

5.

Use of Smartphone in Retrieving Information among PG Students

Sahityanjali Chandra

Research Scholar,

Dept. of Library and Information Science,

Assam University, Silchar

Abstract:

We are living in technology era, everyone is using technological devices. Smartphone is also one of them. Smartphones are providing various applications like internet, e-mail, weather update, academic related various apps, short message device, video call facilities, current news, access document from anytime and anywhere and retrieval of information. The smartphone device is working as a multi-functional device. The Smartphone is an information gadget for retrieving information for students. It can also easily portable device. In the other words today, smartphone works like a computer. We can say that smartphone is a combination of computer. This article related to my Master degree dissertation work.

Keywords: Information, Information Retrieval, Smartphone

1. Introduction:

Information retrieval (IR) is the activity of obtaining information resources relevant to an information need for a collection of information resources for users. Retrieving information is useful for users. It is helping Searches can be based on full-text or other content-based indexing. Information retrieval is the science of searching for information in a document, searching for documents themselves, and also searching for metadata that describe the data, and for databases of texts, images or sounds. Automated information retrieval systems are used to reduce what has been called information overload. Many universities and public libraries use IR systems to provide access to books, journals and other documents. Web search engines are the most visible, IR applications. Smartphone is an easily portable device for retrieving information. User can access information at any time. Now a day's smartphone is one the most popular communication devices at this time and maximum student is use smartphone for retrieving information better than computer

because it is easily portable device. Mobile Information retrieval is comparatively a new area of Information retrieval which is related to enable users to carry out, using a mobile device. It is related to indexing retrieve information in the form of graphic, animation, speech, sound, image, video and their possible combinations for use in mobile devices with wireless network connectivity. . These days, smartphone have been used to replace desktop or mobile computers. All activities which can be performed on normal computers such as sharing information, sending and receiving emails, chatting, opening and editing documents, can be kept inside a pocket of a trouser, hand or a shirt. All smartphone have advanced applications such as a camera which can work as a scanner.

Mobile Information Retrieval is comparatively a new branch of information Retrieval: that is concerned with enabling users to carry out search, using a mobile device. Smartphone retrieval has increased in popularity immensely in the last ten the last ten years. In fact, since 2015 there are more interested through smartphone devices than computer.

Smartphone information retrieval in a relatively recent branch of information retrieval that considered with enabling PG Students of Assam University to carry out, using a Smartphone device. Students may seek information for various reasons such as to understand a specific subject matter or to conduct a research (Nor LiyanaMohdShuib, 2011).

The term Information Retrieval was coined by Calvin Mooers in 1950.

B.C. Vickery has described it as “retrieval is essentially concerned with the structure of the operation of the device to select documentary information from the store of information in response to several questions”.

2. Statement of the problem

The researcher knows about the usage of Smartphone in retrieving information. Only use of Smartphone in Retrieving Information among PG Students has been taken into consideration for this particular study due to the short period, it is impossible to take a large population for study. There are various applications for retrieving information in the library and information science, but no one conducted this study on the usage of Smartphone in Retrieving Information. Through this study, we can be able to know about the reference, articles, mobile app and how can easily access retrieving information by Smartphone in a specific area.

3. Objective of the study

The main objective of the study is to understand how Smartphones are being used for information retrieval by the PG Students at Assam University.

- To know the category wise students perceptions on use of Smartphones for retrieving information.
- To identify the student’s experience of using smart or spending time spent in mobile phone for information retrieval.

- To understand users’ satisfaction of retrieving information through the use of Smartphone.
- To assess the use of smartphone for library purposes.

4. Scope and Coverage

The scope of the usage of Smartphone is less, but in Information retrieval is a very wide area. We can see that the students use smartphone to search for the information at any time and use of mobile phones for internet access has become a routine. This is study generally based on quantitative measurement.

5. Methodology

The methodology used is quantitative and the method used for collecting data is survey method. A sampling technique adopted for study is a random sampling method which means Random sampling is a part of the sampling technique in which each sample has an equal probability of being chosen. The data collection tool used for collecting data is questionnaire method which means a variety of the questions printed or typed in a definite order on a form which is distributed further to the respondents. The respondents of study are the post graduate students of various departments of Assam University.

6. Literature Review

A literature review is a description of the literature relevant to a particular topic. It gives an overview of what methods and methodologies are appropriate and useful. As such, it is not in itself primary research, but rather it reports on other findings. A literature review may be purely descriptive, as in an annotated bibliography, or it may provide a critical assessment of the literature in a particular field.

(Rueger, 2009) has done study on “**Multimedia Information Retrieval**”. This book takes under graduation class on multimedia information retrieval and everyone

who carries out project that build components of multimedia search for work for studies in particular undergraduate level. Multimedia information retrieval involves search engines ex: Google, yahoo Microsoft, Bing and many more. In this book authors introduced basic concept of multimedia information retrieval technology.

(Reese 2013) has done their study on “**Educational use of Smartphone technology: A survey of mobile phone application use by undergraduate student**”. Here the researcher discussed about the aim to present the results of a survey of undergraduate student of use of Smartphone application. This researcher provides evidence of the actual use of mobile devices by student for library administrators and educators interested in developing integrated mobile academic library application.

(Gowthami and Kumar 2016) have done their study on “**Impact of smart phone: A pilot study on positive and negative effects**”. The researchers discuss about the positive and negative effect is studied. Nowadays, smart phone is a part of student life. The intention of this study there are two aspects negative and positive on smart phone of the society. This study first focus on impact of smart phone on education, health sector, business and social life etc.

(Abhishek and Hemchand 2016) have done their study on “**Adoption of sensor based communication for mobile marketing in India**”. This paper aims to explain the applications of sensor-based communication in mobile marketing and how understanding its fast growth is important for marketers. The paper draws from various examples used by companies in India and abroad to explain the phenomenon of sensor-based communication in mobile marketing. Marketers should be aware of the different ways in which sensor-based communication can be used to build and sustain customer engagement.

7. Smartphone information retrieval

Smartphone information retrieval (IR) relates to the indexing and retrieval of information such as text, graphics, animation, sound, speech, image, video, which are their possible combinations for use retrieving information from the Smartphone. The Smartphone is a personal assistant and Smartphones have created a large demand for mobile information content as well as effective mobile IR techniques. The Smartphone is a mobile phone which offers advanced technologies for retrieving information with functionality similar as a personal computer. Smartphone have become essential for people and this has increased the demand for Smartphone in the market. Information plays an important role in the daily life of the people of the so-called “information age. Mobile devices allow users to search information “on the go”.

8. Application of smartphone

There is various type of free mobile app for library which is user can retrieve information. Many type of the academic institution like universities research labs, technical and libraries have developed a unique goal to spread to spread the information conveniently without using of computer and they believe mobile app can improve their access to information can improve their access to information. The adaptation of e-mobile technology for different type of mobile apps satisfying the information need of new users. Mobile apps are categorized in three categories as a discussed below:

- Native app
- Web app
- Hybrid app

9. Advantage of mobile app

- **Database:** All the information is stored on a database, so we can search information more effectively.
- **Multi database search:** Users can search their desired information from multi-database at a same time.

- **Multiple concepts:** At a same time they can use multiple keyword / concept for search.
- **Multi user:** It has the ability to serve multi user at a same time.
- **Geographical Barrier:** Geographical factors are not an obstacle for searching information from storage. Users may able to search information from anywhere of the world.
- **Preservation system:** We can easily store all of our search results on our computer.
- **Various Formats:** We can retrieve information from our search as various formats, such as book, journal, PDF, document format, etc.
- **Cost:** Searching cost is less than manual searching.
- **Multi access point:** At a same time many users can able to access its storage.
- **Up-to-date information:** Most of the result retrieved by this system is up-to-date.
- **Rapid access:** Users can able to access very rapidly to the search result.
- **Resource sharing:** It has the capability of resource sharing.
- **Search logic:** Its search logic is user friendly.

10. Impact of Smartphone on users

Now a day's maximum many student and other people used smartphone. This device solve are many problems like Smartphone has created new dimensions for business. It is not only the Smartphone vendors enjoying the business but it also created a new domain for mobile application developing companies, Internet services provider and other sectors of life to utilize the Smartphone to gain competitive advantages. Now smartphone has famous to use through users. We can see that smartphone has positive effect on the bases of educational area. Through the use of smartphone user can easily retrieving information. Academic skills improve.

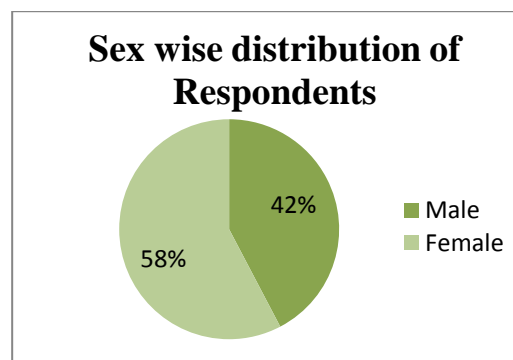
11. Data analysis of this study

11.1 Sex wise Distribution of Respondents

The table presents the sex wise distribution of respondents which shows that out of 130 respondents, majority of the respondents were female (75) with 58% and male (55) with 42% respondents. The graphical representation of the same has been shown in figure 4.1

Table: 4.1 Respondent of Male and Female

| SL No. | Respondent | Number | Percentage |
|--------|------------------|--------|------------|
| 1 | Male | 55 | 42% |
| 2 | Female | 75 | 58% |
| 3 | Total Respondent | 130 | 100% |



Figures: 4.1 Sex wise distribution of Respondents

11.2 Period of Experience of Using Smartphone for Retrieving Information

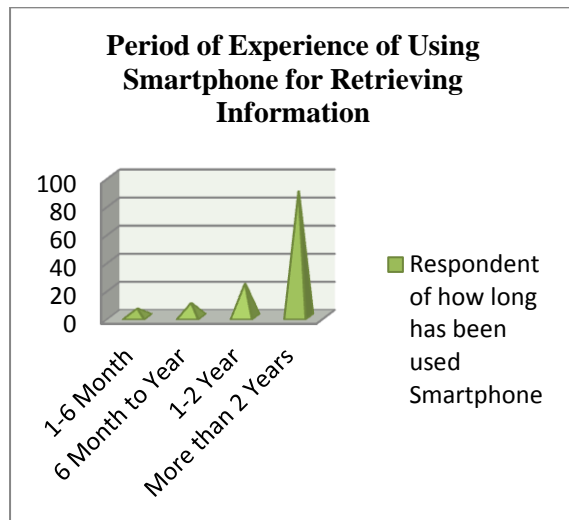
The respondents were asked "How long have you been using the smartphone", 6 of the respondents representing 5% indicated that they use smartphone for last 1-6 month, 10 respondents representing 8% indicates that they for use smartphone 6 months, 24 respondents representing 18% indicates that they use smartphone for 1-2 years, 90

respondents representing 69% indicates that they use smartphone more than 2 years.

Hence it is found that the majority use of smart phone more than 2 years for retrieving information.

Table: 4.2 Period of Experience of Using Smartphone for Retrieving Information

| SL.N | Year | Frequenc | Percentag |
|------|--------------------|----------|-----------|
| o | | y | e |
| 1 | 1-6 Month | 6 | 5% |
| 2 | 6 Months Of Year | 10 | 8% |
| 3 | 1-2 Year | 24 | 18% |
| 4 | More than 2 Years | 90 | 69% |
| 5 | Total respondent s | 130 | 100% |



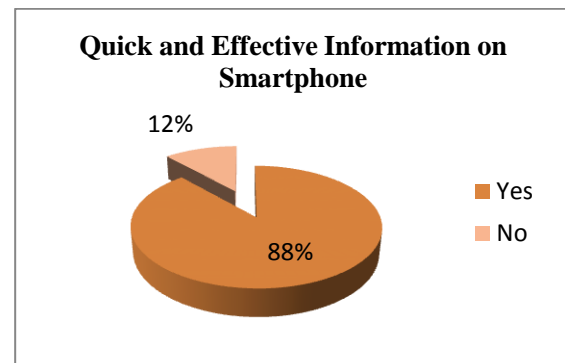
Figures: 4.2 Period of Experience of Using Smartphone for Retrieving Information

11.3 Quick and Effective Information on Smartphone

The below table shows that out of 130 respondents, 115 (88%) said smartphone is helpful in quick and effective information retrieval and 15 (12%) smartphone does not helpful in quick and effective information retrieval.

Table: 4.3 Quick and Effective Information on Smartphone

| SL.N | Responde | Frequen | Percentage |
|------|-------------------|---------|------------|
| o | ts | cy | % |
| 1 | Yes | 115 | 88% |
| 2 | No | 15 | 12% |
| 3 | Total respondents | 130 | 100% |



Figures: 4.3 Quick and Effective Information on Smartphone

11.4 Library Related Information Retrieval On Smartphone

The below table shows that out of 130 respondents, 78(60%) use smartphone for library related information retrieving and 52 (40%) said that smartphone do not help for library related information retrieving.

Table: 4.4 Library Related Information On Smartphone

| Sl. No | Library Related Information Retrieving On Smartphone | Frequ | Perce |
|--------|--|-------|-------|
| | | ency | ntage |
| 1 | Yes | 78 | 60% |
| 2 | No | 52 | 40% |
| 3 | Total Respondents | 130 | 100% |

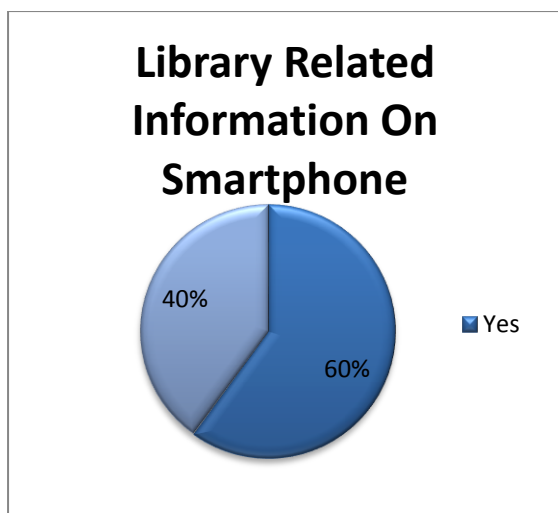
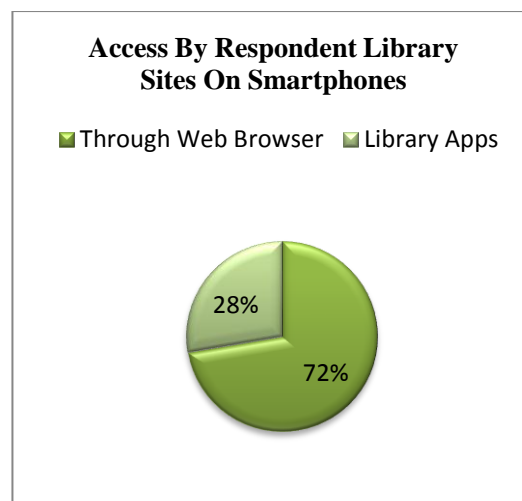


Figure: 4.4 Library Related Information on Smartphone



Figures: 4.4 Access by Respondents to Library Sites on Smartphone

11.5 Access By Respondent Library Sites On Smartphone

The respondents were asked “How do you access to library sites in your smartphone”. The Answer given by the respondents has been presented below which shows that out of 130 respondents 94, 72% respondents use library sites through a web browser and 36, 28% respondents use a library app on smartphone. The graphical representation of the same has been shown in figure: 4.4.

Table: 4.5 Access By Respondent Library Sites On Smartphone

| Sl. No | Library sites on Smartphone | Frequency | Percentage |
|--------|-----------------------------|-----------|------------|
| 1 | Through web browser | 94 | 72% |
| 2 | Library apps | 36 | 28% |
| 3 | Total Respondents | 130 | 100% |

12. Major Findings

The major findings of study are discussed below:

- 150 questionnaires have been distributed out of which, 130 have responded. That is 86.7% has responded. So finally it is concluded that majority of the PG Students have responded.
- Total 130 questionnaires have been collected from the PG students of Assam University. The majority (58%) of the respondents are female which retrieve information on smartphone through internet are.
- 130 questionnaires have been collected from the PG student of Assam University. The majority (69%) of the smartphone users have been using more than 2 years.
- Out of 130 questionnaires 100% of them said they use the internet on a smartphone.
- Out of 130 respondents, 66% of the respondents prefer Google search engines, 21% of the respondents prefer Opera, 13% of them respondents prefer Yahoo.
- 41(31%) of the respondent prefer mobile network, 36(28%) of the respondents use Wi-Fi, 43(33%) of the respondents prefer both network 10(8%) of the respondent other network on smartphone.

- Out of the 130 respondents, 61(47%) of the respondents directly type web address on a smartphone, 54(41%) of the respondents use search engines, 14(11%) of the respondents use subscription database, 1(1%) of the respondents use another. The Majority of the respondents directly type web address on a smartphone.
- Out of the total respondents, 75(58%) use interact few time everyday frequently access internet on smartphone, 20(15%) at least once a day, 35(27%) few time a week access internet on smartphone. The majority of the respondents use internet access few times every day on a smartphone.
- Out of 130 respondents, 60(46.%) retrieve information for academic on smartphone,30(23%) retrieve information for social media, 34(26%) retrieve information for sports and 6(5%) retrieve information for the other information retrieve on smart phone. Majority of the respondents retrieve information for academic purpose.
- Out of 130 respondents, 23(18%) use health app on smartphone, 40(30%) use banking app on smartphone, 58(45%) Job Related App on smartphone and 9(7%) use Other Please Specify. Majority of the respondent use smartphone for job related app.
- Out of 130 of the respondents,39 (30%) use smartphone for reading scholarly article,78 (60%) use smartphone for Preparing class notes, 12 (9%) use smartphone for Preparing Library reference, 1 (1%) use smartphone for Other. Majority of the respondent smartphone prefer smartphone for preparing class notes.
- Out of 130 respondents 97 (75%) said that smartphones improve academic skills and 33 (25%) said that smartphone does not improve academic skill.
- Out of 130 respondents, 86 respondents do not use for smart phone for facilitating learning but 44 respondents do not use for facilitating learning, 99 respondents use for saving time on smartphone but 40 respondents think that smartphone does not save time, 80 respondents said smartphone increases productivity but 50 respondents said smartphone do not increase productivity, 88 respondents said smartphone helps in skill development in retrieving information but 44 respondents do not help in skill development in retrieve information, 93 respondent smartphone is find-up-to-date information but 37 respondents does not helps in find-up-to-date information.
- Out of 130 of the respondents, 78 (60%) use smartphone for library related information retrieving and 52 (40%) said that they do not use for library related information retrieving.
- Out of 130 respondents, 94 (72%) respondents use library sites through a web browser and 36 (27%) respondents use a library app on smartphone.
- Out of 130 respondents 115 (88%) said that smartphone is helpful in quick and effective information retrieval and 15 (12%) said that is smartphone does not helpful in quick and effective information retrieval.

13. Suggestions and recommendation

- High internet speed for the faster retrieval of information and save the valuable time of the PG student of Assam University.
- In Smartphone most of time information retrieving is only possible if a good internet connection is present. There is a vast need of some offline app with which we can get at least basic information on various things.
- The smartphone should be used for increasing the knowledge.
- Smartphone is useful if be used it properly for good purpose.

- Now a days smart phone helps in net banking, retrieve information on related topic anywhere any time.
- Information retrieval becomes easy while using smart phones.
- Smartphone provides high internet speed for faster retrieval information and save the important time of respondents.
- Smartphone has made a positive impact on their subject related information were easy and fast internet access, high speed browsing, saves time and money going to cybercafe/university library, easy access to e-learning materials/e-textbooks.
- Student should use their smartphones for their academic works, the study revealed that majority of the respondents uses their smartphones to improved academic skill and provide update information.
- Smartphone helps quick and effective information with in short period of time through the use of smartphone.

14. Conclusion

Making conclusion is the final part of the study in which the findings of research is summarized according to the research problem. In present days, we live in the age of

information communication technology. The Smartphone is a device of information retrieval for accessing information anytime and anywhere. The study revealed about which the type of information retrieved by the students on the internet through the smartphone. 100% respondents use smartphone for retrieval of information. 47% of the respondents directly type web address on a smartphone. Smartphones are used not only by PG students infact research scholars, teachers access the internet on a smartphone. Many apps are available online in the smartphone. Users can freely access the required information with in a small period of anytime and anywhere. The respondents should know about the library apps because many of respondents directly access through the web browser to retrieve information from smartphone. With the help of smartphone respondents easily access articles, class notes, and library services. However the present study revealed the “Use of Smartphone in Retrieving Information Among the PG students of Assam University, Silchar. Most of the PG students use smartphone for retrieving information.

Reference

- [1]. (2018, December 28). Retrieved from Wikipedia: https://en.wikipedia.org/wiki/Controlled_vocabulary
- [2]. Abhishek, S. h. (2016). Adoption of sensor based communication for mobile marketing in India. 8(1), 65-76. doi:doi/abs/10.1108/JIBR-08-2015-0091
- [3]. Abhishek, S. H. (2016). *Published by Emerald Group Publishing Limited*. doi:doi/full/10.1108/JIBR-08-2015-0091
- [4]. *Advantages and Disadvantages of having Smartphone*. (2018, February). Retrieved from <https://www.eukhost.com/forums/forum/general/technology-forum/17752-10-advantages-and-disadvantages-of-having-smartphone>.
- [5]. Ahmad, S. M. (n.d.). Scope and Impact of Android application in Education Sector. *Chronicle of the Neville Wadia Institute of Management Studies & Research*.
- [6]. Ajay shankar Mishra, J. K. (2020, January 26). https://www.researchgate.net/publication/320016540_MOBILE_APP_AND_THE_LIBRARY_SERVICES. Retrieved from https://www.researchgate.net/https://www.researchgate.net/publication/320016540_MOBILE_APP_AND_THE_LIBRARY_SERVICES
- [7]. *Artificial Intelligence*. (2018, June). Retrieved from <http://what-when-how.com/artificial-intelligence/artificial-intelligence-for-information-retrieval/>
- [8]. Bachchhav, K. P. (2016). Information Retrieval: search process, techniques and strategies. 2(1).

- [9]. Catharine, R. B. (2013). Educational use of smart phone technology: A survey of mobile phone application use by undergraduate university students. *47*(4), 424-436. doi:doi/full/10.1108/PROG-01-2013-0003
- [10]. Claudio Carpineto Stefano Mizzaro, G. R. (2009). Mobile Information Retrieval with Search Results Clustering: Prototypes and Evaluations. *60*(5), 877-895. doi:10.1002/asi.v60:5
- [11]. Croft, M. S. (2012, May). The History of Information Retrieval Research. *vol.100*.
- [12]. Dorothy, O. (2015). Smart technology classroom in the stacks: promoting free government apps in academic library. *32*(1). Retrieved from <https://www.emeraldinsight.com/doi/full/10.1108/LHTN-10-2014-0095>
- [13]. Fabio Crestani, S. M. (2017). *Mobile Information Retrieval*. Switzerland: Springer.
- [14]. Hasinul Elahi, S. I. (2014). Go Fast, Go with Mobile: Students perception on implementing mobile based library services at. Retrieved from <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=3117&context=libphilprac>
- [15]. *Here and Now: Reality-Based Information Retrieval*. (2018, February). Retrieved from https://imld.de/cnt/uploads/Bueschel-2018_RBIR.pdf.
- [16]. Hiemstra, D. (2009, November). Information Retrieval Models. Retrieved from <http://wwwhome.cs.utwente.nl/~hiemstra/papers/IRModelsTutorial-draft.pdf>
- [17]. *History*. (2018, January). Retrieved from https://en.wikipedia.org/wiki/Information_retrieval.
- [18]. Hong-Ren Chen, H.-L. H. (2010). User Acceptance of Mobile Knowledge Management Learning System: Design. *3*(13), 70-77. Retrieved from <https://pdfs.semanticscholar.org/d050/2b64a7083448c85971a256cf5004a037a7b8.pdf>
- [19]. <http://www.stmaryslibrary.org/collection-development-policy.html>. (2018, March). Retrieved from <http://www.stmaryslibrary.org/collection-development-policy.html>.
- [20]. https://www.researchgate.net/publication/215908576_collection_development_policy_in_electronic_era. (2018, March). Retrieved from https://www.researchgate.net/publication/215908576_collection_development_policy_in_electronic_era.
- [21]. *INFLIBNET*. (2018, April). Retrieved from <http://ir.inflibnet.ac.in:8080/ir/bitstream/1944/1153/1/74.pdf>
<http://ir.inflibnet.ac.in:8080/ir/bitstream/1944/1153/1/74.pdf>
- [22]. *INFLIBNET*, S. . (2018, February). <http://shodhganga.inflibnet.ac.in/handle/10603/5661>. Retrieved from <http://shodhganga.inflibnet.ac.in>.
- [23]. *Informationa Retrieval*. (2018, February). Retrieved from http://www.doc.ic.ac.uk/~nd/surprise_97/journal/vol4/hks/inf_ret.html.
- [24]. *International Journal of Next Generation Library and Technologies*. (2018, May). Retrieved from International Journal of Next Generation Library and Technologies: <http://www.ijnglt.com/files/Vol%202%20Issue%201/Kiran%20Prakash.pdf>
- [25]. *Introduction to Samrt Phone*. (2018, February). Retrieved from <https://www.telstra.com.au/content/dam/tcom/seniors/pdf/beginners-intro-smartphones.pdf>.
- [26]. Iqbal, D. S. (n.d.). An efficient technique to retrieve information from a damaged near-field communication tag. *Vol. 10*(Issue: 1). doi:doi/full/10.1108/IJICC-08-2016-0028
- [27]. Joel Cumming, A. M. (2010). The use of handheld mobile devices: their impact and implications for library services. *28*(1), 22-40. doi:doi/full/10.1108/07378831011026670
- [28]. *Library Study and Information Technology*. (2018, August). Retrieved from <https://www.librarianshipstudies.com/2016/05/subject-indexing-process.html>
- [29]. Lusekelo Kibona, J. M. (2015, April). A Review on the Impact of Smartphones on Academic Performance of Students in Higher Learning Institutions in Tanzania. *Vol. 2*(Issue 4). Retrieved from <https://pdfs.semanticscholar.org>
- [30]. Mansour, E. (2016). Use of smartphone apps among library and information science students at South Valley University, Egypt. *Vol. 34*(Issue: 3).
- [31]. meaning, q. m. (2018, February). <http://www.mbaofficial.com/mba-courses/research-methodology/write-a-note-on-the-questionnaire-method-followed-in-research-methodology/>.
- [32]. Meira Levy, P. S. (2010). Personalized Knowledge Service Based on Smart Cell-Phone Usage: A Conceptual Framework. *Americas Conference on Information Systems*.

- [33]. Melody Clark, C. C. (2018). Mobile Information Literacy: Building Digital and Information Literacy Skills for Mobilefirst and Mobile-centric Populations through Public Librarie.
- [34]. Misagal, J. N. (2016). Smart Phoes Usage Among College Student. *Impact Journals*, Vol. 4(Issue 3).
- [35]. *Mobile Information Retrieval using TopicSensitive*. (2018, Feburary). Retrieved from <https://www.ijarce.com/upload/2013/march/19-suresh%20%20-mobile%20information-c.pdf>.
- [36]. *Nabin Ch. Dey*. (2018, April). Retrieved from <file:///C:/Users/Sahityanjali/Desktop/2018/4rth%20sem%20-%20Copy/N.C.Dey/LIS-401-Unit-4.pdf>:
<file:///C:/Users/Sahityanjali/Desktop/2018/4rth%20sem%20-%20Copy/N.C.Dey/LIS-401-Unit-4.pdf>
- [37]. *Natioanal Academic Press*. (2018, July). Retrieved from <https://www.nap.edu/read/10324/chapter/2#2>
- [38]. *National Digital Libray Of India*. (2018, April). Retrieved from <https://ndl.iitkgp.ac.in/>
<https://ndl.iitkgp.ac.in/>
- [39]. Negi, D. S. (2014). Using mobile technologies in libraries and information centers. *31*(5), 14-16. doi:/doi/full/10.1108/LHTN-05-2014-0034
- [40]. Nor Shahriz Abdul Karim, S. H. (2006). Mobile phone application in academic library service:a students feedback survey.
- [41]. Nosakhare Erharuyi, D. F. (2003, October). Mobile Geographic Information Handling Technologies to Support Disaster Management. *88*(4), 312-318. Retrieved from : <http://www.jstor.org/stable/40573885>
- [42]. *Pathshala Corporation*. (2018, July). Retrieved from epg pathshala: <http://epgp.inflibnet.ac.in>
- [43]. Qunyi Wei, Q. C. (2015). Usability study of the mobile library App: an example from Chongqing University. *33*(3). doi:/doi/full/10.1108/LHT-05-2015-0047
- [44]. Ralangarm, R. V. (2015, July). Temple Information Retrieval System using Quick Response Code via Mobile Application. *197*, 998-1005. doi:<https://doi.org/10.1016/j.sbspro.2015.07.292>
- [45]. Ricardo Baeza, B. R. (1999). *Modern Information Retrieval*. Delhi: Pearson Education India.
- [46]. Ruger, S. (2009). Multimedia Information Retrieval. 171 . Retrieved from <https://www.morganclaypool.com/doi/abs/10.2200/s00244ed1v01y200912icr010>
- [47]. Rujijjan Vichivanives, S. R. (2015, February). Temple Information Retrieval System using Quick Response via Mobile Application Code. doi:doi: 10.1016/j.sbspro.2015.07.292
- [48]. S Gowthami, S. V. (2016, March). mpact of Smartphone :A pilot study on positive and negative effects. *2*(3). Retrieved from <http://ijseas.com/volume2/v2i3/ijseas20160353.pdf>
- [49]. S. Gowthami, S. V. (2016, March). Impact of Smartphone :A pilot study on positive and negative effects. *Volume-2*(Issue-3). Retrieved from <http://ijseas.com/volume2/v2i3/ijseas20160353.pdf>
- [50]. S.BHUVANESWARI. (2016). A study on mobile phone usage among college students in Palakkad. *Vol-2*(Issue-5). Retrieved from http://ijariie.com/AdminUploadPdf/A_STUDY_ON_MOBILE_PHONE_USAGE_AMONG_COLLEGE_STUDENTS_IN_PALAKKAD_ijariie3075.pdf
- [51]. Sally Wilson, G. M. (2010). The mobile university: from the library to the campus. Retrieved from <https://www.emeraldinsight.com/doi/full/10.1108/00907321011044990>
- [52]. Saraswathi, S. (2016). Smartphone Usage Among Students. *International Education and Research Journal*, *3*(6).
- [53]. Sasson, R. (2018, March). https://www.successconsciousness.com/ebooks_benefits.htm. Retrieved from https://www.successconsciousness.com/ebooks_benefits.htm.
- [54]. *Shodhganga*. (2018, April). Retrieved from <http://shodhganga.inflibnet.ac.in>:
<http://shodhganga.inflibnet.ac.in>
- [55]. *Smartphone*. (2018, Feburary). Retrieved from <https://en.wikipedia.org/wiki/Smartphone>.
- [56]. *Smartphone Essay - Importance of Smart Phones*. (2018, Feburary). Retrieved from <https://www.ukessays.com/essays/information-technology/importance-of-smart-phones-in-daily-life-information-technology-essay.php>.
- [57]. Suki, N. M. (2007). Mobile phone usage for m- learning: comparing heavy and light mobile phone users. *24* (5), 355-365. Retrieved from <https://www.emeraldinsight.com/doi/full/10.1108/10650740710835779>
- [58]. *The Use of Smartphone in Accessing Information*. (2018, Feburary). Retrieved from <http://repository.library.du.ac.bd:8080/bitstream/123456789/689/1/Emran%20Hossain.pdf>.

- [59]. V.S.Ramachandran. (2012). *The Tell-Tale Brain* (2nd ed.). Vintage Books.
- [60]. Wei, T.-P. L.-P. (2018, March). Introduction to the Special Issue: Mobile Commerce. Retrieved from <https://pdfs.semanticscholar.org/56bb/8a2b3f81b62560d366552491faa37d31795e.pdf>
- [61]. Wei, T.-P. L.-P. (n.d.). Introduction to the Special Issue: Mobile Commerce Applications. Retrieved from <https://pdfs.semanticscholar.org/56bb/8a2b3f81b62560d366552491faa37d31795e.pdf>
- [62]. Wenwei, H. D. (2012). Unstructured queries based on mobile user context. 8(4), 368-394.
- [63]. Wilds, T. (1961). Information Rerteival.
- [64]. Yuan, x. (2014). Applying an information-seeking dialogue model in an interactive information retrieval system. Retrieved from <http://www.emeraldinsight.com/doi/full/10.1108/JD-06-2013-0079>