E-RESOURCES OF INFORMATION : A STUDY OF ATTITUDES OF RESEARCH SCHOLARS

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Abstract

Research is an important activity for the development of scientific and technical knowledge. It is the gateway to the development of theoretical knowledge, practical skills and technical know how in any discipline. Universities are the centers of higher education and research. The libraries attached to the Universities have to deal with the needs of the researchers in various disciplines. It is the responsibility of the University libraries to provide the information requirements of the researchers from time to time. In this paper, the authors have made an attempt to know the attitudes of the research scholars towards electronic resources in the Universities in Karnataka. Survey method using questionnaire as the tool is employed to collect data. The collected data are analysed and interpretation is drawn. Suggestions and findings are presented at the end.

Keywords: E-resources/ Research Scholars/ University libraries/ Changing Information Environment.

1. Introduction

The progress of any country depends upon the contributions of creative people. Such contributions come from original thinkers, scientists, artists and persons who think of innovative ways and procedures of doing things or solving problems. People strive to acquire knowledge to make use of the vast national resources available to them. Thus, every piece of knowledge so acquired enables them to explore the national resources and convert them into commodities which satisfy the needs of life. This is due to the nature of human mind involved in research. So, research is the key factor for development of scientific and technical knowledge happens to be an important activity. It is the gateway to the development of theoretical knowledge, practical skills and technical know-how in any discipline. The results of research – new innovations and inventions- are the stepping stones by which society climbs to the more abundant and comfortable life. Thus the progress and prosperity of a society largely depends on its capacity to produce scientific and technical knowledge and use of such knowledge in a productive way.

S. R. Ranganathan(Ranganathan, 1967), an international authority and father of library science in India defines in his characteristic style as “Research is critical and

exhaustive investigation to discover new facts, to interpret them in the light of known ideas- laws and theories- to revise the current laws and theories in the light of newly discovered facts, and to apply the conclusions to some practical purposes. The findings of research are deposited in the internal memories of individuals, and also to the externalized memory of society which books, periodicals and other micro-documents represent. J. H. Shera(Shera, 1972) writes that research is, "an intellectual process whereby a problem is perceived, divided into its constituent elements, and analysed in the light of certain basic assumptions: valid and relevant data are collected; hypotheses(if any), are through objective testing rejected, amended, or proved. The generalisable results of this process, qualify as principles, laws or truths that contribute to man's understanding of himself, his works or his environment". In other words, research is an intellectual, careful, ordered, reflective, and a systematic attempt to discover new facts or sets of facts, or new relationships among facts, through the formation of preliminary explanation or hypothesis which is subjected to an appropriate investigation for validation or disproof. Busha(Busha, 1978) defines research as "...any systematic quest for knowledge that is characterized by disciplined inquiry". According to Best(Best, 1970), Research is a more systematic activity directed towards discovery and development of an organized body of knowledge. It is based on critical analysis of hypothetical propositions for the purpose of establishing cause-effect relationships, which must be tested against objective reality".

2. Role of University Libraries in Research

Libraries are the direct incentives to the development of educational, social and cultural activities in a nation. They transfer the knowledge and culture from one generation to other. They contribute a lot to the awakening of public in day-to-day life. In the words of Ranganathan father of library movement in India, libraries are not merely the store houses; they are rich springs from which knowledge flows out to irrigate the field of education and culture. So, libraries are an integral part of the academic mission of a university. A university library, there fore, inevitably becomes an intellectual arena, and a place for the bounds of knowledge is being perpetually extended. It acts as a meeting place of enquiring minds- those of authors and readers. Since in a university even teaching is a part of research, and research is unthinkable without a complete library, the latter occupies a place of significance in any university. There fore, the library can enhance a university's reputation by providing access to world-class information resources and services and can help to stimulate research by promoting collections and services widely. Libraries are part of the research culture of a university. They play a pivotal role in ensuring the success of higher degree of research students and there fore, success of universities.

The doctoral studies which deal with new ideas, which not previously treated, and so these are the sources of original work. So, library is the partner-in-progress in providing information supports for research. Adequate library and information support enables them to obtain good results in research work without wasting much of their valuable time. In the absence of such information resources, the research work leads to duplication of work, wasting of time and human potential, which are very valuable.

3. Libraries in the Changing Information Environment:

Information is an amorphous concept, less susceptible to a definition. Yet, every one has to deal with it in many ways throughout one's life. Indeed information has been described as the fifth need of man ranking after air, water, food and shelter. Information collection, transfer and use are all pervasive and universal activities in all walks of life.

In this information explosion era, libraries play a pivotal role in preserving and serving the information requirements of the users. In the present scenario, libraries are the main facilitators in the scholarly communication system. The information is generated from the laboratories, research and development establishments, universities, etc by the authors, editors, printers, publishers, distributors, etc. The communicated information have been selected, acquired, processed, stored and retrieved by the library for current use and for prosperity. Therefore the library is a place where books and publications are kept for information reading and reference purposes. It is the heart of an institution, mind of society and nerve center of an organization. It is a center of learning and a clearing house of information dissemination.

Once a philosopher was asked what is the permanent thing on this earth? He answered aptly but philosophically that "change is the only permanent thing on the earth". Everybody realizes that from the time of one's birth, a person witnesses change". Accelerating change has brought libraries and librarians to the threshold of a new era. Electronic information technologies are diminishing the central role of traditional libraries. Libraries need to accept and shape their responsibilities as information specialists in the new paradigm. Due to information explosion, the traditional library services such as reference services and "selective dissemination of information" need to be supplemented by "selective elimination of information", the evaluation of information to separate quality information from junk

In the changing information environment, the influence of new information technologies in libraries has proved the concept of library-in-a-desk, a reality. This revolutionary concept which envisages, paperless information system has brought in drastic changes in library services. The old manually operated, lethargic library services are diminishing day-to-day, giving rise to modern and dynamic library services as libraries without walls providing access to: world information, and to the most up-to-date and comprehensive information resources.

Libraries are also confronted with an explosion of information in both printed and electronic formats and a plethora of newly arising publishers and aggregators of digital services and resources. Evidences(Group, 2002) suggest that the number of electronic resources being submitted by voluntary deposit to the British Library and to the other UK legal libraries is increasing. The number of purely electronic submissions appears to be increasing at the significant rate, though it is not clear at this stage how these submissions break down into the categories of scholarly journals or grey literature.

In today's information age, the pool of information available continues to expand enormously. The Information and Communication Technologies (ICT) and in particular the internet has transformed the way we create, transmit, store, process and manipulate information. It has been seen that from the world statistics on internet usage that there are 1,09,31,99,895 internet users in the world(www.internetworldstat.com/blog.htm). Compared with other information resources, electronic networking offers advantages like expansion of information sources, timeliness of information and availability of information in digital format. As a result the preferences of information seekers are shifting towards digital resources.

While writing on Academic Libraries, Bergman(Bergman, 2000) notes that "a common electronic gateway may enable access to a wide array of systems and services. From computers in the library, in offices, in dormitories, in homes, in hotels or elsewhere, member of the University community can identify what resources are owned by the institution, what is in order, and which physical materials currently are on loan to other borrowers,... through a library or university gateway".

4. Objectives of the Study

The objectives of the present study are to find out the attitudes of the research scholars of Humanities, Social Science and Science disciplines in using the electronic resources in the academic Universities of Karnataka State.

The main objectives of the study are

1. To assess the preference of electronic resources by the research scholars,
2. To know the opinion on e-resources in searching information,
3. To find out the effect of e-resources on quality of research,
4. To identify areas of training requirements of the research scholars in the electronic era.

5. Scope and Limitations of the Study

The present study aims to cover the research scholars who are pursuing research at doctoral degree level. Only full time research scholars are considered for the data collection. Geographically the scope of the study covers the six general Universities (Bangalore University, Gulbarga University, Karnatak University, Kuvempu University, Mangalore University and University of Mysore) in Karnataka State which have doctoral degree programmes in Humanities, Social Sciences and Sciences.

6. Methodology Adopted for the Study

The study is mainly based on the primary data. The investigator began the study with the literature search on the topic. The LISA database from the beginning to 2005 was searched using CD-ROM facility. Important references were collected and reviewed.

To cover local and regional literature on the theme, indexes and bibliographies available were scanned. On the basis of these searches important texts and primary sources were gathered and studied in detail. It was planned to consider three disciplines such as Sciences, Social Sciences and Humanities for the survey. The division of subjects into three disciplines was made based on Wikipedia Encyclopaedia("Wikipedia Encyclopedia"). In order to achieve the objectives of the study, a structured questionnaire was constructed for the purpose. The investigators have planned to collect data from all the fulltime research scholars. So they personally administered the questionnaire and collected the primary data. Total 845 responses have been collected.

7. Data Analysis

An analysis and interpretation of data collected through the questionnaire was attempted. The main purpose of the questionnaire was to collect the details about the attitudes of the research scholars towards electronic resources in the general universities in Karnataka. The questionnaire also provides data on the preference of e-resources, effect of e-resources on the quality of research and also the training requirements on the use of e-resources.

7.1 Data Collection

The analysis and interpretation of data are done based on the responses received from the research scholars. Statistical Package for Social Sciences (SPSS) was used to feed and analysis the data.

Table1 Responses of the Study Population

Universities	Discipline			Total	Percentage
	Humanities	Social Science	Sciences		
Bangalore	48	42	90	180	21.3
Gulbarga	35	59	62	156	18.46
Karnatak	39	47	79	164	19.4
Kuvempu	12	9	55	76	8.99
Mangalore	12	27	48	87	10.29
Mysore	31	30	120	181	21.42
Total	177(20.94%)	214(25.33%)	454(53.73%)	845(100%)	100

The table 1 provides the responses received from the research scholars from six Universities of Karnataka state. It is clear that majority of the research scholars belong to science discipline who represent 53.73% (454) and 20.94%(177) and 25.33%(214) belong to humanities and social science disciplines respectively. The highest number of responses received from University of Mysore, which represents 21.42%(181) of the total responses. Kuvempu University has the least representation. While looking at the discipline wise, in humanities, Bangalore University (48) has the highest responses,

where as in social sciences Gulbarga University represents highest researcher scholars with 59 responses. In science discipline, University of Mysore has the highest number(120) of responses.

7.2 Preference of E-resources by the Researchers:

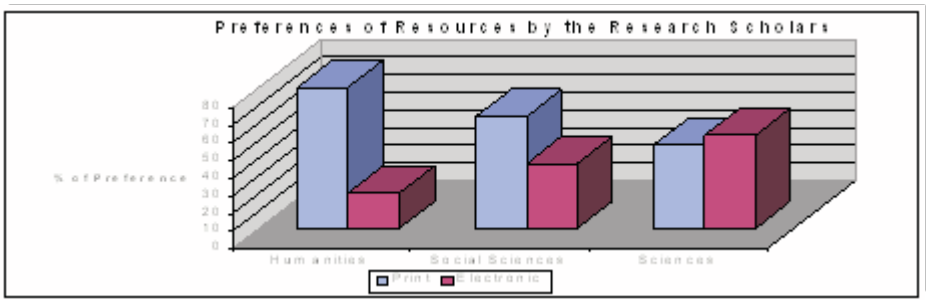
The use of electronic resources is the need of the hour of the present days. If we observe the publication pattern of the developed countries, majority of the publications are in electronic form where as in India, the trend is yet to emerge.

Table 2 : Preference of Resources by the Researchers

Resources	Minimum	Maximum	Mean Value	Std Deviation
Print	0	100	58	23.866
Electronic	0	100	42	23.825

The research scholars have been asked about their preference over print and electronic resources required for their research work. It has been observed that the mean value of the printed resources over the electronic resources varies. The research scholars prefer to use print resources than electronic resources. The table 2 gives the over all mean value of 58 and 42 for printed and electronic resources respectively. This shows the significant value of print resources over e-resources.

The following graph shows the preference of print and electronic resources by the research scholars in various disciplines.



The table 3 and 4 present the discipline-wise preference of resources based on the distribution of mean value. In the table 3 the mean percentage of print resources is 79.60746 in humanities disciplines, where as it is 63.0935 and 47.0749 in case of social science and science disciplines respectively. On the basis of probability 'p' value which is less than 001, in humanities discipline, the mean percentage of print resources show very highly significant which is different from social sciences and science disciplines. This means the humanities researchers are using print resources more than e-resources.

Table 3 : Discipline-wise Preference of Print-resources by the Researchers

Discipline	N	Mean	Std Deviation	Minimum	Maximum
Humanities	177	79.8701	17.60746	20.00	100.00
Social Sciences	214	63.0935	18.45132	10.00	100.00

F = 180.756 p=.001 vhs

Similarly the table 4 presents the discipline-wise distribution of mean percentage of the preference of the e-resources. The mean value of e-resources is 52.9251 in science discipline where as it is 20.0734 and 36.9065 in case of humanities and social science disciplines respectively. On the basis of probability 'p' value which is less than 001, shows that in science discipline, the mean percentage of e-resources is very highly significant which is different from humanities and social sciences disciplines which shows the e-resources are highly used by the science researchers.

Table 4 : Discipline-wise Preference of E-resources by the Researchers

Discipline	N	Mean	Std Deviation	Minimum	Maximum
Humanities	177	20.0734	17.26565	.00	70.00
Social Sciences	214	36.9065	18.45132	.00	90.00
Sciences	454	52.9251	21.49190	.00	100.00

F=182.444 p=.001 vhs

7.3 Opinion on E-resources in Searching the Information

An opinion was collected from the respondents, whether the electronic resources have changed their way in searching the information. Majority of the respondents favoured the usefulness of the electronic resources and agreed that they have changed their way of finding the information. It is evident from the table 5 that out of 845(100%) respondents in an average 89.23%(754) research scholars opined that there is an influence of the electronic resources in finding the information compared with print forms of information resources. In humanities 70.62%(125) of the respondents opined that the electronic resources have changed their way in finding the information. 90.19%(193) of social science and 96.03%(436) of science research scholars showed in more number who have expressed that the electronic resources have changed their way of finding the information. It shows that more number of science research scholars are using the electronic resources and the humanities research scholars are in the process of realizing the importance of electronic resources. If we analyse the data university-wise, 35 research scholars of Bangalore University in humanities, 54 from Gulbarga University in social sciences and 117 from University of Mysore in science disciplines who represent highest number in each discipline have opined that the e-resources have changed their in finding the information.

Table 5 : Opinion on E-resources in Searching the Information

Universities	Discipline			Total	Percentage
	Humanities	Social Science	Sciences		
Bangalore	35	37	84	156	86.70
Gulbarga	26	54	59	139	89.10
Karnatak	24	39	77	140	84.80
Kuvempu	9	7	52	68	89.50
Mangalore	8	27	47	82	94.30
Mysore	23	29	117	169	93.40
Total	125(70.62)	193(90.19)	436(96.03)	754	89.23

7.4 Effect of E-resources on the Quality of Research

Latest and up to date information is available in the form of electronic resources due to internet and Information Communication and Technologies (ICT). This will definitely have an impact on the quality of research. A question was asked about the effectiveness of the e-resources on the quality of research. The respondents were asked to answer in five point scale. In general 32.19 %(272) of the research scholars said that the electronic resources have helped to improve the quality of research. Majority(58) of the humanities research scholars said that the electronic resources have moderately improved their quality of research. Where as 72 respondents in social science responded that the electronic resources have improved the quality of their research. In science discipline 165 of the research scholars viewed that the electronic resources have highly improved the quality of their research. This shows that more and better facilities to access electronic resources should be provided to the research scholars. The results are evident from the table 6.

Table 6 : Effect of E-resources on the Quality of Research

Opinion	Discipline			Total	Percentage
	Humanities	Social Science	Sciences		
Not at all improved	23	7	8	38	4.50
Very well Improved	30	31	36	97	11.48
Moderately Improved	58	68	97	223	26.39
Improved	52	72	148	272	32.19
Highly improved	14	36	165	215	25.44
Total	177	214	454	845	100.00

7.5 Areas of Training Requirements in the use of E-resources:

The training is an important aspect in the libraries on the use of library resources, facilities and services. In advanced countries the libraries provide training programmes from basic library orientation to an advanced information access techniques. Since electronic resources are the new aspect in Indian scenario, awareness and training on the use of these resources is very important. An opinion was asked from the research scholars regarding their training requirements on the use of electronic resources. The researchers expressed their different areas for training requirements. Six aspects are considered for the study. Table 7 provides the training requirements of the research scholars in various disciplines. Out of 845(100%) respondents, 'The online search and retrieval skills" have scored highest 78.20%(661), followed by 73.40%(620) of the research scholars who favoured "access to library resources". 49%(414) research scholars opined that they need training on "how to write reference and citations". In all the disciplines, majority of the research scholars have favoured the need for training programmes on the use of electronic resources.

Table 7 : Areas of Training Requirements in the use of E-resources

Areas of Training	Discipline			Total
	Humanities	Social Science	Sciences	
Access to library Resources	150	159	311	620(73.40%)
Online search and retrieval skills	132	167	362	661(78.20%)
CD-ROM search and retrieval skills	105	154	271	530(62.70%)
How to filter resources effectively	101	147	265	513(60.70%)
To access articles published in particular disciplines	57	81	161	299(35.40)
How to write reference and citations	100	110	204	414(49%)

8. Summary of Findings

On the basis of the responses received from the respondents the following important findings can be noted.

From the study, in general majority of the research scholars prefer printed forms of information

Science research scholars depend more on electronic resources compared to humanities and social sciences.

It is observed that majority of the research scholars have needed electronic resources for their research and due to it they have improved the quality of research.

The researchers opined that the electronic resources have changed their way in searching the information and made their way more easier to collect the required information

In all disciplines, the research scholars expressed that they need training programme for the proper utilization of the resources, facilities and services.

The most likely areas for training are- access to library resources, online search and retrieval skills, CD-ROM search and retrieval skills, how to filter resources effectively, how to access articles published in particular disciplines and how to write reference and citations.

9. Conclusion

Research is the key factor for the development of knowledge in all the disciplines. Universities are the centers of research. The University libraries play an important role in providing the information. The requirements of the researchers should be given priority. In the changing information environment, electronic resources are claiming its importance in the research activities. In the developing countries like India, the researchers have realized the importance of the electronic resources. It was evident from the study that science discipline researchers are more conversant with the use of electronic resources. Majority of the research scholars are interested to get various training programmes related to access and use e-resources for their research. The use of e-resources can be improved by providing proper training programmes to the researchers in all disciplines.

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