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## Information Needs and Seeking Behavior: A Pakistani Perspective

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## **Information Needs and Seeking Behavior: A Pakistani Perspective**

### **Introduction**

Learning is common and natural phenomenon and it occupies a significant role in one's life.

Every one learns things knowingly or unknowingly. It actually refers to change in the behavior of an individual through direct or indirect experience (Mangal and Mangal, 2013, p.141).

Learning has always been a revolutionary factor in the history of human and the process of learning has been developed through several ages. There was a period of transition from Nomadic Age in which human used to hunt animals and eat naturally occurring plants for survival, to Agricultural Age in which there emerged a concept of colonization along with the cultivation of lands and raising of cattles. It was followed by another transition from Agricultural Age to Industrial Age, which introduced roads, vehicles, boats and airships etc. This Age was proceeded by the Age of information and invention of telephone, printing press, radio and television gave rise to mass media and marked its earlier phases. After that, plenty of information was seen due to which it became raw material for all kinds of process and procedures (Doria, 2014). Chowdhury and Chowdhury (2011) also call the present time as a period of information and consider it as a basic element for development of any society. According to Nasreen (2006) this is age of information explosion, in which information act as a keystone for lives and one's existence is totally dependent on information (p.1). Only through information objectives and goals of any profession can be realized (kehinde, Obi, Akenade & Anyim, 2016). Majid and Kassim (2000) also support the above studies by describing the information as an influencing factor in the development of any nation, which provides basis for knowledge development, innovations, valid and justified material for citizens and consequently becomes a supreme entity

for the progress of a society. Today because of web and internet importance of information in our daily life cannot be neglected.

In the old time only a limited and specified group of people used to participate in the activity of access and utilization of information specially academicians, researchers and lawyers etc. But now with the development and mount of web and other related technologies, information has taken a valuable place almost in every one's life. In the completion of everyday daily life activities, various information services and systems are accessed and used. Each of these information systems are frequent and inconspicuous but still has great effects on the seeking behavior of user's community (Singh, Kumar& Khanchandani, 2015).

Yusuf (2012) states that a businessman needs information to have sound business base just like a specialist also need information to be advance and well versed in his area of specialization. A tailor needs information on new material and current styles. Similarly in the educational scenario information is needed and sought by academician to help raise the educational standards in the context of teaching, research productivity, students' performance and co-curricular activities (Singh, 2013. p.317).

### **Concept of Information**

Information is most valuable commodity which gives knowledge, awareness and power. It is considered as a basic requirement in this competitive world, and in any competition environment, the most informed party always has upper hand. It results in appropriate decisions. Information about any entity means representation of an entity (Isazadeh, 2014). The word information refers to every that thing which can be felt, observed, detected, perceived and anticipated by an agent (Gershenson, 2010). Nasreen (2006) is of view that the term information is not limited only to the words of mouth or printed words alone, but also different colours,

artwork, body movements, gestures and facial expressions constitutes information. Information can be a fact like name, class, job timings just like a quantifiable physical quantity, for example speed, sound waves, temperature and pressure (p.36). While according to Wiig (1993) information means organized facts that describe a condition or a situation.

Losee (1997) called all other definitions as field-oriented and gave discipline independent definition and was of view that information is a processes output description based phenomenon, in which values of characteristics are regarded informative about the input and process.

### **Information Need**

Roots of the concept of information needs are buried in the article of Robert S. Taylor entitled as “The Process of Asking Questions” in which both the terms were used collectively for the first time. It refers to discontinuity in knowledge, which is felt by a person at conscious level in the form of a question which in turn results in the searching for answer. If the need is dire then search may be keep continued until its fulfillment (Singh, Kumar & Khanchandan, 2015).

Psychologists categorize the human needs as follow:

1. Physiological needs like food, water and shelter.
2. Psychological needs like to be in secure environment, to accomplish something which is necessary and to get uphold etc.
3. Cognitive needs like learning skills or how to plan etc.

According to this theory of needs, these are depended and interrelated. Physiological needs are primary of which satisfaction lead to psychological needs, which in turn are followed by cognitive needs (Nasreen, 2006).

Information need refers to the state of imbalance conditions between what a person presently knows and what he is supposed to know (Agyemang, Ngulube, & Dube, 2018). Case (2002)

states that when an individual's internal knowledge and beliefs fails to solve a problem or fill an informational gap, then such situation consequences in information need. According to Kehinde et al. (2016) information need arises when one becomes to know that something is missing and is in-sufficient to locate information that helps to arrive at understanding and meaning.

Kuhlthau (2004) affirmed the information need as a budding from an unclear knowledge of somewhat missing and concluded in the information that adds to thoughtfulness and sense-making. Kuhlthau (2004) further added that information need means certain incompleteness in one's picture of the world.

### **Information Seeking Behavior**

Information seeking is an umbrella term which covers a set of related issues and concepts, meaning different things in different contexts. In simplest form information seeking involves a group of tasks starting from searching for meaningful content followed by retrieval, recognition and finally application of that content (Kingrey, 2005).

Information behavior includes actions showed by individuals to different sources and channels through searching for information either actively or passively. Face to face discussion is active seeking while information received from television indicates passive information (Sankpal & punwatkar, 2015).

Fatima and Ahmad (2008) describe the broader scope of information seeking behavior that it includes a series of activities through which an individual passes by taking start from formulation of need, followed by searching, analysis, selection and final use of the required information for satisfaction of that need. Many factors help in determination of seeking behavior of individuals or groups. So the purpose for which information is needed must be understood. The environment

must be studied to identify the channels, sources and barriers which are preferred for acquiring information.

Kakai, Ikoja-Odongo and Kigongo-Bukenya (2004) describe that information seeking behavior refers to the pattern that how information is searched and also involves purposeful information seeking in order to meet a need. They further explain that user needs, methods of searching, time duration, confronted obstacles, processes through which problems were overcome and user satisfaction/dissatisfaction from the collected information sum up the information seeking behavior.

Ford's (2004) refers the information seeking to a course of activities which is followed with the intention to obtain information to fulfill a task. Information seeking is an attempt to get information to reduce uncertainty, bridge up gap one's knowledge or make sense (Case, 2007). So information seeking covers many behaviors to increase one's understanding. These behaviors include information search behaviors like focus on searching, acquisition, processing, organization and presentation of information (Brand-Gruwel, Wopereis and Vermetten, 2005). Information seeking behavior actually means searching and use of information and is of much importance in designing and development of information centers (Khan, 2010, p.18).

### **Concept of User Studies: Information Needs and Seeking Behavior in Pakistan**

The concept of information seeking behavior was originated from user studies which is a broader phenomenon and covers a large number of studies in information science (Sankpal & Punwatkar, 2015). Collecting information from different sources gives rise to the concept of user studies (Abraham, Tamizhchelvan and Sornam, 2015). In information science, user studies act as a tool of planning for management of information and make the information managers able to provide information products and services to all kinds of information users. User studies can be

performed from traditional or modern approach. The prime one is system (library) oriented concept which keeps its focus on information product, service or system, that how a system is used and by whom not what a person actually needs when he enters in a system. The second method directs its attention towards the perception of users. It tries to examine the reasons which bring a user in the system (Marilia, 2013). Much importance has always been given to users in the field of librarianship and information science. First union catalogue by Charles Ammi Cutter was devised only for the assistance of scholar monks in the location of wanted manuscripts in the monastery Library. Though before the World War second there was system oriented concept, but a paper presented by professor J.D.Bernal on the use of scientific literature by scientific community in a conference of scientific information organized by Royal society in 1948, marked the foundation of actual user studies (Wilson, 2006). Connaway and Faniel (2015) describes that the base of user studies also known as user behavior, information behavior or information seeking behavior is hidden in the context of Ranganathan's fourth law, which states that a user should be studied from the moment he enters in the library to the moment he leaves. Wilson (2000) states that work on users of library and readership studies like "The Library Survey (1940)" which refers to various kinds of surveys dating back to 1916, could be called as precedent of human information seeking behavior, but the honor of keeping foundation of user studies goes to the contribution of Bernal's study which was mainly concerned with the understanding how people used information in relation to their tasks. Hence it marked the origin of modern user studies in real sense. Siatri (1999) also describes the emergence of user studies from the conference of Royal society and explains that after 1940 and onwards, production of literature and publication rate was much more developed in the disciplines of science as compared to humanities that is why early user studies were mainly related with scientists'

community. But in the decades of 1960, there occurred a growth in the number of studies and turn in the focus of studies in regard of forms and choice of community. Social and behavioral sciences presented their own principles and theoretical frameworks, which were quickly adopted by information community. The very first study on information seeking behavior in social and behavioral sciences was carried out by American Psychological Association in 1963, that was a project of much importance consisted on series of studies concerning psychologists. This endeavor was followed by another big contributory study of M.B. Line and his associates on the information use by social scientists during 1968-1971 at the Bath University, UK (Line, Brittain & Cranmer, 1971a; 1971b).

Research work on information seeking behavior is very less in developing countries; the reasons may include lack of literature, research skills, language competencies and funding etc. But the main cause seems to be laid in the education of Library and Information Science (LIS) which impart library-focused and tradition-bound knowledge to their professionals and do not expose them to this significant area of research. In Pakistan this topic got focus of researchers in the onwards of 1970, momentum was observed in this area in 1974-1975 but that push was lost soon. There is dire need for LIS practitioners and academics to bring current state of affairs under study and take initiatives to conduct and promote research in this area (Anwar, 2007). But now the situation is different in Pakistan. The topic has got significant attention of LIS academicians, professionals and researchers. The subject is taught on master and M.Phil level in all schools of Library and Information Science in Pakistan. Many research studies at higher level have been conducted on the same topic for achievement of M.Phil and Ph.D degrees like Khan (2011) and Nasreen (2006) respectively. While the other major publications that contributed enough more to the area includes Tahira and Ameen (2009), Bhatti (2010), Khan and Shafique (2011), Khan and



Bhatti (2012), Shafique and Mehmood (2013), Shehzad and Khan (2015), Naeem and Bhatti (2016), Khan (2018), Ahmad and Naveed (2019) and Jamshed, Naeem and Bhatti (2020).

### **Objective of the Study**

Main objective of the study was to identify and present a detailed review of research articles on information needs and seeking behavior of diverse groups in Pakistan.

### **Scope of the Study**

This paper reviews research articles published on information needs and seeking behavior in Pakistan during January 2008 to June 2021. All types of research papers were included in the selection criteria except those conducted on teaching faculty members. Studies written in language other than English were also excluded from review.

### **Method**

Relevant information was extracted from various published, printed and electronic resources. Pakistan Library and Information Science journal (PLISJ), Google Scholar, the database of Library and Information Science Technological Abstract (LISTA), Directory of Open Access Journals (DOAJ) and some other free databases were consulted in order to collect the most relevant and latest articles on the topic. The relevant articles were identified by using search terms “information needs”, “information seeking”, “information behavior”, combining ‘AND’ with Pakistan. References from relevant papers were also checked to identify further studies that may have been skipped during key word search. Title and author based search were also carried out on Google for extraction of more research papers.

### **The Literature Review on Information Needs and Seeking Behavior**

Studies on information needs and seeking behavior are important for LIS professionals and policy makers to inform them about information needs, seeking behavior and problems of users.

The topic under study has got much attention of LIS researchers in the last decade, some of the latest studies are reported below:

Naveed and Hassan (2021) assessed information needs of citrus farmers residing in the rural regions of Sargodha. Respondents were face to face interviewed using preformulated questionnaire. Results indicated that different factors like land preparation and fertility, harvesting and plantation techniques, fertilizer applications, pest and diseases control, weather, irrigation management, citrus trees protection, better citrus varieties, how to stop fruit drop, Government policies and programs, better pricing, buyers and traders constituted their information needs. Information needs were primly satisfied from previous experience and fellow farmers. Lack of access, awareness, finance, education, visits of extension staff and language issues were the main barriers in the farmers information seeking.

Rafiq, Iqbal, Rehman, Waqas, Naveed and Khan (2021) conducted a quantitative study on female students residing in university and private hostels of Lahore. Survey research method was used for the study. Results of the study showed that hosted students sought information for academic purposes, safety issues, self-help problems and social circle. For satisfaction of every day information needs female residents mainly relied on cell phones, social media, and internet and inter personal relations. Natural hesitation, Cultural differences, time concerns, language barriers and identification of reliable information were the major hindrances in seeking everyday life information.

Shahid, Rehman, Safdar and Khan (2021) explored information needs, seeking behavior, usage of library material and problems encountered by medical doctors of Lahore based hospital. Study was quantitative in nature. Data was collected through cross sectional survey by distribution of questionnaires. Findings indicated that physicians needed information for continuing education,

keeping themselves up to date and improvement of knowledge. Most of the respondents visited library rarely. Most of the doctors acquired information from books in the library. Inadequacy of library resources, far location of library from departments and lack of modern technological tools were the problems encountered by respondents of the study.

Jamshed (2020) presented a quantitative study on information seeking behavior of female lawyers in province Punjab using survey method and questionnaire as a data collection tool. Study found that most of respondents needed information for preparation of cases. Bear acts and online legal resources were preferred sources. Majority of lawyers sought information from printed material. Lack of separate law library and quality books and journals main problems reported by respondents.

Jan (2020) reported a content analysis of latest research studies on information needs and seeking behavior published at national and international level. Pakistan Library & Information Science Journal (PLISJ), LISTA, Directory of Open Access Journals (DOAJ) and some other free databases were accessed for collection of relevant studies. It was found that much attention is given to topic under study in province Punjab. India has produced much studies on information seeking behavior of library users.

Jamshed, Naeem and Bhatti (2020) conducted a study on District Bar Law Library of Multan. Results indicated that majority of respondents used law library for understanding of legal problems and socialization purposes. Law journals and books were among preferred sources while majority of lawyers used to satisfy their needs from senior lawyers and printed media. Lawyers were satisfied with services of library, however, lack of professional librarian and information literacy training were among the major problems.

Khan and Khan (2020) surveyed Master, M.Phil and Ph.D research students at university of Peshawar to investigate their information needs and seeking behavior. Results revealed that researcher required information for selection of research topic, access to latest information, writing research synopsis, research papers and theses. Researchers mostly satisfied their information needs from workshops, other researchers, online research databases and internet. Respondents mentioned poor internet connectivity, lack of ICTs and study rooms in the university library as the major problems.

Jan, Usman and Welsh (2019) conducted a comparative study on information needs of distance and regular learning university students of Khyber Pakhtunkhwa. Constructed questionnaire was distributed among respondents through cross sectional survey. Results indicated that both categories of students were mainly dependent on lectures followed by books for exams preparation. However difference was found in both groups in the methods applied for acquisition of information as regular students used to visit library personally while distance learning students relied on emails and internet. Though seeking pattern of both regular and distance learners remained the same regarding job opportunities but varied in seeking information on material related to their studies, scholarships and post graduate education. Lack of material, digital resources, internet and school library were the major issues confronted by respondents.

Ahmad and Naveed (2019) investigated information seeking behavior of blind pupils studying in the academic institutions of Lahore. Participants were interviewed using an interview guide. The study found that visually impaired students (VIPs) needed information for class assignments, lecture handouts, research activities and other schedules like fee notices, time tables and date sheets; however, they spent more time on searching. They used to convert the accessed information in usable format.

Ahmad, Ahmad and Anwar (2018) investigated information needs of forestry scientists of the Pakistan Forest Institute, Peshawar. The study indicated that main motivational forces for information seeking by this group included personal interests, conduction of research activities and knowledge updation. Books, journals, magazines and newspapers were top frequently used information sources. Discussion with colleagues, academic staff and conferences were top communication channels among scientists. The study recommended training courses on information searching for forestry researchers.

Ali, Jawwad and Ahmad (2018) investigated information needs and seeking behavior of lawyer's community practicing in Districts Courts Bar Association, Islamabad using Wilson (1996) model of information seeking. Data was collected through questionnaire by using convenient sample technique. Results indicated that most of the lawyers sought information for legal processes, up to date ness and for defence of cases in courts. Lawyers used different sources of information, visited different libraries and were satisfied with the accessible sources and services, however; they ranked their own chamber libraries at top. Major problems experienced by respondents included price of information sources and lack of wanted collection.

Arshad and Ameen (2018) conducted a study on information seeking behavior of engineers and technologists engaged in academic activities with special focus on their e.journal use patterns. A self-constructed questionnaire was used for data collection with 61% response rate. Findings of the study showed that the academic staff used books, journals, research reports in electronic format as well as consult colleagues for satisfying their research and teaching needs along with up to date ness in the field. Electronic resources were accessed through search engine, websites of open access journals and Google scholar. Frequently used method was searching and chaining while browsing and e-mail alert were least used methods.

Naveed and Suhaib (2018) face to face interviewed desert women of Hafizwala village Bahawalnagar district and found that rural women needed information on children education, health, religion, water purification, poultry and cattle care. Information was mainly acquired from friends, family members and relatives. Poor financial conditions, illiteracy, lack of access and awareness, cultural boundaries and communication issues were indicated as the main problems in information seeking.

Nagar, Kalhor and Kalhor (2018) conducted a study on the same topic in the Mehran University of Engineering, Jamshoro. Aim of the study was to find out awareness and information requirements of researchers. Data collection tool was questionnaire distributed through Google online form. Findings of the research indicated that the researchers used text books, reference books and electronic resources frequently.

Naeem and Shehzad (2018) explored the influences of change in information seeking behavior of users on university libraries. Findings of the study indicated use of information and communication technologies (ICTs) for meeting information needs more in male category and had brought positive change in the behavior of users. Data analysis showed that 85% of respondents favored information communication technologies in terms of facilitating them in seeking process. Major problems encountered by respondents were disperse information, bulk of information and lack of knowledge about searching techniques to get fully benefited from digital contents and libraries.

A questionnaire based survey was carried out by Naeem, Bhatti and Ishfaq (2018) on use of internet by Nurses and Doctors for information seeking. The study found that most of the respondents were having internet access at their practice stations. Internet was needed by the respondents for research conduction, teaching activities, up to datedness and clinic related

information. Majority of the respondents used books, journals and web based documents.

Medical representatives were also contacted to fulfill their needs.

Khan (2018) carried out a questionnaire based study on Library and Information science M.Phil and Ph.D scholars. The study showed strong positive relation between change in behavior and social information seeking.

Khan and Nisa (2017) made a small scaled research on gender difference in information seeking of scholars. Objectives of the study were to find out utilization of electronic resources, preferred digital sources, time duration in online searching and problems confronted by both categories of scholars while searching information in online environment. Results indicated that gender difference significantly influence the information seeking behavior of researchers. Data analysis also showed strong positive relation in gender difference and time spent in online searching of information. However use of smartphones for online searching, preference of digital resources and problems faced while seeking online information, were common in both group of researchers.

Latif, Ahmad, Satti and Haq (2017) worked on information seeking behavior of medical students to examine information needs, seeking behavior, searching techniques and sources used by medical under graduate students. From results it was concluded that students mostly used information technologies for entertainment purposes followed by academic assignments. They mostly relied on text books and notes, therefore no problems were experienced in managing time. They used informal ways to exchange information and mostly borrowed print and electronic resources available in the library.

Naeem and Bhatti (2016) investigated the major constraints that hinder the seeking behavior of physicians. Different health sectors of district Multan were surveyed and data was collected

through questionnaire distributed by email, post and personal visits. Study revealed that the major barriers were lack of library, librarian having health related information, deficiency of resources and unavailability of modern infrastructure.

Ali, Bashir, Fatima and Babar (2016) conducted a study on needs of visually weakened students getting education in colleges and universities of Lahore. Data was collected through self-constructed questionnaire using snow ball sampling technique. Results indicated information needs including studies, future development, health related information, seeking employment opportunities, enhancement in knowledge about current affairs and information about sight improvement. Libraries were preferred first for satisfaction of needs followed by internet and discussion with fellows. Students were pleased with assistive tools like JAWA software and audio recording. Lack of tools and braille material were the major problems while non-existence of training about electronic resources was least experienced obstacle.

Naveed and Anwar (2015) came to conclusion that cotton cultivators in Bahawalpur needed information about soil, seeds, plot preparation, harvesting activities and care procedures of crops. They sought information from informal sources. Lack of timely access to needed sources, fewer visits of supervisory staff, ignorance and language issues of cotton farmers were the problems observed in the result section.

Naeem and Bhatti (2015) highlighted the information needs of primary health care physicians through a comparative analysis of rural and urban physician's clinical information needs and access to needed information. Results indicated that both groups had similar information needs but non rural physicians were having more access to information resources as compared to rural community. Majority of the urban physicians satisfied their needs from hospital libraries whereas another group used their personal collection because of non-existence of library, librarian and



lack of access to online resources. The study also found that older physicians experienced less clinical information needs due to long time practice.

During investigation of information seeking behavior of master students of the faculty of social sciences at university of Peshawar, Khan and Sheikh (2014) reached at conclusion that more than half of the social science students preferred subject books for class assignments, exams and research projects. Respondents were satisfied with information sources. Students were happy with printed material. They used library for reading and acquisition of material. Largest group of students was satisfied from the library staff and had never faced any type of problem during acquisition of material from library.

It was explored by Naveed and Anwar (2014) that non-urban Pakistanis, mostly felt it easy to satisfy their information needs regarding finance related processes, health maintenance and political conditions; mostly through interpersonal communication rather than using any other sources like printed information and media. The residents faced problems like access to required information, low education and language issues. Respondents desired to have a public library that would help them and their children in learning.

Hashmi, Rehman and Zeeshan (2014) in their study investigated information seeking behavior of distance learning students enrolled in Allama Iqbal Open University Pakistan. Data was collected through focus group using qualitative approach. Results indicated that respondents needed information for course contents, exams, assignment completion and career development. Sources were preferred in English and internet was preferred source. Students were not happy with stock and staff of their institutional library.

Shafique and Mehmood (2013) made a research on educational administrators working in academic institutions of Islamabad and province Punjab. Main focus of the study was to find out

information needs, seeking pattern, preferred sources and major problems faced by managers while seeking information. Findings of the study indicated that education managers sought information for accomplishment of different tasks of administration and management. They mostly used personal and internal sources. Data analysis also showed that respondents sought their information from internet, however; they do not used library. Availability and access to required information were the major issues followed by long time and efforts consumed in seeking the required information and question on reliability of the information.

Shafique and Mehmood (2013) presented a review of the literature having main focus on information seeking behavior of administrators like department heads, principals, registrars, vice chancellors to education ministers. Aim of the study was to analyze the variables which influence the seeking behavior of administrators. Review of research studies highlighted that needs of administrators varies according to the position at which they serve and responsibilities which they hold. The study also revealed that context and experience of work and administrative responsibilities significantly affected the information needs of educational administrators.

Naveed and Anwar (2013) identified that farmers in Pakistan mostly need information on seeds, activities of soil preparation, harvesting of crops and on rising of animals. They mostly satisfied their needs from own experience and inter personal communication. Radio, television and printed sources were least preferred. Majority of the respondents were dissatisfied with agricultural information sources. Timely access, low education, language and unawareness about the location of sources were major problems. Respondents viewed that public library could help them in meeting their needs.

An investigation of information needs of rural women of Moon Valley was conducted by Iqbal, Yousaf and Soroya (2013) through purposive sampling technique. Major findings of the study

exposed that majority of the respondents needed information for cooking, health, fashion and sewing followed by house management and family care. Purposes of seeking information included knowledge improvement, refinement of home routines and entertainment. The study also revealed that majority of respondents used T.V and internet as formal while friends and relatives as informal sources. Lack of resources and language were the barriers in their information seeking.

Naeem, Ahmad and Ishfaq (2013) collected data through close ended questionnaire by descriptive survey on information needs and sources used by doctors working in District Multan. Results of the study discovered that doctors mostly needed information for policies and procedures, up to datedness, continuation of education and management of patients. Medical text books and journals were best printed sources and specialist and colleagues were best human sources for satisfaction of their clinical information needs. Majority of the respondents were not satisfied with information resources provided in health centers.

Naveed (2013) conducted an exploratory study on Pakistani farmers residing in Saleempur village. Data was collected through semi structured interview of those male adults who were actively engaged in farming. Results indicated that most of the respondents needed information for their socio economic issues. Information needs were mostly met through interpersonal relations. In information sources printed material and mass media were rated low. Timely access to sources, language issues and low level of education were the main barriers in seeking information.

Iqbal, Mehmood and Arif (2012) observed the information needs of medical researchers in capital territory and province Punjab and Khyber Pakhtunkhwa. Data was collected through questionnaire using survey research method. Information regarding research work, general

awareness, experiments and preparing lectures were disclosed as purposes of information seeking. Internet was ranked as important information source. General and text books were preferred information sources. Most of the researchers were in trouble because information was scattered and expensive.

A study was conducted by Iqbal, Mehmood and Arif (2012) to assess information needs and problems encountered by MPhil and PhD researchers in the medical institutions. Findings revealed that researchers needed time saving and latest information for their research projects. Internet was the most preferred source of information and books usage was ranked at 5<sup>th</sup> level. Major problems were dispersed and costly information sources and unavailability of sources. Naveed, Anwar and Bano (2012) presented a review of literature published on information needs of farmers. Relevant studies were extracted from “AGRIS” and “Pakistan Agriculture Database” by using specified search terms. Fifteen published papers were found relevant for analysis. The study found that attention has been given to information needs of Pakistani farmers neither by LIS professionals nor by agricultural research institutions.

Khan, Bhatti and Khan (2011) pointed out that lawyer community at district bar council Bahawalpur sought information for case preparation and profession requirements. Most of respondents always acquired information from bar library and frequently from senior lawyers. Information sources were preferred in English language and print format. Little impact of ICT was observed on practitioners seeking behavior. Telephone was mostly used ICT tool for seeking information. Most of respondents did not use internet. Few respondent stressed on provision of internet in library.

An investigation of university students of Pakistan was conducted by Qureshi, Iqbal and Khan (2008) in order to examine students' behavior towards information. Data was collected through

distribution of questionnaires, face to face and telephonic interviews. Study found that students' participation, educational and cultural background, self-evaluation and surrounding environment had positive impacts on their seeking behavior.

### **Findings**

Review of collected data revealed that significant number of research studies have been published in Pakistan on information needs and seeking behavior of diverse groups. Students and researchers of different fields, law practitioners, physicians, farmers, and rural women were most studied population. But more attention is given to information needs and seeking behavior of students.

Various scholars from different territories have contributed to the topic, the prominent authors are;

Muhammad Asif Naveed, Robina Bhatti, Khalid Mehmood, Farzana Shafique, Salman Bin Naeem, Mumtaz Anwar and Shakeel Ahmad Khan from Punjab. Dr. Saeedullah Jan and Dr. Ghalib Khan from Khyber Pakhtunkhwa.

Review also indicated that the province of Punjab is leading the rest of the provinces in production of literature on the topic. Khyber Pakhtunkhwa is 2<sup>nd</sup> in this regard. No single study was observed from province Balochistan.

Collected data showed that most productive year was 2018 in which 8 articles were published on the topic followed by 2013 introduced 6 papers on information needs and seeking behavior.

Analysis also revealed that objectives of all studies were almost same with little differences.

Information needs, information seeking behavior and problems encountered by respondents were addressed in all studies.

Quantitative research approach using survey research method and questionnaire as a data collection tool dominated the methodology section of all studies, except few in which interviews were taken from participants.

Coherent results were found among same groups. Groups of same characteristics needed information almost for same purposes, sought information from same sources and same problems were encountered while seeking information. However, diversity was observed in different groups.

### **Suggestions**

All those topics which are taken under research in province Punjab can be studied in Khyber Pakhtunkhwa and other provinces. Research gap can be recognized from above review and other topics can be identified for further studies.

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