10-2021

# Perception and Practices of Faculty Members about Electronic Information Resources: A Survey of Public Sector Universities of Khyber Pakhtunkhwa, Pakistan

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**Purpose:** This study investigated the perception, awareness and practices of faculty members regarding e-resources. Moreover, it also highlighted the problems faced by the faculty members while accessing these resources.

**Research Design and Methodology.** The study was quantitative in nature and survey was conducted to collect data from the respondents through questionnaire. The stratified sampling technique was used, and 340 faculty members were selected from the population of 661. The collected data was analyzed using Statistical Package for Social Sciences version 22 (SPSS).

**Findings.** It was found that Google was the most used search engine among the respondents. They were aware of e-resources like e-books & e-journals and used these for learning, research, and teaching purposes. Most of the respondents were satisfied with e-books and believed that e-resources would replace electronic resources. The respondents said that e-resources could increase research productivity, exposure to peer-reviewed articles and improve the quality of research. The major problems faced by the faculty members while accessing e-resources were low speed of the internet, inadequate IT infrastructure, lack of internet, non-availability of full-text access to most of the e-journals and lack of awareness.

**Implications.** The results of the study could be beneficial, the key points to be considered include 1) training and workshops be organized to enhance the awareness and use of e-resources 2) the universities should upgrade their IT infrastructure 3) more databases should be subscribed to satisfy the information needs and enhance the research productivity.

**Keywords:** Awareness of e-resources, Perception about e-resources, Use of e-resources, Satisfaction with e-resources, Electronic Information Resources, Khyber Pakhtunkhwa, Pakistan

**Introduction**

Today's we are living in an electronic era. Every organization such as banks, health organizations, and libraries use Information and Communication Technologies (ICT) applications to bring standard and innovation in their works and activities (Khayyum, Lingaiah, & Abdul, 2015). Nowadays, e-resources are very popular because it helps the researchers, to

get information easily by removing the barriers in research. Electronic publishing has led to a new era of communications and information sharing. E-resources make an increasingly important part of the collection building activities of libraries (Kaur, 2018; Kavitha, 2018). E-resources refer to those that require a computer for access; these may either be accessed remotely via the internet or locally (Devi & Keshava 2020). The digital environment, ICT and e-resources provide a platform for the faculty members and students to access information that enhances research and academic activities (Saddiqa & Hussain, 2021). Electronic information sources are the latest advancements in information technology and are the most powerful instruments ever developed in human history (Abouelenein, 2017).

The last few decades have seen a great deal of material published in electronic format. Internet development has made it easier for users to retrieve and distribute information (Tamrakar & Garg, 2016). Electronic resources, particularly e-zines, databases, and e-books, are essential e-resources (Shukla, Sharma, Singh & Gupta,2020). Al-Baridi, Altaf, and Ansari (2021) defined electronic resources are the materials available in digital format accessible electronically; these include e-books, e-journals, online databases and webpages. Electronic resources are information that can be retrieved, recovered, stored, and utilized through electronic means. According to Dayakar (2018); Jegan and Jayaprakash (2019); and Kashyap (2016), the key characteristics of e-resources, including these have a global reach; users can access e-resources any time and from anywhere; these can be quickly copied, processed, and disseminated; easy to review, manipulate and merge; these are not as voluminous as paper; quick distribution, can add value to services and saves users' time.

**Literature review**

Ansari (2020) reported that most users had knowledge of e-resource, and they also knew about the features and characteristics of these information assets. Abba (2019); Hussain and Saddiqa (2019) and Sharma (2019) noticed that the respondents were aware of e-services and resources  and most faculty members and students were aware of e-books, e-journals, e-zines, and other online databases. Srinivasulu, Balu and Narendra (2019) investigated the use of e-resources among the academic staff and most respondents were found aware of the e-resources available in the library. Publishing articles/books and getting more information were the primary purposes of using these resources.

Sebastian and Muthumari (2020) exposed that most of the respondents had knowledge of available e-resources and used these assets for academic purposes. The respondents stated that digital resources improved their learning, research productivity, and their dependency on digital resources increased over time. Arshad and Ameen (2018);  Yanti and Setiawan (2018)

noticed that e-resources improved and enhanced their research, teaching and e-learning in educational activities. Reddy and Shashikala (2021) reported that most of the respondents were lecturers and assistant professors; Google Chrome and Google were the most used browser and search engines among the respondents, respectively, and most of the respondents visited the library daily. Siwach and Malik (2019) investigated "the use of electronic resources by science faculty and researchers in selected North Indian Universities." The most used e-resource among the respondents were e-journals and the most used databases were "Science Direct, Springer Link, Taylor & Francis, and Wiley."

Baskaran and Prasad (2019); Jegan and Jayaprakash (2019); Ganesh and Rajendran (2019) observed the satisfaction of faculty members with e-resources. They found that the maximum number of respondents were found satisfied with the available e-resources. Dehghani, Asnafi and Hajizeinolabedini (2018) opined that almost all the teaching communities used e-sources and were highly satisfied with the subscribed databases. Science Direct and Magiran were the most used databases among the respondents. Saddiqa and Hussain (2021); Girakaduwa (2019); Jestin and Surnam (2019) highlighted the problems faced by the respondents while accessing e-resources; these include lack of infrastructure facilities, lack of user education and user awareness programs, English language barriers, lack of IT skills and poor knowledge, fewer computers, lack of needed titles, issues of viruses in the computer, and lack of time to access the resources.

Lavanya and Santharooban (2018) identified that the major problems faced while accessing e-resources were power failure, lack of training & orientation sessions, slow internet speed and connectivity, lack of awareness about e-resources, and virus-affected computers. Bhatti, Chohan and Asghar (2014); Kwafoa and Afful-Arthur (2014) highlighted the major problems pointed out by the teachers were the limited number of computers, slow speed of internet, busy schedule of teachers, power supply, charging of access fee, lack of assistance, lack of knowledge and skills of searching techniques to retrieve the required information

**Objectives of the Study**

This study tried to achieve the following objectives:

- To know the awareness of faculty members regarding e-resources.
- To examine the use of electronic resources among the faculty.
- To study the perception of faculty members about e-resources.
- To detect the satisfaction of teaching staff concerning electronic information resources.
- To specify the problems being faced by the teachers concerned with e-resources.

**Research Design and Methodology**

The quantitative research design was used and survey was carried out to achieve the set objectives. The faculty members of the six public sector universities situated in the southern region of Khyber Pakhtunkhwa were the study's population. There were six hundred sixty-one (661) faculty members in these universities, which constituted the study's population. According to Gay, Mills and Airasian (2011), if the population size is around 500, then 50% should be taken as a sample for the quantitative study. Keeping in view, 340 faculty members were selected as a sample of the study. The stratified sampling technique was used to draw the sample from the population.

The faculty members were grouped into three strata based on their designations. 1) professors and associate professors; 2) assistant professors; and 3) lecturers. The sample size of each stratum was equal to the group's proportion in the whole population. The researcher was then randomly select the respondents from each stratum to achieve the desired sample size. The structured questionnaire was used to collect data from the sample. It is also worth mentioning that the data for the study was collected in November 2020.

Moreover, the paper is formatted according to the "Publication Manual of the American Psychological Association" (APA 6th ed.), and the references are organized using the reference management tool EndNote x8.

**Data Analysis and Interpretation**

The collected data was analyzed according to the study's objectives, and the results are presented in tables with explanations.

**Demographic Information of Respondents**

This section describes the respondents' demographic information in terms of gender, age, designation and teaching experience. The data in Table 1 indicate that the study sample constituted 249(73.2%) male and 91(26.8%) female respondents. In addition, the data reveals that 154(45.3%) respondents were of age group ranged from 35-39 years followed by 103(30.3%) respondents with age 40-44 years, 44(12.9%) respondents were of age ranged from 45-49 years. There were 29(8.5%) respondents with age group 30-34 years and only 10(2.9%) respondents were of the age group 25-29 years.

The data in Table 1 shows that out of 340 faculty members, 205(60.3%) respondents were Lecturers, 108(31.8%) were Assistant Professors, 17(5%) were Associate Professors and only 10(2.9%) were Professors. Furthermore, the data illustrates that 172(50.6%) faculty members had 6-10 years of teaching experience, 102(30%) faculty members had 11-15 years'

experience, 62(18.2%) respondents with 1-5 years of teaching experience, whereas 4(1.2%) respondents had 16-20 years of experience.

Table.1

Demographic Information of Respondents

| Gender | Frequency | Percentage (%) |
|---|---|---|
| Male | 249 | 73.2 |
| Female | 91 | 26.8 |
| **Age** | | |
| 25-29 | 10 | 2.9 |
| 30-34 | 29 | 8.5 |
| 35-39 | 154 | 45.3 |
| 40-44 | 103 | 30.3 |
| 45-49 | 44 | 12.9 |
| **Designation** | | |
| Professor | 10 | 2.9 |
| Associate Professor | 17 | 5 |
| Assistant Professor | 108 | 31.8 |
| Lecturer | 205 | 60.3 |
| **Experience** | | |
| 1-5 | 62 | 18.2 |
| 6-10 | 172 | 50.6 |
| 11-15 | 102 | 30 |
| 16-20 | 4 | 1.2 |

**University and Faculty Wise Distribution of Respondents**

The data was collected from the faculty members of various universities; Table 2 depicts the university-wise distribution of respondents. The data shows that out of 340 respondents, 136(40.4%) were from Gomal University D.I Khan (GUDIK), followed by Kohat University of Science and Technology (KUST) with 96(28.2%) respondents and University of Science and Technology, Bannu (UST, Bannu) with 65(19.1%) respondents, 27(7.9%) respondents were from Khushal Khan Khattak University Karak (KKKUK), whereas 10(2.9%) respondents were from FATA University (FU) and 6(1.8%) respondents belonged to University of Lakki Marwat (ULM).

The faculty-wise distribution of the study's sample indicates that 117(34.4%) respondents were from the faculty of social sciences, followed by science faculty with 114(33.5%) respondents. The faculties of management& economics and engineering & technology had the least respondents with 60 and 49 respectively.

Table 2
*University and Faculty wise distribution of Respondents*

| Name of University | Frequency | Percentage (%) |
|---|---|---|
| GUDIK | 136 | 40.4 |
| KUST | 96 | 28.2 |
| UST, Bannu | 65 | 19.1 |
| KKKUK | 27 | 7.9 |
| ULM | 6 | 1.8 |
| FU | 10 | 2.9 |
| **Name of Faculty** | | |
| Faculty of Social Science | 117 | 34.4 |
| Faculty of Science | 114 | 33.5 |
| Faculty of Engineering &Technology | 49 | 14.4 |
| Faculty of Management & Economic | 60 | 17.6 |

**Tools/Sources used by the Respondents to learn about E-resources**

The participants were asked, that how they learned about e-resources. The data in Table 3 reveals that most of the faculty members, 110(32.4%), learned about e-resources from self-learning, 104(30.5%) respondents got information through friends, 68(20.0%) respondents aware themselves through the workshop, while 58(17.1%) learned from courses.

Table 3
Sources used to learn about E-resources

| Statement | Frequency | Percentage |
|---|---|---|
| Through friend | 104 | 30.6 |
| Self-learning | 110 | 32.4 |
| From courses | 58 | 17.1 |
| Workshop | 68 | 20.0 |

**Use of Search Engines among the Respondents**

The survey participants were asked about the use of various search engines. The result in Table 4 shows that Google (Mean =4.89) was the most frequently used search engine, followed by Google Scholar (Mean=4.42), Yahoo (Mean=4.19) and MSN (Mean=3.90), while Ask (Mean=3.68) was the least used search engine among the respondents.

Table 4
*Use of Search Engines for Teaching / Research*

| Search Engines | Mean | Std. Deviation | Variance |
|---|---|---|---|
| Google | 4.89 | 0.30 | 0.09 |
| Google Scholar | 4.42 | 0.85 | 9.72 |
| Yahoo | 4.19 | 1.17 | 1.39 |
| MSN | 3.90 | 1.21 | 1.48 |
| Ask | 3.68 | 1.38 | 1.92s |

Scale: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always

### Respondents' Awareness of Electronic Resources

The respondents were inquired about the awareness of electronic resources; their responses are mentioned in Table 5. It is demonstrated from the data that the faculty members were more aware of e-resources like e-books (Mean=4.56), e-journals (Mean=4.48) and e-zines (Mean=4.35). They were moderately aware of e-resources like HEC databases (Mean=3.97), HEC repository (Mean=3.85) and open-access databases like Library Genesis (Mean=3.57) and Directory of Open Access Journals (Mean=3.53).

Table 5

*Extent of awareness of the different electronic resources*

| E-resources | Mean | Std. Deviation | Variance |
|-------------|------|----------------|----------|
| E-books | 4.56 | 0.79 | 0.62 |
| E-journals | 4.48 | 0.94 | 0.90 |
| E-zines | 4.35 | 0.93 | 0.87 |
| HEC Databases | 3.97 | 1.08 | 1.17 |
| HEC Repository | 3.85 | 1.03 | 1.07 |
| Library Genesis | 3.57 | 1.25 | 1.58 |
| DOAJ | 3.53 | 1.50 | 2.26 |

Scale: 1=Not at all aware, 2= Slightly aware, 3=Somewhat aware, 4=Moderately aware, 5 =Extremely aware

### Use of the Electronic Resources

The respondents were asked about the use of various electronic information resources. The statistics in Table 6 demonstrates that faculty members strongly agreed with the statement that "their institution's library provides adequate facilities to access the electronic resources (Mean= 4.43). It was also found that most of the teachers believed that "HEC e-resources are easily accessible in their universities (Mean=4.37) and used e-resources for learning (Mean=4.16), research (Mean=4.90) & teaching purposes (Mean=4). The faculty members also said that the librarian help in providing the required information (Mean=3.82), the institutes provide remote access to HEC resources (Mean=3.80) and the library provides training to use HEC e-resources and other free databases.

Table 6

*Use of the e-resources among the Respondents*

| Statement | Mean | Std. Deviation | Variance |
|---|---|---|---|
| The library of your institution offers the Electronic resources/journals/databases with the necessary facilities | 4.43 | 0.95 | 0.91 |
| HEC Electronic resources/journals/databases are easily accessible at your university/institute | 4.37 | 1.09 | 1.21 |
| You use electronic resources/ journals/ databases for learning purpose | 4.16 | 1.07 | 1.14 |
| You use electronic resources/ journals/ databases for research purpose | 4.09 | 1.09 | 1.19 |
| You use electronic resources/ journals/ databases for Teaching Purpose | 4.00 | 1.18 | 1.41 |
| You get librarian support if the required resources/articles are not accessible via HEC resources | 3.82 | 1.15 | 1.33 |
| In case your required resources/articles are not accessible through HEC resources, you get support from subject expert | 3.80 | 1.17 | 1.37 |
| If your resources/articles are not accessible via HEC resources, you are supported by friends | 3.76 | 1.20 | 1.44 |
| You get via personal subscriptions in case your required resources/articles are not accessible through HEC resources | 3.66 | 1.23 | 1.52 |
| Your University/Institute provides adequate remote (home/ office) access to HEC resources. | 3.59 | 1.21 | 1.47 |
| The library offers sufficient training on the use of HEC electronic resources and other free databases | 3.54 | 1.16 | 1.34 |
| There is an improvement in your research quality after the access to electronic resources provided by HEC | 3.52 | 1.11 | 1.24 |
| The information you acquire from HEC e-resources is of very high quality | 3.49 | 1.33 | 1.78 |

"Scale:   1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree"

**Perception of Respondents about Electronic Resources**

The information was collected from respondents about the perception of electronic resources. The result shows that respondents strongly agree with the statements that the use of e-resources enhanced their research productivity (Mean=4.32), increased exposure to non-

peer-reviewed articles (Mean=4.30) and increased the quality of research skills (Mean=4.13). Most of the teachers also admitted that e-resources help in locating relevant materials of research (Mean=4.09), enhance awareness about recent research (Mean=3.97) and help the researcher in easy and fast publications (Mean=3.89).

Table 7

*Perception of Respondents about e-resources*

| Statement | Mean | Std. Deviation | Variance |
|---|---|---|---|
| Use of e-resources increase the research productivity | 4.32 | .89 | 0.80 |
| The use of electronic tools often increases exposure to publications which have not been peer reviewed | 4.30 | .97 | 0.94 |
| Use of e-resources improves the quality of research search skills | 4.13 | .92 | 0.85 |
| E-resources helped me in locating relevant materials to my research | 4.09 | .97 | 0.94 |
| E-resources enhance awareness about recent research | 3.97 | 1.13 | 1.29 |
| I share e-resources with peers/friends because their distribution is easier and less costly | 3.95 | 1.31 | 1.72 |
| I have published more papers because e-resources make it faster and easier to access good quality papers | 3.89 | 1.14 | 1.31 |
| E-resources waste users' time because of unfriendly user interfaces | 3.68 | 1.34 | 1.81 |

Scale:  1=Strongly Disagree, 2= Disagree, 3 =Neutral, 4= Agree, 5= Strongly Agree

**Electronic Resources are Replacement of Print Resources**

The survey respondents were inquired to what extent they believed that e-resources are the substitution of print resources. The numerical data in Table 8 reveals that out of 340 respondents, 154 (45.3%) participants agreed with the high extent to the statement, 67 (19.7%) with some extent, 54 (15.9%) with a small extent, 42(12.4%) respondents to a very high extent, while 23(6.8%) respondents replied to the statement with no extent.

Table 8
*Electronic Resources are Replacement of Print Resources*

| Statement | Frequency | Percentage |
|---|---|---|
| Very high extent | 42 | 12.4 |
| High extent | 154 | 45.3 |
| Some extent | 67 | 19.7 |
| Small extent | 54 | 15.9 |
| No extent | 23 | 6.8 |

## The Satisfaction of Respondents with HEC Resources

The faculty members were also asked to show their level of satisfaction with HEC e-resources, i.e., e-books, e-journals, e-zines, and HEC resources. The responses of the faculty member are listed in Table 9 which illustrate that the majority of respondents were highly satisfied with e-books because it received means score of 4.04. They also showed their satisfaction with satisfied with e-journals (Mean=3.98), e-zines (Mean =3.88), HEC databases (Mean = 3.82) and other online databases (Mean =3.53).

Table 9
*Satisfaction with E-resources*

| Sources | Mean | Std. Deviation | Variance |
|---|---|---|---|
| E-books | 4.04 | 1.08 | 1.16 |
| E-Journals | 3.98 | 1.09 | 1.20 |
| E-Magazines | 3.88 | 1.20 | 1.44 |
| HEC Databases | 3.82 | 1.29 | 1.67 |
| Online Databases | 3.53 | 1.43 | 2.06 |

Scale: 1 = Highly Dissatisfied, 2 = Dissatisfied, 3 = Neutral, 4 = Satisfied, 5 = Highly Satisfied

## Overall Satisfaction with Electronic Information Resources

The faculty members were questioned about their overall satisfaction with e-resources. The data presented in Table 10 indicates that 176 (51.8%) of the respondents were satisfied with e-resources. Whereas 66 (19.4%) of the respondents were neutral in their decision, 45(13.2%) of respondents were highly satisfied with e-resources, 42(12.4%) respondents were highly dissatisfied with e-resources and the least of the respondents, 11(3.2%) were dissatisfied with e-resources.
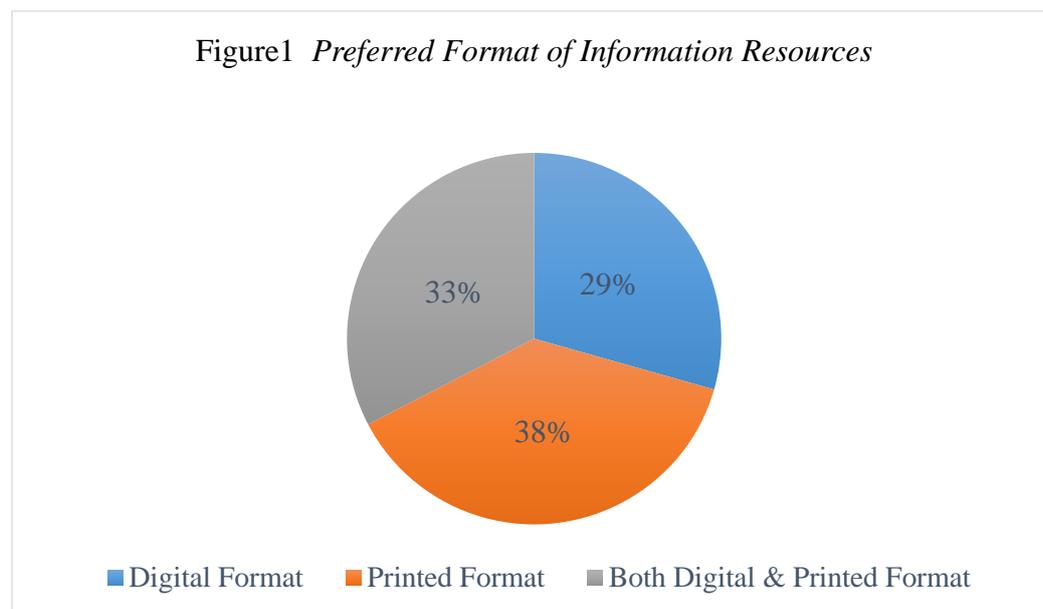
Table 10
*Overall Satisfaction with E- Resources*

| Statement | Frequency | Percentage(%) |
|---|---|---|
| Highly Satisfied | 45 | 13.2 |
| Satisfied | 176 | 51.8 |
| Neutral | 66 | 19.4 |
| Dissatisfied | 11 | 3.2 |
| Highly dissatisfied | 42 | 12.4 |

Scale: 1=Highly Dissatisfied 2= Dissatisfied 3=Neutral 4= Satisfied 4= Highly Satisfied

**Preferred Format of Information Resources**

The survey respondents were queried to provide information regarding their preferred format of information resources. Three options were provided, including digital, printed and both digital & printed formats. The answers of the surveyed participants are presented in Figure 1. It was found that the majority of 129(38%) respondents preferred printed format, 111(33%) preferred both printed & digital, while 100(29 %) participants preferred digital format. Overall, the respondents favoured information sources in both printed and electronic formats.



Figure1 *Preferred Format of Information Resources*

Digital Format ■ Printed Format ■ Both Digital & Printed Format

**Problems Faced by Respondents while Accessing Electronic Resources**

Table 11 shows the barriers faced by the respondents while accessing electronic resources. The major problem identified by the faculty members were low speed of internet (Mean=4.55), inadequate IT infrastructure (Mean=4.49), lack of internet (Mean=4.43), non-availability of full-text access to most of the e-journals (Mean=4.05), lack of awareness of e-resources (Mean=4.05), "lack of cooperation of Lib./Computer Lab. Staff (Mean=3.86), and lack of printing facility (Mean=3.80).

Other hindrances mentioned by the faculty members including, energy crisis (Mean=3.79), lack of training (Mean=3.73), non-availability of VPN (Mean= 3.59), non-availability of latest computers (Mean=3.57), lack of expertise to search on the internet (Mean=3.48).

Table 11
*Barriers in Accessing E-Resources*

| Statement | Mean | Std. Deviation | Variances |
|---|---|---|---|
| Low speed of internet | 4.55 | 0.96 | 0.93 |
| Inadequate IT infrastructure | 4.49 | 0.97 | 0.94 |
| Lack of access to internet facility | 4.43 | 0.87 | 0.76 |
| Non-availability of full text access to most of journals | 4.05 | 1.03 | 1.07 |
| Lack of awareness of electronic resources | 4.05 | 0.88 | 0.78 |
| Lack of cooperation from the staff of library/computer lab. | 3.86 | 1.19 | 1.42 |
| Lack of Printing facility | 3.80 | 1.19 | 1.42 |
| Load shedding/ energy crisis | 3.79 | 1.36 | 1.85 |
| Lack of training/ orientation to access and use of electronic resources | 3.73 | 1.25 | 1.58 |
| Non-availability of VPN | 3.59 | 1.34 | 1.80 |
| Non-availability of latest computers in library/computer lab. | 3.57 | 1.28 | 1.66 |
| Lack of expertise to search on Internet | 3.48 | 1.28 | 1.65 |
| Shortage of computer terminals in the library/computer lab. | 3.46 | 1.35 | 1.84 |
| Short time access to electronic resources in the library/computer lab. | 3.28 | 1.34 | 1.81 |

Scale:  1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5=Strongly Agree

**Findings**

The major findings of the study are as under: -

- The findings show that the proportion of male respondents was higher than the proportion of female respondents.

- It was found that 45.3 % of faculty members were 35-39 years of age and 30.3 % were between 40-44 years of age.

- The respondents' designation statistics indicate that 60.3 % of faculty members were lecturers, while only 2.9% were professors.

- The data were collected from the four faculties of the surveyed universities and found that most respondents (34.4%) were from the faculty of social sciences.

- Out of 340 respondents, 40.4 % of faculty members were from Gomal University D.I. Khan, and 28.2% from Kohat University of Science and Technology, Kohat.

- Most faculty members (32.4 %) were aware of e-resources through self-learning and 30.3 % of respondents received information through friends.

- The results demonstrate that most of the respondents were aware of e-resources like e-books and e-journals whereas less aware of databases like Library Genesis & Directory of Open Access Journals.

- The result shows that most respondents used the Google search engine to search for the information they needed, followed by Google Scholar.

- Most respondents said that the use of e-resources could increase the productivity of research, increase exposure to non peer-reviewed articles, improve the quality of research skills, help to locate relevant materials, and enhance awareness of recent research.

- The respondents used electronic information resources for learning, research and teaching instructions.

- The results demonstrate that majority of respondents believed that e-resources would replace electronic resources.

- The respondents were more satisfied with e-books than other e-resources such as e-journals, e-zines and HEC databases.

- The majority (51.8%) of the respondents were satisfied with e-resources, while 19.4% were neutral in their decision.

- The majority (38%) of respondents claimed that their preferred information format is printed and (33%) of respondents said that both printed and digital are their preferred formats.

- The major problem faced by the faculty members while accessing e-resources were the low speed of the internet, inadequate IT infrastructure, lack of internet, non-availability of full-text access to most of the e-journals, lack of awareness of e-resources, lack of cooperation of library staff and lack of printing facility.

## 5.6 Recommendations

Keeping in view the results of the study, the following are some of the recommendations to enhance the use of e-resources among the faculty members and students:-

- The university administrations should arrange proper training and workshops to increase the use of e-resources.

- The universities should organize formal sessions for teachers and students to enhance the use of various search engines and inform them how these search engines are beneficial for their study, teaching, and research.

- The faculty members may be encouraged to use e-resources like the database of HEC, Library Genesis, DOAJ and other open-access databases.

- The libraries authorities must arrange tutoring programs for teachers and students regarding the use of e-resources.

- The faculty members should improve their know-how to search for information to better use the available e-information resources.

- A user orientation program is a very efficient instrument for maximum utilization of electronic resources. It needs to be arranged regularly for both university teachers and students.

- The universities should build their IT infrastructure to enable the better use of e-resources.

- The university libraries should provide the faculty members with free or subsidized printing facilities because they were eager to print the resources.

- The universities administration and libraries authorities should create VPN for their users, including teachers, students, and staff, to enhance the use of e-resources.

- More computers with the latest specifications should be installed in the computer laboratories and libraries so that faculty members can use the electronic resources.

- The libraries should allocate a regular fund for the acquisition of electronic resources according to the needs and requirements of their users.

**References**

Abba (2019). University lecturers' level of awareness and proficiency of internet services and resources for academic activities in Adamawa state, Nigeria. *Library Philosophy and Practice*, 1-19.

Abouelenein, Y. (2017). Using electronic information resources canters by faculty members at university education: Competencies, needs and challenges. *Turkish Online Journal of Educational Technology-TOJET, 16*(1), 219-245.

Al-Baridi, D., Altaf, A., & Ansari, K. M. (2021). Utilization and awareness of electronic resources by the teaching staff of King Fahd University of Petroleum and Minerals (KFUPM), Dhahran, Saudi Arabia

Ansari, M. S. (2020). Use and awareness of e-resources among research scholars of literature subjects in Banaras Hindu University. *Library Philosophy and Practice (e-journal)* Retrieved from https://digitalcommons.unl.edu/libphilprac/4667/ *32*(3), 104-116.

Arshad, A., & Ameen, K. (2018). Usefulness of e-journals consortium in Pakistan: Academic staff's perceptions and expectations. *Serials Review, 44*(4), 275-281.

Baskaran, C., & Prasad, M. (2019). Research quantify with faculty member's perception and expectations in e-context at the academic sphere. *Library Philosophy and Practice*, 1-16.

Bhatti, R., Chohan, T. M., & Asghar, M. B. (2014). HEC Digital library and higher education: Trends and opportunities for faculty members at the Islamia University of Bahawalpur, South Punjab, Pakistan. *Library Philosophy and Practice*, 0_1.

Dayakar, G. (2018). Use of e-resources in higher education: Advantages and concerns. *Journal of Applied and Advanced Research, 3*, 17. doi:10.21839/jaar.2018.v3iS1.160

Dehghani, N., Asnafi, A. R., & Hajizeinolabedini, M. (2018). A survey on using online database by faculty members and graduate students at Shahid Beheshti University. *Library philosophy and practice*, 1-17.

Devi, R., & Keshava, D. (2020). E-resources: Perception and utilisation by Ayurvedic Medical College Librarians ff North Karnataka. *Library Philosophy and Practice*, 1-16.

Gay, L. R., Mills, G. E., & Airasian, P. W. (2015). *Educational research: Competencies for analysis and applications*. India: Pearson India education services.

Ganesh, P., & Rajendran, P. (2019). Use of e-resources by the faculty members and research

scholars of SRM institute of science & technology: Kattankalathur campus. *Library Philosophy and Practice (e-journal). Retrieved from https://digitalcommons.unl.edu/libphilprac/3020*

Girakaduwa, S. (2019). Usage of electronic resources, services and challenges faced by the library users in university of the visual and performing arts (UVPA), Sri Lanka. *people: International Journal of Social Sciences, 5*(2).

Hussain, M., & Saddiqa. (2019). Use of electronic information resources by teachers and students: A study of Khushal Khan Khattak University Karak, Pakistan. *The Journal of Information Management and Library Studies, 2*(1), 35-51. Retrieved from https://jimls.kkkuk.edu.pk/jimls/index.php/jimls/article/view/20/15

Jegan, P., & Jayaprakash, M. (2019). Use and impact of e-resources among the faculty members and students at Salem College of Engineering and Technology for Women, Salem, Tamilnadu, India: A Study. *Library Philosophy and Practice*, 1-23.

Jestin.J & Sornam, S. A. (2016) Use of e-resources by the faculty members of engineering colleges in Kerala: A survey. *International Journal of Digital Library Services, 6*(3).

Kashyap, S. R. (2016). Use of e-resources by university faculty members of Madhya Pradesh and Chhattisgarh: A comparative study. *International Journal of Digital Library Services, 6*(2), 56-62.

Khayyum, B. M., Lingaiah, V., & Abdul, R. M. (2015). Use of electronic resources by research scholars and faculty members in Maulana Azad national Urdu University (MANUU): A survey. *Journal of Library, Information and Communication Technology*, *6*(1-2), 11-16

Kaur, G. (2018). Attitude and satisfaction of users regarding electronic information resources in the libraries of research institutes of Jalandhar. *International Research: Journal of Library and Information Science, 8.*

Kavitha, E. S. (2018). A study on knowledge and usage of electronic resources by the Sc/St research scholars and Pg. students among Periyar university affiliated colleges. *Library Philosophy and Practice*, 1.

Kwafoa, P. N. Y., & Afful-Arthur, P. (2016). Assessment of the use of electronic resources among administrators and faculty in the University of Cape Coast.

Lavanya, J., & Santharooban, S. (2018). Usage of online resources by the undergraduates attached to the faculty of agriculture, Eastern university, Sri Lanka. *Journal of the University Librarians Association of Sri Lanka, 21*(2).

Reddy B, S., & Shashikala, H. M. (2021). E-resources utilisation pattern among the faculty of

Kempegowda Institute of Medical Sciences, Bangalore: A study. *Library Philosophy and Practice (e-journal). Retrieved from*
*https://digitalcommons.unl.edu/libphilprac/4929/*

Saddiqa, & Hussain, M. (2021). Electronic information resources: An overview of problems faced by the faculty members. *Library Philosophy and Practice (e-journal).* https://digitalcommons.unl.edu/libphilprac/5616/

Sebastian, R., & Muthumari, D. P. (2020). Impact and usefulness of e-resources on delivering knowledge in contemporary learning environments of medical colleges in Kerala: A study. *Library Philosophy and Practice*, 1-17.

Sharma, N. (2019). Access and use of electronic resources by the faculty members and research scholars of social sciences in Maharshi Dayanand university, Rohtak, Haryana.

Siwach, A. K., & Malik, S. K. (2019). Use of electronic resources by science faculty and researchers in selected North Indian universities. *Library Philosophy and Practice*, 1-25.

Srinivasulu, P., Balu, C. C., & Narendra, A. (2019). Awareness and usage of e-resources by faculty members at Vardhaman college of engineering (autonomous), Hyderabad: A study. *Library Philosophy and Practice*, 1-16.

Shukla, R., Sharma, A., Singh, M., & Gupta, S. (2020). Impact of e-resources among the research scholars of the faculty of social science and the Department of education of the university of Jammu, Jammu: A case study. *Library Philosophy and Practice*, 1-22.

Tamrakar, A. K., & Garg, R. G. (2016). User perception towards e-resources and services of IIT-Guwahati library. *DESIDOC Journal of Library & Information Technology, 36*(1).

Yanti, H., & Setiawan, A. (2018). Teacher's perception about the use of e-learning/edmodo in educational activitie*s.* Paper presented at the IOP conference series: Materials science and engineering