



## **Research Scholars' Perception about Information Resources available in University Libraries of Punjab, Pakistan**

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### **Abstract**

The purpose of this study was to evaluate the information resources of the university libraries of the province of Punjab through the perception of research scholars. The researchers provided their opinion about online resources, print resources and acquisition method adopted by university libraries for acquiring these resources. This study used the survey method of quantitative research design to determine the perception of research scholars about the information resources of the central libraries of their universities. The data of this study was collected using a questionnaire, which was based on nominal and Likert scale tools. After analysis using statistical method, it was revealed that perceptions of research scholars regarding the information resources available/accessible in central libraries of their universities are generally satisfactory. However, the accessibility of online resources in universities needs to be enhanced, moreover, a well-defined/standardized collection development policy, catering requirements of research scholars, is utmost need of the university libraries. Knowing the true status of information resources of the libraries and the perception of research scholars will certainly enable the policy makers and librarians to plan the collection development for the future. Similarly, the subscription of digital contents for their patrons will also be increased and the input of research scholars will also be sought for development of collection in libraries accordingly.

**Keywords:** Information Resources; University Libraries; Research Scholars



## Introduction

Human development is the most crucial factor of a progressive society, for this a large share of the budget is spent. The advanced educational institutions of any country pave the way for research. The goal of any sort of research performed in educational institutions is enlightenment and comfort of mankind. The better the opportunities of research, the better would be the results for society. So, the transformation of raw data into wisdom by doing research is the product of educational institutions. Similarly, the improvement in research culture in any society is real human development (Rafi, JianMing, et al., 2020). Libraries are an imperative part of any civilizations from ancient ages. No society deserves to be called a progressive society, today as well, without a proper active institution of library. The importance of libraries for any educational institution is manifold because this sacred place is not only a resource center of information but also provides a supportive environment for education, research, and lifelong learning (Ahmad et al., 2019b).

### *Academic Libraries and Research*

It is considered that library and institution are inevitable for each other and institution's existence without the library is not possible. Similarly, no academic institution can exist without proper Library (Sentence is having multiple clauses and causes lack of clarity and understanding) (Khan, 2012). With the advent of new technology and ever-changing needs of the patrons, the role of academic libraries has been becoming more diverse and multifaceted. The traditional librarianship and mere shelved collection of books would not now satisfy the patrons' needs but more vigilance and proactive approach in terms of resources and services are required (Rafi et al., 2019b). Access to information in universities is provided by the libraries that's why these libraries are called gateways of knowledge. The new requirements of patrons and changing technological infrastructure have changed the role of libraries as well, as stated by Foo et al. (2002), the key role for providing the competitive advantages in university are taken by the academic libraries and they have become the central place for learning and research in universities. Ali (2018) argued that the role of academic libraries is now multifaceted (Islam et al., 2020). They provide not only books and space for students to study, but at the same time other allied activities to support research are also responsible for these libraries, such as bibliographies, reference services and information



literacy classes. At the same time, another challenge is being faced by the academic libraries that are changing in scholarly communication (Rasul & Singh, 2010).

### ***Information Needs of Research Scholars***

Research plays a significant role in universities and colleges. Although teaching and learning are still important, more emphasis is being given to research. Universities are allocating substantial amounts of funds for promoting research as they ranked according to their research output. Similarly, faculty members are assessed by the universities with respect to their research publications, articles, and the number of researchers they supervised (Kuruppu & Gruber, 2006). Universities are also working simultaneously to improve infrastructure as well to assist the researchers in satisfaction of their information needs. The number of postgraduate students is also increasing in universities and research work is becoming an essential part of their degree completion (Rafi, Ahmad, et al., 2020).

However, with the emergence of e-resources, users being additional curious about access instead of actual possession, libraries face larger competition from several other sources like publishers and vendors who try to give several equivalent services that libraries give later. Their information can also be latest and advanced. These competitors generally give their services quicker with efficiency. Similarly, virtual libraries are simply accessible through the web. Some students prefer to grasp additional information regarding their research from libraries other than their own institutions' libraries (Simmonds & Andaleeb, 2001).

### ***Development of Digital Library***

From the first electronic book (e-books) developed by Guttenberg in 1971 many steps in this direction and proceedings of conferences, journal articles and other resources were emerged in 1993. Other organizations like Wiley, science direct JSTOR and library of congress also took the initiative. In Pakistan, for the previous few decades, the requirement for changes and improvement within the quality of education has been felt enormously (Rafi et al., 2019a). Google is now attracting the researchers as well besides, the public in large numbers, no matter how advanced material library provides to the postgraduate students (Law, 2009). It is acceptable for educational libraries in universities to re-examine their relevant role in facilitating research (Singh, 2007). The central place of libraries is nowadays under question that



how libraries can claim the hub of information resources in presence of other technological services by different institutes (Shabbir & Ali, 2021).

Several librarians nowadays don't precisely apprehend their users due to huge changes into infrastructure and technology. It absolutely was easier once library users walked through the doors of the library, and therefore the library employees may really take some sort of assessment of those users. The library employees were ready to develop a library-user relationship with a few numbers of the users. Nowadays it's much more troublesome to mention exactly what % age of their students really visits the library to use the resources as it is possible the student might be using the library remotely through other sources. It's troublesome to estimate what % age utilizes the services and experience of the library employees within the library building (Simmonds & Andaleeb, 2001).

### ***HEC Digital Library***

This century came with major changes in data and communication technologies which affected the developed as well as the developing world. No society and country can escape from this changing environment and technology, but it is mandatory for them to change themselves. In the developed world the researchers are introduced and allowed to use the emerging electronic resources in a separate section of academic libraries. This has led to changes in information seeking behavior of the users as well. Due to these resources the users can easily access their required data remotely all over the world. The developing countries are also bound to establish institutions for incorporating the pace of the advanced or developed world.

Fatima Warraich and Ameen (2010) shared their views regarding the HEC digital library, its usage and level of user satisfaction with it. Study disclosed that young LIS professionals use the HEC digital library resources frequently as compared to old professionals (Ahmad et al., 2018). The satisfaction level with these resources was good and the respondents acknowledged and admired the role of the digital library in supporting research activities in universities. Level of satisfaction with e-journals was very high; on the other hand, the level of satisfaction with e-books was very low (Aslam, Qutab, et al., 2022). It was disclosed that the capacity of LIS professionals to train the users with usage of these resources is not good. Lack of skills, awareness of technology and databases were the major hurdles which became barriers for professionals to offer training and literacy sessions of these resources. The study further recommended that well trained LIS professionals are required at every university to introduce the researchers with the usage of



databases and allied material. Therefore, literacy sessions about the e-resources accessible through HEC digital library should be a regular feature of the libraries (Ali, Shoaib, & Abdullah, 2023).

### ***Impact of digital library resources on Research***

University libraries are increasing their electronic collections for several years. No doubt in it that its emergence has affected the allocation budget on other sectors of the libraries. Consortia dealing in this regard could be beneficial for the whole community. It would be economical and can be a cause of saving in terms of canceling the print journals subscription as these are expected to be accessible. Resource sharing programs facilitate libraries in their material deficiency and users' choice regarding accessing the resources would also be increased by this way. Digital libraries are meant to serve users; if these systems don't seem to be used, they comprise oblivion and terminate their operation. So, one in every of the most aspects to be thought of in research is that the user's perspective, deciding the extent to that the capacity to addresses the desires of its users (Ali, Shoaib, & Asad, 2021). Ozoemelem (2009) interprets that library spent its cash very carefully to make it more optimal for library users. When the points of interlibrary loan and resource sharing arise, the libraries are so far reluctant to spend much on these programs. Although, allocating funds for this purpose could be beneficial for users (Ali, Shoaib, & Syed, 2023).

### ***Importance of Libraries Evaluation***

Proper periodic evaluation of any institution is the key for its progress in the right direction. The organizers or managers of any institution formulate the policies and plan, short term, and long term, for their institution on the bases of evaluations results. Libraries as institutions are also required to be evaluated after their establishment and for this quantitative as well as qualitative methods of evaluation are applied for uplift and improvement of the library services and resources (Shoaib et al., 2020).

### **Research Gap**

This research area was not studied so far by anyone, and it was neglected. Although many researchers evaluated the collection or information resources of university libraries, the respondents were library professionals, undergraduate library users or all users, not only the research scholars. The services of university libraries were also evaluated by many researchers in detail but again it was only users centered, therefore, users centered appraisal of libraries information resources was the need of the hour. Although many researchers had evaluated the



information resources of a library as per users' requirements of an individual university, they had not extended their research up to a district, province, or a country level. Similarly, the ever-increasing number of digital resources in university libraries have changed the needs of research scholars by manifold. Now, it has become essential for libraries to evaluate, time and again, the information needs of researchers after a very short span of time according to frequent changes and advancement in information technology. Besides, the importance of research scholars' opinions or recommendations for university libraries in collection development or acquisition was also not assessed, at large, by anyone so far.

### **Objectives of the study**

The goal of the study was to evaluate the information resources available in university libraries as per research scholars' requirements and to propose viable solutions, where possible, for better collection development in university libraries of Punjab which may enable the research scholars to fulfill their needs in a better way.

1. To explore user centered development of library collections.
2. To find out the perception of research scholars about library collections.
3. To inquire involvement of research scholars in collection development plans.
4. To dig out the range and depth of information resources for research scholars.
5. To evaluate a variety of information resources available to research scholars.

### **Rationale and significance of the study**

This was particularly important to measure that available information resources in university libraries are as per requirements of research scholars. Further, this study also assessed the requirements of research scholars and how much university libraries can coop with their requirements. This study depicts the clear status of the relevance of collection with research scholars' needs and provides solutions to libraries. This study has also revealed to us which areas of university libraries collection or information resources are weak, lacking, up to the mark or overspent. Through this study, it has also been assessed that how far HEC involvement in university libraries is beneficial for research scholars, especially satisfaction of the users with the resources of the digital library of HEC have also been evaluated. This study also provides a baseline to university libraries for formulating any collection development policy in future. This study enlightens us how much research scholars of universities are being affected with the



technological revolution and advent of new technologies. Consequently, the university libraries can decide now after this study that which direction they must choose, in terms of acquiring information resources, for promoting research culture in universities and educational institutions.

### **Literature Review**

Researchers play an important role to keep a society on the path of development through their research work. Therefore, it is the responsibility of a society to create a supportive environment and provide the relevant resources in this regard to researchers. University libraries all over the world have emerged as leading institutions on behalf of a society to play their due role to facilitate the researchers and their tasks. The ultimate product of well-developed advanced and enriched university libraries is research (Sultan & Rafiq, 2021). Enormous funds are being spared and great efforts are being made in universities for the establishment of purposefully built and state of the art libraries in developed as well as in developing countries. Many studies have been conducted, so far, on the benefits and importance of these libraries. Similarly, the assessment and evaluation of these libraries in terms of their services and information resources, after their establishment, are considered essential to keep them on track and beneficial for researchers and other users as well (Shuling, 2007).

The services and resources of university libraries are required to be evaluated periodically for overall improvement of the libraries. Number of studies have been conducted to analyze and assess the information resources of the libraries. These studies are very beneficial for the libraries and support the library professionals as well to formulate policies and procedures for future endeavors (Ahmad et al., 2019a).

### ***Role of Academic Libraries***

It has not been much written so far about the initiative-taking role of educational libraries considering research as their prime responsibility. Still, the focus of literature being published in the field of Library Information Science (LIS) is providing maximum resources and services to access these resources like Interlibrary Loan (ILL), information provision programs and reference services. However, some documents and literature have been produced in this area to provide advanced resources and services to the researchers (Aslam, Naveed, et al., 2021). The roles of the academic libraries have become more important in this regard (Johnston, 2020). The libraries, no doubt, are facing lack of funding to enrich their resources and take new initiatives to support their



patrons, especially researchers in the case of university libraries. Universities in Pakistan have started new programs in the evening and afternoon which is truly an opportunity for many students to complete their education, but these programs also provide finance to universities for improving their infrastructure and resources (Ullah et al., 2022). Similarly, HEC also offers grants for the development and enhancement of universities. Both these sources of finance provide a tiny share to libraries; therefore, the resources and services of these academic libraries could not be enhanced accordingly.

### ***Evaluation of Information Resources***

The evaluation of libraries information resources is the most important factor of collection development (Agee, 2005). The collection enrichment of libraries and libraries future strategies regarding addition of new resources largely depend upon their evaluation data (Carrigan, 1996). The acquisition of balanced and effective material for libraries also depends upon its proper assessment. The core mission of universities cannot be fully supported without proper evaluation of library resources on periodic bases, which guarantees the meeting of users' requirements. The media, source and change in format of information do not minimize the importance of evaluation. The new online resources of information are also required evaluation as required for print resources (Muema Kavulya, 2003). Information professionals must be compelled to bear in mind the holdings of their libraries for inclusion or withdrawal information resources from their libraries. (Wallace & Van Fleet, 2001).

The study of Ameen (2010) describes that university libraries in Pakistan are still focusing on increasing the collection instead of their effectiveness and usefulness. The "bigger is better" is still prevailing in university libraries which has become obsolete in the global north. So, academic libraries are not changing them as fast as the change in technology and other factors are observed. Therefore, university libraries should get rid of this outdated phenomenon and develop their resources and services based on the effectiveness of these services and resources. So, effectiveness can be measured as per perception of the users (Aslam, Awan, et al., 2021). The students who passed out from universities are very important for libraries to get their challenges and opportunities information from them (Aslam, Naveed, et al., 2022). The previous library experiences of those students may be an important determinant of what quantity adjustment to the library system is needed, a few the explanations by the students why international students





used the library include: test preparations, book reading, searching, and finding books, get benefit from online resources, and meeting friends (Rafi et al., 2021; Shoaib et al., 2022).

### ***Information Resources***

In a study by Kassim (2009), respondents were asked in what ways in which the libraries will serve users' learning and analysis desires. The researchers suggest that libraries prioritize providing the latest materials, as this emerges as the most common recommendation, cited by 40% of the respondents. Following closely is the suggestion that libraries extend their opening hours (18.9%), increase the availability of computers (16.1%), enhance the friendliness and knowledgeability of staff (13.3%), organize more workshops on information utilization (7.5%), offer guidance on consultation and research methodology (2.8%), and develop their own web-based information resources (2.0%).

The study of Mirza and Mahmood (2012) sorted out that usage and purpose of usage of electronic resources differs amongst different age groups. In Pakistan some barriers are found in the way of electronic resources usage like power outages, lack of advanced technology, lack of web affiliation, lack of literacy programs and sessions for orientation of these resources. Ozoemelem (2009) viewed that these issues have been mentioned by the users in different surveys, and Ali, Shoaib and Abdullah (2021) disclosed that lack of literacy or understanding with electronic resources and lack of training for using these resources besides outdated terminals are major hurdles in usage of these resources. The usage of electronic resources is on the rise among the research scholars of BZU and IUB and they mostly rely on these resources to complete their assignments and presentations (Amjad et al., 2013). Though, they indicated several issues with the usage of these resources but, overall, they were satisfied with these resources and there were not many variations in the satisfaction level of under-studied universities (Ali & Naveed, 2020).

### **Research Methods and Design**

This research focuses on the study's research methodology, encompassing aspects such as the research design, setting, population, sample, and the instrument used for data collection. The research design is an overall plan of the study to find the answers to the research questions. This study used a quantitative descriptive survey research method to evaluate the information resources of the public sector university libraries of province Punjab in terms of the perception of MPhil and PhD research scholars.



This study attempted to quantify the research scholars' perception or level of satisfaction with the available information resources in the central libraries of their respective universities. Besides, the study also attempted to evaluate and describe which area of university libraries collections meets, exceeds, or falls short of research scholars' expectations. Moreover, their involvement and satisfaction with the library acquisition program of their university were also quantified through this study. Quantitative data can be rearranged into numbers to obtain information and describe variables and their relationships.

### ***Research Population and Sample***

Researchers of MPhil and PhD, who were studying at the main campuses of the public sector universities of Punjab, were the population.

In this study non-probability convenience sampling was used and questionnaires were distributed in the central libraries of under studied universities. One-thousand one-hundred and twenty (1120) questionnaires were sent out to twenty-nine public sector universities of Punjab (i.e., forty questionnaires were sent to twenty-five universities and thirty questionnaires were sent to four universities). Six-hundred and seventy-nine (679, 61%) responses were received from twenty-two (22) universities of the Punjab. Most survey questionnaires were sent by the researcher to Central libraries of the universities as the perception and availability of resources in the central libraries of the under-studied universities were sought. They handed over the questionnaires to the research scholars (MPhil/PhD Students) of their universities who visited the library.

### ***Data Collection***

The researcher distributed forty questionnaires to twenty-five universities and thirty questionnaires to four universities to collect the data through courier and email as well. Each willing research scholar received a letter containing details about the study and a questionnaire. The distribution of questionnaires to the researchers was facilitated by volunteers from the central libraries of the universities, helping the researchers. The completed questionnaires were kept for analysis to address the question of the perceptions of postgraduate students regarding the availability of information resources and acquisition in the central libraries of the public sector universities of Punjab, a questionnaire survey was designed based on previous related surveys. The 66-items questionnaire was then developed with 36 nominal scale questions, 30 Likert scale questions and 8 demographic questions. The questionnaire underwent compilation and discussion



with the researcher's supervisor, an expert, and a statistician. Modifications recommended by them were incorporated. The questionnaire was pre-tested with 40 postgraduate students and found fit for further study.

Questionnaire's sections are as under:

Section A (1-2): Availability of Print & Electronic resources in libraries

Section A (3): Involved in Library acquisition.

Section B (1-2): Level of satisfaction with the available information resources

Section B (3): Level of satisfaction with the library's acquisition process

Section C: Demographic or Personal (Biographical) Information

The data of 679 questionnaires received through courier or email were arranged in a tabular form for coding of the items, the spreadsheet file was used for entries and all records were completed for proper data analysis.

### **Data Analysis**

This study is based on a self-composed questionnaire used for required analysis, from research scholars of the universities of the province of Punjab. The questionnaire received 679 valid responses from the research scholars of 22 public sector universities. A questionnaire was sent to 29 universities, but no response was received from the research scholars of 7 universities. The response rate was 61% of the total 1120 sent questionnaires. The analysis covers: demographic features of the respondents, availability of online/digital & print resources in their central libraries, participation of the respondents in the collection development of their central libraries, level of satisfaction with online/digital & print resources available in their libraries and level of satisfaction with the collection development of their central libraries.

SPSS, ver. 21 was used for data analysis. Various statistical methods including frequency analysis and descriptive statistics were presented for accuracy of data.

### **Demographic Data**

The instrument comprised questions designed to elicit specific demographic information about the research scholars from each participating university. These inquiries encompassed aspects such as the gender of the respondents, degree (MPhil or PhD), program (Morning or Evening) and computer skills (Excellent, Very Good, Good, Fair, or poor). Table 1 (cross



tabulation) is showing the results in combine. However, tables 2 through 05 show the same results independently.

**Table 1.** *Gender \* Computer Skills\* Degree \* Program Cross tabulation*

Program	Degree	Gender	Count	Excellent	Very Good	Good	Fair	Poor	Total
			Count	70	80	89	30	9	278
		Male	Computer Skills	38.7%	37.2%	38.7%	68.2%	100.0%	40.9%
Morning & Evening	M.Phil & Ph.D		Count	111	135	141	14	0	401
		Female	Computer Skills	61.3%	62.8%	61.3%	31.8%	0.0%	59.1%
		Total	Count	181	215	230	44	9	679
			Computer Skills	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 1 shows that there were a total 679 respondents, out of which 401(59%) were female and 278 (41%) were male researchers who participated in the study through questionnaire. This table also showed their computer skills and most of the respondents were found computer literate. 181 (61.3%) of female respondents selected excellent, whereas 38 (38.7%) male respondents selected excellent in their computer skills. Moreover, 9 (100%) male respondents selected their computer skills as poor and no (0%) female respondent selected her computer skills as poor.

**Table 2.** *Frequency distribution of respondents’ program and degree pursued*

Respondents’ Degree	Frequency	%	Respondents’ Program	Frequency	%
MPhil	553	81.4	Morning	282	41.5
PhD	126	18.6	Evening/Weekend	397	58.5
Total	679	100.0	Total	679	100.0

Table 2 shows that the majority 553 (81.4 %) of the respondents were MPhil scholars and 126 (18.6 %) were PhD scholars. The table data shows that the majority 397 (58 %) of the



respondents were studying in the evening/weekend program whereas, 282 respondents (41.5 %) were studying in the morning program.

**Table 3.** *Frequency distribution of respondents' gender*

Respondents' Gender	Frequency	Percentage
Male	278	40.9
Female	401	59.1
Total	679	100.0

Table 3, presenting the frequency distribution of respondents' gender, indicates that the majority consists of 401 individuals, accounting for 59.1% of the respondents were female scholars while 278 individuals, accounting for 40.9 % were male research scholars.

**Table 4.** *Frequency distribution of respondents' computer skills*

Respondents' computer skills	Frequency	Percentage
Excellent	181	26.7
Very Good	215	31.7
Good	230	33.9
Fair	44	6.5
Poor	9	1.3
Total	679	100.0

The question was asked from the participants about their computer skills depicted that one hundred and eighty-one (26.7 %) were ranked themselves in “excellent” category, two hundred and fifteen (31.7 %) ranked themselves in “very good” category, two hundred and thirty (33.9 %) respondents ranked themselves in “good” category, forty-four (6.5 %) ranked themselves in “fair” category and nine respondents (1.3 %) ranked themselves in “poor” category.

#### ***Accessibility to online resources***

Researchers were asked about the accessibility of online resources in the central libraries of their respective universities. Nominal scale was used to know the categorical opinion about the under studied phenomenon with two options “Yes or No”

**Table 5.** *Accessibility to online resources*

a. Accessibility to HEC Digital Library and E-Journals/Magazines					
		HEC Digital Library		E-Journals/Magazines	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	617	90.9	542	79.8	
No	62	9.1	137	20.2	
Total	679	100.0	679	100.0	
b. Accessibility to Online Research Support Tutorials and Institutional Research Repository					
		Online Research Support Tutorials		Institutional Research Repository	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	421	62.0	477	70.3	
No	258	38.0	202	29.7	
Total	679	100.0	679	100.0	
c. Accessibility to digital databases and E-Books					
		Digital Databases		E-Books	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	524	77.2	485	71.4	
No	155	22.8	194	28.6	
Total	679	100.0	679	100.0	

A significant majority of the respondents/researchers (617, 90.9%) believe that the central libraries of their universities offer access to HEC DL. Additionally, a majority (542, 79.8%) express the view that central library's provide access to e-journals/magazines. Furthermore, a substantial majority (421, 62%) indicate that central library's offer access to online research support tutorials. Moreover, a significant majority (477, 70.3%) state that central libraries provide access to Institutional research repositories. Additionally, a majority (524, 77.2%) affirm that central libraries offer access to digital databases, and a considerable number (485, 71.4%) believe that these libraries provide access to e-books collections.



**Table 6.** *Accessibility to online resources*

d. Accessibility to online public access catalogues and audio-visual resources		Online public access catalogues		Audio visual resources	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	464	68.3	387	57.0	
No	215	31.7	292	43.0	
Total	679	100.0	679	100.0	
e. Accessibility to reference/citations tools and quantitative data analysis tools		Reference/citations tools		Quantitative data analysis tools	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	478	70.4	469	69.1	
No	201	29.6	210	30.9	
Total	679	100.0	679	100.0	
f. Accessibility to qualitative data analysis tools and survey tools		Qualitative data analysis tools		Survey tools	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	447	65.8	438	64.5	
No	232	34.2	241	35.5	
Total	679	100.0	679	100.0	

A predominant majority of the respondents/researchers (464, 68.3%) believe that central libraries of their universities offer access to OPAC. Additionally, a significant majority (387, 57%) express the view that central libraries provide access to audiovisual resources. Furthermore, a substantial majority (478, 70.4%) indicate that central libraries offer access to reference/citations tools. Moreover, a significant majority (469, 69.1%) state that central libraries provide access to quantitative data analysis tools. Additionally, a considerable majority (447, 65.8%) believe that central libraries offer access to qualitative data analysis tools. Lastly, a significant majority (438, 64.5%) indicate that central libraries provide access to survey tools.



**Availability of print resources in the library**

**Table 7.** Availability of print resources in the library

a. Availability of Manuals and Indexes and abstracts		Manuals		Indexes and abstracts	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	519	76.4	498	73.3	
No	160	23.6	181	26.7	
Total	679	100.0	679	100.0	
b. Availability of Newspapers and Print journals/magazines		Newspapers		Print journals/magazines	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	561	82.6	543	80.0	
No	118	17.4	136	20.0	
Total	679	100.0	679	100.0	
c. Availability of Pamphlets and brochures and reference books		Pamphlets and brochures		Reference books	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	433	63.8	556	81.9	
No	246	36.2	123	18.1	
Total	679	100.0	679	100.0	

The response of majority (519, 76.4 %) respondents/researchers shows that central libraries of their universities provide print manuals for research guidance. The response of the majority (498, 73.3 %) respondents/researchers shows that central libraries of their universities provide print indexes and abstracts for research. The response of the majority (561, 82.6 %) respondents/researchers shows that central libraries of their universities provide print Newspapers to researchers. The response of majority (543, 80 %) respondents/researchers shows that central libraries of their universities provide print journals/magazines to researchers. The response of the majority (433, 63.8 %) respondents/researchers shows that central libraries of their universities provide pamphlets and brochures to researchers. The response of the majority (556, 81.9 %)





respondents/researchers shows that central libraries of their universities provide reference books to researchers.

**Table 8.** Availability of print resources in the library

d. Availability of General books and Theses & dissertations		General books		Theses & dissertations	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	571	84.1	544	80.1	
No	108	15.9	135	19.9	
Total	679	100.0	679	100.0	

  

e. Availability of Textbooks and Public and private sectors reports		Textbooks		Public and private sectors reports	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	558	82.2	513	75.6	
No	121	17.8	166	24.4	
Total	679	100.0	679	100.0	

The response of the majority (571, 84.1 %) respondents/researchers in table 25 shows that central libraries of their universities provide general books for reading and borrowing to researchers. The response of majority (544, 80.1 %) respondents/researchers in table 12 shows that central libraries of their universities provide theses & dissertations to researchers. The response of majority (558, 82.2 %) respondents/researchers in table 12 shows that central libraries of their universities provide textbooks to researchers. The response of the majority (513, 75.6 %) respondents/researchers in table 12 shows that central libraries of their universities provide public and private sector reports to researchers.

**Resources added to collection of your library regularly**

**Table 9.** Availability of print resources in the library

a. Addition of New books and new journals/magazines		New Books		New journals/magazines	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	447	65.8	415	61.1	



No	232	34.2	264	38.9
Total	679	100.0	679	100.0
b. Addition of online material and Acquisition of new material				
	Online material		Acquisition of new material	
Response	Frequency	Percentage	Frequency	Percentage
Yes	321	47.3	411	60.5
No	358	52.7	268	39.5
Total	679	100.0	679	100.0
c. Recommendation of manuals for the library and indexes and abstracts				
	Recommendation of manuals for the library		Recommendation of indexes and abstracts	
Response	Frequency	Percentage	Frequency	Percentage
Yes	380	56.0	366	53.9
No	299	44.0	313	46.1
Total	679	100.0	679	100.0

The response of the majority (447, 65.8 %) respondents/researchers in table 28 shows that central libraries of their universities ask from them for addition of new books in the collection. The response of the majority (415, 61.1 %) respondents/researchers in table 29 shows that central libraries of their universities ask for addition of new journals/magazines in the collection. The response of the majority (358, 52.7 %) respondents/researchers in table 30 shows that central libraries of their universities do not ask from them for addition of online material. The response of majority (411, 60.5 %) respondents/researchers in table 31 shows that central libraries of their universities ask from all for acquiring library material. The response of the majority (380, 56 %) respondents/researchers in table 32 shows that they recommend manuals for central libraries of their universities. The response of the majority (366, 53.9 %) respondents/researchers in table 33 shows that they recommend indexes and abstracts for central libraries of their universities.

**Table 10.** *Availability of print resources in the library*

d. Recommendation of journals/magazines and Books		Recommendation of journals/magazines		Recommendation of books	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	379	55.8	450	66.3	
No	300	44.2	229	33.7	
Total	679	100.0	679	100.0	
e. Recommendation of Software and recommend manuals		Recommendation of Software		Provision of recommend manuals	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	375	55.2	422	62.2	
No	304	44.8	257	37.8	
Total	679	100.0	679	100.0	
f. Provision of recommended indexes and abstracts and recommended journals/magazines		Provision of recommended indexes and abstracts		Provision of recommended journals/magazines	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	401	59.1	438	64.5	
No	278	40.9	241	35.5	
Total	679	100.0	679	100.0	
g. Provision of recommended books and recommended software		Provision of recommended books		Provision of recommended software	
Response	Frequency	Percentage	Frequency	Percentage	
Yes	516	76.0	450	66.3	
No	163	24.0	229	33.7	
Total	679	100.0	679	100.0	



The response of the majority (379, 55.8 %) respondents/researchers in table 34 shows that they recommend journals/magazines for central libraries of their universities. The response of the majority (379, 55.8 %) respondents/researchers in table 35 shows that they recommend books for central libraries of their universities. The response of majority (375, 55.2 %) respondents/researchers in table 36 shows that they recommend software for central libraries of their universities. The response of majority (422, 62.2 %) respondents/researchers in table 37 shows that central libraries of their universities provide manuals they recommend. The response of majority (401, 59.1 %) respondents/researchers in table 38 shows that central libraries of their universities provide indexes and abstracts they recommend. The response of majority (438, 64.5 %) respondents/researchers in table 39 shows that central libraries of their universities provide journals/magazines they recommend. The response of the majority (516, 76 %) respondents/researchers in table 40 shows that central libraries of their universities provide books they recommend. The response of the majority (450, 66.3 %) respondents/researchers in table 41 shows that central libraries of their universities provide software they recommend.

***Satisfaction level of the respondents***

The respondents’ level of satisfaction was also measured by five-point Likert scale, employed to assess both the purpose and the degree of satisfaction among respondents concerning the information resources and collection development methods of their respective central libraries. Furthermore, Likert scale was also used to measure the importance of this information material on research. For the statement the respondents’ satisfaction with the library resources and collection development method 1 indicated “strongly disagree” and 5 “strongly agree”.

**Table 11.** *Satisfaction level of the respondents*

Sr. No.	Statement	Mean	S. D
i.	Access to HEC digital library satisfy my research needs	3.43	1.35
ii.	access to e-journals/magazines satisfy my research needs	3.44	1.25
iii.	Access to institutional research repository satisfy my research needs	3.41	1.13
iv.	Access to research tutorial satisfy my research needs	3.37	1.19
v.	Access to e-books satisfy my research needs	3.43	1.16
vi.	Access to digital databases satisfy my research needs	3.54	1.17



vii.	Access to OPAC satisfy my research needs	3.53	1.21
viii.	Access to audio visual resources satisfy my research needs	3.41	1.19
ix.	Access to reference/citations tools satisfy my research needs	3.55	1.14
x.	Access to quantitative data analysis tools satisfy my research needs	3.40	1.21
xi.	Access to qualitative data analysis tools satisfy my research needs	3.41	1.18
xii.	Access to survey tools satisfy my research needs	3.42	1.23

Table 11 shows that most of the respondents (57.4 %) accepted that they found the DL services and resources satisfactory. The information presented in the table suggests that most of the respondents (54.7 %) accepted that they were satisfied with the access of e-journals/magazines provided by the central libraries of their universities. The information presented in the table suggests that most of the respondents (229, 33.7 %) were not aware about the institutional research repositories of their respective universities or the term is new for respondents, or most universities have not created an institutional research repository so far. The information presented in the table suggests that most of the respondents (51.4 %) accepted that they were satisfied with the access to research tutorial provided by the central libraries of their universities. The information presented in the table suggests that most of the respondents (54.5 %) accepted that they were satisfied with the access to e-books provided by the central libraries of their universities. The information presented in the table suggests that most of the respondents (60 %) accepted that they were satisfied with the access to digital databases provided by the central libraries of their universities.

The information presented in the table suggests that most of the respondents (52.6 %) accepted that they were satisfied with the access of OPAC provided by the central libraries of their universities. However, the high %age (28.7) of neutral responses of respondents depicts that they were not aware about their central libraries' OPAC. The information presented in the table suggests that most of the respondents (54.3 %) accepted that they were satisfied with the access of audio visual (A/V) material provided by the central libraries of their universities. The information presented in the table suggests that most of the respondents (58.5 %) accepted that they were satisfied with the access of reference/citation tools provided by the central libraries of their universities. The information presented in the table suggests that most of the respondents (52.4 %) accepted that they were satisfied with the access of quantitative data analysis tools provided by the central libraries of their universities. The information presented in the table suggests that most of



the respondents (54.3 %) accepted that they were satisfied with the access of qualitative data analysis tools provided by the central libraries of their universities. The information presented in the table suggests that most of the respondents (53.7 %) accepted that they were satisfied with the access of survey tools provided by the central libraries of their universities.

***Satisfaction with the availability of print resources***

**Table 12.** *Satisfaction with the availability of print resources*

Sr. No.	Statement	Mean	S. D
i.	I am satisfied with the availability of manuals for research guidance	3.44	1.17
ii.	I am satisfied with the availability of indexes and abstracts	3.47	1.11
iii.	I am satisfied with the provision of Newspapers	3.72	1.08
iv.	I am satisfied with the availability of print journals/magazines	3.73	1.08
v.	I am satisfied with the availability of pamphlets and brochures for upcoming events	3.44	1.16
vi.	I am satisfied with the availability of reference books of the library	3.71	1.03
vii.	I am satisfied with the availability of public and private sectors research reports	3.54	1.08
viii.	I am satisfied with the availability of general books in the collection	3.62	1.24
ix.	I am satisfied with the availability of theses & dissertations in the collection	3.62	1.18
x.	I am satisfied with the availability of textbooks in the collection	3.65	1.17

Table 12 shows that most of the respondents (58.1 %) accepted that they were satisfied with the availability of research manuals in the central libraries of their universities. The information presented in the table suggests that most of the respondents (55.3 %) accepted that they were satisfied with the availability of indexes and abstracts in the central libraries of their universities. The information presented in the table suggests that most of the respondents (67.3 %) accepted that they were satisfied with the availability of Newspapers in the central libraries of their universities. The information presented in the table suggests that most of the respondents (66.1 %) accepted that they were satisfied with the availability of journals/magazines in the central libraries of their universities. The information presented in the table suggests that most of the respondents



(51.1 %) accepted that they were satisfied with the availability of pamphlets and brochures of upcoming events in the central libraries of their universities. The information presented in the table suggests that most of the respondents (66.1 %) accepted that they were satisfied with the availability of reference books in the central libraries of their universities. The information presented in the table suggests that most of the respondents (57.4 %) accepted that they were satisfied with the availability of public & private sector research reports in the central libraries of their universities. The information presented in the table suggests that most of the respondents (64.8 %) accepted that they were satisfied with the availability of general books in the central libraries of their universities. The information presented in the table suggests that most of the respondents (63.3 %) accepted that they were satisfied with the availability of theses & dissertation in the central libraries of their universities. The information presented in the table suggests that most of the respondents (63.4 %) accepted that they were satisfied with the availability of textbooks in the central libraries of their universities.

***Satisfaction with the method of collection development of the library***

**Table 13.** *Satisfaction with the method of collection development of the library*

Sr. No.	Statement	Mean	S. D
i.	I am satisfied with the method library adopts for getting my input during selection of new library books	3.49	1.18
ii.	I am satisfied with the method library adopts for getting my input during selection of new journals/magazines	3.47	1.17
iii.	I am satisfied with the method library adopts for getting my input during selection of new online resources	3.51	1.10
iv.	I am satisfied with the method library adopts for getting my input during selection of other information resources	3.54	1.15
v.	Library always purchases my recommendations of printed books	3.39	1.17
vi.	Library always subscribes my recommendations of printed journals/magazines	3.37	1.23
vii.	Library always purchases my recommendations of other information resources	3.28	1.19




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viii.	Library always purchases my recommendations of online resources	3.31	1.17
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Table 13 shows that most of the respondents (58.3 %) accepted that they were satisfied with the method libraries adopted for getting their input during the selection of new books for the central libraries of their universities. The information presented in the table suggests that most of the respondents (57.6 %) accepted that they were satisfied with the method libraries adopted for getting their input during the selection of new journals/magazines for the central libraries of their universities. The information presented in the table suggests that most of the respondents (59.6 %) accepted that they were satisfied with the method library adopt for getting their input during the selection of new online resources for the central libraries of their universities. The information presented in the table suggests that most of the respondents (58.9 %) accepted that they were satisfied with the method library adopt for getting their input during the selection of other information for the central libraries of their universities. The table data shows that although, majority of the respondents (48.5 %) accepted that the library always purchased their recommendations, a large %age (51.5%) of dissatisfaction or neutrality also show that their recommended printed books are not always purchased for the central libraries of their universities.

The table data shows that although, majority of the respondents (48.9 %) accepted that the library always purchased their recommendations, a large %age (51.1%) of dissatisfaction or neutral also show that their recommended print journals/magazines are not always subscribed for the central libraries of their universities. The table data shows that although most of the respondents (44.9 %) accepted that the library always purchased their recommendations of other information resources but a large %age (55.1%) of dissatisfaction or neutrality also show that their recommended other information resources are not always purchased for the central libraries of their universities. The table data discloses that although most of the respondents (45.5 %) accepted that the library always purchased their recommendations of online resources but a large %age (54.5%) of dissatisfaction or neutrality also show that their recommended online resources are not always purchased for the central libraries of their universities. The tables show clear pictures of the university libraries information resources, print as well online resources, and their usefulness and effectiveness for the research scholars besides, the importance of research scholars' recommendations during acquisition of new information resources in university libraries has also revealed upon us by the help of collected data and its display in tabular form. So, data about both





areas of research, (i) availability of information resources and its effectiveness for research scholars (ii) research scholars' involvement in collection development of university libraries, have been collected, presented, and analyzed.

### *Descriptive Statistics of the variables*

**Table 14.** *Descriptive Statistics of the variables*

Variables	Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Deviation
Accessibility to online resources	679	1	2	1.30	.268
Availability of print resources	679	1	2	1.22	.234
Resources added to collection of your library regularly	679	1	2	1.39	.318
Satisfaction with the accessibility of online resources	679	1	5	3.44	.916
Satisfaction with the availability of print resources	679	1	5	3.59	.885
Satisfaction with the method of collection development of your library	679	1	5	3.42	.980

The table 14 reflects that most of the respondents/researchers are provided with the online resources required to them for research purpose as mean value (1.30) of the responses regarding the availability of online resources is near to 1 (Yes) comparatively to 2 (No). Similarly, the respondents/researchers are also provided the print resources, in the Central Libraries of participating Universities, required to them for research purpose as mean value (1.22) of the responses regarding the availability of print resources is near to 1 (Yes) comparatively to 2 (No). Although, most of the respondents are of the view that their Central Libraries regularly add research resources required to them in their collection, however, many respondents are of the view that their universities are not regularly adding the resources required to them as mean value of the responses regarding the 'regularly addition of resources in the collection of your library' stands at 1.39 where 1 represent yes and 2 represent No.

Most of the respondents are agreed, and many of them are strongly agreed, with statement that they are satisfied with the accessibility of online resources accessible in their universities as



mean value stands at 3.44. Similarly, satisfaction level of respondents regarding the availability of print resources stands at 3.59 which shows that the respondents are strongly agreed with the statement that they are satisfied with the availability of print resources in the central libraries of their universities. However, satisfaction level with the method of collection development adopted by the central libraries of the respondents are not as much satisfactory as above stated two cases as the mean value stands at 3.42. The Standard Deviation of above table in all cases is less than one (1) which depicts that responses are not much variant, and the data are clustered around the mean.

## **Findings, Recommendations and Conclusion**

### **Findings**

The major findings of this study conducted on Research Scholars' satisfaction with library information resources and collection development method are as:

*How much research scholars are satisfied with the information resources available in university libraries?*

The response of the research scholars regarding satisfaction with the information resources available in central libraries of their universities, with minimum mean score 3.37 and maximum 3.73, shows that the respondents are generally, not highly, satisfied with the information resources available in university libraries of the province of Punjab. However, improvement in online resources is necessary for university libraries. Moreover, awareness about Online Public Catalogue (OPAC) amongst the library users is very limited.

*Which area of the library collection meets, exceeds, or falls short of research scholars' expectations?*

There is a dire need of creating institutional research repositories in university libraries of the province of Punjab as only very few researchers are aware of the term and its usage mean score 3.41. Similarly, quantitative data analysis tools are also not in sufficient numbers, with mean 3.40, available in university libraries. The number of these tools is also required to be improved in the central libraries of the universities to promote the research culture in universities. The print journals/magazines (Mean=3.73), Newspapers (Mean=3.72) and reference books (Mean=3.71) available in the collection of university libraries are quite satisfactory as per requirements of the



researchers. No area of the libraries' collection exceeds as per the requirements of the research scholars with the highest mean score of satisfaction with information resources is 3.73.

*How much variation and multiplicity of information resources available to research scholars in university libraries?*

The university libraries provide online as well as print information resources to research scholars with almost 91% libraries provide access to, at least some databases of HEC digital library as described by the respondents which show nine % (9%) of respondents are whether not aware of accessibility of HEC digital library or their library do not provide computer systems to access the digital library. Whatever the case, it is required that orientation of the HEC digital library should be provided to researchers and separate computer systems in university libraries should also be provided to researchers for accessing the HEC digital library. Similarly, appreciable numbers of libraries, more than 80%, provide print resources in their collection: Newspapers, Journals/magazines, reference books, general books, theses/dissertations, and textbooks.

*How deep and diverse are information resources of university libraries?*

There is no highly satisfactory area found in the collection of university libraries of the province of Punjab as per perception of the research scholars and evaluation, therefore, depth of available or accessible information resources of the university libraries is out of question. Mean score of satisfaction with information resources of university libraries could not cross 3.84. However, diversity in information resources of university libraries is prevailed as flavor of different media and formats of information resources are provided by the university libraries to the researchers from audio visual resources to textbooks, from access to digital library to pamphlets and brochures of upcoming events and reports of public and private sectors institutions and companies.

*Are research scholars involved in the development of collection in universities?*

The minimum mean score 3.28 and maximum mean score 3.54 of section B3, regarding involvement of research scholars and their satisfaction with the method library adopts for its collection development, is not very satisfactory. Research scholars' requirements of information resources are not always addressed by the university libraries of the province of Punjab. There should be a proper mechanism of university libraries to seek the requisitions from research scholars for procuring or subscribing their requirements of print as well as online resources. After



implementation of this, the researchers would regularly recommend books and other resources for the libraries.

### **Recommendations**

Following are some recommendations based on the above findings:

1. The information resources both print and online are required to be developed more vigilantly as per research scholars' needs in the university libraries.
2. University libraries should develop their Institutional Research Repositories and provide its awareness to researchers to facilitate the researchers proactively.
3. A campaign should be started in university libraries to give awareness to their users about the Online Public Access Catalogue (OPAC) and its usage after developing it. It should also be a part of the main page of universities' websites. Similarly, orientation programs regarding the awareness, usage and importance digital library should be planned in universities, besides, the provision of dedicated computer systems for researchers to access the digital library of HEC in university libraries is also required.
4. Research scholars should be involved in the library acquisition process and their recommendations/selection should be acquired on priority basis as teachers' recommendations are procured in university libraries.
5. User centered surveys for evaluation of library information resources are required to be conducted at each university with the involvement of concerned librarians.
6. Research Scholars should be asked frequently by the libraries about the effectiveness and usefulness of information resources.

### **Conclusion**

To evaluate the university libraries information resources as per the perception of their users specially, research scholars, provided the opportunity to understand different information resources very deeply and research scholars being prime users of university libraries revealed many neglected areas of the libraries which require the attention of the university management as well as policymakers. The research scholars were generally satisfied with the library information resources but a lot of work in many neglected areas is required to be done. The results of the study also show that material recommended by the researchers is occasionally acquired by the libraries. Moreover, the standardized method for seeking the research scholars' requirements of information



resources and its proper acquisition regularly are also required to be adopted in university libraries of the province of Punjab.

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