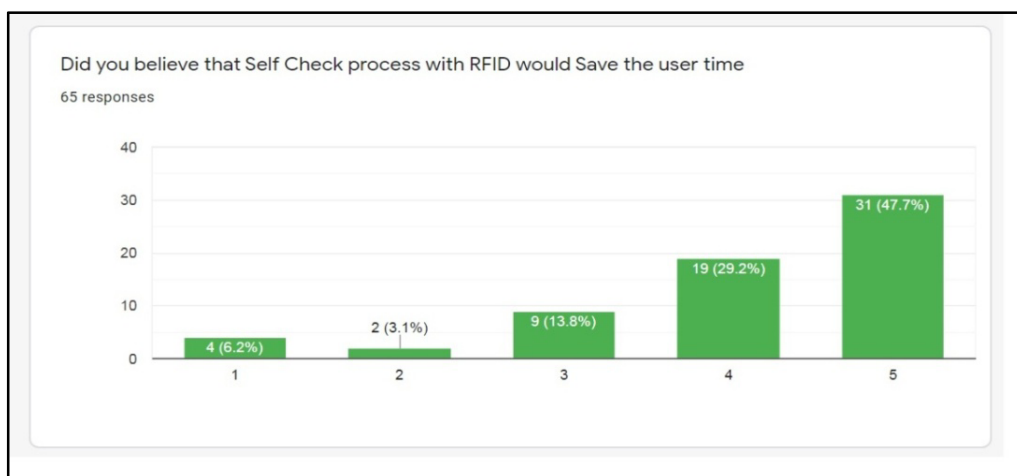| Table 1. 2 : Independent Samples Test of Students and faculty						
		t-test for Equality of Means				
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Use of self check	Equal variances assumed	-.907	59	.368	-.46364	.51125
	Equal variances assumed	-.733	57	.0490	.6364	.63212
	Equal variances assumed	.000	8	1.000	.00000	.48412

Source: Data compiled and processed through IBM SPSS 20.

From the table 2, it has been examined that the t value is -0.907 and 'p' value 0.368 between student and faculty with mean difference of -0.4636 at 59 degrees of freedom. Here the calculated 'p' value (0.368) is greater than the critical value (0.05). Therefore the null hypothesis is accepted. In other words there is no significant difference of satisfaction with respect to self check machines while they were using. It has been observed the t value is -0.733 and 'p' value .0490 between student and others with mean difference of 0.6364 at 57 degrees of freedom. Here the calculated 'p' value (.0490) is lesser than the critical value (0.05). Therefore the null hypothesis is rejected. In other words there is a significant difference of satisfaction with respect to self check machine while using by students and others. Further it compelled to explore the difference of satisfaction between faculty and others. The t value is -0.000 and 'p' value 1.000 between faculties and others with mean difference of 0.0000 at 8 degrees of freedom. Here they calculated 'p' value (1.000) is greater than the critical value (0.05). Therefore the null hypothesis is accepted. In other words there is no difference of satisfaction with respect to self check

4.2 User Time saving

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Null Hypothesis (H_0): There is no significant difference of satisfaction with regards to self check machine between students and faculties

Alternate Hypothesis (H_1): There is a significant difference of satisfaction with regards to self check machine between students and faculties

Table 2.1 : Showing statistics of Users time saving

VDireariable	Users category	N	Mean	Std. Deviation
Users time saving	Student - Faculty	55	4.0364	1.20129
		6	4.3333	0.5164
	Student - Others	55	4.0364	1.20129
		4	4.5	1
	Faculty - Others	6	4.3333	0.5164
		4	4.5	1

Source: Data compiled and processed through IBM SPSS 20.

From the table 2.1, it has been noticed that the mean of satisfaction of students and faculty with regards to **Users time saving** is differentiated slightly the same has been witnessed their respective standard deviations. Coming to students and others it has been noticed that the mean of satisfaction of students and others with regards to self check machine is differentiated slightly. When it comes to the faculty and others, it has been noticed that the mean of satisfaction of faculty and others with

regards to **Users time saving** is no difference the same has been witnessed their respective standard deviations.

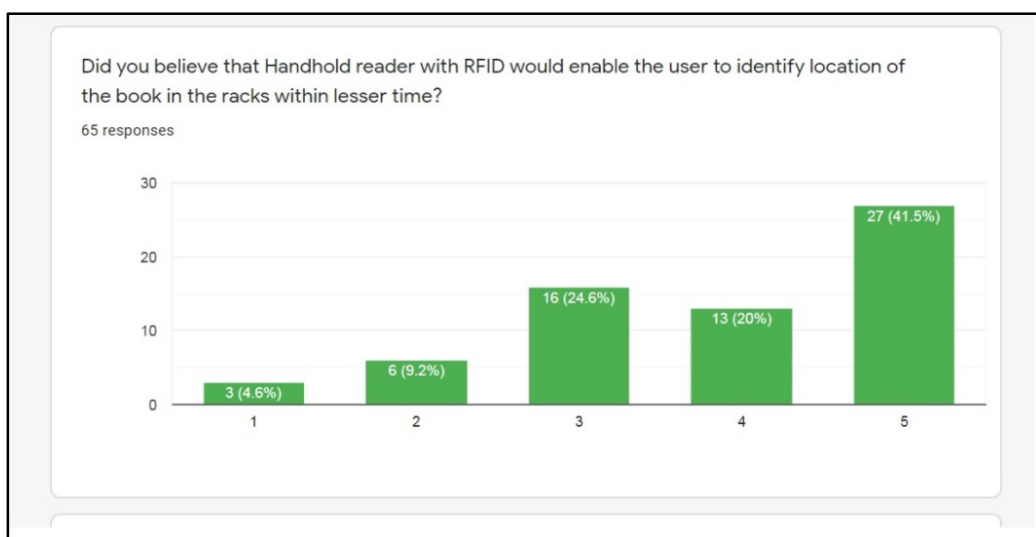| Table : Showing T value and P value of Users time saving						
		t-test for Equality of Means				
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Users time saving	Equal variances assumed	-.596	59	.553	-.29697	.49832
	Equal variances assumed	-.751	57	.456	-.46364	.61706
	Equal variances assumed	-.351	8	.735	-.16667	.47507

Source: Data compiled and processed through IBM SPSS 20.

From the table 2.2, it has been examined that the t value is -.596 and 'p' value .553 between student and faculty with mean difference of -.29697 at 59 degrees of freedom. Here the calculated 'p' value (.553) is greater than the critical value (0.05). Therefore the null hypothesis is accepted. In other words there is no significant difference of satisfaction with respect to self check machines while they were using. It has been observed the t value is -.751and 'p' value .456 between student and others with mean difference of -.46364 at 57 degrees of freedom. Here the calculated 'p' value (.456) is lesser than the critical value (0.05). Therefore the null hypothesis is rejected. In other words there is a significant difference of satisfaction with respect to self check machine while using by students and others. Further it compelled to explore the difference of satisfaction between faculty and others. The t value is -.351 and 'p' value .735 between faculties and others with mean difference of -.16667 at 8 degrees of freedom. Here they calculated 'p' value (.735) is greater than the critical value (0.05). Therefore the null hypothesis is accepted. In other words there is no difference of satisfaction with respect to Users time saving.

4.3 Locating item

Null Hypothesis (H_0): There is no significant difference of satisfaction with regards to self check machine between students and faculties

Alternate Hypothesis (H_1): There is a significant difference of satisfaction with regards to self check machine between students and faculties

Table 3.1: Showing statistics of locating time of the book

Group Statistics				
	users category	N	Mean	Std. Deviation
	Students	55	3.7636	1.24668
	Faculty	6	4.0000	.89443
Locating time of the book	Students	55	3.7636	1.24668
	Others	4	4.7500	.50000
	Faculty	6	4.0000	.89443
	Others	4	4.7500	.50000

Source: Data compiled and processed through IBM SPSS 20.

From the table 3.1, it has been noticed that the mean of satisfaction of students and faculty with regards to Locating time of the book is differentiated slightly the same has been witnessed their respective standard deviations. Coming to students and others it has been noticed that the mean of satisfaction of students and others with regards to locating time of the book is differentiated slightly. When it comes to the

faculty and others, it has been noticed that the mean of satisfaction of faculty and others with regards to locating time of the book is no difference the same has been witnessed their respective standard deviations.

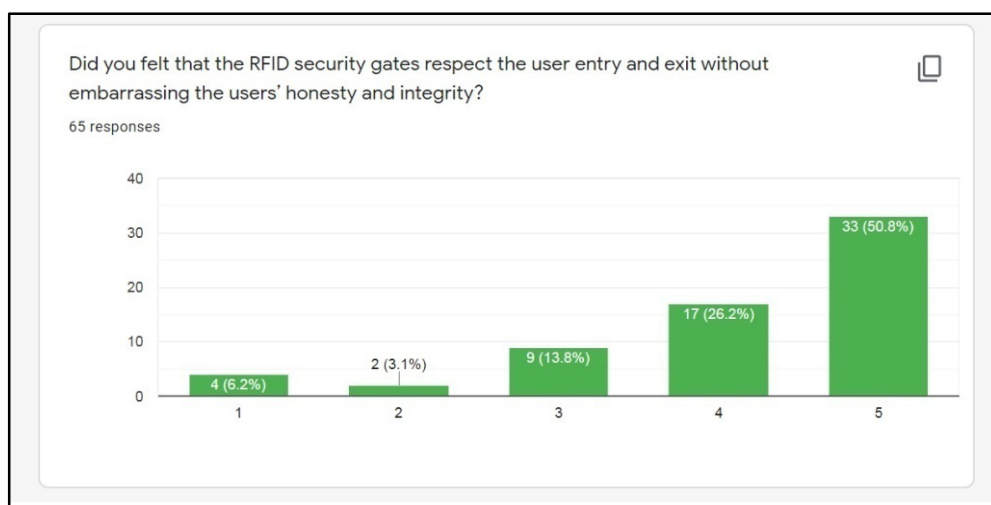| Table 3.2 : Showing T value and P value of locating time of the book						
		t-test for Equality of Means				
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Locating time of the book	Equal variances assumed	-.450	59	.654	-.23636	.52486
	Equal variances assumed	-1.563	57	.124	-.98636	.63119
	Equal variances assumed	-1.508	8	.170	-.75000	.49739

Source: Data compiled and processed through IBM SPSS 20.

From the table 3. 2, it has been examined that the t value is -.450 and 'p' value .654 between student and faculty with mean difference of -.23636 at 59 degrees of freedom. Here the calculated 'p' value (.654) is greater than the critical value (0.05). Therefore the null hypothesis is accepted. In other words there is no significant difference of satisfaction with respect to locating time of the book while they were using. It has been observed the t value is -1.563 and 'p' value .124 between student and others with mean difference of -.98636 at 57 degrees of freedom. Here the calculated 'p' value (.124) is lesser than the critical value (0.05). Therefore the null hypothesis is rejected. In other words there is a significant difference of satisfaction with respect to locating time of the book while using by students and others. Further it compelled to explore the difference of satisfaction between faculty and others. The t value is -1.508 and 'p' value .170 between faculties and others with mean difference of -.75000 at 8 degrees of freedom. Here they calculated 'p' value (.170) is greater than the critical value (0.05). Therefore the null hypothesis is accepted. In other words there is no difference of satisfaction with respect to locating time of the book.

4.4 RFID respects user's honesty and integrity

Null Hypothesis (H_0): There is no significant difference of satisfaction with regards to self check machine between students and faculties

Alternate Hypothesis (H_1): There is a significant difference of satisfaction with regards to self check machine between students and faculties

Table 4.1: Showing statistics of RFID Security Gates respects the users honesty and integrity

	users category	N	Mean	Std. Deviation
RFID Security Gates respects the users honesty and integrity	Students	55	4.0727	1.21495
	Faculty	6	4.0000	.63246
	Students	55	4.0727	1.21495
	Others	4	5.0000	.00000
	Faculty	6	4.0000	.63246
	Others	4	5.0000	.00000

Source: Data compiled and processed through IBM SPSS 20.

From the table 4.1, it has been noticed that the mean of satisfaction of students and faculty with regards to self check machine is differentiated slightly the same has been witnessed their respective standard deviations. Coming to students and others it has been noticed that the mean of satisfaction of students and others with regards to self check machine is differentiated slightly. When it comes to the faculty and

others, it has been noticed that the mean of satisfaction of faculty and others with regards to self check machine is no difference the same has been witnessed their respective standard deviations.

Table 4.2 : Showing statistics of RFID Security Gates respects the users honesty and integrity						
		t-test for Equality of Means				
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
RFID Security Gates respects the users honesty and integrity	Equal variances assumed	.144	59	.886	.07273	.50596
	Equal variances assumed	-1.514	57	.136	-.92727	.61239

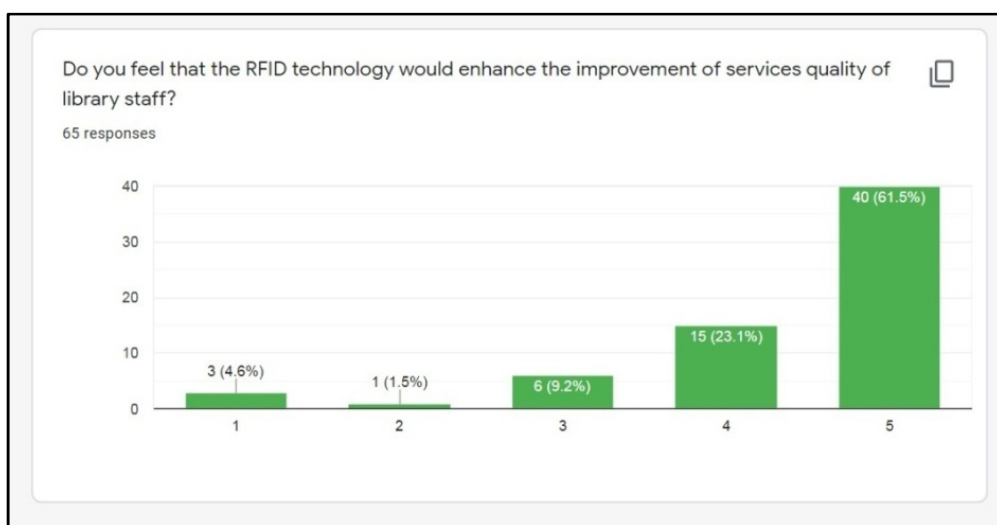Source: Data compiled and processed through IBM SPSS 20.

From the table 2, it has been examined that the t value is .144 and 'p' value .886 between student and faculty with mean difference of .07273 at 59 degrees of freedom. Here the calculated 'p' value (.886) is greater than the critical value (0.05). Therefore the null hypothesis is accepted. In other words there is no significant difference of satisfaction with respect to RFID Security Gates respects the users honesty and integrity while they were using. It has been observed the t value is -1.514 and 'p' value .136 between student and others with mean difference of -.92727 at 57 degrees of freedom. Here the calculated 'p' value (.136) is lesser than the critical value (0.05). Therefore the null hypothesis is rejected. In other words there is a significant difference of satisfaction with respect to RFID Security Gates respects the user's honesty and integrity while using by students and others. Further it compelled to explore the difference of satisfaction between faculty and others. The t value is -0.000 and 'p' value 1.000 between faculties and others with mean difference of 0.0000 at 8 degrees of freedom. Here they calculated 'p' value (1.000)

is greater than the critical value (0.05). Therefore the null hypothesis is accepted. In other words there is no difference of satisfaction with respect to self check

4.5 Service quality improvement

Null Hypothesis (H_0): There is no significant difference of satisfaction with regards to self check machine between students and faculties

Alternate Hypothesis (H_1): There is a significant difference of satisfaction with regards to self check machine between students and faculties.

Do you feel that the RFID technology would enhance the improvement of services quality of library staff?

65 responses

	users category	N	Mean	Std. Deviation
Table5.2 : Showing statistics of Improvement of service quality				
	Student	55	4.2545	1.09237
	Faculty	6	4.8333	.40825
Improvement of service quality	Faculty	6	4.8333	.40825
	Others	4	5.0000	.00000
	Studnet	55	4.2545	1.09237
	Others	4	5.0000	.00000

Source: Data compiled and processed through IBM SPSS 20.

From the table 5.1, it has been noticed that the mean of satisfaction of students and faculty with regards to Improvement of service quality is differentiated slightly the same has been witnessed their respective standard deviations. Coming to students

and others it has been noticed that the mean of satisfaction of students and others with regards to Improvement of service quality is differentiated slightly. When it comes to the faculty and others, it has been noticed that the mean of satisfaction of faculty and others with regards to Improvement of service quality is no difference the same has been witnessed their respective standard deviations.

Independent Samples Test						
		t-test for Equality of Means				
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Improvement of service quality	Equal variances assumed	-1.280	59	.206	-.57879	.45221
	Equal variances assumed	-.800	8	.447	-.16667	.20833
	Equal variances assumed	-1.354	57	.181	-.74545	.55061

Source: Data compiled and processed through IBM SPSS 20.

From the table 5.2, it has been examined that the t value is -1.280 and 'p' value .206 between student and faculty with mean difference of -.57879 at 59 degrees of freedom. Here the calculated 'p' value (.206) is greater than the critical value (0.05). Therefore the null hypothesis is accepted. In other words there is no significant difference of satisfaction with respect to Improvement of service quality while they were using. It has been observed the t value is -.800 and 'p' value .447 between student and others with mean difference of -.16667 at 57 degrees of freedom. Here the calculated 'p' value (.447) is lesser than the critical value (0.05). Therefore the null hypothesis is rejected. In other words there is a significant difference of satisfaction with respect to Improvement of service quality while using by students and others. Further it compelled to explore the difference of satisfaction between faculty and others. The t value is -1.354 and 'p' value .181 between faculties and others with mean difference of -.74545 at 8 degrees of

freedom. Here they calculated 'p' value (.181) is greater than the critical value (0.05). Therefore the null hypothesis is accepted. In other words there is no difference of satisfaction with respect to Improvement of service quality.
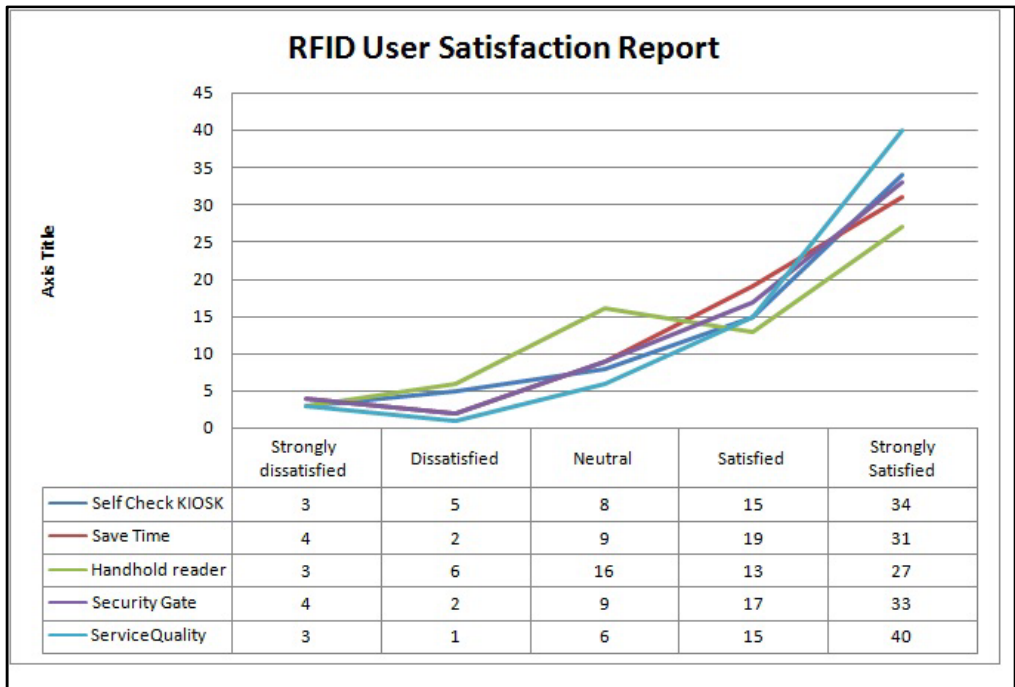
CONCLUSION

The Radio Frequency Identification (RFID) Using in Libraries an next Level of Library Automation Software i.e. Library services and operations, past 20 years ago RFID Technology implemented in various service operations sector across the globe, In same line in Library and Information Centres are Also Utilizing RFID Services for my Present Library User Satisfaction on RFID Technology "Evolution of User Satisfaction with RFID in Libraries: A Case Study of NITHM Library" Total 65 members participated in Survey, major items of Survey

1. Use of self check (KIOSK) 52% member given 5 Star rating,
2. Users time saving 47% member given 5 Star rating,
3. Locating time of the book 41.5% members given 5 star rating,
4. RFID Security Gates respects the user's honesty and integrity 50.8% members given 5 star rating,
5. Improvement of service quality 61.5% members given 5 star rating.

By utilizing advance technology user happy with service.

RFID User Satisfaction Report

	Strongly dissatisfied	Dissatisfied	Neutral	Satisfied	Strongly Satisfied
Self Check KIOSK	3	5	8	15	34
Save Time	4	2	9	19	31
Handhold reader	3	6	16	13	27
Security Gate	4	2	9	17	33
ServiceQuality	3	1	6	15	40

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