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1-14-2021

Evaluating Research Support Facilities to University Students during COVID-19

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Shoaib, Muhammad; Rasool, Dr. Shamshad; and Anwar, Dr. Behzad, "Evaluating Research Support Facilities to University Students during COVID-19" (2021). *Library Philosophy and Practice (e-journal)*. 4953.

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Evaluating Research Support Facilities to University Students during COVID-19

Abstract

This study aimed to examine the research support and availability of print resources to university students during COVID-19 in Pakistan. Along with other pandemic related issues during the lockdown, university students faced study issues as all the teaching activities were shifted to online, and they faced unavailability of print resources. A quantitative study design was opted to conduct the study. A total of 2745 university students participated in the survey. This form was sent to 5950 students through their emails and WhatsApp groups. A well-structured questionnaire was constructed and pre-tested from 30 randomly selected students. The study findings showed that COVID-19 affected the educational institutions of several countries generally and Pakistan particularly. The university libraries were closed as lockdown and social distancing was implemented as per the guidelines of the World Health Organization (WHO). University students were restricted to their homes and were not allowed to visit the library. Therefore, they faced the non-accessibility of books, periodicals, manuscripts, and lack of research support facilities. This study concluded that university libraries were closed during the COVID-19 outbreak and the students faced a deficit of research support and non-availability of print resources in Pakistan. It is recommended that the university libraries should strengthen their digital resources to facilitate students in terms of research support facilities and availability of online books, manuscripts, and periodicals to tackle the issues of university students.

Keywords: Social distancing, COVID-19 outbreak, Fear of infection, Books and periodicals, Manuscript, Research support.

Introduction

COVID-19 was declared as pandemic on March 11, 2020, by World Health Organization (WHO) and it affected about 213 countries (WHO, 2020a, 2020b, 2020d). Pakistan had no exemption from the current pandemic with a large number of cases (Shoaib & Abdullah, 2020; Waris, Khan, Ali, Ali, & Baset, 2020). Government of Pakistan (GOP) as per the instruction of WHO soon established isolation and quarantine centers in the country to tackle the pandemic situations (Hassan, Qureshi, & Gul, 2020). Further, lockdown and social distancing were also implemented to minimize the spread of COVID-19 (Mukhtar, 2020; Noreen et al., 2020; Shoaib & Abdullah,

2020). In addition to these measures, all educational institutions including public and private sector universities were also closed on March 13, 2020. The lockdown extended to more than six months of home restrictions for all students. Along with other pandemic-related issues during the lockdown and social distancing, university students faced study issues as all the teaching activities had been shifted to online (Bao, 2020; Gonzalez et al., 2020; Jena, 2020). For the moment, female and male students lacked provision of print resources and research support for their educational accomplishment including preparation of quizzes, assignments, presentation, and examination (Ahmed, Allaf, & Elghazaly, 2020; Gaetjens, 2020). Although universities established digital resources for research and study purpose (Harlow & Hill, 2020; Odunola & Tella, 2020), other issues including load-shedding and lack of availability of internet also contributed to affect students in a negative way (Adams, 2020; Matthews, 2020; Murphy & Shelley, 2020). This study was designed to evaluate the extent of research support and availability of print resources to the university students during COVID-19 in Pakistan.

Review of Literature

Several studies asserted that the COVID-19 pandemic affected all social institutions generally and educational institutions particularly (Bao, 2020; Crawford et al., 2020; Gonzalez et al., 2020). Research also supports that social distancing and lockdown negatively affected university students (Marinoni, Van't Land, & Jensen, 2020). Universities along with other educational institutions were closed and all educational activities were also closed (Reimers & Schleicher, 2020). Therefore, students had to work from home as the educational activities were shifted to online teaching in several countries (Stearns, Revitt, & Leonard, 2020; Tammaro, 2020b). At the time of lockdown and social distancing to minimize the spread of COVID-19, university students had a lack of print resources and research support facilities to work from their home (Jæger & Blaabæk, 2020; Marinoni et al., 2020; Osman, 2020). Similarly, the study of Gaetjens (2020) highlighted the use of print periodicals and Tammaro (2020b) mentioned the role of the library during COVID-19 in Italy.

Many studies across various societies asserted that university students faced difficulty in terms of print resources including books, periodicals, manuscripts, and research support during COVID-19. Research support facilities and study-related issues of students had been discussed in several countries including Philippine (Toquero, 2020), Oman (Osman, 2020), Bahrain (Nawaz, Gomes, & Saldeen, 2020), United States (Gaetjens, 2020; Murphy & Shelley, 2020), Turkey (Mahmut,

2020), Nigeria (Ifijeh & Yusuf, 2020; Ladan, Haruna, & Madu, 2020), Germany (König, Jäger-Biela, & Glutsch, 2020), India (Jena, 2020), Denmark (Jæger & Blaabæk, 2020), Spain (Gonzalez et al., 2020), Ghana (Demuyakor, 2020), Indonesia (Churiyah, Sholikhan, Filianti, & Sakdiyyah, 2020), China (Bao, 2020), and Pakistan (Ali & Gatiti, 2020).

A considerable number of studies had also highlighted the importance of the library and its research support services (Appleton, 2020; Baada, Ayoung, Bekoe, & Azindow, 2020; Channa, Manan, & David, 2020; Craft, 2020). The study of Appleton (2020) examined the importance of student engagement with the library for their learning. Similarly, Auten, Croxton, and Tingelstad (2020) highlighted the usage of library resources by users. Further, Baada et al. (2020) pointed out the quality of public library service. However, the study of Murphy and Shelley (2020) investigated the affordability of textbooks during pandemic i.e. COVID-19. On the other hand, Okike (2020) revealed the role of the library in terms of dissemination of information during COVID-19. Furthermore, several studies highlighted the issue of non-availability of print resources to students during COVID-19 and they faced difficulty to prepare their study-related assignments (Gaetjens, 2020; Jena, 2020; Murphy & Shelley, 2020; Tamaro, 2020b). Thus, this nature of study aimed to examine the research support and availability of print resources to university students during COVID-19 in Pakistan. The following conceptual framework had been developed to test the direct and indirect effects among independent and dependent variables on the issue underhand.

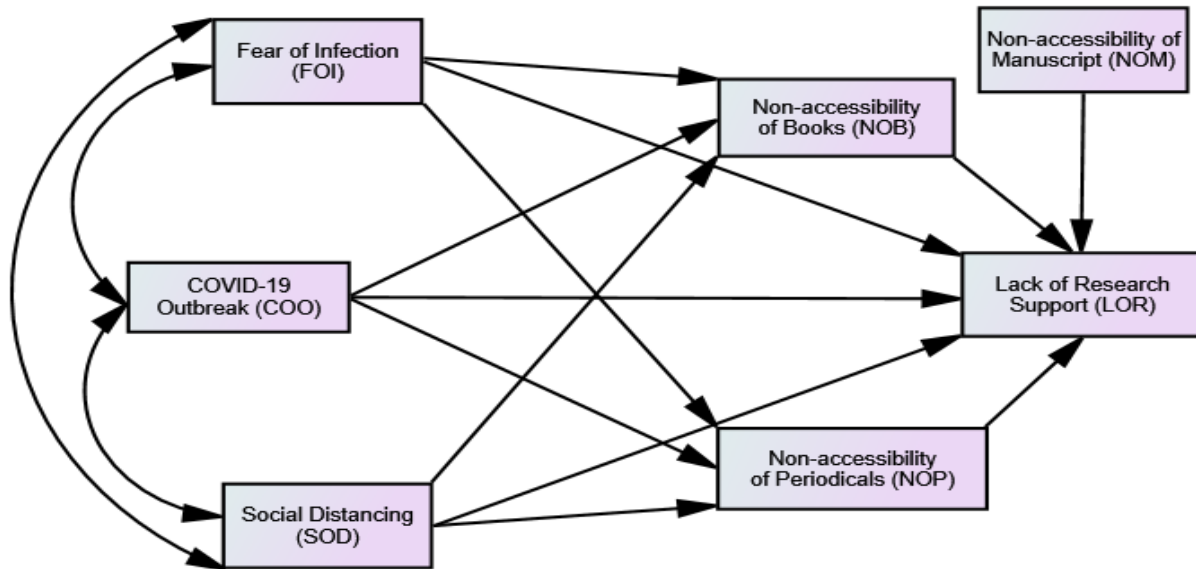


Figure 1: Conceptual Framework

Based on this model, ten hypotheses were developed having direct and indirect effects of the model and were presented in the section of results and discussion.

Hypothesis 1: Social distancing, COVID-19 outbreak, and fear of infection had direct effects on the non-accessibility of books among students

Hypothesis 2: Fear of infection, COVID-19 outbreak, and social distancing had direct effects on the non-accessibility of periodicals among students

Hypothesis 3: Non-accessibility of periodicals, fear of infection, and social distancing had direct effects on lack of research support facilities among students

Hypothesis 4: COVID-19 outbreak, non-accessibility of the manuscript, and social distancing had direct effects on lack of research support facilities among students

Hypothesis 5: COVID-19 outbreak had an indirect effect on the lack of research support facilities among students through the mediation of non-accessibility of periodicals

Hypothesis 6: COVID-19 outbreak had an indirect effect on the lack of research support facilities among students by the mediation of non-accessibility of books

Hypothesis 7: Fear of infection had indirect effects on lack of research support facilities among students by the mediation of non-accessibility of periodicals

Hypothesis 8: Fear of infection had an indirect effect on the lack of research support facilities among students by the mediation of non-accessibility of books

Hypothesis 9: Social distancing had an indirect effect on the lack of research support facilities among students by the mediation of non-accessibility of periodicals

Hypothesis 10: Social distancing had an indirect effect on the lack of research support facilities among students by the mediation of non-accessibility of books

Materials and Methods

A quantitative study design was opted to conduct the study. The purpose was to examine the availability of print resources to university students during COVID-19. A total of 2745 university students participated in an online survey as this form was sent to 5950 students through their emails and WhatsApp groups. A well-structured questionnaire was constructed based on the scale of (dis)agreement and pre-tested from 30 randomly selected students. The results of pre-testing showed the significance of Alpha value ranging from .745 to .983 and overall was .936. Further, the inclusion criteria for the selection were based on an enrolled student of public and private sector university, passed at least one semester of BS (4 years) and MA/MSc (2 years) programme in Pakistan, using library resources, and male & female. In addition to this, the consent form and purpose of this study were also online on the first page of the questionnaire. The study used exogenous and endogenous variables. The questionnaire consisted of different variables as mentioned in the conceptual framework. Furthermore, Confirmatory Factor Analysis (CFA) was employed to confirm the factors. In the end, Structural Equation Modelling (SEM) technique was employed to measure the direct and indirect effects of the proposed model. There were ten hypotheses based on the direct and indirect effects of the model. Moreover, the indirect effects of the model were also tested among variables. The indirect effects were measure by employing an indirect effect plugin (Gaskin & Lim, 2018) and the conclusion was drawn.

Results and Discussion

This study asserted that participants had mixed geographical locations (urban and rural) and gender as well (Male=31% and Female=69%). All the participants were literate (BS & MA/MSc educational level) and had an age bracket of 19 to 28 years. It was noteworthy here to mention that parents of the students were working in different capacities of life such as government and private jobs, business, farming, driving, and labour. Furthermore, a small proportion was reported as unemployed. The educational level of their father was ranging from illiterate to above master level. Moreover, the results also showed that students were living with up to six brothers and eight sisters. In addition to the demographic characteristics of the participants, descriptive statistics of the study

presented in table 1. It included range, minimum (Min.), maximum (Max.), mean, std. deviation and variance of the variables used in the research.

Table 1
Descriptive Statistics (n=2745)

Variables	Range	Mini.	Maxi.	Mean	Std. Deviation	Variance
Fathers' Education (in years)	16+	0	17	7.72	4.579	20.964
Brothers (in numbers)	6	0	6	1.96	1.182	1.397
Sisters (in numbers)	8	0	8	2.67	1.432	2.051
Fear of Infection (FOI)	13	7	20	17.64	2.282	5.206
COVID-19 Outbreak (COO)	12	8	20	15.02	2.333	5.442
Social Distancing (SOD)	14	10	24	20.84	3.121	9.742
Non-accessibility of Books (NOB)	9	7	16	14.25	1.820	3.314
Non-accessibility of Periodicals (NOP)	12	8	20	17.55	2.378	5.655
Non-accessibility of Manuscript (NOM)	15	5	20	16.05	3.599	12.954
Lack of Research Support Facilities (LOR)	9	11	20	17.75	2.251	5.065

Table 2 described the correlation statistical test of the variables. The results showed that there was a significant positive correlation among all variables. It is worth mentioning to show that fear of infection had a high correlation with non-accessibility of periodicals (.556), social distancing (.586), and lack of research support facilities (.432). Contrary to it, the lowest significant correlation (.093) had been reported between the non-accessibility of manuscript and non-accessibility of books. Moreover, it revealed that the results showed in the table presented the significance of the variables selected for this study.

Table 2
Correlation Statistical Test (n = 2745)

Var.	FOI	COO	SOD	NOB	NOP	NOM	LOR
FOI	1	.262**	.586**	.237**	.556**	.249**	.432**
COO		1	.298**	.160**	.264**	.131**	.248**
SOD			1	.318**	.511**	.327**	.452**
NOB				1	.214**	.093**	.426**
NOP					1	.501**	.466**
NOM						1	.311**
LOR							1

Direct Effects of the Model

Hypothesis 1: Social distancing, COVID-19 outbreak, and fear of infection had direct effects on the non-accessibility of books among students

The results presented in table 3 supported hypothesis 1 that there was a significant direct effect of social distancing ($\beta = .258$), COVID-19 outbreak ($\beta = .065$), and fear of infection ($\beta = .069$) on non-accessibility of books among students. Therefore, findings support hypothesis 1. The result revealed that during COVID-19 pandemic situations university students faced non-availability of printed books for their study and research. As the country followed the guidelines of WHO such as the lockdown and social distancing. Further, the fear of infection contributed to restrict university students at their homes. Therefore, the study and exam preparation was disturbed as they had not available print resources and research support facilities as well. Thus, the finding of this study is supported by the research of Adams (2020) and Tammaro (2020a). Further, the study findings of Murphy and Shelley (2020) had also aligned with the present study findings.

Hypothesis 2: Fear of infection, COVID-19 outbreak, and social distancing had direct effects on the non-accessibility of periodicals among students

The study findings presented in table 2 depicted that fear of infection ($\beta = .378$), COVID-19 outbreak ($\beta = .086$), and social distancing ($\beta = .264$) had direct effects on non-accessibility of periodicals among students. Thus, the results support hypothesis 2. It is pertinent to mention here that fear of infection restricted university students to their homes and stopped their physical movement in the area. Similarly, they were not allowed to visit the university library to consult print and research support facilities for their study purpose. As pandemic outbreak, all the educational activities were stopped to practice the guidelines of WHO (WHO, 2020a, 2020c, 2020e) and further shifted to online. As in Pakistan, students faced load-shedding and internet issues to consult online available university resources. On the other hand, they had a lack of print resources at their homes. Thus, university students faced study issues during a current pandemic. The results of this study were supported by several pieces of research conducted in developed (Tammaro, 2020a), developing (Demuyakor, 2020) and Muslim countries (Mahmut, 2020) in the world during COVID-19 pandemic situations.

Table 3

Regression Weights, Covariances, and Variances (n = 2745)

Variables			Standardized Regression Weights	Estimate	S.E.	C.R.	P
SOD	--->	NOB	.258	.151	.013	11.408	***
FOI	--->	NOP	.378	.394	.020	20.078	***
COO	--->	NOP	.086	.088	.016	5.405	***
COO	--->	NOB	.065	.051	.015	3.431	***
FOI	--->	NOB	.069	.055	.018	3.078	.002
SOD	--->	NOP	.264	.201	.015	13.852	***
NOP	--->	LOR	.199	.184	.018	10.251	***
FOI	--->	LOR	.142	.137	.020	6.936	***
SOD	--->	LOR	.130	.091	.014	6.358	***
COO	--->	LOR	.064	.061	.015	3.930	***
NOM	--->	LOR	.105	.064	.009	6.816	***
NOB	--->	LOR	.298	.360	.020	18.303	***
Covariances							
FOI	<-->	COO		1.394	.105	13.279	***
SOD	<-->	COO		2.168	.145	14.952	***
SOD	<-->	FOI		4.171	.158	26.481	***
Variances							
SOD				9.739	.263	37.041	***
FOI				5.204	.140	37.041	***
COO				5.440	.147	37.041	***
e2				12.950	.350	37.041	***
e1				2.952	.080	37.041	***
e3				3.572	.096	37.041	***
e4				3.142	.085	37.041	***
Chi-square = 848.092, df = 6, p-value = .000							
Model fit summary = GFI = .929, AGFI = .913, CFI = .915, RMSEA = .052							
Total number of observations = 2745							

Hypothesis 3: Non-accessibility of periodicals, fear of infection, and social distancing had direct effects on lack of research support facilities among students

Table 3 revealed that there was a significant direct effect of non-accessibility of periodicals ($\beta = .199$), fear of infection ($\beta = .142$), and social distancing ($\beta = .130$) had direct effects on lack of research support facilities among university students. Likewise, results also support hypothesis 3. As the COVID-19 outbreak, all the educational institutions of several countries were closed and students were restricted to their homes. Further, they had fear of infection and kept social distancing rules of WHO (WHO, 2020b). On the other hand, they did not visit their university

library for consultation of print resources and research support facilities. Therefore, they faced difficulty to prepare their quizzes, assignments, presentations, and exam preparations. Furthermore, several studies pointed out that the COVID-19 outbreak affected university student negative not only in developing countries (Bao, 2020; Demuyakor, 2020; Toquero, 2020) but also in developed (Gaetjens, 2020; Murphy & Shelley, 2020) and Muslim world (Mahmut, 2020; Osman, 2020).

Hypothesis 4: COVID-19 outbreak, non-accessibility of the manuscript, and social distancing had direct effects on lack of research support facilities among university students

Statistical data in table 1 described that the COVID-19 outbreak ($\beta = .064$), non-accessibility of the manuscript ($\beta = .105$), and social distancing ($\beta = .298$) had direct effects on the lack of research support facilities among students. Consequently, the results supported hypothesis 4. It was noteworthy here to point out that students were socially isolated during this COVID-19 outbreak. Moreover, the findings of this study also asserted that the non-availability of the manuscript and social distancing during the COVID-19 outbreak affected the research support facilities to university students. They were restricted to their homes and were not allowed to consult the university library. Therefore, they faced a lack of research support for their study purpose during COVID-19. Furthermore, multiple studies also revealed similar nature of results in terms of lack of research support facilities during COVID-19 in several countries (Ahmed et al., 2020; Jæger & Blaabæk, 2020; Rapanta, Botturi, Goodyear, Guàrdia, & Koole, 2020; Reimers & Schleicher, 2020).

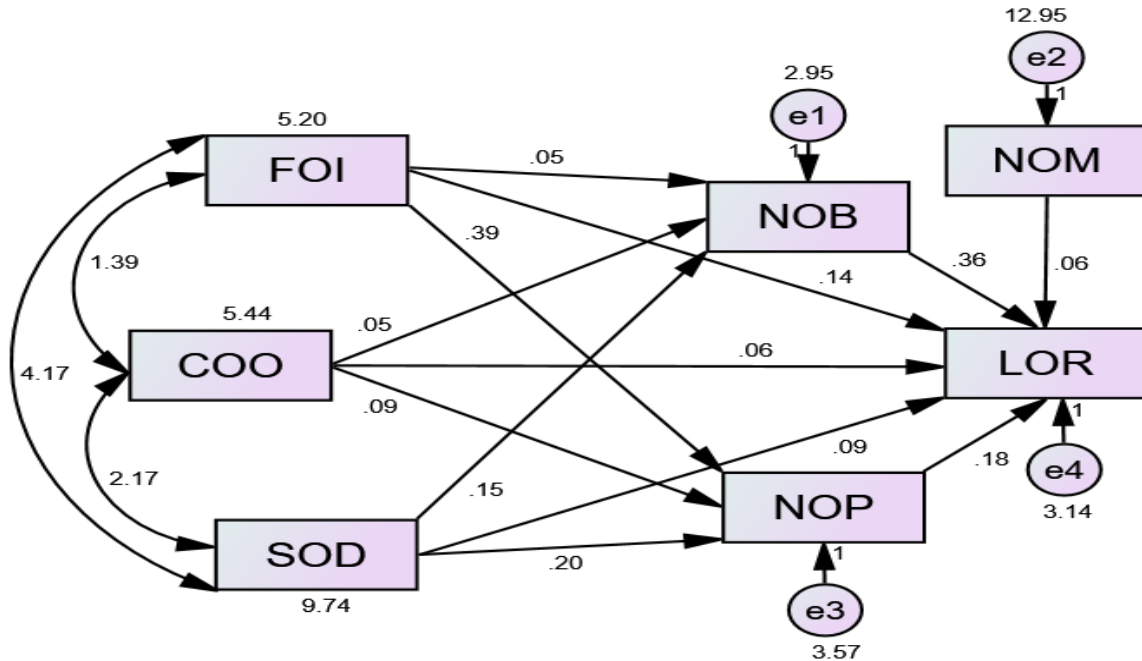


Figure 2: Model Fit Diagram

Indirect Effects of the Model

Hypothesis 5: COVID-19 outbreak had an indirect effect on the lack of research support facilities among students through the mediation of non-accessibility of periodicals.

The results presented in table 4 supported hypothesis 5 that there was a significant and indirect effect ($SE = 0.017^{***}$) of COVID-19 outbreak on lack of research support facilities through the mediation of non-accessibility of periodicals. Thus, findings revealed that hypothesis 5 was accepted. The study findings reported that the COVID-19 pandemic affected the accessibility of the university library and its resources for students. Lockdown and social distancing restricted students to their homes and they faced non-accessibility of periodicals and research support facilities for their study assignments. The results of this study were similar to the study findings from Gaetjens (2020).

Hypothesis 6: COVID-19 outbreak had an indirect effect on the lack of research support facilities among students by the mediation of non-accessibility of books.

The study findings presented in table 4 depicted that there was an indirect effect ($SE = 0.019^{***}$) of the COVID-19 outbreak on lack of research support facilities through the mediation of non-accessibility of books among students. Therefore, the results asserted that hypothesis 6 was accepted. It is worth mentioning here that COVID-19 affected all educational institutions including

schools, colleges, and universities along with religious and technical institutions. Students were restricted to their homes and they were not allowed to visit the university library. Thus, they had a lack of print resources and research support facilities during their studies. Similarly, several researchers reported similar nature of results not only in developed countries (Appleton, 2020; Bock, Dilmetz, Selznick, Zhang, & Mayhew, 2020) but also in developing (Asamoah, 2020; Channa et al., 2020; Chidi Nuel-Jean & Okoye, 2020).

Hypothesis 7: Fear of infection had indirect effects on the lack of research support facilities among students by the mediation of non-accessibility of periodicals.

Table 4 revealed that there was a significant indirect effect ($SE = 0.075^{***}$) of fear of infection on COVID-19 pandemic risk reduction through the mediation of non-accessibility of periodicals. Likewise, the results pointed out that acceptance of hypothesis 7. It was important to mention here that fear of infection among university students restricted them to their homes. They were not allowed to visit the university library and other places as well. Meanwhile, they had non-accessibility of periodicals and research support facilities for their study purpose. As the fear of infection and other rumors during COVID-19 created multiple problems for university students and the non-availability of periodicals and lack of research support was one for them. Consequently, their study-related work was affected negatively. Moreover, similar nature of several studies reported similar results of this pandemic in terms of university students' issues (Appleton, 2020; Dollinger & Vanderlelie, 2020; Gunapala, Montague, Reynolds, & Vo-Tran, 2020; Hamad, Fakhuri, & Abdel Jabbar, 2020).

Hypothesis 8: Fear of infection had an indirect effect on the lack of research support facilities among students by the mediation of non-accessibility of books.

Statistical data in table 4 asserted that there was a significant and indirect effect ($SE = 0.021^{**}$) of fear of infection on lack of research support facilities through the mediation of non-accessibility of books among students. As a result, hypothesis 8 was accepted. Therefore, it was important to assert here that fear of infection affected not only the university students but also the students of other educational institutions. They had faced a lack of research support and the non-accessibility of books. Further, it resulted and affected negatively in their exam preparation and other study-related assignments. Moreover, the findings of this study were similar to the study findings conducted not only in the Muslim world (Ali & Gatiti, 2020) but also in other countries of the world (Jena, 2020; Tamaro, 2020b; Yuvaraj, 2020).

Hypothesis 9: Social distancing had an indirect effect on the lack of research support facilities among university students by the mediation of non-accessibility of periodicals.

The study findings in table 4 highlighted that there was a significant and indirect effect (SE = 0.052***) of the social distancing on lack of research support facilities through the mediation of non-accessibility of periodicals among university students. Based on the mediation results, hypothesis 9 was accepted. Further, it had been important to mention here that social distancing created multiple problems for university students and lack of research support facilities was one of them. They were restricted to their homes and were not allowed to visit the university library. Thus, they faced a lack of research support facilities and the non-accessibility of periodicals. Likewise, the similar nature of results was also asserted by several researchers (Demuyakor, 2020; König et al., 2020; Rapanta et al., 2020).

Table 4

Indirect Effects of the Model (n = 2745)

Indirect Path	Unstandardized Estimate	Lower	Upper	P-Value	Standardized Estimate
COO --> NOP --> LOR	0.016	0.011	0.021	0.001	0.017***
COO --> NOB --> LOR	0.018	0.010	0.028	0.001	0.019***
FOI --> NOP --> LOR	0.072	0.057	0.091	0.001	0.075***
FOI --> NOB --> LOR	0.020	0.009	0.033	0.002	0.021**
SOD --> NOP --> LOR	0.037	0.029	0.046	0.001	0.052***
SOD --> NOB --> LOR	0.054	0.046	0.064	0.001	0.077***

Significance of Estimates: *** p < 0.001, ** p < 0.010, * p < 0.050, † p < 0.100

Hypothesis 10: Social distancing has an indirect effect on the lack of research support facilities among students by the mediation of non-accessibility of books.

The data in table 4 pointed out that there was a significant and indirect effect (SE = 0.077***) of the social distancing on lack of research support facilities through the mediation of non-accessibility of books among students. The mediation results revealed that hypothesis 10 was accepted. Moreover, it asserted that social distancing had affected all individuals generally and

university students, particularly during the COVID-19 outbreak. Students were restricted to their homes and were not allowed to visit the university library. Therefore, they had a lack of research support facilities and non-accessibility of books to complete their study related assignment on time during the current situations. Besides, the study findings were also supported by Ifijeh and Yusuf (2020), Gaetjens (2020), and Toquero (2020).

Conclusion

COVID-19 affected the educational institutions across the globe generally and Pakistan particularly. Owing to the closure of the university libraries consequent upon the lockdown and the social distancing implemented as per the guidelines of WHO, the students were restricted to their homes, and forbidden to visit the libraries. Therefore, they faced the severe non-accessibility of books, periodicals, manuscripts, and lack of research support facilities. Consequently, their study-related assignments were affected badly. Though university libraries had established online and digital resources, load-shedding and internet issues adversely affected their utility. The study concluded that university libraries were closed during the COVID-19 outbreak and students faced a lack of research support and non-availability of print resources in Pakistan. It recommended that the university libraries should strengthen their digital resources to facilitate students in terms of research support facilities and availability of online books, manuscripts, and periodicals to manage the future outbreaks appropriately.

Research Implications

The present research may enhance the awareness and knowledge regarding print resources and research support facilities provided by university libraries to students. It may be a significant addition to the existing body of knowledge in the field of research support facilities and the availability of print resources in the university library, and provide guidelines to students, research scholars, policymakers, and academicians to develop policies to improve the research support facilities and availability of print resources during outbreaks of epidemics of the similar nature in future.

Practical Implications

The findings of this study may motivate university administration to establish digital data sources as per the needs of the students. Moreover, they should make sure the online availability of books, periodicals, manuscripts, and research support facilities during pandemic situations in future.

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