8-15-2021

Academic Library Resources and Services at Higher Education Institutions during COVID-19 Pandemic: A Case of Students' Satisfaction

Jamil Ahmad
Professor, Institute of Peace and Conflict Studies, University of Peshawar, Peshawar, Pakistan,
jamilchitrali@uop.edu.pk

Muhammad Shoaib
Assistant Professor, Department of Sociology, University of Gujrat, Gujrat, Pakistan,
shoaibsoc@uog.edu.pk

Bilal Shaukat
Lecturer, Institute of Peace and Conflict Studies, University of Peshawar, Peshawar, Pakistan,
bilalshoukat@uop.edu.pk

Academic Library Resources and Services at Higher Education Institutions during COVID-19 Pandemic: A Case of Students' Satisfaction

First Author
Dr. Jamil Ahmad
Professor, Institute of Peace and Conflict Studies, University of Peshawar, Peshawar, Pakistan

Second and Corresponding Author
Dr. Muhammad Shoaib
Assistant Professor, Department of Sociology, University of Gujrat, Gujrat, Pakistan

Third Author
Dr. Bilal Shaukat
Lecturer, Institute of Peace and Conflict Studies, University of Peshawar, Peshawar, Pakistan

Abstract

This study has been designed to inspect the library resources and services at higher education institutions during the covid-19 pandemic in terms of students' satisfaction. A quantitative study design to conduct an online survey from the students of public sector universities of Pakistan. A sample of 1823 respondents had been sampled through a proportionate random sampling technique. Moreover, a well-structured questionnaire was opted to measure the response of the respondents using an attitudinal scale of (dis)agreement. Further, frequency distribution, descriptive statistics, correlation statistical tests, and regression analysis had been used to draw results and conclusions. The study findings present that provision of required documents and available library resources have not been predicting students' satisfaction. However, other variables including access to library resources, access to library services, available library services, response to online queries, and online research support have favorable effects on students' satisfaction towards online library access and resources in public sector universities.

Keywords: Library Resources, Online Query, Available Document, Research Support, Students' Satisfaction

Introduction

From the Library of Alexandria to the Library of Congress, libraries have served as a repository for knowledge (Appleton, 2020; Holley, 2020; Long, 2021; Wolfe, 2020). Libraries have always kept knowledge and cataloged it for potential users, from clay tablets and papyrus scrolls to encyclopedias and article databases (Shoaib, Abdullah, & Ali, 2020; Shoaib, Rasool, & Anwar, 2021). However, with the advent of the Internet, libraries were able to reach a wider audience, making it easier to access and locate information (Shoaib, Ali, Anwar, Rasool, et al.,

2021; Shoaib, Ali, Anwar, & Shaukat, 2021). Although the core function of libraries has remained the same, namely to provide the public with access to vital knowledge and literature, they have evolved beyond that in the modern day (Harlow & Hill, 2020; Holley, 2020; Hwang, Elkins, Hanson, Shotwell, & Thompson, 2020; Kingsley, 2020). Academic libraries, in addition to what they provide online, have aided their communities in improving the quality of their lives and have played essential social roles (Damerchiloo et al., 2020; Do & Nuth, 2020; Fagan, Ostermiller, Price, & Sapp, 2020). It is pertinent to mention here that the social roles change with a neoteric situation like the outbreak of the COVID-19 pandemic (Shoaib & Abdullah, 2020, 2021). According to UNESCO, 186 countries would have imposed nationwide closures by the end of April 2020, affecting 73.8 percent of all enrolled students (Condic, 2021; Shoaib, Rasool, et al., 2021; Tammaro, 2020; Xie, Siau, & Nah, 2020). Hence, this study has been designed to examine the library resources and services at higher education institutions during the covid-19 pandemic in terms of students' satisfaction.

The Study Context

The only options to limit the spread of the COVID-19 outbreak by interrupting the transmission chain are lockdown and social isolation, the closure of educational institutions has impacted a huge number of pupils (J. Garner et al., 2021; Lee & Springer, 2020; J. A. Murphy & Shelley, 2020; Zawacki-Richter, 2020). COVID-19 pandemic has prompted educational institutions all around the world to pursue innovative techniques promptly (Naciri, Baba, Achbani, & Kharbach, 2020; Nawaz, Gomes, & Saldeen, 2020; Okike, 2020). Most institutions have moved to an online method during this time, employing Blackboard, Microsoft Teams, Zoom, or other online platforms (Adams, 2020; Harlow & Hill, 2020; Wan, 2021; Xie et al., 2020). Even though libraries all around the world are working hard to enable remote access to their services and collections (Adedoyin & Soykan, 2020; Rapanta, Botturi, Goodyear, Guàrdia, & Koole, 2020). Academic libraries adopt online methods, collections, resources, services, locations, and operations that may all undergo considerable changes (Odunola & Tella, 2020; Rapanta et al., 2020). To deal with this new situation, UNESCO's Education Division is offering links to important educational resources, and its archives include a collection of historical sound recordings (Adedoyin & Soykan, 2020; Habiba & Ahmed, 2020; Weeks, Houk, Nugent, Corn, & Lackey, 2020). Moreover, Wikimedia has also set up a project on the COVID-19 pandemic to handle information on the subject (Hoogland, 2021; König, Jäger-Biela, & Glutsch, 2020). Similarly, academic libraries in Pakistan have also facilitated the students at the university level for academic activities (Shoaib, Rasool, et al., 2021). Thus, the

study has been designed to examine the students' satisfaction towards access and availability of academic library resources and accessibility at the higher educational level.

The objective of the Study

This study has been designed to inspect the library resources and services at higher education institutions during the covid-19 pandemic in terms of students' satisfaction.

Review of Literature

Several studies have been conducted to examine online services provided by academic libraries (Adedoyin & Soykan, 2020; Alajmi & Albudaiwi, 2020; Shoaib, Rasool, et al., 2021). It has been observed that academic libraries at public sector universities are a helpful and practical tool for curriculum delivery (M. Y. Ali & Gatiti, 2020; Arora & Srinivasan, 2020). Similarly, according to the researches on the pandemic pedagogies, learners benefit from online learning for a variety of reasons, including simple access to knowledge, proper content distribution, content standardization, customized instruction, self-pacing, interaction, and enhanced convenience (Bao, 2020; Burki, 2020; Butler-Henderson, Crawford, Rudolph, Lalani, & Sabu, 2020; Churiyah, Sholikhan, Filianti, & Sakdiyyah, 2020; Coghill & Sewell, 2020). During the pandemic, online learning enabled higher education institutes to keep their digital doors open for students during the lockdown (Craft, 2020; Crawford et al., 2020; Demuyakor, 2020). Several libraries already had a strong digital presence, but many more are working to establish one to continue serving clients during the pandemic (Dwivedi et al., 2020; Fraser-Arnott, 2020; J. C. Garner & Logue, 2020). It has also been reported that libraries have emerged as a critical conduit to high-quality e-books, periodicals, and educational content as the need for reputable e-resources grows (J. C. Garner & Logue, 2020; Gonzalez et al., 2020; Honey-Rosés et al., 2020; Ifijeh & Yusuf, 2020). The library has expanded its online offerings, emphasizing biblio-therapy as a means of assisting users during the crisis, and earning positive press coverage (Jæger & Blaabæk, 2020; Jones, 2020; König et al., 2020). Academic libraries, meantime, are making every effort to provide remote access, an online article request service, webinars, and panel discussions on a variety of topics, and to act as a catalyst for effective information dissemination (Ladan, Haruna, & Madu, 2020; Lee & Springer, 2020; Ma, 2020). It has also been observed that libraries provide access to Scopus, RCAAP, PubMed, Web of Sciences, e-books database, and BON to its user amide of COVID-19 (Marinoni, Van't Land, & Jensen, 2020; Mishra, Gupta, & Shree, 2020; J. A. Murphy & Shelley, 2020).

It is pertinent to mention here that the studies have also been asserted that the learning process is less suffer due to online services rendered by libraries, besides that most of the libraries - particularly in underdeveloped countries are not prepared for this novel situation (M. P.

Murphy, 2020; Naciri et al., 2020; Nawaz et al., 2020). Nevertheless, the hard efforts by the librarian with the support of higher education institutions turn the situation into a 'new normal' position and the equilibrium maintained (N. Ali, Shoaib, & Abdullah, 2021; Shoaib, Abdullah, & Ali, 2021; Shoaib, Ali, Anwar, Rasool, et al., 2021; Shoaib, Rasool, et al., 2021). Besides the accessibility and availability of libraries services to the students and other users, the potential library users must have a good attitude toward technology skills, are proficient in using mobile technology, and use it daily to obtain information (Shoaib, Rasool, et al., 2021). Changes in user information needs have been noted to put increased strain on library service delivery (Srivastava & Babel, 2021). Text notifications can spread information and multimedia content such as movies, photos, and audio files via mobile devices (Koos, Scheinfeld, & Larson, 2021; Warren, Lofstedt, & Wardman, 2021). Librarians have also been used these tools to notify patrons about recent events around COVID 19, as well as safety tips and other pertinent information (Okike, 2020; Trujillo & Tallman, 2021; Wan, 2021).

Research Methodology

This study opted quantitative study design to conduct an online survey from the students of public sector universities of Pakistan. A sample of 1823 respondents had been sampled through proportionate random sampling technique following inclusion criteria of students enrolled in BS (4 years) and MA/MSc (2 years) from the four public sector universities. A well-structured questionnaire was opted to measure the response of the respondents using an attitudinal scale of (dis)agreement. This measurement tool consisted of different parts including socio-demographic characteristics, access, and available library resources, access and available library services, response to an online query, provision of a required document, online research support, and students' satisfaction. The reliability of the scale was pretested randomly from 30 students and the value of C. Alpha was ranging from .762 to .947. All the questions were coded and computerized to analyze the data. Further, frequency distribution, descriptive statistics, correlation statistical tests, and regression analysis had been used to draw results and conclusions.

Results and Discussions

This section provides the results and discussion of the study. It has been divided into four sections including socio-demographic characteristics, descriptive statistics, correlation statistical test, and regression analysis.

Socio-demographic Characteristics

Table 1 shows the socio-demographic characteristics of the respondents, such as academic program and name of the faculty in which the respondents enrolled, family and/or parent

occupation of the respondents, their family monthly income, size of family (in numbers), and family type of the respondents. The table also shows that out of 1823 respondents 1119 (61.4%) are from the BS program while 704 (38.6%) were enrolled in the Master program. Both the faculties have approximately equal representation in the sample that is 933 (51.2%) from the Faculty of Science and 890 (48.8%) from the Faculty of Arts. Similarly, family occupation is shown in the table illustrations that most of the respondents' family livelihood came from agriculture and business, where 484 (26.5%) belong from a business-oriented family, while 443 (24.3%) are from an agriculture background. Adequate number 201 (11%) of respondents have family engagement in government services while some respondents 84 (4.4) are from families whose members serve in the private sector. The third high number 366 (20.1%) of the family occupation of the respondent are laborious work while 245 (13.4%) respondents' parents are retired and/or old and out of the job market.

Table 1

Socio-demographic Characteristics

Program of the Students			Faculty Name of the Students		
Category	*f*	%	Category	*f*	%
BS (4 Years)	1119	61.4	Arts	890	48.8
MA/MSc	704	38.6	Science	933	51.2
Total	1823	100.0	Total	1823	100.0
Family Occupation			Family Monthly Income (PKR)		
Agriculturist	443	24.3	Up to 10000	68	3.7
Businessman	484	26.5	10001-20000	418	22.9
Govt. Job	201	11.0	20001-30000	559	30.7
Private Job	84	4.6	30001-40000	306	16.8
Old/retired/late	245	13.4	40001-50000	400	21.9
Labour	366	20.1	50001 & Above	72	3.9
Total	1823	100.0	Total	1823	100.0
Family Size (No.)			Family Type		
1-3	20	1.1	Nuclear	946	51.9
4-6	551	30.2	Joint	610	33.5
7 & Above	1252	68.7	Extended	267	14.6
Total	1823	100.0	Total	1823	100.0

Family monthly income is one of the important demographic factors that affect respondents' accessibility and adaptability to new and modern technologies and gadgets. The table shows that most of the respondents'559 (30.7%) family monthly income fall in the range of 20001 to 30000 Rs.., and 418 (20.9%) respondents' family monthly income is from 10001 to 20000 Rs., while 306 (16.8%) of the respondents' family monthly income is ranged from 30001 to 40000 Rs. The group of the respondents also comprise very high and low family income, such as 68 (3.7%) of the respondents family monthly income is below 10000 Rs., while 72 (3.9%)

respondents family monthly income is above 50000 Rs., however, the majority (approx.. 70%) of the respondents are from the medium economic status.
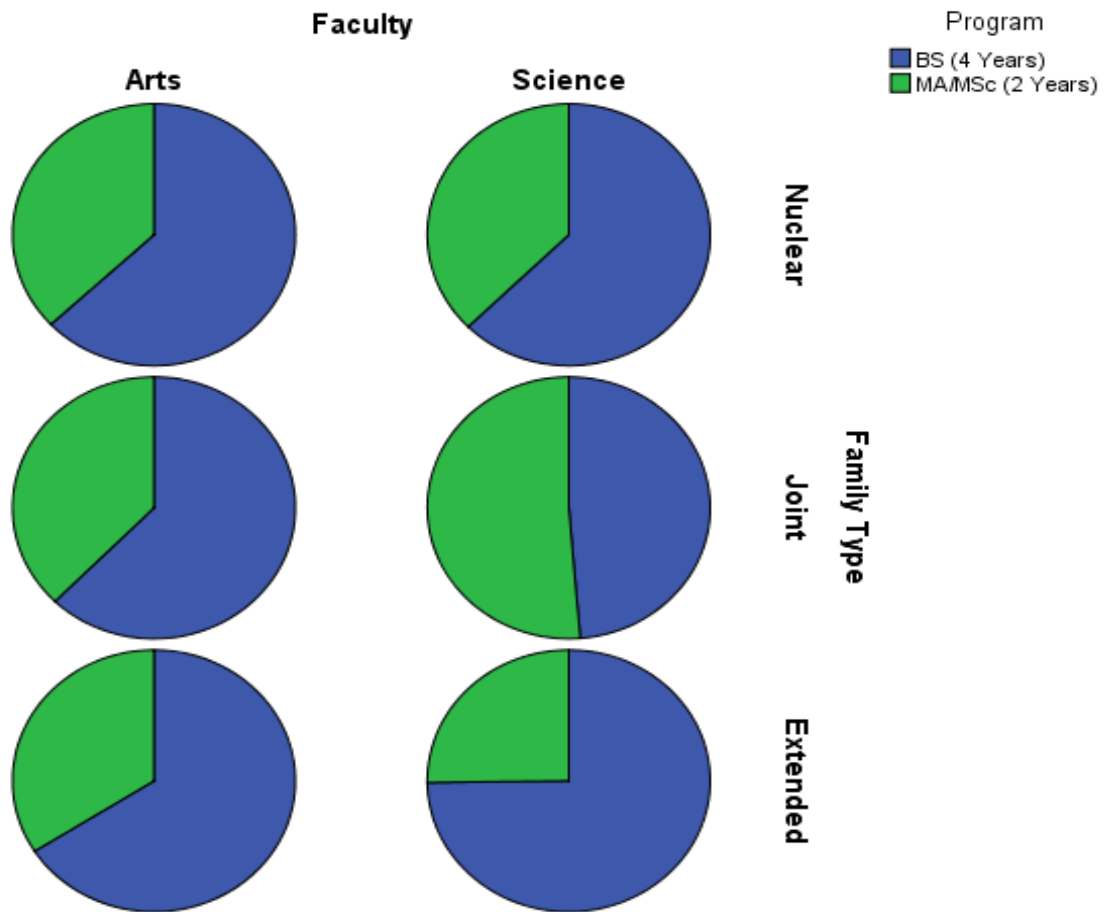

Figure 1. Showing Program, Faculty, and Family Type of the Students

Another important demographic factor is the family size, the table depicts the real position of Pakistani family where 1252 out of 1823 (68.7%) respondents has more than seven family members, 551 (30.2%) has four to six family members while only 20 (1.1%) of the respondents has one to three family member. The last section of the table is about the family type of the respondents, it shows that most of the respondents 946 (51.9%) are living in the nuclear family, where parents are living with their unmarried children, 610 (33.5%) respondents are living in the joint family setup, while 267 (14.6%) of the respondents are the inhabitant of extended family.
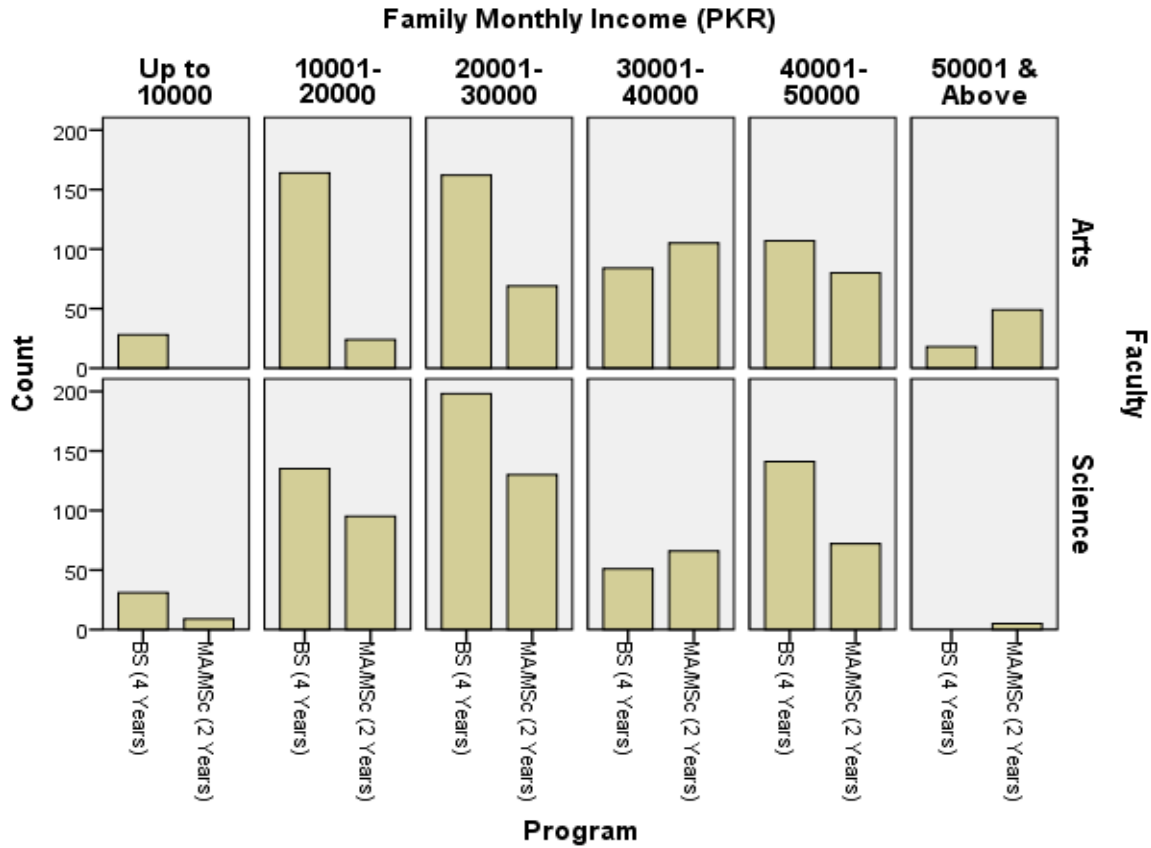
Figure 2. Showing Program, faculty, and Family Monthly Income (PKR)

Descriptive Statistics

Table 2
Descriptive Statistics (n=1823)

Variables	Min-	Max-	Mean	Std. Dev-	Var-
Provision of Required Document	8	20	15.09	2.330	5.427
Access to Library Resources	7	20	17.60	2.320	5.383
Available Library Resources	10	24	20.83	3.158	9.976
Access to Library Services	5	20	15.91	3.769	14.206
Available Library Services	8	20	17.52	2.387	5.698
Respond to Online Query	9	20	17.99	2.289	5.241
Online Research Support	7	16	14.30	1.793	3.217
Students' Satisfaction	11	20	17.78	2.240	5.016

Table 2 present the descriptive statistics of the variables. Analysis reveals that the minim value of the scale of provision of required documents is 8 and the maximum is 20 along with a 15.09 mean value. Similarly, the standard deviation is 2.330 and 5.427 variance has been reported. Further, the descriptive statistics of the variables including access to library resources, available library resources, access to library services, available library services, response to an online query, online research support, and students' satisfaction have also been provided in the table.

Correlation Statistical Test

Table 3 reveals the correlation statistical test of the variables. As the data was parametric and normally distributed, hence, Pearson correlation test has been applied to check the correlation among variables. The correlation between available library resources and access to library resources has been reported as moderately significant positive as .586. However, the provision of required documents has a week correlation with access to library services. It is pertinent here to mention that all the variables have a significant positive correlation among each other as mentioned in Table 3.

Table 3
Correlation Statistical Test

Var.	PRD	ALR	AVL	AVS	ACL	ROQ	ORS	STS
PRD	1	.262**	.295**	.122**	.265**	.386**	.145**	.253**
ALR		1	.586**	.251**	.564**	.302**	.250**	.433**
AVL			1	.305**	.503**	.454**	.315**	.431**
AVS				1	.496**	.268**	.070**	.282**
ACL					1	.440**	.216**	.448**
ROQ						1	.455**	.583**
ORS							1	.418**
STS								1

Regression Analysis

Table 4
Regression Analysis Predicating Students' Satisfaction towards Online Library access and resources

Predictors	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Provision of Required Document	-.010	.019	-.010	-.531	.595
Access to Library Resources	.188	.023	.195	8.249	.000
Available Library Resources	.020	.017	.029	1.217	.224
Access to Library Services	.040	.012	.068	3.318	.001
Available Library Services	.083	.023	.088	3.557	.000
Respond to Online Query	.375	.022	.384	16.691	.000
Online Research Support	.204	.025	.164	8.167	.000
(Constant)	2.417	.438		5.514	.000
F=208.017, Sig.=.000[b] R=.667[a] R Square=.445, Adjusted R Square=.443, n=1823					

Table 4 illustrates the multiple regression analysis predicting students' satisfaction towards online library access and resources in terms of academic libraries of public sector universities. The study findings present that provision of required documents and available library resources have not been predicting students' satisfaction. However, other variables including access to

library resources, access to library services, available library services, response to the online query, and online research support have favourable effects on students' satisfaction towards online library access and resources in public sector universities.

It has been observed that any endeavor to improve the effectiveness of online learning from the libraries must take into account the users' perspectives (Azonobi, Uwaifo, & Tella, 2020; Popoola & Olajide, 2021; Smith, 2020). Students have both positive and negative attitudes toward online services afforded by academic libraries (Shoaib, Rasool, et al., 2021). These favorable and unfavorable acuities depend on, consistency of libraries online services, the interaction of students with the librarian, rate of connective and flexibility of the online setting, social presence and conferencing with other teachers and classmates, and students' proficiencies and capabilities to use of new and updated technologies (Shoaib, Abdullah, et al., 2021; Shoaib, Ahmad, Ali, & Abdullah, 2021; Shoaib & Ullah, 2019, 2021a, 2021b). Furthermore, several flaws in online learning have also been identified in the literature in the provision of libraries online services such as suspension of services, late responses, slow internet connectivity, feeling of isolation, problems in collaboration with peers, over searched and overload sites, and the necessity for internet users to commit to studying regularly.
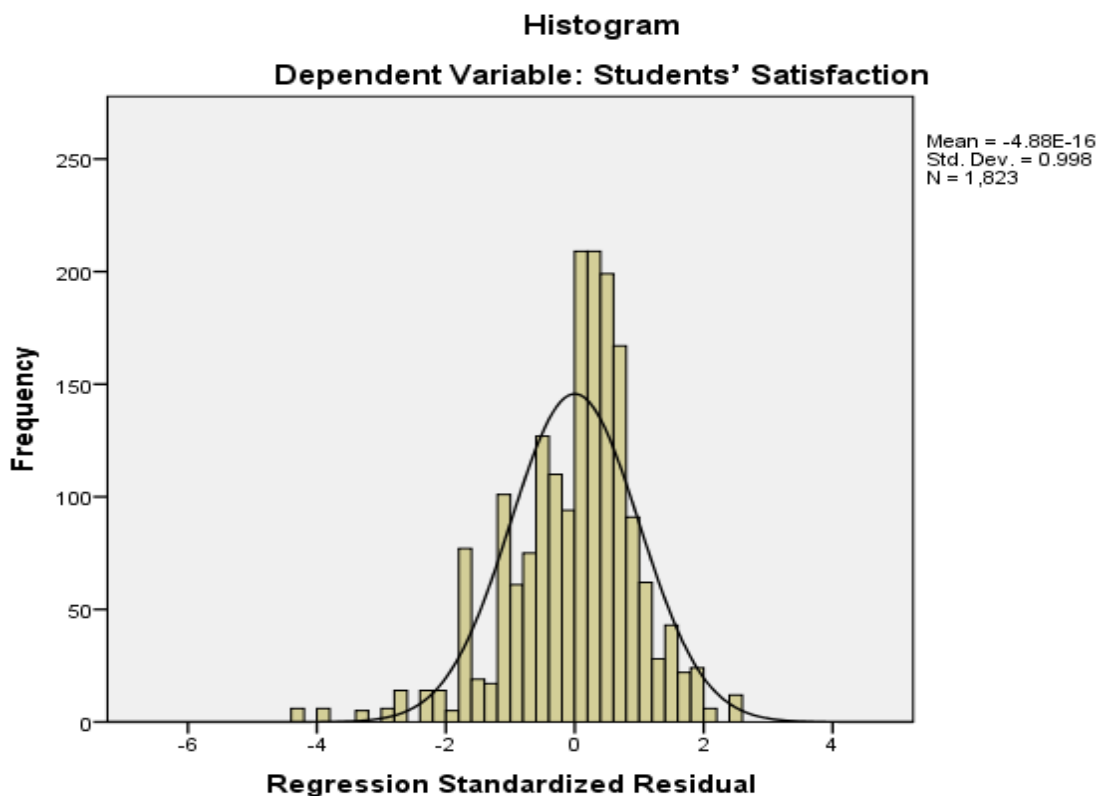

Figure 3. Showing Histogram

Conclusion

The overall conclusion that we reached based on the study is that the provision of required documents and available library resources have fewer effects and predicting students' satisfaction towards online library access and resources in public sector universities. However, other variables including access to library resources, access to library services, available library services, response to an online query, and online research support have favorable effects on students' satisfaction. University students are satisfied with their libraries' response to the COVID-19 pandemic, noting the positive help they have received from library staff. The usage of available electronic resources, on the other hand, has not been as envisaged; most students are ignorant of the presence of reference databases on campus and the capacity to access them online. In terms of online library resources, students have a positive self-perception of their knowledge and skills in terms of access and availability in public Sector universities.

Limitations of the Study

The study is limited to quantitative study design and students of public sector universities using library online resources for their academic activities. Further, selected variables in terms of online library resources and students' satisfaction have been used in this study.

Future Implications

This study will be an addition to the existing body of knowledge and will become part of the literature.

References

Adams, A. L. (2020). Online Teaching Resources. *Public Services Quarterly, 16*(3), 172-178. doi:10.1080/15228959.2020.1778598

Adedoyin, O. B., & Soykan, E. (2020). Covid-19 pandemic and online learning: the challenges and opportunities. *Interactive Learning Environments*, 1-13.

Alajmi, B. M., & Albudaiwi, D. (2020). Response to COVID-19 Pandemic: Where Do Public Libraries Stand? *Public Library Quarterly*, 1-17. doi:10.1080/01616846.2020.1827618

Ali, M. Y., & Gatiti, P. (2020). The COVID-19 (Coronavirus) pandemic: reflections on the roles of librarians and information professionals. *Health Information & Libraries Journal, 37*(2), 158-162.

Ali, N., Shoaib, M., & Abdullah, F. (2021). Trends of Research Visualization of Digital Collections and Resources in Academic Libraries from 2001 to 2020: A Bibliometric Analysis. *Library Philosophy and Practice, 5598*, 1-25.

Appleton, L. (2020). Academic Libraries and Student Engagement: A Literature Review. *New Review of Academic Librarianship, 26*(2-4), 189-213. doi:10.1080/13614533.2020.1784762

Arora, A. K., & Srinivasan, R. (2020). Impact of pandemic COVID-19 on the teaching–learning process: A study of higher education teachers. *Prabandhan: Indian journal of management, 13*(4), 43-56.

Azonobi, I. N., Uwaifo, S. O., & Tella, A. (2020). Determinants of Postgraduates' Use of Electronic Information Resources in Federal Universities in Southern Nigeria. *International Information & Library Review*, 1-14. doi:10.1080/10572317.2020.1783629

Bao, W. (2020). COVID-19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technologies, 2*(2), 113-115.

Burki, T. K. (2020, May, 21). COVID-19: consequences for higher education. *The Lancet Oncology,* p. 758.

Butler-Henderson, K., Crawford, J., Rudolph, J., Lalani, K., & Sabu, K. (2020). COVID-19 in Higher Education Literature Database (CHELD V1): An open access systematic literature review database with coding rules. *Journal of Applied Learning & Teaching, 3*(2), 1-6.

Churiyah, M., Sholikhan, S., Filianti, F., & Sakdiyyah, D. A. (2020). Indonesia education readiness conducting distance learning in Covid-19 pandemic situation. *International Journal of Multicultural and Multireligious Understanding, 7*(6), 491-507.

Coghill, J. G., & Sewell, K. A. (2020). Librarians' Response During COVID-19. *Journal of Electronic Resources in Medical Libraries, 17*(3-4), 92-100. doi:10.1080/15424065.2020.1823924

Condic, K. (2021). Examination of Academic Library Websites Regarding COVID-19 Responsiveness. *Journal of Web Librarianship, 15*(1), 32-45. doi:10.1080/19322909.2021.1906823

Craft, A. R. (2020). Remote Work in Library Technical Services: Connecting Historical Perspectives to Realities of the Developing COVID-19 Pandemic. *Serials Review, 46*(3), 227-231. doi:10.1080/00987913.2020.1806658

Crawford, J., Butler-Henderson, K., Rudolph, J., Malkawi, B., Glowatz, M., Burton, R., . . . Lam, S. (2020). COVID-19: 20 countries' higher education intra-period digital pedagogy responses. *Journal of Applied Learning & Teaching, 3*(1), 1-20.

Damerchiloo, M., Haghparast, A., Ramezani, A., Zeinali, V., VazifeShenas, N., & Jafari, B. (2020). Impact of the E-Journals of Academic Libraries Consortium on Research Productivity: An Iranian Consortium Experience. *Collection Management, 45*(3), 235-251. doi:10.1080/01462679.2019.1682738

Demuyakor, J. (2020). Coronavirus (COVID-19) and online learning in higher institutions of education: A survey of the perceptions of Ghanaian international students in China. *Online Journal of Communication and Media Technologies, 10*(3), 1-9.

Do, D. T., & Nuth, A. (2020). Academic Library Middle Managers as Leaders: In Their Own Words. *Journal of Library Administration, 60*(1), 41-70. doi:10.1080/01930826.2019.1671036

Dwivedi, Y. K., Hughes, D. L., Coombs, C., Constantiou, I., Duan, Y., Edwards, J. S., . . . Prashant, P. (2020). Impact of COVID-19 pandemic on information management research and practice: Transforming education, work and life. *International Journal of Information Management, 55*, 102211.

Fagan, J. C., Ostermiller, H., Price, E., & Sapp, L. (2020). Faculty Perceptions of Academic Librarians: Experts, Connectors, and Resource Stewards. *New Review of Academic Librarianship*, 1-38. doi:10.1080/13614533.2020.1819354

Fraser-Arnott, M. (2020). Academic Library COVID-19 Subject Guides. *The Reference Librarian, 61*(3-4), 165-184. doi:10.1080/02763877.2020.1862021

Garner, J., Hider, P., Jamali, H. R., Lymn, J., Mansourian, Y., Randell-Moon, H., & Wakeling, S. (2021). 'Steady Ships' in the COVID-19 Crisis: Australian Public Library Responses to the Pandemic. *Journal of the Australian Library and Information Association*, 1-23. doi:10.1080/24750158.2021.1901329

Garner, J. C., & Logue, N. K. (2020). Navigating the COVID-19 slipstream: A case study on living and managing access services during a global pandemic. *Journal of Access Services, 17*(4), 176-198. doi:10.1080/15367967.2020.1818570

Gonzalez, T., De La Rubia, M., Hincz, K. P., Comas-Lopez, M., Subirats, L., Fort, S., & Sacha, G. (2020). Influence of COVID-19 confinement on students' performance in higher education. *PloS one, 15*(10), 1-23.

Habiba, U., & Ahmed, S. M. Z. (2020). ICT Infrastructure and Access to Online Services: Determining the Factors Affecting Faculty Satisfaction with University-Subscribed

Resources. *International Information & Library Review*, 1-19. doi:10.1080/10572317.2020.1794204

Harlow, S., & Hill, K. (2020). Assessing Library Online Patrons Use of Resources to Improve Outreach and Marketing. *The Serials Librarian, 79*(1-2), 200-227. doi:10.1080/0361526X.2019.1703873

Holley, R. P. (2020). Academic Library Users Are Not "Customers": A Response to Steven Bell. *Journal of Library Administration, 60*(1), 88-96. doi:10.1080/01930826.2019.1685272

Honey-Rosés, J., Anguelovski, I., Chireh, V. K., Daher, C., Konijnendijk van den Bosch, C., Litt, J. S., . . . Nieuwenhuijsen, M. J. (2020). The impact of COVID-19 on public space: an early review of the emerging questions – design, perceptions and inequities. *Cities & Health*, 1-17. doi:10.1080/23748834.2020.1780074

Hoogland, M. A. (2021). Options for Accessing Online Electronic Resources in Difficult Fiscal Times. *Journal of Electronic Resources in Medical Libraries*, 1-15. doi:10.1080/15424065.2021.1875944

Hwang, S.-Y., Elkins, S., Hanson, M., Shotwell, T., & Thompson, M. (2020). Institutional Repository Promotion: Current Practices and Opinions in Texas Academia. *New Review of Academic Librarianship, 26*(1), 133-150. doi:10.1080/13614533.2019.1587483

Ifijeh, G., & Yusuf, F. (2020). Covid–19 pandemic and the future of Nigeria's university system: The quest for libraries' relevance. *The Journal of Academic Librarianship, 46*(6), 102226.

Jæger, M. M., & Blaabæk, E. H. (2020). Inequality in learning opportunities during Covid-19: Evidence from library takeout. *Research in Social Stratification and Mobility, 68*, 1-5.

Jones, S. (2020). Optimizing Public Library Resources in a Post COVID-19 World. *Journal of Library Administration, 60*(8), 951-957. doi:10.1080/01930826.2020.1820281

Kingsley, D. (2020). The 'Impact Opportunity' for Academic Libraries through Grey Literature. *The Serials Librarian, 79*(3-4), 281-289. doi:10.1080/0361526X.2020.1847744

König, J., Jäger-Biela, D. J., & Glutsch, N. (2020). Adapting to online teaching during COVID-19 school closure: teacher education and teacher competence effects among early career teachers in Germany. *European Journal of Teacher Education, 43*(4), 608-622.

Koos, J. A., Scheinfeld, L., & Larson, C. (2021). Pandemic-Proofing Your Library: Disaster Response and Lessons Learned from COVID-19. *Medical Reference Services Quarterly, 40*(1), 67-78. doi:10.1080/02763869.2021.1873624

Ladan, A., Haruna, B., & Madu, A. U. (2020). COVID-19 pandemic and social media news in Nigeria: The role of libraries and library associations in information dissemination. *International Journal of Innovation and Research in Educational Sciences, 7*(2), 2349-5219.

Lee, A. P., & Springer, K. (2020). Socially Engaged Oral History Pedagogy amid the COVID-19 Pandemic. *The Oral History Review, 47*(2), 227-239. doi:10.1080/00940798.2020.1793678

Long, H. (2021). Academic Library Services for First-Generation Students. *Technical Services Quarterly, 38*(2), 203-204. doi:10.1080/07317131.2021.1892360

Ma, L. F. H. (2020). Academic Library Services during COVID-19: The Experience of CUHK Library. *International Information & Library Review, 52*(4), 321-324. doi:10.1080/10572317.2020.1834251

Marinoni, G., Van't Land, H., & Jensen, T. (2020). The impact of Covid-19 on higher education around the world. *IAU Global Survey Report*.

Mishra, L., Gupta, T., & Shree, A. (2020). Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *International Journal of Educational Research Open, 1*(2020), 100012. doi:https://doi.org/10.1016/j.ijedro.2020.100012

Murphy, J. A., & Shelley, A. (2020). Textbook Affordability in the Time of COVID-19. *Serials Review, 46*(3), 232-237. doi:10.1080/00987913.2020.1806656

Murphy, M. P. (2020). COVID-19 and emergency eLearning: Consequences of the securitization of higher education for post-pandemic pedagogy. *Contemporary Security Policy, 41*(3), 492-505.

Naciri, A., Baba, M. A., Achbani, A., & Kharbach, A. (2020). Mobile learning in Higher education: Unavoidable alternative during COVID-19. *Aquademia, 4*(1), 1-2.

Nawaz, N., Gomes, A. M., & Saldeen, M. A. (2020). Artificial intelligence (ai) applications for library services and resources in covid-19 pandemic. *Artificial intelligence (AI), 7*(18), 1951-1955.

Odunola, O. A., & Tella, A. (2020). Perceived Usefulness as Correlate of Undergraduate Students' Patronage of Online Public Access Catalog in South-West Nigeria. *Cataloging & Classification Quarterly, 58*(5), 520-532. doi:10.1080/01639374.2020.1765443

Okike, B. I. (2020). Information dissemination in an era of a pandemic (COVID-19): librarians' role. *Library Hi Tech News*, 1-3. doi:10.1108/LHTN-04-2020-0040

Popoola, S. O., & Olajide, O. O. (2021). Influence of Library Anxiety and Computer Literacy Skills on Use of Library Information Resources by Undergraduates in Private Universities in Southwest Nigeria. *International Information & Library Review*, 1-19. doi:10.1080/10572317.2021.1873051

Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2020). Online university teaching during and after the Covid-19 crisis: Refocusing teacher presence and learning activity. *Postdigital Science and Education, 2*(3), 923-945.

Shoaib, M., & Abdullah, F. (2020). Risk Reduction of COVID-19 Pandemic in Pakistan. *Social Work in Public Health, 35*(7), 557-568. doi:10.1080/19371918.2020.1806172

Shoaib, M., & Abdullah, F. (2021). COVID-19 backlash: psycho-social impacts of outbreak in Pakistan. *Health Education, 121*(3), 265-274.

Shoaib, M., Abdullah, F., & Ali, N. (2020). Library Resources and Research Environment in Higher Education Institutions: Students' Satisfaction. *Library Philosophy and Practice*, 1-18.

Shoaib, M., Abdullah, F., & Ali, N. (2021). A Research Visualization of Academic Learning Skills among Students in Higher Education Institutions: A Bibliometric Evidence from 1981 to 2020. *Library Philosophy and Practice, 5579*, 1-34.

Shoaib, M., Ahmad, A., Ali, N., & Abdullah, F. (2021). Trend of Research Visualization of Learning, Classroom, and Class Participation in Higher Education Institutions: A Bibliometric Analysis from 2001 to 2020. *Library Philosophy and Practice, 5743*, 1-26.

Shoaib, M., Ali, N., Anwar, B., Rasool, S., Mustafa, R.-e., & Zici, S. (2021). Research Visualization on Teaching, Language, Learning of English and Higher Education Institutions from 2011 to 2020: A Bibliometric Evidences *Library Philosophy and Practice, 5677*, 1-27.

Shoaib, M., Ali, N., Anwar, B., & Shaukat, B. (2021). Plotting the Literature on Learning Outcomes and Academic Performance in Higher Education from 2001 to 2020: A Scientometric Analysis. *Library Philosophy and Practice, 5919*, 1-24.

Shoaib, M., Rasool, D., & Anwar, D. (2021). Evaluating Research Support Facilities to University Students during COVID-19. *Library Philosophy and Practice, 4953*(1), 1-18.

Shoaib, M., & Ullah, H. (2019). Female and Male Students' Educational Performance in Tertiary Education in the Punjab, Pakistan. *Pakistan Journal of Social Issues, X*(1), 83-100.

Shoaib, M., & Ullah, H. (2021a). Classroom Environment, Teacher, and Girl Students' Learning Skills. *Education and Urban Society*, 1-25. doi:10.1177/00131245211001908

Shoaib, M., & Ullah, H. (2021b). Teachers' perspectives on factors of female students' outperformance and male students' underperformance in higher education. *International Journal of Educational Management, 35*(3), 684-699. doi:10.1108/IJEM-05-2020-0261

Smith, J. (2020). Information in Crisis: Analysing the Future Roles of Public Libraries during and post-COVID-19. *Journal of the Australian Library and Information Association, 69*(4), 422-429. doi:10.1080/24750158.2020.1840719

Srivastava, R., & Babel, P. (2021). Role of Open Access after Emergence of Covid-19: Special Reference to National Digital Library and Repository. *New Review of Children's Literature and Librarianship*, 1-10. doi:10.1080/13614541.2021.1882245

Tammaro, A. M. (2020). COVID 19 and Libraries in Italy. *International Information & Library Review, 52*(3), 216-220.

Trujillo, N., & Tallman, K. W. (2021). "A Library Within a Library": Organizational Design as Perceived by Academic Government Information Librarians. *Journal of Library Administration, 61*(1), 21-41. doi:10.1080/01930826.2020.1845545

Wan, S. (2021). Do Iowa's public libraries provide reliable online health information? *Journal of Electronic Resources Librarianship, 33*(1), 60-61. doi:10.1080/1941126X.2021.1871203

Warren, G. W., Lofstedt, R., & Wardman, J. K. (2021). COVID-19: the winter lockdown strategy in five European nations. *Journal of Risk Research*, 1-27. doi:10.1080/13669877.2021.1891802

Weeks, A., Houk, K. M., Nugent, R. L., Corn, M., & Lackey, M. (2020). UNLV Health Sciences Library's Initial Response to the COVID-19 Pandemic: How a Versatile Environment, Online Technologies, and Liaison Expertise Prepared Library Faculty in Supporting Its User Communities. *Medical Reference Services Quarterly, 39*(4), 344-358. doi:10.1080/02763869.2020.1826197

Wolfe, K. (2020). Service design in higher education: a literature review. *Perspectives: Policy and Practice in Higher Education, 24*(4), 121-125. doi:10.1080/13603108.2020.1792573

Xie, X., Siau, K., & Nah, F. F.-H. (2020). COVID-19 pandemic – online education in the new normal and the next normal. *Journal of Information Technology Case and Application Research, 22*(3), 175-187. doi:10.1080/15228053.2020.1824884

Zawacki-Richter, O. (2020). The current state and impact of Covid-19 on digital higher education in Germany. *Human Behavior and Emerging Technologies*, 1-9.