

Original Research Article

Relevance of Mobile Technology to afford by Engineering College Library Users: Comparative Study

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Abstract

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Implementation of Information and Communication Technologies (ICTs) has changed the way people access and communicate information. Users want easy and instant access to relevant information, putting pressure on Library and Information Science (LIS) professionals to think out of the box for meeting their information needs. Application of mobile phones to provide library and information services are a significant step in this direction. Present paper aims to explore the comparative in users of engineering college library services through mobiles.

Keywords: Mobile, Users, Library services, ICT's

INTRODUCTION

The technological advancements have tremendously changed communication processes. Implementation and relevance of Information and Communication Technologies (ICTs) have not only changed the way people access information, but has also given birth to the new channels of communication. Invention of mobile phones¹ is a vital achievement of technological developments. The plunging prices of handsets and nominal call charges have put mobile phones in the pockets of common people in India, where, even landline connectivity was a jewel of rich, a few years ago. The ease of use and affordability has consequence the application of mobile phones for various purposes in different sectors beyond merely talking and texting. Nowadays, libraries are functioning in a user centered, technology based atmosphere, providing individualized value added services. The Internet and networking of libraries and information centers have facilitated information access 24x7 at one's fingertips. Library and Information Science (LIS) professionals are no more merely caretakers of books. They do the challenging, non-commercial business of satisfying information needs of users. Therefore, today's LIS professionals look forward to assume new earnings of communication for

outreaching the users to take information at their ease. Universities and Colleges in various countries are successfully providing library and information services through mobile phones. The Oxford University Library² provides access to the online library catalogue, maps, contacts, news, travel information and podcasts through mobile phones (University of Oxford). Similarly, libraries of Athabasca University, Alberta, Canada, American University, Washington D.C., Mississippi State University, Black Hills State University, Wayne State University, Boston College, Duke University, Texas Christian University, etc. offer mobile interfaces, applications and services over mobile phones. Ryerson University Library sends call numbers and location of information resources from catalogue to users. This paper presents comparative study in relevance of mobile technology to afford by engineering college library users.

Review of Literature

Kumar K (2012). Libraries have been working to develop network-ready services. Mobile communication intensifies this activity and adds new challenges as they look at

what it means to be mobile-ready. This has organizational implications as a shift of emphasis towards workflow integration around the learner or researcher creates new relationships with other service organizations on campus. It also has implications for how space is used, for library skills, and for how collections are developed. Services may be made mobile-ready, as with special mobile interfaces for library services, alerting services. Mobilization continues the restructuring of services, organizations and attention that networking has brought about.

Joan KL (2010). Purpose-Society may be on the verge of a revolutionary phase of mobile device use in higher education generally and in libraries in particular. This paper seeks to address this issue. Design/methodology/approach-Through an examination of trends and technological developments in the area of mobile devices and a review of the potential of mobile devices, the paper analyze the potential of mobile devices in academic libraries. Findings-Most college students own cell phones and laptops and the capabilities of these and other devices are expanding. Research limitations/implications-Libraries have the opportunity to extend new types of services to users of mobile devices and to develop, license, or otherwise make available scholarly content that is configured for mobile devices. Ideally, libraries will become part of an institutional planning process for the development of services for mobile devices. Practical implications-The more pervasive use by students of smart phones, the uptake of e-book readers, and the increasing use of mobile devices in some areas of the curriculum all have implications for libraries. Social implications-Some writers in this area believe that the increased capabilities of mobile devices could lead to new forms of engagement with student learning; this possibility can be embraced by academic libraries that seek to be strong partners in the teaching and learning process of their institution. Originality/value-The paper synthesizes developments and provides suggestions for the future.

Vimal KV (2008). Changes in society and technology made variations in the life style of Kerala people and their views and attitude towards libraries. In this situation new means of communication practices are necessary to keep in touch with library users. Mobile technology is feasible in terms of cost and efficiency to meet the communication needs of all types of libraries. SMS can reach large number of library users. This paper aims to signify the application of SMS technology in libraries for the excellence of services offered.

Engineering College in Andhra Pradesh

Andhra Pradesh has the distinction of having leading engineering colleges in India. The state has

recently made strides in setting up several institutes. There are a total of 690 engineering educational institutions in Andhra Pradesh (Engineering colleges list available at: [http://www.andhracolleges.com/colleges/district wise.aspx?type=Engineering](http://www.andhracolleges.com/colleges/district%20wise.aspx?type=Engineering)). The state is home to the Indian Institute of Technology Hyderabad, Tata Institute of Fundamental Research Hyderabad, International Institute of Information Technology, Hyderabad (IIIT-H), National Institute of Technology NIT Warangal. Andhra Pradesh is the domicile to Osmania University (Engineering college in Andhra Pradesh details available at: http://en.wikipedia.org/wiki/Andhra_Pradesh), which is one of the oldest modern universities in India. It is one of the largest university systems in the subcontinent with over 300,000 students on its various campuses and affiliated engineering colleges. The Government of Andhra Pradesh has established Rajiv Gandhi University of Knowledge Technologies (RGUKT), in 2008 to cater to the educational needs of the gifted rural youth of Andhra Pradesh. The Institute specializes in teaching and research in Information Technology and other emerging disciplines under the control of a common university Governing Council and following a common syllabus

Objectives of the Study

- To ascertain the users' frequency of visits to library and their awareness about library services. To find for what purposes students use mobile phones.
- To ascertain the users' opinion about provision of library services through mobile phones.
- To identify the services that could be delivered through mobile phones.
- To disclose the obstacles that libraries may face in providing information and services through mobile phones and make suggestions to ensure adequate provision of these services.

METHODOLOGY

The questionnaire method was used for collecting data for the study. The choice of selecting questionnaire method was survey-based, and questionnaire was designed in structural form. The study was selected Top ten Engineering college library users in Andhra Pradesh. For this purpose a total of 100 online questionnaires were distributed through electronic mail (yahoo group) among library users'. Out of 100 online questionnaires distributed, 65 (65%) valid online questionnaires were received and then data was analyzed, tabulated, interpreted and presented in form of this paper (table 1) (Figure 1)

Table 1. Sample Size

S. No.	Gender	Distributed	Received
1	Male	70 (70.00)	51 (78.46)
2	Female	30 (30.00)	14 (21.54)
Total		100 (100.00)	65 (100.00)

(Figures in Parentheses indicate percentage)

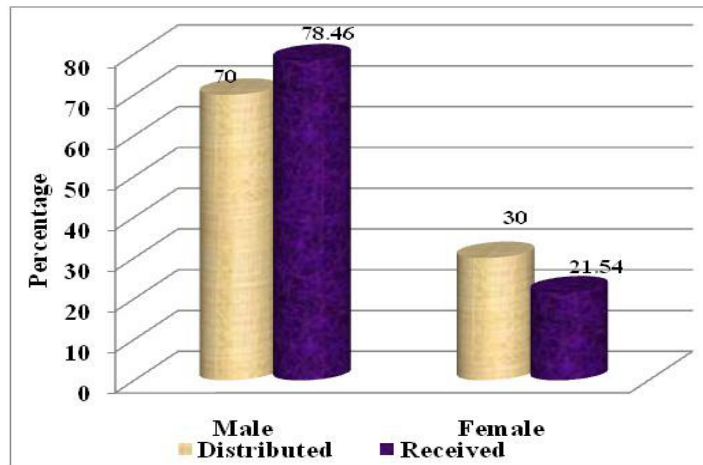


Figure 1. Sample Size

Table 2. Frequency of Visit to Library

S. No.	Library Visit	Male	Female	Total
1	Daily	27 (52.94)	7 (41.17)	34 (52.30)
2	2-3 Times a week	21 (41.17)	6 (52.94)	27 (41.54)
3	Once a week	03 (5.89)	1 (5.89)	04 (06.16)
Total		51 (100)	14 (100)	65 (100)

(Figures in Parentheses indicate percentage)

Co-efficient of Variation

$$\bar{x} = \frac{\sum x}{n}$$

According to Professor Karl Pearson who suggested this measure, Co-efficient of is Percentage variation in the Mean, Standard Deviation being considered as the variation in the mean. For comparing the variability of two series, the Co-efficient of Variation for each series is calculated. The series having greater CV is said more variable than the other and the series having lesser CV is said more consistent (or Homogenous) than the others.

Mean

Standard Deviation

$$\sigma = \sqrt{\frac{\sum(\bar{x} - x)^2}{n - 1}}$$

Co-efficient of Variation Percentage = $\frac{\sigma}{\bar{x}} \times 100$

Data Analysis and Interpretation

The received questionnaires were carefully edited tabulated and analyzed. To make the data analysis

Table 3. Level of Awareness about Library Services

S. No.	Awareness	Male	Female	Total
1	Fully Aware	10 (19.61)	5 (35.75)	15 (23.08)
2	Partially aware	39 (76.47)	9 (64.25)	48 (73.84)
3	Not aware	02 (3.92)	0	02 (03.08)
Total		51 (100)	14 (100)	65 (100)

(Figures in Parentheses indicate percentage)

Table 4. Purpose of Use of Mobile Phone

S. No.	Purpose	Male	Female	Total	Mean	Standard Deviation (SD)	Co-efficient of Variation
1	Make calls	51 (78.46)	14 (21.54)	65 (100.00)	1.00	0.000	0.00
2	Exchange messages	49 (85.97)	8 (14.03)	57 (87.70)	1.12	0.331	29.55
3	Browse the Internet	33 (82.5)	7 (17.5)	40 (61.53)	1.38	0.490	35.51
4	Video conferencing	6 (85.72)	1 (14.28)	7 (10.77)	1.89	0.312	16.51
5	E-mails	17 (62.97)	10 (37.03)	27 (41.53)	1.58	0.497	31.46
6	Photos	28 (63.64)	16 (36.36)	44 (67.70)	1.32	0.471	35.68
7	Watch videos	12 (52.17)	11 (47.83)	23 (35.39)	1.65	0.482	29.21
8	Music	34 (72.34)	13 (27.66)	47 (72.30)	1.28	0.451	35.23
9	Other	1 (100)	0	01 (1.53)	1.98	0.124	6.26

(Figures in Parentheses indicate percentage)

statistically sound, necessary statistical techniques (diagrams) are used.

Users-Library Visiting

It is evident from table 2 that majority of the users 52.30% visited library daily. Nearly 41.54% were visiting 2-3 times a week. Only 06.16% users visited library once a week.

Awareness of Library services

Table 3 shows that majority of (73.84%) users was partially aware about library services. Only 23.08% respondents expressed full awareness with library services. About 3.08% users were not familiar with the

services delivered by library services.

Purpose of Using Mobile Phones

Table 4 reveals that in addition to talking 87.70% respondents were using mobile phones to exchange messages. About 72.30% respondents were using mobiles to listen music and 67.70% to take pictures. Around 61.53% students were using mobile phones for browsing the Internet for various purposes. Nearly 41.53% students used mobile phones to check e-mails. It is observed from the above table, more variation exists between male and female users with regard to taking photos (35.68%), browsing internet (35.51% and (35.23%) while variation is minimal with regard to making calls.

Table 5. Types of Text Alerts

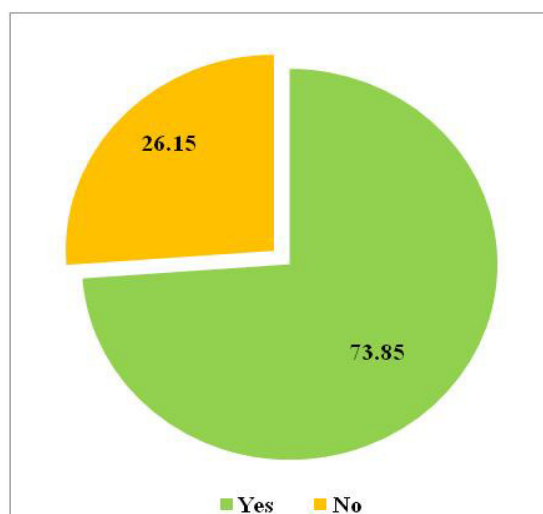
S. No.	Text Alerts	Male	Female	Total
1	(SMS) Messages	15 (71.43)	6 (28.57)	21 (33.88)
2	E-mail	6 (75)	2 (25)	8 (12.90)
3	Both	21 (63.64)	12 (36.36)	33 (53.22)

(Figures in Parentheses indicate percentage)

Table 6. OPAC through Mobile Phone

S. No.	OPAC	Male	Female	Total
1	Yes	36 (70.58)	12 (36.36)	48 (73.85)
2	No	15 (29.42)	2 (25)	17 (26.15)
Total		51 (100)	14 (100)	65 (100)

(Figures in Parentheses indicate percentage)

**Figure 2.** Using (OPAC) through Mobile Phone

Types of Text Alerts

Table 5 reveals that majority of the students constituting 53.22% opted to receive text alerts by both text messages and e-mail. Nearly, 33.88% preferred to get alerts through text messages. Only 12.90% respondents wanted text alerts through e-mail.

Using Mobile Phone Online Public Access Catalogue (OPAC)

Table 6 shows that 73.85% respondents were willing to access OPAC using through mobile phones and 26.15%

not used in OPAC in mobile phones (Figure 2).

Using Library website through mobile

Table 7 shows that 63.07% respondents were willing to access Library Website using through mobile phones and 36.93% not used in Library Website in mobile phones.

Library Facility in mobile phones

Table 8 depicts that 74.20% of the 62 respondents who

Table 7. Using Library website

S. No.	Using Website	Male	Female	Total
1	Yes	29 (56.86)	12 (36.36)	41 (63.07)
2	No	22 (43.14)	2 (25)	24 (36.93)
Total		51 (100)	14 (100)	65 (100)

(Figures in Parentheses indicate percentage)

Table 8. Use of Facility through Mobile Phones

S. No.	Facility	Male	Female	Total	Mean	Standard Deviation (SD)	Co-efficient of Variation
1	Information about recent arrivals	36 (80)	9 (20)	45 (72.59)	1.31	0.465	35.50
2	Access OPAC	11 (68.75)	5 (31.25)	16 (25.80)	1.75	0.434	24.80
3	Queries to reference desk	16 (61.54)	10 (38.46)	26 (41.93)	1.60	0.495	30.94
4	E-books	32 (69.57)	14 (30.43)	46 (74.20)	1.29	0.458	35.50
5	E-journals	29 (69.05)	13 (30.95)	42 (67.74)	1.35	0.482	35.70
6	E-Databases	18 (75)	6 (25)	24 (38.70)	1.63	0.486	29.82
7	Images	31 (73.81)	11 (26.19)	42 (67.74)	1.35	0.482	35.70
8	Library rules and regulations	10 (55.56)	8 (44.44)	18 (29.03)	1.72	0.452	26.28
9	Contact information of library staff	13 (65)	7 (35)	20 (32.26)	1.69	0.465	27.51
10	Information literacy programmes	6 (54.55)	5 (45.45)	11 (17.74)	1.83	0.378	20.66
11	List of websites in area of interest	29 (85.29)	5 (14.71)	34 (54.83)	1.48	0.503	33.99

(Figures in Parentheses indicate percentage)

wish to use library services over mobile phones, want to access e-books through handheld devices. Nearly 72.59% students want information about recent arrivals in library. Around 67.74% respondents were interested to access e-journals and an equal number of students want to get pictures of animals and diseases, etc. through mobile phones. Similarly, 54.83% students want information about important websites in their area of interest. About 29.03% respondents would like to use library services over mobile phones to get information about the rules and regulations of library (Figure 3). It is observed from there prevails more variation in terms of using E-Journals (35.70%) by male and female community, followed by usage of E-books (35.50%) and information about recent arrivals (35.50%), while variation is minimal in terms of usage of information literacy programmes (20.66%).

Table 9 reveals that majority (69.35%) of the students will use library services through mobile phones from campus, outside the library premises. About 67.74% respondents would like to use library services from their residence over. 04.83% students responded that through mobile phones they will be able to use library services from anywhere.

Lead role of library services through mobile phones

It is evident from table 10 that 45.17% respondents opined that provision of library services through mobile phones will be time saving for them. 48.39% respondents are of the opinion that such services will do all of the above. Nearly 35.49% think that this will help to keep them informed about library even when they are outside

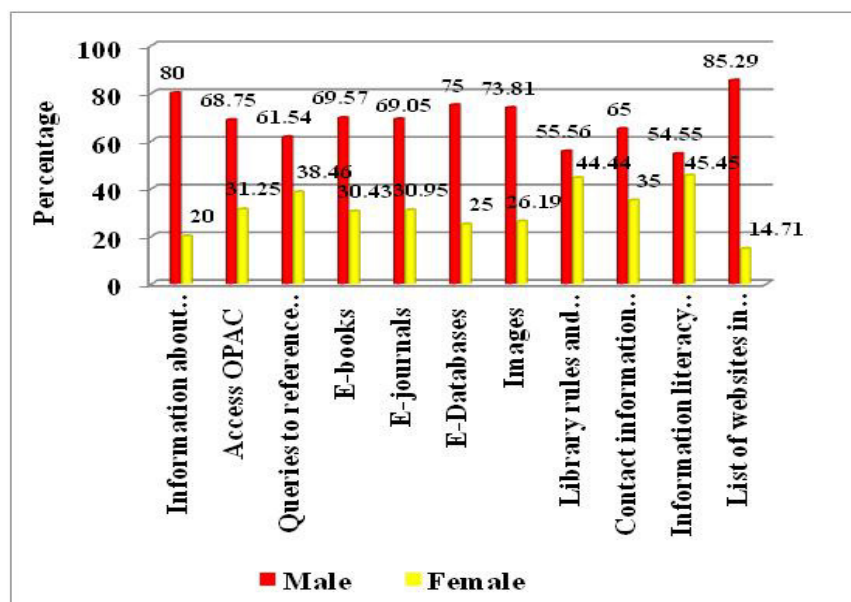


Figure 3. Use of Facility through Mobile Phones

Table 9. Location of Library Services will be used

S. No.	Location	Male	Female	Total
1	While traveling	21 (63.64)	12 (36.36)	33 (53.22)
2	While at residence	33 (78.57)	9 (21.43)	42 (67.74)
3	Within library	8 (57.14)	6 (42.86)	14 (22.59)
4	On campus	35 (81.4)	8 (18.6)	43 (69.35)
5	Any other	2 (66.67)	1 (33.33)	03 (04.83)

(Figures in Parentheses indicate percentage)

Table 10. Lead role of library services through mobile phones

S. No.	Lead role	Male	Female	Total	Mean	Standard Deviation (SD)	Co-efficient of Variation
1	Attract users to library	8 (66.67)	4 (33.33)	12 (19.35)	1.82	0.391	21.48
2	Save time of users	18 (64.29)	10 (35.71)	28 (45.17)	1.57	0.499	31.78
3	Improve the staff-users cooperation	3 (60)	2 (40)	5 (08.07)	1.92	0.269	14.01
4	Keep users informed even when they are on the move	18 (81.82)	4 (18.18)	22 (35.49)	1.66	0.477	28.73
5	Make a difference by increasing importance of library in their lives	7 (58.33)	5 (41.67)	12 (19.35)	1.82	0.391	21.48
6	All of the above	18 (60)	12 (40)	30 (48.39)	1.54	0.502	32.60
7	None of the above	2 (66.67)	1 (33.33)	3 (04.83)	1.95	0.211	10.82

(Figures in Parentheses indicate percentage)

the campus. Around 19.35% students agreed that it will attract users to library. About 19.35% students believe that it will make a difference by increasing importance of library in their lives and 08.07% consider it to be helpful in improving staff user co-operation. There exists more variation among male and female users with respect to saving time of the users (31.78%) while variation is very less in terms of improving the staff users' co operation (14.01%).

FINDINGS OF THE STUDY

- It is evident from table 2 that majority of the users 52.30% visited library daily. Nearly 41.54% were visiting 2-3 times a week. Only 06.16% users visited library once a week.
- Table 3 shows that majority of (73.84%) users was partially aware about library services. Only 23.08% respondents expressed full awareness with library services. About 3.08% users were not familiar with the services delivered by library services.
- Table 4 reveals that in addition to talking 87.70% respondents were using mobile phones to exchange messages. About 72.30% respondents were using mobiles to listen music and 67.70% to take pictures. Around 61.53% students were using mobile phones for browsing the Internet for various purposes. Nearly 41.53% students used mobile phones to check e-mails.
- Table 5 reveals that majority of the students constituting 53.22% opted to receive text alerts by both text messages and e-mail. Nearly, 33.88% preferred to get alerts through text messages. Only 12.90% respondents wanted text alerts through e-mail.
- Table 9 reveals that majority (69.35%) of the students will use library services through mobile phones from campus, outside the library premises. About 67.74% respondents would like to use library services from their residence over. 04.83% students responded that through mobile phones they will be able to use library services from anywhere.
- It is evident from table 10 that 45.17% respondents opined that provision of library services through mobile phones will be time saving for them. 48.39% respondents are of the opinion that such services will do all of the above. Nearly 35.49% think that this will help to keep them informed about library even when they are outside the campus. Around 19.35% students agreed that it will attract users to library. There exists more variation among male and female users with respect to saving time of the users (31.78%) while variation is very less in terms of improving the staff users' co operation (14.01%).

Suggestions

- A detailed survey of user needs and expectations should be conducted before introducing such services.
- Initially, free text messaging services like Way2sms.com, 160by2 and SpiceSMS.com, etc. can be used to experiment the application of mobile phones to provide library services.
- The institutions should contact mobile phone service operators for improved transmission of information at nominal charges.
- Proper training of library staff should be ensured for setting up services and mobile interface.
- Users also need to be trained about how to utilize these services.
- A common interface compatible to all mobiles/networks should be developed.

CONCLUSION

Information and Communication Technology needs and expectations of users and emerging technologies are making LIS professionals to think about new means of approaching the stakeholders. Users want easy and speedy access to relevant information. Application of mobile phones to provide library and information services will open new pathway towards this trend. This can be an astonishing means to outreach the users, enabling them to access library resources and services from anywhere any time even when they are on move.

REFERENCES

- Engineering college in Andhra Pradesh details available at: http://en.wikipedia.org/wiki/Andhra_Pradesh
- Engineering colleges list available at: <http://www.andhracolleges.com/colleges/district-wise.aspx?type=Engineering>
- Gupta SC, Kapoor VK (2001). *Fundamentals of Mathematical Statistics*. Sultan Chand and Sons. New Delhi. ISBN: 81-7014-791-3.
- Internet and Mobile Association of India (IAMAI) and eTechnology Group@IMRB (2006). Mobile value added services in India. <http://www.iamai.in/Upload/Research/mobile.pdf> (17-7-11).
- Joan KL (2010). A mobile future for academic Libraries Reference Services Review *Emerald Group Publishing Limited*. Vol. 38 No. 2, pp.205-213. www.emeraldinsight.com/reprints.DOI 10.1108/00907321011044981
- Kumar K, Raghunadha RT (2012). Role of Mobile Communication and Technology Services in Educational Libraries Int. J. Librarianship and Administration Vol. 3, Number 1 (2012), pp.57-68. <http://www.ripublication.com/ijla.htm>. ISSN 2231-1300
- Engineering Institutions students groups available at: yahoo.group.com
- University of Oxford (2009). Oxford libraries go mobile. Accessed from http://www.bodleian.ox.ac.uk/news/2009_oct_23.
- Vimal KV, Chitra S (2008). Innovative use of SMS technology for the excellence in library services in Kerala. *IASLIC 23rd National Seminar on Library Profession in Search of a New Paradigm*, Bose Institute, Kolkata pp10-13.