Trends in Information Management (TRIM)
ISSN: 0973-4163
11(1), pp. 111-119

Preferential Places and Gadgets for Accessing e-resources in Agricultural Libraries of Northern India

Nazir Ahmad Bhat
Shabir Ahmad Ganaie

Abstract

Purpose: *The study was conducted to assess the preference of the places and gadgets with respect to the use electronic information resources (EIRs).*

Design/methodology/approach: *Using qquestionnaire as data collection tool, seven sampled universities were surveyed personally. Face to face interaction was also made with respondents to substantiate the responses and remove ambiguities thereof. Statistical Package for Social Science (SPSS) was used to make analysis of the data on empirical basis.*

Findings: *'Place of work' viz. department & office chamber and 'residence' viz. hostel and home prove to be most popular places to access EIR's. A good proportion of users access EIRs from library also. Majority of the users prefer to use e-resources via laptop, but smart phones and desktops are also used by a good number of users. The newly emerged devices, i.e. 'tablets' and 'e-book readers' are not much popular.*

Research limitations: *Study has been conducted on e-resources only. Response to a similar set of questions need to be collected from same library users to consolidate the facts about print form of information and thus carryout a comparative study.*

Originality/value: *This is first work of its nature in Northern India with domain as agricultural libraries. The outcome of the study may provide a thought for the librarians to facilitate adequate, smooth and reliable access to EIRs from places of work and residence and strengthen browsing opportunities and Internet connectivity.*

Keywords: *Electronic information resources (EIRs); Electronic resources; Electronic gadgets; Smart phones; Tablets and e-book readers; Northern India-Agricultural libraries*

Paper type: *Research Article*

Introduction

The prime objective of a library is to identify the information, specific & relevant to the needs of its clientele; acquire the identified information; organize the acquired information by passing it through a series of technical processes; facilitate easy, economical, fast & reliable search, retrieval and access to the organised information for meeting the demands of users at appropriate time & in shortest possible time. Finally, the libraries aim to deliver the information to the demanding users at appropriate place of access through a convenient mode and in a preferable format. The electronic availability of information and incorporation of various Information Communication

Technology (ICT) tools and techniques in the library architecture has revolutionised the scenario in libraries. However, in this changing scenario libraries seem to be more dependent on technology and thus the rendering of library services is becoming more costly than print era. It is not possible for a user to read directly from an electronic form of information resource through a naked eye but needs some reading aid for the purpose. This given birth to a series of reading aids, which among others include desktop, laptops, smart phones and the like.

It is now an admitted fact that the advent of e-resources in association with the ICT developments has carved out better and extensive opportunities for users to gain access to information and as such has laid an impact on the choice of users so far as the *places wherefrom they tend to access* and the *gadgets they use* for the purpose are concerned **(RIN and CIBER, 2011; Chirra & Madhusudhan, 2009, etc.)**. Libraries thus cannot ignore the change registered in behaviour of users with respect to these two aspects. It is in this context that an effort is made *to identify the most preferential place(s)* and the *gadget(s) of accessing EIR's from the users' point of view.* The outcome may enable the authorities to make efficient planning with regard to arrangements to be made in respect of the preferred place(s) and gadget(s) of access. The findings may provide them with logical facts to architect and develop the required browsing & networking infrastructure necessary for outreaching the end users at their preferred place(s) of access, facilitate the users with preferred gadget(s) of access, and at the same time ensure that information can be displayed over the newly emerging devices of access likely to gain popularity in future.

Review of literature

In context with the place where from users tend to gain access and use the EIRs, the **Research Information Network & Centre for Information Behaviour and the Evaluation of Research (2011)** are of the view that "nowadays the researchers seek to obtain & use the sources of information mostly *'outside the library'*, whether in the computer lab, the office, at home or on the move. Only a small percentage of users, mostly from the humanities, visit the library building to browse or to read hard copy of journals". **Melo (2013)** explored that users from the *Engineering, Humanities* and *Social Science* disciplines are the ones who mostly *use e-resources* within the premises of the *university libraries*. The users from *Science streams* like Mathematics, Physics & Chemistry, Biology, etc. are the least visitors of libraries. It is because they remain busy in laboratories and usually need to work in the fields and even outside the university campus, therefore do not find time to visit their libraries".

Chirra and Madhusudhan (2009) have also recorded that *majority of Doctoral students* access e-journals from *departmental computer labs*, followed by the *university library* and computer centre. One more study also indicates that *majority* of users access the e-resources from the *departments*, followed by the *hostels*, *computer centres* with least priority to the library **(Kaur & Verma, 2009)**. **Trivedi and Joshi (2009)** found that *most of the research scholars* were referring to e-journals from their *departmental library* as well as the *computer centre* in the central library. *Majority of users* from The Essential Electronic Agricultural Library (TEEAL) search information from their *offices* or *chambers* and come to the library only when they need to print full-text of articles **(Salaam & Aderibigbe, 2010)**. *Majority of the users* of the scholars portal resources across OCUL were observed to make its use from *off-campus locations* **(Davidson & Kyrillidou, 2010)**. **Jagboro (2003)** reports that respondents access electronic resources from *cybercafes*.

Objectives

- To assess the popularity of the places of access with respect to EIRs;
- To identify the much popular gadgets used to access EIRs;
- To examine the similarities/dissimilarities among different categories of users with respect to both places and gadgets in terms of accessing the EIR's.

Scope and methodology

The study was conducted with main focus on the agricultural libraries of Northern India. Four out of seven States of Northern India, viz. *Delhi, Himachal Pradesh (HP), Jammu & Kashmir (J&K)* and *Punjab,* were selected randomly as a sample for investigation. Seven well established agricultural universities/deemed to be universities existing in the sampled out states were taken into study. They were:

1. Indian Agricultural Research Institute (IARI), New Delhi;
2. Chowdhury Sarwan Kumar Himachal Pradesh Krishi Vishvavidyalaya (CSKHPKV), Himachal Pradesh;
3. Dr. Y.S. Parmar University of Horticulture and Forestry (DYSPUH&F), Himachal Pradesh;
4. Sher-e-Kashmir University of Agricultural Science & Technology of Jammu (SKUAST-J), Jammu & Kashmir;
5. Sher-e-Kashmir University of Agricultural Science & Technology of Kashmir (SKUAST-K), Jammu & Kashmir;
6. Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana (GADVASU), Punjab; and
7. Punjab Agricultural University (PAU), Punjab.

Three categories of users, viz. scientists (faculty members), PhD scholars and Masters' students were only covered in this study.

A survey was conducted across the universities using questionnaire as a data collection tool. The investigators also interacted with the respondents through telephone and also availed the e-mail service correspondence for ascertaining timely response and clearing doubts of the collected responses.

The data collected through the survey was processed with the help of Statistical Package for Social Science (SPSS). In order to convert the data into meaningful information and draw necessary inferences, the data about each entity was codified into meaningful numerical and alphabetical codes. The values were entered in the form of standardized codes to avoid misinterpretation and spelling errors.

Data analysis and interpretation

The data analysis was carried out under two sub-headings:

- Popular places of access & use, and
- Popular gadgets of access & use

Popular places of access & use

Library (ARIS Centre) with 47.42% of user indication ranks 1st for access & use of e-resources. However, if 'department/division' and 'office chamber' are collectively taken as *'place of work'* and the 'hostel' and 'home' collectively as *'residence'*, they prove to be most popular places of access with a user base of *58.83%* and *68.25%,* respectively. *Internet Cafe,* the most commonly used and the only option of initial years of advent of Internet seems to have lost its importance, as *only 6.25%* users have expressed to use it as a place to access e-resources (Table 1).

Table 1: Popularity of place of access & use with respect to e-resources (n=1200)

Place of Use	Frequency	Rank
Library (ARIS Centre[#])	569[*] (47.42%)	1
Department/ Division	498 (41.50%)	2
Hostel	453 (37.75%)	3
Home	399 (33.25%)	4
Office chamber	208 (17.33%)	5
Internet Café	075 (06.25%)	6

[*]*Respondents have opted for more than one place*

[#]*ARIS Centre: Agricultural Research Information System sponsored by ICAR and mostly existing as a part of agricultural libraries*

A deeper analysis of the data shows that only 43% of users use a single place to access and use e-resources, whereas majority of users (57%) use more than one destination simultaneously. Forty such combinations are observed out of which the combinations with maximum score are shown in Table 2.

Table 2 displays that the combination *'Library (ARIS Centre)'* and *'hostel'* is the most preferred combination as marked by 95 (i.e. 7.8%) users followed by a three place combination i.e. *'Library (ARIS Centre)', 'department/division'* and *'hostel'* marked by 84 (i.e. 7.1%) users.

Table 2: Combinations about different places of use (n=1200)

Rank	Combinations of places	Frequency	Percentage
1	Single Place	516	43
2	Library (ARIS Centre) & Hostel	94	7.8
3	Library (ARIS Centre), Deptt/Division & Hostel	84	7.1
4	Deptt/Division & Home	64	5.3
5	Office Chamber & Home	62	5.2
6	Deptt/Division & Hostel	61	5.1
7	Other combinations	329	26.5
	Total	**1200**	**100**

Popular gadgets of access & use

'Laptops' prove to be the *preferential* gadgets as 79*.83%* of users are seen to use the same for accessing the e-resources followed by *'mobile phones'* (52.42%) and the *'desktop'* (47.17%) respectively. However, *'tablets'* and *'eBook readers'* are not popular among users (Table 3).

Table 3: Gadgets used for accessing and using the e-resources (n=1200)

Gadgets Used	Frequency*	Rank
Laptop	958 (79.83%)	1
Mobile	629 (52.42%)	2
Desktop	566 (47.17%)	3
Tablet	089 (07.42%)	4
eBook reader	039 (03.25%)	5

** Respondents opted for more than one gadget*

The data on further analysis reveals that only 38.90% of users use a single gadget to access e-resources, while majority of them (61.10%)

simultaneously use more than one gadget for accessing the e-resources. Eighteen combinations are traced among the multiple gadget use options, among which 8 prefer to use two gadgets, 6 use three gadgets, 3 use four and 1 group uses all the five gadgets. Data about 9 highly used combinations is presented in Table 4).

It is observed from Table 4 that the combination *'laptop' and 'mobile'* with 268 (22.10%) users and *'desktop', 'laptop' and 'mobile'* with 166 (16.30%) remain the most popular combinations with the combination *'desktop' and 'laptop'* used by 99 (8.30%) users ranks 3rd.

Table 4: Combinations about different gadgets of access (n=1200)

Combinations of gadgets	Frequency	Percentage
Single gadget	467	38.9
Laptop & Mobile	268	22.3
Desktop, Laptop & Mobile	196	16.3
Desktop & Laptop	99	8.3
Desktop & Mobile	51	4.3
Laptop, Tablet & Mobile	28	2.3
Desktop, Laptop, Tablet, & Mobile	25	2.1
Other combinations	66	5.43
Total	**1200**	**100**

Findings and Discussion

'Place of work' viz. department & *office chamber* and *'residence' viz. hostel* and *home* prove to be *most popular* places for accessing e-resources. A *good percentage of users (47.42%)* are observed to access and use e-resources from *'Library'*. However, *'Internet Café',* seems to have *lost its importance*, as it is observed to be used by a meager proportion of respondents. These findings are in tune with the overall trend noted across India by a number of research studies **(Chirra & Madhusudhan, 2009; Davidson & Kyrillidou, 2010; Kaur & Verma, 2009; Kumar & Kumar, 2013; Trivedi & Joshi, 2008).**

The fact that only *47.42%* of the users are observed to use *'library as a place of access'* should not disappoint the authorities as the major reason explored, upon minutely assessing the situation, is that *nature of access* has registered a remarkable *change*. The *users now need not* to *physically visit the libraries* to collect and use the information resources, which happened to be the only way out in print era. Users can now, rather prefer, to access and use the information resources from their *work places* and even from their *residence* like that of *home, hostel* or *staff*

quarters, as also revealed by the findings of **Davidson and Kyrillidou (2010); Melo (2013)** and **RIN and CIBER (2011)**.

The information generated by analysing data about the electronic gadgets used for accessing the e-resources, depicts that the *'laptops'* proves to be the *most popular gadgets*. At the same time *'mobile phones'* and the *'desktops'* are also seen to be used by a *good %age* of users. However, *'tablets'* and *'e-Book readers' are not much popular* among users of North Indian agricultural libraries. It is thus comprehended that *users prefer to use light weight and portable devices* to access and use the e-resources. The reason for using these devices may be their battery backup and portability features, which the heavy & fixed devices lack.

Conclusion

The availability of information sources in electronic form and the advent of a number of ICT avenues have revolutionized the accessibility of information resources as it has enabled the users to access the required information irrespective of any binding on time and place. The accessibility has really become unimaginably high and has laid tremendous impact on the mindset of users. They are now little interested to visit the libraries and prefer to access the information at their *place of work viz. department* & *office chamber* and *residence viz. hostel* and *home*. The users prefer to use *light weight* and *portable devices* like that of *Laptops/Smart Phones* to access and use the e-resources and the importance of heavy and fixed devices (desktops) is lessening day by day.

Suggestions

1. Libraries need to create adequate facilities for smooth and reliable access to e-resources from places other than library premises especially from work places and residences of users. As such they may have to establish adequate number of browsing nodes by laying extensive wired networks or establishing the wireless connectivity through *WiFi* / *Infra Red* technology.
2. Libraries should take utmost care that their information resources are smoothly accessible and usable across light weight devices like that of smart phones, tablets, e-document readers, etc. Libraries should also ensure that all of their EIR's are operable over smart phones as users are seen scanning through and browsing across their smart phones touch screens at hostels, at home, while travelling or even at a run.

References

Chirra, R. & Madhusudhan, M. (2009). Use of electronic journals by doctoral research scholars of Goa University, India. *Library Hi Tech News, 26* (10), 12-15.

Davidson, C. & Kyrillidou, M. (2010). The Value of Electronic Resources: Measuring the Impact of Networked Electronic Services (MINES for Libraries®) at the Ontario Council of University Libraries. In *Research Library Issues: A Bimonthly Report from ARL, CNI, and SPARC, no. 271* (pp. 41-47). Retrieved from http://www.arl.org/resources/pubs/rli /archive/rli271.shtml.

Jagboro, K. O. (2003). A study of internet usage in Nigerian universities: A case study of Obafemi Awolowo University, Ile–Ife, Nigeria. *First Monday, 8*(2). Retrieved from http: //Firstmonday.Org/Issues/Issue8_2/Jagboro/Index.html

Kaur, B. & Verma, R. (2009). Use of electronic information resources: A case study of Thapar University. *DESIDOC Journal of Library and Information Technology, 29*(2), 67-73.

Kumar, B. T. S. & Kumar, G. T. (2013). Search engines and their search strategies: The effective use by Indian academics. *Program: electronic library and information systems, 47*(4), 437–449. DOI: 10.1108/PROG-03-2012-0009

Melo, L. B. (2013). The impact of electronic information resources in Portuguese academic libraries. In *Proceedings of the International Conference on QQML2010, Chania, Crete, Greece, 25-28 May 2010.* Singapore: World Scientific.

Research Information Network (RIN) & Centre for Information Behaviour and the Evaluation of Research (CIBER), (2011). *E-journals: Their use, value and impact: Final report.* London: Research Information Network. Retrieved from www.ucl.ac.uk/infostudies/research/ciber /Ejournals2.pdf

Salaam, M. O. & Aderibigbe, N. A. (2010). Awareness and utilization of The Essential Electronic Agricultural Library by academic staff: A case study of University of Agriculture, Abeokuta, Nigeria. *Chinese Librarianship: An International Electronic Journal, 30.* Retrieved from http://www.iclc.us/cliej/cl30SA.pdf

Trivedi, M. & Joshi, A. (2009). Usage of electronic journals (e-journals) versus print journals by healthcare professionals in H M Patel Centre for Medical Care and Education (HMPCME). *Journal of Health Informatics in Developing Countries, 3*(1), 13-16. Retrieved from http://www.jhidc.org/index.php/jhidc/issue/view/6

Corresponding author:
Nazir Ahmad Bhat can be contacted at: bhatnazeerahmad@gmail.com

Author biographies

Nazir Ahmad Bhat is a Science graduate with Master's and Doctorate in Library and Information Science from University of Kashmir. Dr. Nazir started his career as Library and Information Assistant in All India Radio (Prasar Bharati) and has also worked as college librarian. He is currently working as an Assistant Librarian at Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir (SKUAST-K). The author has thirteen publications to his credit (10 research articles in peer reviewed journals and three in proceedings of international/national conferences). Author has also designed and developed a soft solution for storage, indexing, retrieval and delivery of information about research articles available in print only format of journals in SKUAST-K Library System. The author has also developed the Institutional Repository at SKUAST-K.

Shabir Ahmad Ganaie is Sr. Assistant Professor in the Department of Library and Information Science, University of Kashmir, India. His research interests include knowledge management, library networking, public libraries and Health Information Systems. He has authored many research papers in national and international journals.