

Consequence of technology transform on information seeking habits of individuals

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ABSTRACT

The performed study analyzes the consequence of information technology on information seeking behaviors of users of selected stated university of Tamil Nadu. A questionnaire was prepared and hand out among the faculty, research scholar students of the sample universities the result of the study provides the information about the respondents opinion recording their information gathering habits, usefulness of training programme, ICT facilities in their library and made of obtaining journal articles for their study and research.

Keywords: Information technology, information seeking behavior, electronic dissemination of information, ICT facilities.

INTRODUCTION

Information seeking is a basic activity pampered in by all people and manifested through a particular way of behavior. It is also an aspect of scholarly work most interesting to academic librarians who strive to develop collections, services, and organizational structures that facilitate seeking of information. Few studies have been done in the area of information-gathering practices of interdisciplinary scientists. The recent literature of library and information science, while concerned with improving access and use of information, tends to focus more on rising electronic services than exploring existing needs. There is a small body of literature on the needs of scientists, but the articles tend to focus on specific scientists biologists, chemists, physicists and tend to have been written between 6 and 16 years ago. There is a universal assumption that man was born innocent and should actively seek knowledge. 'Information seeking is thus a natural and necessary mechanism of human existence'. Information seeking behavior is the purposive seeking of information as a consequence of a need to satisfy some goal. In the course of seeking, the individual may interact with manual information systems such as a newspaper or a library, or with computer-based systems such as the Web. Information seeking behavior involves personal reasons for seeking information, the kinds of information which are being sought, and the ways and sources with which needed information is being sought.

Information seeking behavior is expressed in various forms, from reading printed material to research and experimentation. Scholars, students and faculty actively seek current information from the various media available in libraries, e.g. encyclopedias, journals and more currently, electronic media. Abels (2004) mentioned that the frequency of use of the internet in 1998-2000 had greatly increased. At the same time, expenditure on monographs showed steady increase. The library, therefore, is the most widely used source of information available to literate societies. The librarian should be aware of what kind of information is being sought, and how it can be obtained. Due to the rapidly escalating cost of purchasing and archiving printed scholarly journals and electronic media, the library has the duty to provide and maintain efficient services.

LITERATURE SURVEY

The literature is classified in three groups; digital information resources, information needs, and digital information seeking behavior.

Digital information resources: There are various researches have been conducted on the use of digital information resources by different researchers around the world. In 2013 Gakibayo et al. carried out a study at Mbarara University Library Uganda regarding the use of digital information resources by university students. Results were tabularized and it

shows that a large number of respondents were aware with the full use of technology in utilizing digital resources. The above research results ascertained that the use of digital resources in Mbrara University is frequent but to make their research more effective and useful they need advanced training for using digital resources. Natarajan et al. (2008) revealed the users of Annamalai University library were aware of digital journals only among all the other digital resources and 50% of the users are fulfilled from digital resources and it was also observed that digital journals were only source used comprehensively by users and the digital dictionaries and digital encyclopedias were the digital resources with the least usage. The study tells that users are not well aware with the provided resources and they cannot identify their actual need properly because of which the satisfaction is below average.

The use of internet based digital resources at Manipur University, India. This study identify the utilization, rationale, difficulties and satisfaction level of users about internet based digital resources services provided by the library and they conclude that low speed internet, irregular power supply and lack of required full text journals. According to findings the use of internet based digital resources by the students of Manipur University is not found very significant. The reason might be those problems which they are facing while accessing these resources (Singh, et al., 2007). In 2008 a survey was completed by H.R. and Mudhol was completed a survey at College of Fisheries, India. The research study revealed that respondents were highly satisfied about the level of access for the use of digital information sources. The study confirmed that the digital information sources users are very satisfied with their retrieved results and as the sample is limited to faculty, research scholars and post graduate students to the main reason for using digital information sources is the research in which they are currently involved. It seems that they are well aware with the usage of such digital resources. Mostafa (2013) carried out a survey at some selected private universities of Bangladesh about the use and impact of digital resources.

According to results, majority of the respondents gave preference to digital thesis among all other digital resources likewise digital books, digital newspapers and digital magazines. The study exposed the fact there are sufficient digital resources available in the campus and students use those digital resources frequently but is need to modify infrastructure and training courses as well. Okiki et al. (2011) had conducted a survey in Nigeria to determine the use of digital information sources by post graduate students in Nigeria. Results showed that a large number of respondents use digital information sources daily they are motivated to use digital information sources for their research projects. According to tabulated results show connection in a major problem faced by the respondents. The post graduate students in Nigeria are being motivated for the utilization of digital information resources because of which the use of digital information is found extraordinary among them.

Information Needs: Fabritius (1997) investigated the information seeking behaviour of journalists. The main purpose of the study was to investigate the role of digital information in journalism, how journalists use latest information technology and how new digital technologies sustain news reporting. The journalists' information searching behaviour was examined by means of major hierarchical aspects. Fabritius places information seeking and salvage into a wider framework which have an effect on the loom to information sources and application of information. Otiike (1999) revealed the information needs and seeking behaviour of lawyers in the United Kingdom (UK). The main objectives of the study were; discovering the nature of information lawyers acquire in the United Kingdom, to find the ways how lawyers recognize and retrieve any information and conclude the factors that manipulate their information needs and seeking habits. The findings of the study show that 53.8% of the lawyer community needs comprehensive information. Mostly lawyers acquire this information from review articles in research journals of law subject, law reports, or matters augment in text books. About 46% lawyers use concise and realistic information.

Digital information seeking behavior: Research in the domain of information needs, information seeking and information seeking behaviour started in early twentieth century. Whereas tracing the history of information seeking and behavioral studies, few studies were carried out in the early 1900s, Ayres and McKinnie in 1916 revealed the information seeking at the Cleveland Public Library. Tibbo informs that a distinguished production of studies on the subject take placed in the 1960s [e.g. a study by the American Psychological Association, 1963 - 1969 and Earle and Vickery's study in 1969]. Wilson (2000) discovered an early importance on the use of information systems with a more person-oriented approach growing later in the 1980s. Although early user centred research concerted on the scientific community, it rapidly expanded to integrate educational institutions to investigate students and staff's actions and inspirations when using the technology. According to Francis (2008), "Researchers and practitioners in the field of LIS have long held an importance in the information seeking behaviour of diverse patron groups.

Research in this part dates back to the 1940s and the deliberate was on scientists." Since then, studies rapidly improved, preliminary with those proposed to get better collection development, followed by folks that investigated the research behavior of individuals approach that observed the system as seen by the user Studies on web information seeking

behaviour emerged afterward, and many pen down the mid-90s as the exact initial point. Jansen & Spink (2004) propose that the most primitive studies of web searching behaviour in the mid-90s occurred as web search engine and web browser use began to grow, mainly in academic environments. Author discovered the behavioral outline with special reference to electronic databases and the World Wide Web. Different models of information seeking behaviour were presented and the complexities in the procedure of searching were explored. The purpose of the study was to examine the position of information searching character of the users on internet.

Data was collected using a questionnaire trailed by interview with users from five faculties. 188 users responded to the study. Study revealed that students use internet extensively, and it inhabits an important position with diverse sources. Study also revealed that electronic media has not substitutes print media. A study of Brazilian social sciences scholars found that, while print resources are still the most frequently used, electronic resources are becoming more and more accepted. Access to networked computers is the main barrier to the use of databases and other electronic resources. Francis (2005) focused on a study that explained the information seeking behavior of social sciences faculty at the University of the West Indies (UWI). One of this 2005 study's findings was that social scientists have a preference journal articles in electronic format over print. Wang (2007) wrote about disciplinary and cultural differences among information seekers in the Internet age, concluding that there are distinctions across disciplines and cultures in terms of how they rank the importance of these resources and how much they use them. Wang further discussed the information needs, information-seeking behaviors, and resource use of selected special interest groups. Nazli (2001) studied the information seeking behavior of user community at the Islamia University of Bahawalpur Library. Khan & Shafiq (2011) explored the Information need and information-seeking behaviour: a survey of college faculty at Bahawalpur. Most recently Tariq (2013) completed her research on Trends in using electronic resources by students of faculty of Science, University of Karachi.

PROPOSED STUDY

The nature of information is not easy to describe. Perhaps the most explicit definition in the literature defines information as recorded experience that is used in decision-making. Today, information technology has developed rapidly and has had a huge impact on access to information and on information seeking behavior. The librarian and library-staff have to know and examine the criteria of information seeking and information utility by users for providing information services, designing new information systems, intervening in the operation of existing systems, or planning service programs. The present human society is living in an information age and as a consequence, man has become more and more information conscious. More and more people deliberately and consciously seek information and it has become an integral part of human activity especially in the area of education, research and development, production and marketing of goods, all of which have contributed to the improvement of the quality of life.

World War I and II accelerated research and development activities resulting in information explosion. The information so produced is recorded and reported in a variety of documents-printed and non printed documents. The information explosion coupled with multiplicity of documents has created problems to the generators, users, and the organizers of information. The users of information are finding difficulty in identifying and physically locating the relevant information at the time when it is required. In this context, the libraries, being the reservoirs of knowledge and the centers of learning, have a greater responsibility in providing the right information to the right user at the right time, in the right form so that the information will be put to maximum use, thereby promoting the use of information. To achieve this, the Libraries/Information Centers need to be planned and designed based on the needs and requirements of the users of libraries.

Users have been viewed as passive recipients of information and the study investigates their external behavior, generally by means of qualitative methods. Although these surveys have yielded much quantitative data, which gives an overall picture of information needs and seeking behavior, they fail to convey a real picture regarding the factors which trigger the information search and a more in-depth insight into the individuals' concepts and thoughts. On the other hand, in user-oriented studies, users are viewed as active and self controlling recipients of information and they are concerned with the internal cognitions and attitudes of users, which are investigated by qualitative methods. The cognitive approach of the researchers focuses their efforts to understand 'how individuals process information and then illustrate this process through models'.

In the holistic approach, the researcher is not only interested in the cognitive needs of the users but also takes into account other factors which influence them to use the information sources, the methods followed in searching for information and possible reasons for not using information sources, if any. Another category is the action research. This approach views users as active participants during their research and tries to understand the language, the activities and the social inter-

relationships of users. A more recent one is the theory of usability techniques, which was with the use of computers and new technology in conjunction with information seeking behavior. They focus on the use of a system; but from the user's point of view. They take as a base user's needs in order to create an environment, which will be friendly, effective and easy for a user to handle.

METHODOLOGY USED

This chapter explains how the research was carried out. Thus the research design, research methodology, target population, sampling procedures and data collection procedures are outlined. Also highlighted are the challenges and limitations encountered during the course of the study. Wilson in Davis (2005:85) posits that research methodology is often confused with research methods; however, methodology is more fundamental - it provides the philosophical groundwork for methods. Sarantakos (1997:34) has also observed this confusion in terms, and concludes that methods are not synonymous with methodology, instead "... research 'methodology' means the science of methods [...] and contains the standards and principles employed to guide the choice, structure, process and use of methods, as directed by the underlying paradigm". According to Nachmias and Nachmias (1996:13), methodology is a scientific system of explicit rules and procedures upon which research is based and against which claims of knowledge are evaluated. Leedy and Omrod (2005:12) suggest that research methodology is the general approach a researcher follows when carrying out a research project.

In simple terms, methodology relates to the broader principles and philosophies governing research. Research methods, however, refer to the techniques selected for gathering data (Harding in Westmarland, 2001:1). Sarantakos (1997:34) defines methods as the tools of data generation and analysis. These are often chosen on the basis of criteria related to or even dictated by the major elements of the methodology in which they are embedded, such as perception of reality, purpose of the research, and type of research units. In this study, the type of data that was required was an influential factor. Within the two methodologies, there are various methods one can employ to obtain information or collect data. Most research methods can be classified based on the distinctions between qualitative and quantitative research methodologies (Myers, 1997:n.p). The main distinction between the two is that quantitative methods deal with data that is in numerical form while qualitative methods do not. However, quite often researchers combine techniques from both research frameworks in a single study.

It also increases the ability to control, or at least assess, some of the threats to the validity of the results and to reduce the risk of systematic distortions inherent in the use of only one method. Often, a study that uses only qualitative data or quantitative data misses the rich interpretation that an integrated approach makes possible, particularly when investigating social phenomena such as behaviour. In this study, this was achieved through the use of a questionnaire, which is considered to be a quantitative data collection technique, and interviews, which fall under qualitative data collection methods. Through the questionnaire, a relatively large target population was reached, while the interviews catered for a detailed examination of the views, perceptions and sentiments of the respondents with regard to web information seeking.

Qualitative research By definition, qualitative research may generally be understood as research that is conducted in a natural setting; a researcher gathers words or pictures, analyzes them inductively, focuses on the meaning of the participants, and describes a process that is both expressive and persuasive in language (Trochim, 2000:n.p). Sarantakos (1997:6) reiterates that qualitative research employs methods of data collection and analysis that are non-quantitative. Such research aims to explore sociological elements and describe reality as experienced by the respondents. A study by Flick (2006:11) confirms the view that qualitative research is of specific relevance to the study of social relations. An investigation into social phenomena warrants the use of qualitative methods because human actions, such as web information seeking behaviour, are difficult to quantify. This study adopted Njoku's (2004:305) definition of behaviour as a fairly consistent pattern of reactions or responses to a given problem or phenomenon by a person or group. Other than that, qualitative research methods, according to Durrheim (in Terre Blanche, Durrheim and Painter, 2006:46), allow researchers to study selected issues in depth, openness and detail as they identify and attempt to understand the categories of information that emerge from the data.

Quantitative research Quantitative research refers to a study that is numerically oriented, requires significant attention to the measurement of phenomena, and often involves statistical analysis. Hopkins (n.d:n.p) defines it as research that aims to determine the relationship between one thing (an independent variable) and another (a dependent or outcome variable) in a population. There are various quantitative research methods that researchers can use in studies today. Myers (1997:n.p) identifies the following quantitative methods, which are all generally accepted in the social sciences: surveys, laboratory experiments, formal methods (e.g. econometrics) and numerical methods, such as mathematical modelling. According to McCarthy (2006:n.p), quantitative methods are perfect for getting to the nuts-and-bolts of a situation, or the what, where, when and questions. With regard to web information seeking behaviour, the quantitative research method sought to elicit 'who' is doing 'what', and [how many] students and staff are aware of, believe that, or are inclined to behave in a certain

way towards the web in their work and learning environments. The quantitative approach was incorporated in the structured questions included in the survey (specifically the questionnaire). Its inclusion was necessary to reach out to a relatively large population inexpensively and easily. It also made it easier to measure descriptive aspects of the study, such as the composition of the population.

RESULTS

In this section, the responses to the questionnaires that were handed out to students and staff at the University of Punjab and the Delhi Technological University, (DTU) are organized, compiled, analyzed and interpreted. The general aim of the study was to examine how the web affects the way students and members of staff search for information and to uncover some of the inherent similarities and differences in the web information seeking behaviour of students and staff from universities of technology, which offer practically-oriented diplomas and degrees in technical fields, and comprehensive universities, which offer both theoretically-oriented degrees and practically-oriented diplomas and degrees. A detailed breakdown of the responses obtained was provided in Methodology section. In brief, 103 students and 11 academics were targeted at the University of Punjab: 84 (82 %) students, and 9 (82 %) academics responded - an overall response rate of 82% (93). 256 students and 24 academics were targeted at the Delhi Technological University: 139 (54%) students and 14 (58%) academics responded. The overall response rate at DTU was 55% (153).

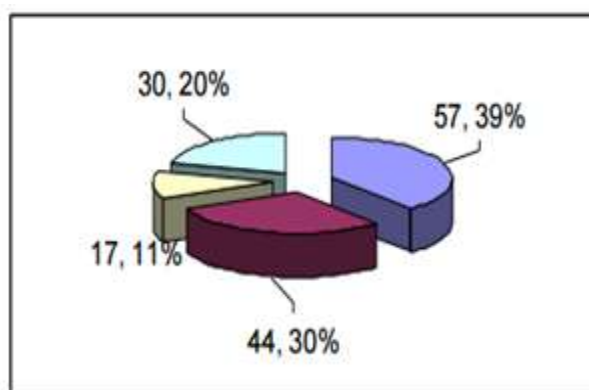


Fig 1: DTU students' distribution by campus affiliation

Distribution by faculty affiliation Punjab and the DTU each have four faculties. The University of Punjab is composed of the Faculties of Arts; Commerce, Administration and Law; Education; and Science and Agriculture. The Durban University of Technology, in turn, is composed of the Faculties of Arts; Accounting and Informatics; Engineering and the Built Environment; and the Health Sciences.

Table 1: Distribution of students by faculty

PU N= 83		DTU N=137	
Faculty	Frequency	Faculty	Frequency
Arts	27 (33%)	Arts	43 (31%)
Commerce, Administration & Law	24 (29%)	Accounting & Informatics (Commerce)	33 (24%)
Science & Agriculture	18 (22%)	Engineering Sciences & the Built Environment	37 (27%)
Education	13 (16%)	Health Sciences	24 (18%)

The response rate across all four faculties in both institutions was relatively high. Most of the students were from the Faculty of Arts, with 27 (33%) respondents from Punjab and 43 (31%) from DTU. Responses from other faculties were also relatively high, i.e. above 13 (16%) at PU and above 24 (18%) at DTU.

Table 2: Distribution of staff by faculty

PU N=9		DTU N=14	
Faculty	Frequency	Faculty	Frequency
Arts	3 (33%)	Arts	-
Commerce , Administration and Law	3 (33%)	Accounting & Informatics (Commerce)	4 (29%)
Science and Agriculture	2 (22%)	Engineering Sciences & the Built Environment	6 (43%)
Education	1 (11%)	Health Sciences	4 (29%)

As revealed in Table 2, the faculties with the highest staff representation at Punjab were the Faculties of Arts and Commerce, with 3 (33%) respondents from each. Most staff members from the DTU were from the Faculty of Engineering, Sciences and the Built Environment (6; 43%), followed by the Faculties of Health Sciences and Accounting and Informatics, with 4 (29%) respondents each. No respondents were from the Faculty of Arts.

Medium of information Media trends have had a huge impact on the academic environment. Users today have to integrate new, changing formats with the traditional formats they have grown accustomed to. The preferred medium of information (in this case) refers to the respondents' most favored and used mode of obtaining information when searching for information.

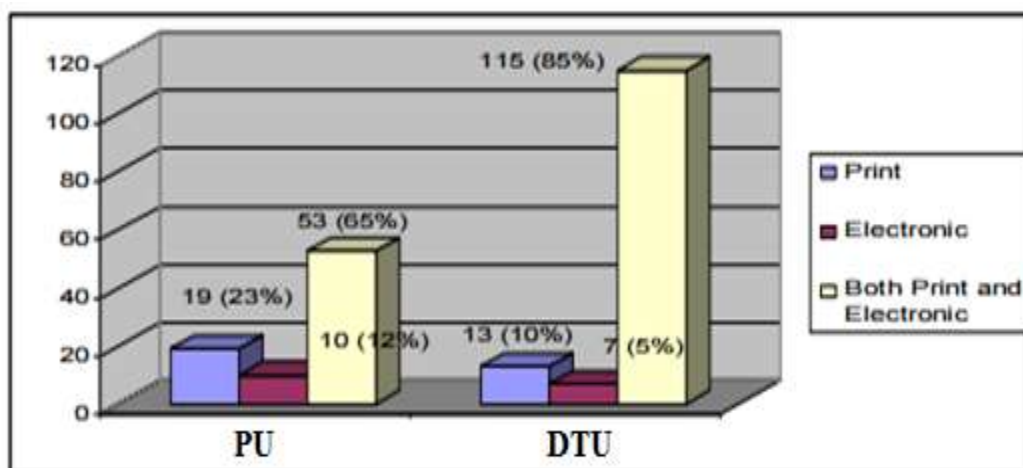


Fig 2: Students' preferred medium of information

Figure 2 clearly shows that of the three variables (print, electronic, and both print and electronic), the most preferred medium of information, as cited by students from both Punjab and DTU, was both print and electronic sources (53; 65% and 115; 85%, respectively) followed by print sources (19; 23% respondents from Punjab and 13; 10% from DTU). The least preferred medium was electronic, opted for by 10 (12%) respondents from Punjab and 7 (5%) from DTU. These results point to the hybrid use of old (print) and emerging (electronic) sources and not to a total shift or move towards emerging formats. It was nevertheless unexpected that electronic sources would be rated so poorly by students, given the flurry with which they seem to flock to computer laboratories. Evidently, there are still issues to consider when examining students' preferences for information media as these have an effect on how any particular medium will be adopted.

CONCLUSION

The proposed study provides the conclusion of impact of new information technology on the user's information seeking behavior. The study reveals that most of students, research scholars and teaching staff are impacted by new information

technology in their information seeking and gathering behavior. Electronic resources have changed the information seeking and retrieval method of the respondents. Internet and telecommunication are most important and useful medium for retrieval of information from the vast information available in the world. It is also found from the study that training programme offered by the institution are much utilized by the research scholars of the universities than others.

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