Winter 12-12-2019

"Awareness and access to mobile applications in an Academic Library"

Sk Abdul Gaffar
Alagappa University, gaffaramu@gmail.com

Dr.S. KIshore Kumar
Alagappa University, libkishore@yahoo.com

Gaffar, Sk Abdul and Kumar, Dr.S. KIshore, ""Awareness and access to mobile applications in an Academic Library"" (2019). *Library Philosophy and Practice (e-journal)*. 3763.
https://digitalcommons.unl.edu/libphilprac/3763

Awareness and access to mobile applications in an Academic Library

Sk Abdul Gaffar[1]; Dr. S. Kishore Kumar[2]

[1] Research Scholar, Department of Library &\and Information Science Alagappa University, Tamil Nadu, Email- gaffaramu@gmail.com
[2] Deputy Librarian, Department of Library and Information Science, Alagappa University, Tamil Nadu, Email- libkishore@yahoo.com

Abstract

Smartphones and Mobile applications are considered as one of the dominant communication tools in every walk of life whether it is for general or professional communication in education domain. The smartphone of different kinds with powerful features through applications is available in the market; which can also be used in an academic library to promote library activities and services for the benefit of fraternity and research output. To enable such services, mobile applications related to library play a vital role in disseminating information to the users over smartphones. The purpose of this study is to find out the awareness, access, and usage of mobile application among the users of technical institute library using the survey method in National Institute of Technology, Rourkela. From this study, it enumerates that mobile application and its functionality significantly enhance the use of library resources and services more effectively and efficiently.

Keywords: *Mobile Applications, smartphone, Academic Library, Library resources, QR Code*

Introduction

Smartphones and Mobile applications are playing an essential role as communication media. People are interested in using the smartphone to search the required information in their day-to-day life. In short time, the use of the smartphone enormously increased,this is due to the advancement in use of the internet and drastic changes in users' behavior to fulfill their requirements. The smartphone provides a platform to use various mobile applications (apps) and features for easy and comfortable access to the user worldwide. Libraries are also gradually dependents on the database and related library software for mobile to access digital contents[1]. In this context, libraries are also developing various mobile applications for the better use and dissemination of library resources to its users over the smartphone.

Features of mobile applications of the library: Presently, mobile phone devices are more versatile to communication between an individual purpose, for the voice call, text message and e-mail. On the other hand, Twitter, Facebook, and WhatsApp are more popular activates in the cell phone. Many features are availableon the smartphone like the Netbook, Notebook Computers, Cell phones, MP3 players, Cameras and E-book readers for better communication[2]. Some libraries also provide MARC 21 for manage library metadata, and Job search also features available. This handy range of communication significance for libraries, primarily for library reference services. The smartphone can use for watching/ listening and create digital contents it will be the effect on libraries. It is surprising that various kinds of applications developed in one place, and that is the smartphone. It is the vital part of our lives. Tools for study, productivity, task management and much more combined in a single trick that we are using[3]. Today one can engage to use the features in a single device such as Voice and video calling; Sending and receiving e-mail; SMS text messaging; Searching the internet; Searching database of scholarly information and Organizing citations. Along with these features, mobile applications for academic libraries includes accessing of library resources, course management system, reading or listening to books and articles and much more[4].

Application of mobile apps in libraries: Academic libraries have many choices to developing of websites to support of smartphones and other types of mobile devices. Academic libraries mainly maintain two separate sites, i.e., (i) full size of browser and (ii) mobile browser. First time when a designer takes an approach to building a mobile website, it was a very challenging task to design a full-featured site for a small screen than a big one[5]. But today it is the past; academic libraries are using mobile apps to provide many applications such as OPAC, Online reservation, Last 24 hours, Latest collection, E-thesis, E-books, E-journals, Browse Log, In-house the library services, Directory, FAQ and so on.

Statement of the problem

To understand the awareness, access, and usage of the mobile application among the library users of NIT-Rourkela.Mobile application for Biju Patnaik Central library has been developed and communicated for its usage to all the users. A need was felt to understand the level of awareness,

access and usage aspects of this mobile application among the users of NITR. The data collected will serve as the feedback and help library staff for its further improvements. Hence, this study is conducted to know, how this has been used and benefited the users in their academic and research activities.

Objectives of the study

To find the solution for the aforesaid problem, the following objectives have framed for this study:

  i.   To determine the availability status, awareness and use of smartphones by the users
  ii. To examine the purpose of smartphone use among the user
  iii. To know the access, awareness, and use of mobile application of the library by the users
  iv. To understand the purpose that mobile application utilized by the library users.

Literature review

There have been many studies on the use of the mobile applications in libraries. However, only few literature reviews have done in context with the present study on the awareness, access, and use of mobile apps in libraries.

Enhancement of mobile technology in library communication is more effective among the users. For the implementation of mobile technology in the twenty-first century, users are effectively able to access the digital resources around 24/7 hours, and whenever they want. The author also found that the effect of mobile technology implementation elevated high awareness among the library staff for the need to acquire skills and realize benefit.it is also makeable that some of the academic institutions are marketing their products and services through mobile devices. The most challenge is to create and make the availability of digital resources to the users for their need. In this survey, the author has found that use of mobile technology in the library; it is need of the hour[6].

Mobile primarily developed for communication purpose. But recently mobile phone is a device which enables users to communicate, connect, transact and innovate. Mobile apps have potential to facilitate the teaching and learning process differently. Mobile applications can support the library to hold the resources in a dynamic way to existing user. It is also possible that create the enhance connection between new patrons and libraries. The author believes that mobile technology is essential in our lives today[7].

The University of Regina Library launched mobile site after seven months the mobile group was first assembled. There were continuously required investigation of new technologies and services for mobile devices[8].

The library's mobile site is a stage of "perpetual beta"[9]and regularly be educating and changing. The study found that the library presently provided mobile maps of the library building, study room booking, and providing PC availability. The aim of design and building a library mobile site is to provide excellent service and information to the community. For this study, survey methods selected. The study title was "mobile use, " and the questioner was a frame out according to the topic. The survey was open to all students. Its purpose was to discover how students were effetely using their mobile devices and how they like to use it to access library's resources and services. The study found that 95.4 % of the students use smartphones, 34% said they always used to access the web, and 42% of them use their mobile device to access the internet most of the time. Students vote were very high for both the library catalog and library database. It was amazing that 24% of the students voted for having library databases to see mobile format. Many positive comments received regarding mobile library site development: this is an excellent idea. I use my phone more than a computer just because it is much more convenient[10].

The study by Bomhold[11]found that five discovery service functions investigated that is "Catalogue(MOPAC)," Journal database," "Ask a Librarian," "Course reserves," and "Subject Guides." Each category weighted for its relevance to the user. 73.6% offered to access "Journal database" through their smartphone. 43.4% access "Subject Guides" and 24.5% access to "Course reserved" services.

Similarly, the study conductedBomhold[12] determines that of 71.2% of the University provided mobile access to library services, 9.6% had university website that enhanced for mobile use with library services, 5.5% university apps that provide a link to an optimized library website. The study found that library provided service for mobile to access the resource to the society in a better way.

The study by Manso Rodríguez and Machado Rivero[13]discovers that 22.7% of users well aware of QR code and 93% of users had both smartphones with an integrated camera. According to the author, some user was aware of QR code, but the first challenge is to introduce them how it is work from different. From the collected data, it shows that 56% user report that it is beneficial for basic information about the documents. 47% of users access the virtual reference services that the library

offers QR code to link the service. Therefore, it is very much clear that the use of QR code is an alternative to providing URL to the user according to their need.

As stated by Chang[14], mobile application in University is quite high. Most of the libraries would benefit from pursuing technologies where the user will be interacting with library resources using mobile devices. The study used a well-established UTAUT model to a measurement of every category of user and their intention for mobile application in University libraries.

The study Singh Negi[15]discovers that the mobile sites provided following feature: the mobile library catalog, library loan, opening hours, library location map, link to the download of library database and E-books and also provide a social link like web 2.0 to connect YouTube, Flickr, Google group and so on. It anticipated that smartphone with library application is more user-friendly to access library resource rather than a traditional library.

1. CENTRAL LIBRARY@ NIT ROURKELA: A PROFILE

Biju Patnaik Central Library (BPCL) is the central library of the National Institute of Technology Rourkela (NITR). The Library caters to the educational and research needs of the academic community, and its resources consulted by scholars from all over the world. BPCL@NITR has started functioning since 1965. Currently, the library holds collections of 70,630 books, 18,000 back volumes of periodicals and 76 print journals along with various forms of e-resources. Apart from the online journals and standards provided by INDEST-AICTE Consortium, the library subscribes to numerous online science and technology research journals to support teaching and research activity. Other resources included ISI codes, educational video courses & cassettes and CD-ROMS, etc. BPCL tries to implement state-of-the-art technology to provide services to NITR academic community as a whole. The BPCL has automated with state-of-the-art technology tools by using an integrated library software package called Libsys and modernized with latest Radio Frequency Identification (RFID) based automation system that facilitates Self Check-in/Check-out and automatic security gate system. This technology offers fastest, easiest, most efficient way to track, locate and manage library materials. The RFID system counts more than 1.2 lakhs transactions (issue, return, and renewal) in a year[16].

Methodology

In this study, the methodological issues that are applied to carry out the empirical investigation described in detail below. According to the theoretical studies, there are supposed to be the difference in the perspectives such as access, awareness, and purpose of usage of mobile applications in various academic libraries. Based on the above assumptions, a framework is adopted using a questionnaire and by applying observation methods using appropriate statistical tool to analyze the collected data.

*Survey data collection:*A survey will be the most appropriate method for this study. The primary data are collected through group email and personal meetings with users through survey method by preparing Close-ended and Open-ended Structured Questionnaire.

*Sampling procedure:*The population for this study selected from research scholars of Ph.D./M.Tech(R) B.Tech/M.Tech and Faculty of National Institute of Technology, Rourkela (NITR) adopting convenient sampling. A questionnaire prepared and data collected from users of NIT, Rourkela.

*Data analysis:*For data analysis, there are many statistical tools are available with various features. Among them, one of the most popular tools is MS-Excel, a statistical tool to analyze and calculate the collected primary data. The gathered data were analyzed and interpreted with the help of figures and tables for easy understanding.

Analysis and interpretation

The methodology is adopted for this study as mentioned above. The results obtained by using the statistical tool namely MS-Excel to meet the objectives of the survey. Detailed analysis and its interpretation discussed below.
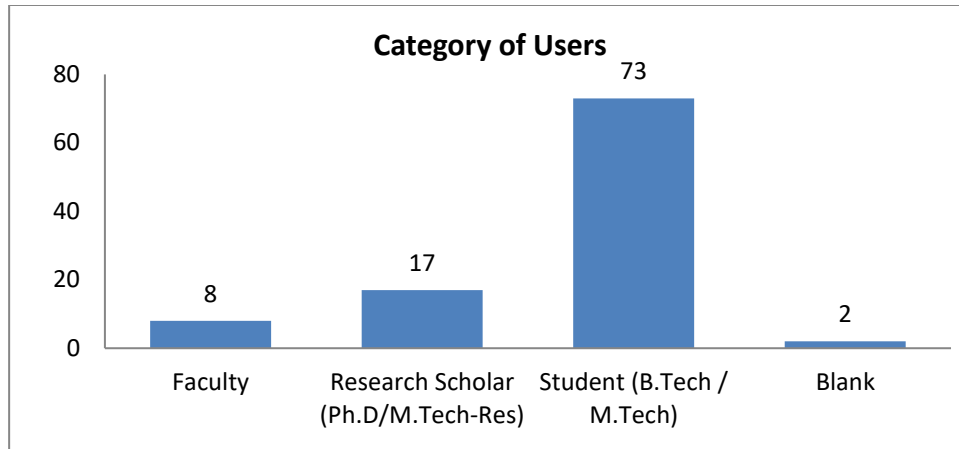
**Figure 1. Distribution of Sample**

Figure 1 shows the distribution of sample collected randomly by various categories of users in NITR. The population of the study shows representation from B.Tech/M.Tech students are the highest percentage (71%), followed by the research scholars of Ph.D./M.Tech (Research) (17%), faculty (8%) and not responded (2%). So B.Tech/M.Tech students are the highest percentage, i.e., 71% of the total survey.
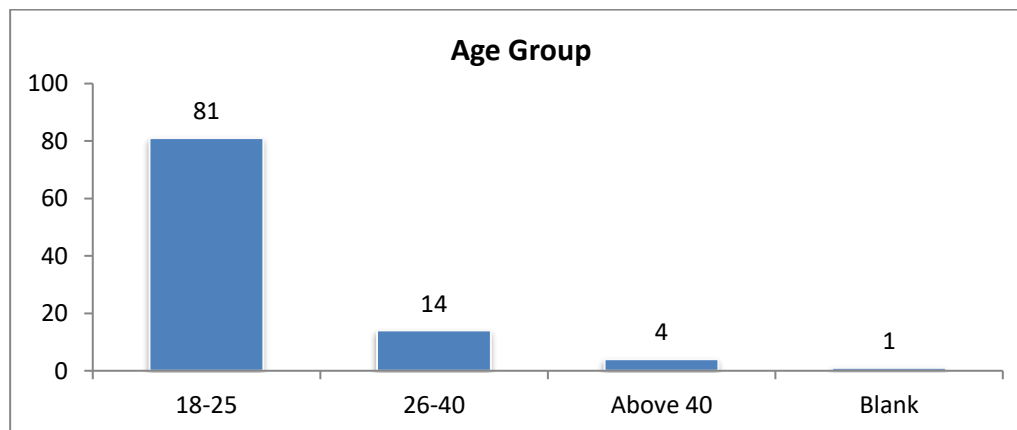


Figure 2: Age group wise respondents

Figure 2 shows the distribution of sample among various age categories of users in NITR. It indicates that highest no. of the respondents are 81% belongs to 18-25 age group, 14% belongs to 26-40 age group; 4% belongs to above 40 age group and 1% is in not responded. The study found that the highest no. of the respondents are 81% belongs to 18-25 age groups, and 4% belongs to above 40 age group.
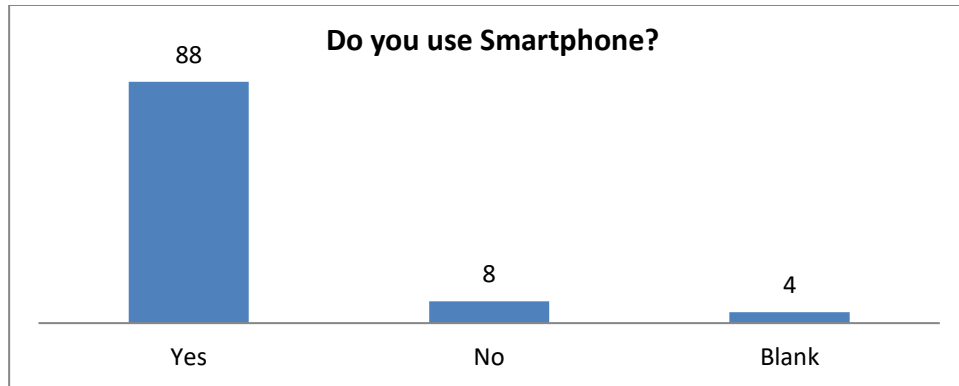
Figure 3: Smartphone use frequency of the respondents

Figure 3 represents that 88% of the respondents are using smartphones, 8% of the respondents do not use it at all, and 4% not responded. In above figure represent that 88% of the respondents are using smartphones and only 8% of the respondents were not using it at all.
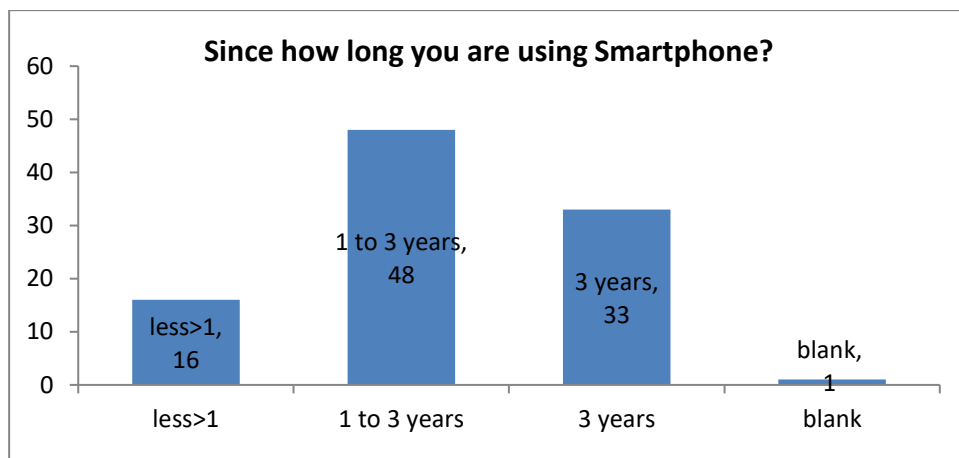

Figure 4: Smartphone use frequency of the respondents in time

Figure 4 shows that 48% of the respondents are using smartphones since 1 to 3 three years, 33% of the respondents are using smartphones more than three years, 16 % of the respondents are using smartphones less than one year, and 1% not responded. Here the study shows that maximum, i.e., 48% of the respondents are using smartphones for 1 to 3 three years, and 16 % of the respondents are using smartphones less than one year.
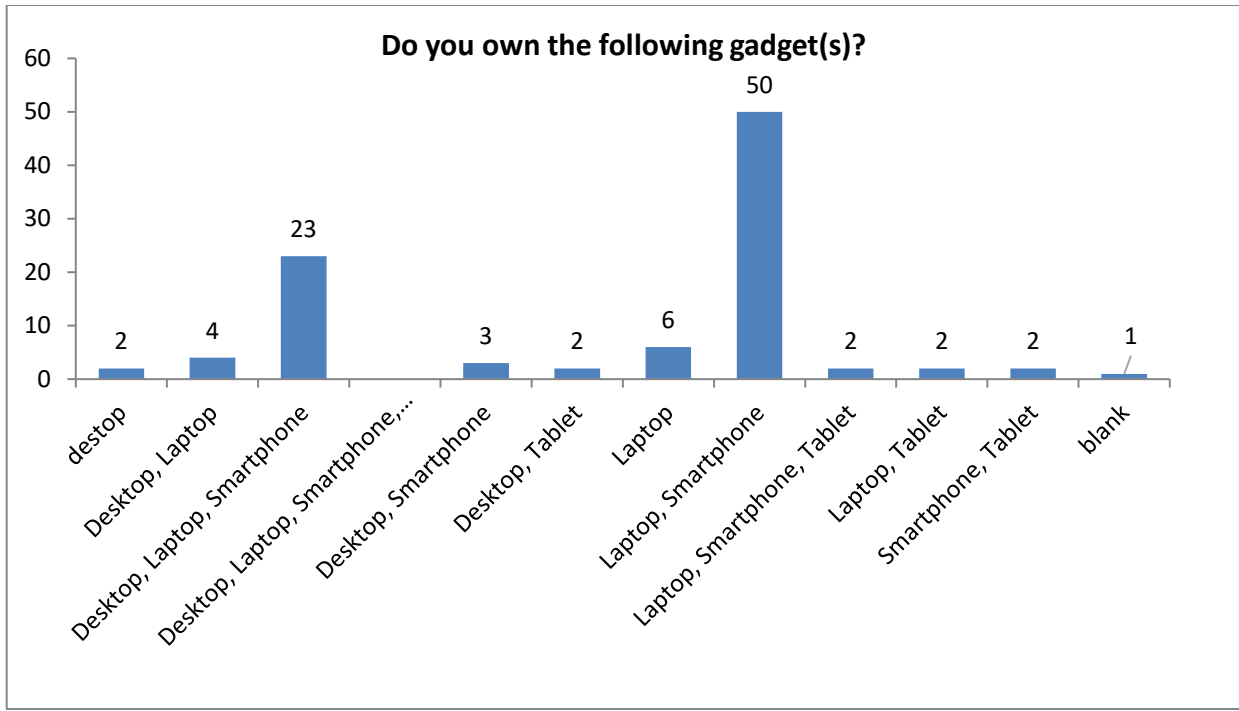
Figure 5: Use of Gadgets by the respondents

Figure 5 represents that 50% of the respondents own both the laptop and smartphone; 23% of the respondents have desktop, laptop, smartphone; 6% of the respondents have only laptop; 4% of respondents have desktop and laptop; 3% of respondents have desktop, smartphone; and rest respondents possess desktop (2%); desktop, laptop and smartphone (2%); laptop (2%); smartphone, (2%) and 1% of the respondent not responded. This figure indicates that all most 50% of the respondents have both laptop and smartphone and 23% of the respondents have the desktop, laptop and smartphone devices.
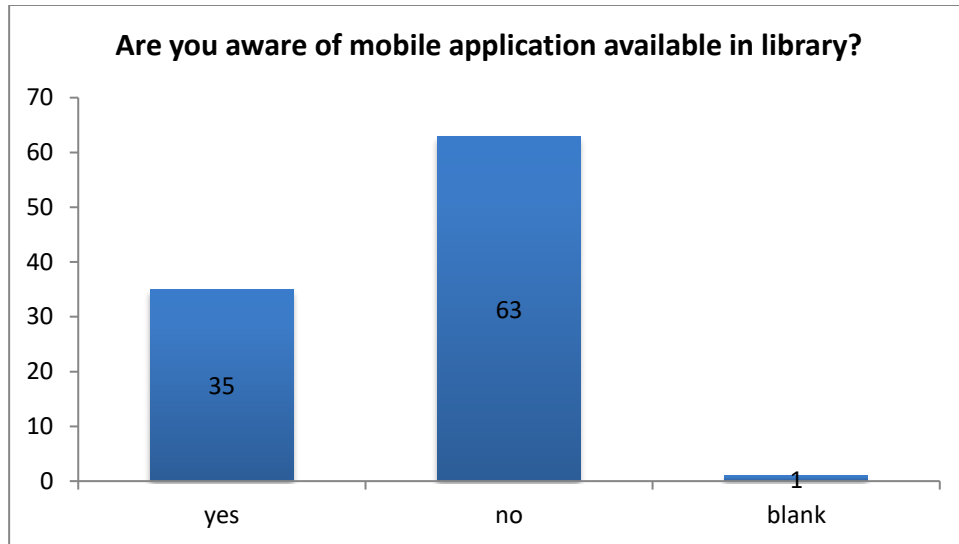
Figure 6: Awareness of mobile applications by the respondents

Figure 6 shows that 63% of the respondents are not aware of the mobile application available in the library whereas 35% of the respondents are aware of mobile application available in the library and 1% of the respondents not responded.
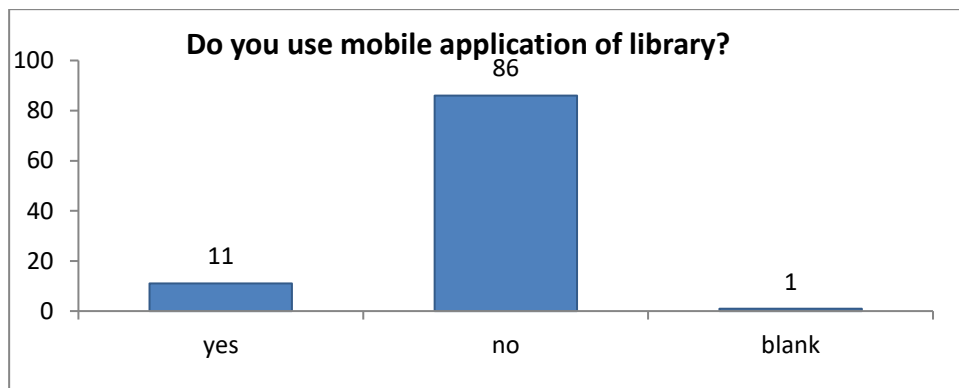

Figure 7: Use of mobile application of library by the respondents

Figure 7 represents that 86% of the respondents are not using mobile application of library whereas only 11% of the respondents use it and rest 1% not responded. The study discovers that 11% of the respondents using mobile application of library while and 86% of the respondents are not using mobile application of library.
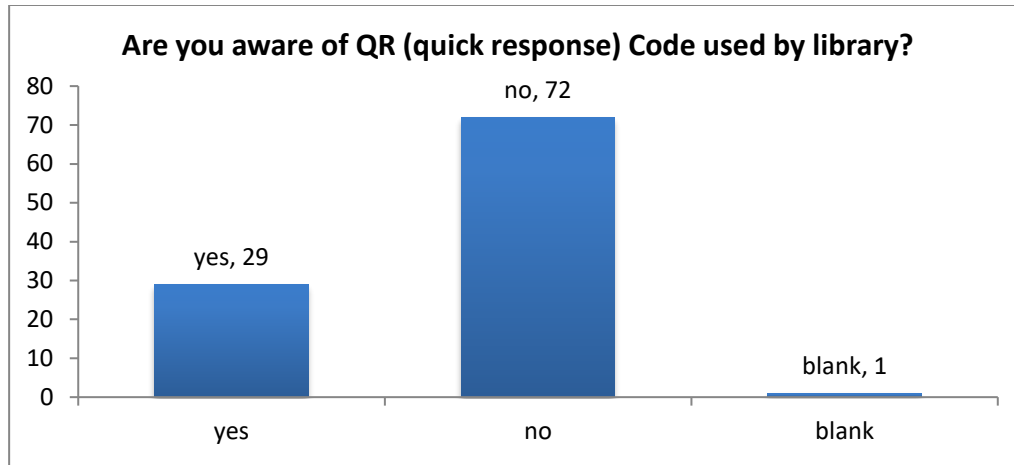
Figure 8: Awareness of QR Code used by library

Figure 8 shows that 72% of the respondents are not aware of QR (quick response) Code used by library whereas 29% of the respondents are aware of the same and 1% not responded. The figure shows that one-third of the respondents, i.e., 29% of the respondents are aware of QR (quick response) Code used by library while 72% of the respondents are not aware of QR (quick response) Code used by the library.
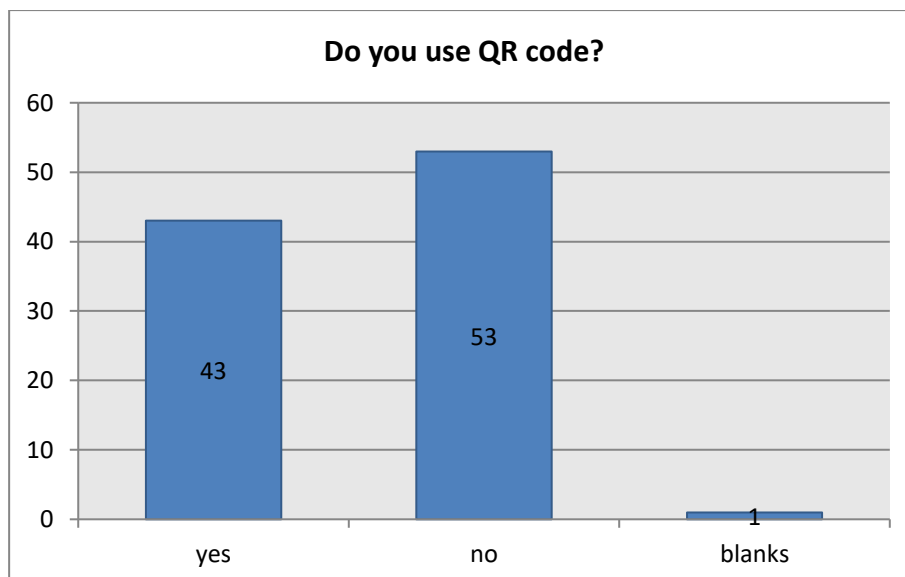
**Figure 9: Use of QR Code by the respondents**

Figure 9 shows that 53% of the respondents are not using QR Codes whereas 43% of the respondents are using QR Code and 1% not responded. Study represent that 43% of the respondents are using QR Code and 53% of the respondents are not using QR Codes.
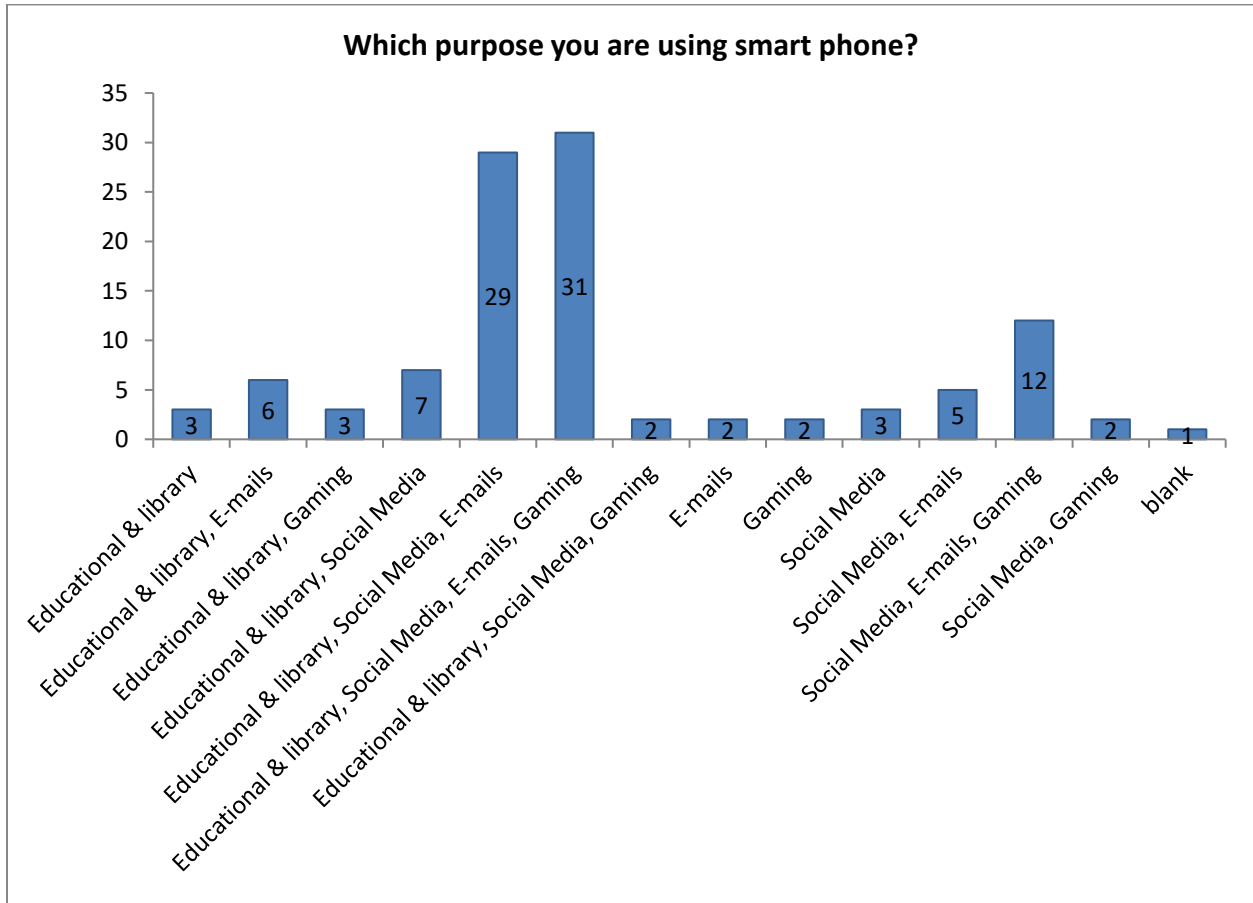
Figure 10: Purpose of smartphone usage by respondents

Figure 10 represents that 31% of the respondents are using smartphones for educational & library, social media, E-mails, and Gaming purpose whereas 29% use it for educational and library, social media, and E-mails purpose. However, 12% of the respondents use smartphones for social media, E-mails and gaming purpose whereas 7% use it for educational and library and social media purpose. Rest of the respondents are using smartphones for various purposes such as educational & library and E-mail (6%); social media and E-mails (5%); educational and library (3%); educational and library and gaming (3%); social media (3%); educational and library, social media and gaming

(2%); E-mails (2%); Gaming (2%); social media, and gaming purpose (2%) and 1% is not responded.

Do you access available library resources/e-journals on your Smartphone?
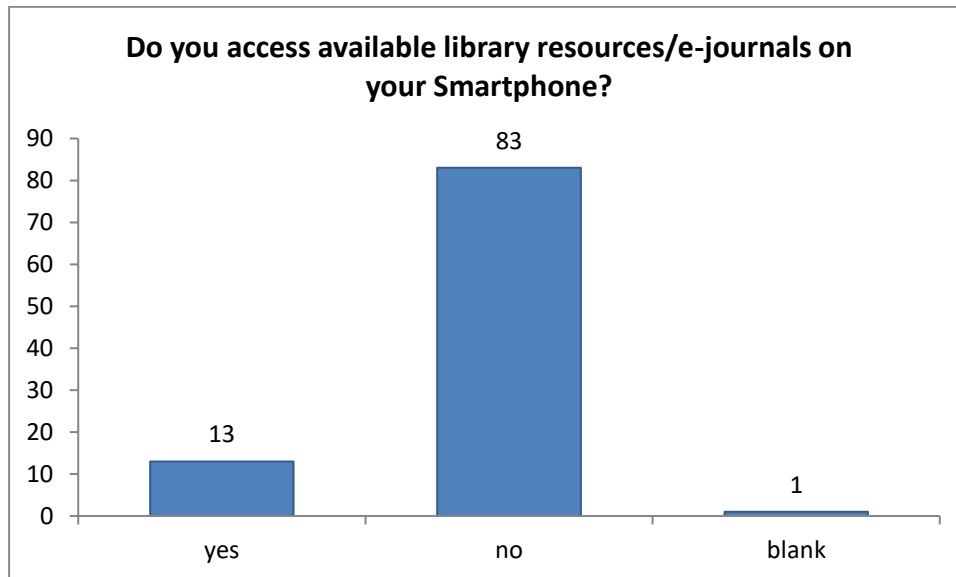
Figure 11: Accessing library resources/e-journals over Smartphone by the respondents

Figure 11 shows that 83% of the respondents are not accessing available library resources/e-journals on their Smartphone whereas 13% of the respondents are accessing available library resources/e-journals on their Smartphone and 1 % is not responded. From the figure, it is found that only13% of the respondents are accessing available library resources/e-journals on their Smartphone but most of them, i.e., 83% of the respondents are not accessing available library resources/e-journals on their Smartphone.
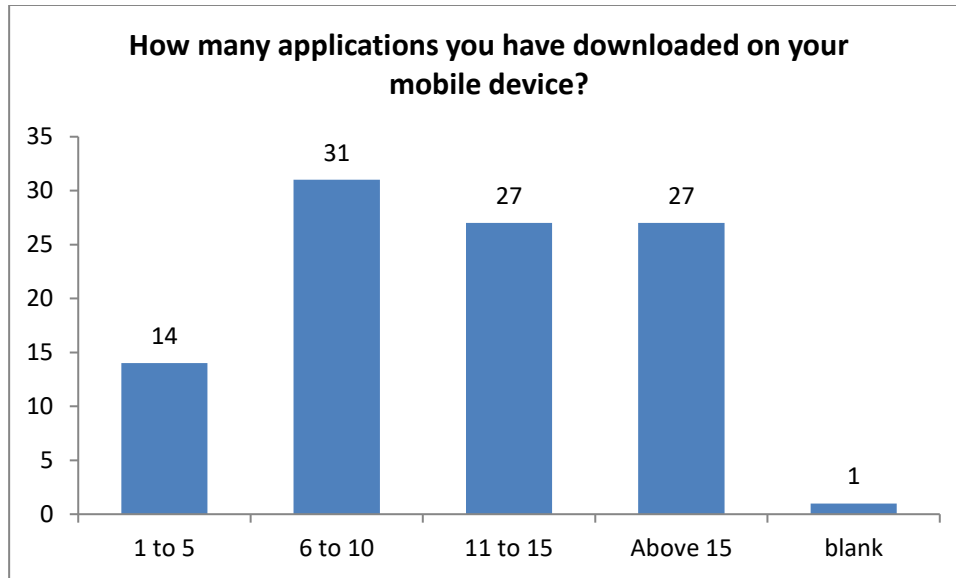
Figure12: Applications downloaded by the respondents on their mobile device

Figure 12 represents that 31% of the respondents have downloaded 6-10 applications on their mobile device whereas 27% of the respondents have above 15 applications; 27% have downloaded 11-15 applications; 14% of the respondents have downloaded 1-5 apps on their mobile device, and 1% not responded. The study discovers that 27% of the respondents have more than 15 applications in their smartphone to use in different purpose.

The following are the barriers and its analysis while using mobile applications are mentioned below.

Table 1: Barriers to access library resources by respondents

Do you encounter any barriers (e.g., authentication/password requests) when trying to access library items (e.g., articles) on your mobile device? If so, how would you rate your experience?	Always	Frequently	Rarely	Never	Not Answered
[A. I can get the required items easily]	15	23	20	29	13
[B. I can get the items, but it's a somewhat frustrating/annoying process.]	5	25	30	26	14
[C. I can get the items, but I avoid having to do this because the process is so painful.]	8	25	21	31	15
[D. I have tried, but I have not been able to get the required items.]	6	17	31	32	14
[E. I have not tried to access library items from my mobile device]	12	16	24	33	15
[F. I don't know / not aware about this]	17	11	25	33	14

Table 1 shows that 29% of the respondents never encountered any issues in accessing the library resources whereas 30% were able to get the items rarely but felt it's a somewhat frustrating/annoying process. 31% of the respondents were avoided to use due to the painful process; 32% not been able to get the required items; 33% were never tried to access library items from my mobile device, and 33% were not aware of this. Study disclose that 29% of the respondents never encountered any issues in accessing the library resources.

Findings of the study

Based on the analysis of the survey, the key findings are listed below:

- 35% of the respondents are aware of mobile application available in the library
- 11% of the respondents are using mobile application of the library
- 29% of the respondents are aware of QR Code used by the library
- 43% of the respondents are using QR Codes
- 31% of the respondents are using smartphones for educational & library, social media, E-mails and Gaming purpose
- 13% of the respondents are accessing available library resources/e-journals on their Smartphone
- 31% of the respondents have downloaded 6-10 applications on their mobile device
- 29% of the respondents were never encountered any issues in accessing the library resources whereas 30% were able to get the items rarely but felt it's a somewhat frustrating/annoying process

Recommendations

Based on the analysis of the study, the following recommendations have made:

- Awareness about the availability of mobile applications of library needs to be conducted more to enhance the awareness, access, and its usage.
- To increase the level of usage of mobile apps of the library, it is recommended to provide a detailed orientation about the mobile apps and its usage used in the academic libraries.
- It is also required to educate the users about the QR codes used by the library in all associated programs to increase awareness.

- It is necessary to create awareness and educate the users on all library resources/e-journals available over the Smartphone to enhance its usage.
- Use of QR Codes used in different library services such as New Arrivals, Figure of Contents for Periodicals, events, etc. that can direct users to the particular resources can also be introduced.
- Barriers to access issues (if any) of mobile application of library need to handle on a regular basis.

Conclusion

The study conducted among the users of National Institute of Technology, Rourkela, its observed that mobile application and its functionality significantly enhance the use of library resources and services more effectively and efficiently. Here the study found that more than 35% of the respondents are aware of the mobile application and QR Code used by the library so; they have reasonable confidence level about mobile application and QR Code. Near about 46% of the respondents are always using the mobile device for reading contents, and 35% of the respondents are frequently using the mobile device for reading purpose. Further, this research study is not limited to a single institute rather it can be conducted for other types of institutes as well. Recommendations mentioned above may be adopted for the better usage of the platform to access and use library resources effectively and efficiently. Other libraries may conduct the similar kind of study.

References

1. Iglesias, E., &Meesangnil, W. (2011). Mobile website development: From site to app. *Bulletin of the American Society for Information Science and Technology, 38*(1), 18-23. doi:10.1002/bult.2011.1720380108
2. Mobile device. (2016, June). Retrieved June 03, 2016, from https://en.wikipedia.org/wiki/Mobile_device
3. New media consortium (2010). Available at https://www.nmc.org/pdf/2010-Horizon-Report.pdf (Accessed on May 2016).
4. Lippincott J. K, (2010). A mobile future for academic libraries. *Reference Services Review*, *38* (2), 205-213.

5. Brigham Young University's Harold B. Lee Library (2014). Available at https://lib.byu.edu/ (Accessed on June 2016)

6. KumbharS. S and Pawar, R.R (2014), *Mobile Based Services: Application and Challenges*. In Proceedings of National Conference on Changing Trends in Academic Libraries and Librarianship in Digital Environment; 25 & 26 February, 2014, Shivaji University, Kolhapur

7. Nalluri S. R, (2016). Mobile Library Services and Technologies: A study. *International Journal of Research in Library Science, 2* (2), 59-66.

8. Nowlan G, (2013). Going Mobile: Creating a mobile presence for your library. *New Library World, 114* (3/4), 142-150.

9. DeMars, (2012). M-Libraries: 5 form devices to peoples *Facet Publishing*; London.

10. Cummings et al., (2010). Available at http://www.emeraldinsight.com/doi/abs/10.1108/PROG-01-2013-0003?mobileUi=0&journalCode=prog(Accessed on June 2016).

11. Bomhold C,(2015). Research and discovery function in mobile academic libraries. *Library Hi Tech*, *33* (1), 32–40.

12. Bomhold C, (2014). Mobile services at academic libraries: Meeting the users' needs, *Library Hi Tech*, *32* (2), 336–345.

13. Manso Rodríguez R. A and Machado Rivero M. O, (2016). Information skills training through mobile devices. *The Electronic Library*, *34* (1), 116–131.

14. Chang C.C, (2013). Library mobile applications in university libraries. *Library Hi Tech*, *31* (3), 478–492.

15. Singh Negi D,(2014). Using mobile technologies in libraries and information centers. *Library Hi Tech News*, *31* (5), 14–16.

16. Biju Patnaik Central Library (BPCL) Available at http://library.nitrkl.ac.in (Accessed on June 2016).