

## СОЦИОЛОГИЯ

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### THE EFFECTS OF COVID-19 ON LIBRARIES OF MONGOLIA

**Tseren Ganbaatar, Narantuya Otgondoo, Naigalmaa Sergei, Zolboo Mashbat,**

**Naranjargal Purev-Ochir, Badamkhand Batjargal**

National University of Mongolia (Ulaanbaatar, Mongolia)

tseren@num.edu.mn; narantuya\_o@num.edu.mn; naigalmaa@num.edu.mn; zolboom@num.edu.mn;

naranjargalp@num.edu.mn; bkhandaa@num.edu.mn

**Abstract.** The Covid-19 pandemic has greatly affected higher education and cultural sector, including libraries. The majority of the libraries in Mongolia were physically closed for patrons. Librarians were suddenly tasked moving from in-person service into online and the Covid-19 pandemic affects policies, strategies, activities, behaviors itself and the library's future development strategy was not taking into account the effect of Covid-19. The aim of this paper is to explore how Mongolian libraries satisfy the need of their patrons in unexpected situation, such as Covid-19-induced transition to adapt to keep afloat, to identify the main issues that have arisen and make recommendations for the betterment of libraries' role in such situations. To be more specific, we address the following research questions: To what extent the Covid-19 affected the library daily activities? Do the library service style, perspectives, strategies, patrons and librarian attitudes change in the future? To address the research questions a quantitative and qualitative content analysis approach was used on a dataset created from questionnaire survey and interviews from librarians and patrons. We studied whether the library could response patrons' needs, the staff is fully paid or not, printed and e-book usage, internal and external online databases, positive and negative impacts of Covid-19 and other library services during pandemic period and compared them to the indicators with pre-Covid-19 period.

**Keywords:** Covid-19, pandemic, library, library service, patron, librarians, internal and external online databases, Mongolia.

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### БИБЛИОТЕКИ МОНГОЛИИ: ВЛИЯНИЕ ПАНДЕМИИ COVID-19

**Цэрэн Ганбаатар, Нарантуя Отгондоо, Найгалмаа Сергей, Золбоо Машбат,**

**Наранжаргал Пурэв-Очир, Бадамханд Батжаргал**

Монгольский государственный университет (г. Улан-Батор, Монголия)

tseren@num.edu.mn; narantuya\_o@num.edu.mn; naigalmaa@num.edu.mn; zolboom@num.edu.mn;

naranjargalp@num.edu.mn; bkhandaa@num.edu.mn

**Аннотация.** Пандемия Covid-19 оказала значительное влияние на учреждения сферы культуры и высшего образования, включая библиотеки. Большинство библиотек Монголии были закрыты для очного посещения. Перед библиотекарями была поставлена сложная задача: перейти от очного обслуживания к обслуживанию онлайн.

Отметим, что пандемия Covid-19 внесла кардинальные перемены в повседневную жизнь людей, что, несомненно, отразилось на направлениях деятельности библиотек. Цель данной работы состоит в том, чтобы проанализировать, как монгольские библиотеки удовлетворяют потребности своих посетителей в непредвиденных ситуациях, таких как переход к онлайн-обслуживанию, вызванный Covid-19. В процессе своего исследования мы попытались ответить на следующие вопросы: в какой степени Covid-19 повлиял на повседневную деятельность библиотек? Изменятся ли в будущем стиль библиотечного обслуживания, перспективы и стратегии развития библиотек, посетители и отношение к ним библиотекарей? Для получения ответов на данные вопросы были использованы методы количественного и качественного контент-анализа, результаты анкетного опроса и интервью с библиотекарями и посетителями. Мы изучили, каким образом библиотеки удовлетворяют запросы посетителей, как используются печатные и электронные издания, внутренние и внешние онлайн-базы данных, каково положительное и отрицательное влияние Covid-19, как различаются библиотечные услуги в период пандемии и до Covid-19.

**Ключевые слова:** Covid-19, пандемия, библиотека, библиотечное обслуживание, меценат, библиотекари, внутренние и внешние онлайн-базы данных, Монголия.

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## Introduction

The year 2020 and 2021 will be remembered as the years of the coronavirus and around the world, hundreds of thousands of people died from the disease, every organization changed in ways large and small, and libraries were no exception. In Mongolia, all academic institutions and libraries were closed from January 27<sup>th</sup>, 2020 therefore the educational institutions forced to work online to avoid risk of losing an academic year [The Mongolian Special Commission News, 2020]. The majority of the libraries in Mongolia were physically closed for patrons but the libraries required to meet the needs of their readers. Librarians have arisen many needs, such as working with patrons remotely, introducing electronic systems, learning to work with techniques and technologies, digitizing printed books, and obtaining copyrights and patents and etc. This pandemic, on the other hand, has given a powerful impetus to the rapid transformation of traditional libraries to meet the needs of modern readers [Holland, 2021]. In many parts of the world, libraries have faced a variety of challenges due to their social development, exploring opportunities to meet the information needs of their patrons remotely, and opening up new library services (IFLA, 2020). Due to the Covid-19 pandemic, physical services to libraries around the world have been disrupted, making it a sudden obstacle for patrons to access library resources in a timely manner. In Mongolia, there is an urgent need to identify and analyze the challenges that library readers face in meeting and accessing information during the Covid-19 period, and to make recommendations on how to improve library services to suit their current and future circumstances.

The modern libraries established in Mongolia in 1921 and generally have been divided into public, research and special libraries. Public libraries enrich their collection with all kinds of scientific books and provide services to a variety of professionals of all ages from child to adulthood,

and try to meet the needs and requests of them. Research libraries are for people doing research and include itself the research institutes, universities, and colleges. Research libraries dedicated to specific readers and build their holdings to suit the needs of their patrons. Special libraries generally include secondary school and institutional libraries. The Covid-19 has exacerbated the problem of Mongolian libraries and accelerated their digital transition. Librarians are being asked digitizing printed materials, increasing the number of e-books, starting online library trainings, conferences, and community activities, preparing and posting contents, brochures for e-learning students in Mongolia.

### Literature Review

Few opinion papers comparing how the libraries work, meet their patrons during Covid-19 were published, but we did not find empirical studies on the phenomenon. Library associations have also responded to the pandemic with researches and best practices. The International Federation of Library Association has been compiling and updating its website regarding the situation of libraries around the world since the outspread of Covid-19. The American Library Association has created webpage to compile information about the possible implications of Covid-19 pandemic [Rafiq et al., 2021]. A comparative study of the three university library services reveals that the Covid-19 pandemic had a significant impact on American higher education, including libraries [Connell et al., 2021]. Almost all libraries closed and restricted from accessing buildings, therefore the use of digital content, e-learning, and virtual software has increased in the USA [Survey: Libraries examine phased building re-opening, prepare summer, 2020]. The quarantine of Covid-19 has led to increase digital libraries, focus on building with an electronic sources and secure library infrastructure in India [Parikh et al., 2020]. According to the study in West Bengal, India, “During the quarantine period, students used smartphones for e-learning and they faced a variety of problems, including depression, slow internet speeds, a poor home learning environment, and the students in remote areas had the most difficulties to learn” [Kapasia et al., 2020]. During the pandemic, Pakistani library staffs worked home and there was a sense of over burden because of 24/7 connectivity and without any formal working policy addressing to new working routines. University librarians felt lack of digital literacy skills, and slow internet speed were the major barriers in their transition from physical to online mode and libraries need to focus on improving their digital services in Pakistan [Rafiq et al., 2021]. Although libraries began the transition to e-library before the Covid-19, they preferred providing traditional services, and the transition to digital services were too slow but the pandemic tasked with making electronic advances and opened up new possibilities [Huwiler, 2016]. Students' reading habits are changing, and many people are seeking to access information using digital technology and it creates a need for libraries to adapt to these changes [Tait et al., 2016]. Libraries in the United States and other developed countries have less difficulty accessing e-services during the pandemic than less developed countries and they are working to introduce cloud technology based services in order to make the library services easier [Connell et al., 2021]. The study about the impact of Covid-19 pandemic

on Chinese students, their access to information was done in 2021, and according to the research result they found that the patrons lacked the understanding of digital libraries and desired library support for them [Shi, Li, Luo, 2021]. Prior to the pandemic, the transition to e-libraries in most Asian countries was slow, but the studies on “Library Services in the Digital Age” was conducted in 2012 and on “Adolescent Library Service Habits and Future Trends” in 2013. 80 % of the respondents preferred library home delivery service and 77 % of the respondents answered that they need the internet service access on library computers [Zickuhr et al., 2013].

## Method

### *Design*

In this study, while we accept the suggestion that the most library management related studies were developed in the absence of pandemic context and they might not be suitable for applying to today’s condition, we address the proposal that Covid-19 is the main influencing factor behind all libraries’ sudden change practices and behavior. The aim of this paper is to explore how Mongolian libraries satisfy the need of their patrons in unexpected situation, such as Covid-19-induced transition to adapt to keep afloat, to identify the main issues that have arisen and make recommendations for the betterment of libraries’ role in such situations. To be more specific, we address the following research questions:

To what extent the Covid-19 affected the library daily activities?

Do the library service styles, perspectives, strategies, patrons and librarian attitudes change in the future?

To address the research questions, a qualitative content analysis approach was used on a dataset with questions with optional answers and open-ended questions created from librarians and patrons from various backgrounds with special consideration to context, in order to identify the main influences of Covid-19 on future concepts and daily activities of Mongolian libraries. A qualitative content analysis approach was used on a dataset with created from interviews with librarians and patrons from various backgrounds. These approaches were chosen a method of inquiry because it is consistent with our research goal: during the data analysis, we sought to identify the main concepts from the interviewees’ narratives which relate to our research questions and make a comparison between questionnaire survey results, the finding our empirical results. The interviews were conducted by different interviewers in their office or library, we agreed on preliminary guidelines that the interviewers should follow. First, the interview questions should be same as questionnaire survey sample and the sequence of the questions should not be changed. Second, the interviewer could support the interviewee with further explanations about the question if something was not clear to the participants. Third, the interview questions should not be shared with the participant prior the interview, since this could influence the actual interview situation. We required that the interview invitation letter was sent to all participants beforehand to schedule in their free time.

### ***Data Collection Tools***

The data collection method involved conducting personal, semi-structured interviews and optional and open-ended questions with librarians and patrons from various backgrounds. For the analysis, the questionnaire survey and interview were divided into main three groups: University, Secondary school and Public libraries. The criteria for University library group included main representatives of the State Universities and representatives of big and small sized private university libraries. The main purpose of dividing into three categories was to provide a basis for comparison in differences to the responses of each categories. We included 47 libraries, from them 16 – University libraries, 16 – Secondary school libraries and 15 – Public libraries. For all of our participants, we employed the following criteria: they should be working in Mongolian libraries or having one of active patrons of its. We developed two different questionnaire surveys with optional answers and open-ended questions for librarians and readers and each type included itself 15 questions. Our final first type of questionnaire survey sample included 1102 readers, 177 of the participants were researchers and teachers, 42 graduate, 613 undergraduate and 213 secondary school students and 57 readers were not circled where they belong. In the control group we interviewed 12 active patrons with same content of questions within three groups libraries. The second type of questionnaire survey sample included 47 librarians from each participated libraries and made control interview with 15 librarians within main three groups libraries including same content of questions. Since our goal was to ensure a comfortable atmosphere and let participants freely express themselves, we arranged the interviews in participants' office. SPSS software was used to integrate the survey. Comparing the issuance of printed books during normal and pandemic period was mathematically tested to determine whether they were affected by Covid-19 using the Chi-square test.

### ***Research Process***

Both interview questionnaire from librarians and patrons were same as survey questionnaire and divided into two parts. The purpose of the first part of both survey questionnaire and interview was to collect patrons' and libraries' statistical information during Covid-19. The second part of our analysis from the patrons was the effect of Covid-19 in patrons' study process and knowledge. We assessed the problems raised during Covid-19, the implemented new things its period and future desired service after pandemic from the librarians. To achieve the objectives of the study, the survey was conducted using the questions in Tables 1 and 2.

Table 1

**Summarizes the questionnaire survey and interview structure from patrons**

Category	Questions
1. Personal information of using library	<i>What is your level of study? Which library do you go mostly? Which service do you take mostly? How about your frequency of library use before Covid-19? Did you use the digital library before the pandemic period?</i>
2. Effect of Covid-19 on study process	<i>Could you take your desired service during Covid-19, if not why? How often do you use the digital library during the pandemic period, if don't why? How often did you have the necessity of taking the library service the during pandemic period? Did the libraries' electronic databases provide your desired necessities during the Covid-19? How the Covid-19 effect on your taking knowledge and skill process? Could you take your required information during the Covid-19? Did the limited library service effect on your taking knowledge process badly or vice versa during the pandemic period? Did librarian support you during the Covid-19? If the pandemic gets to continue what kind of service do you want to take mostly?</i>

Table 2

**Summarizes the questionnaire survey and interview structure from librarians**

Category	Questions
1. Libraries' statistical information	<i>Which library do you work? How many printed and online materials were in circulation for patrons during the Covid-19? How did your library work during the Covid-19?</i>
2. Effect of Covid-19 on library activity	<i>How the Covid-19 influenced to your library's normal activity? What kind of difficulties have you had to work online suddenly due to the Covid-19? Did your library have an electronic database and give a service to patrons from them? Did your service indicators with electronic databases increase during the Covid-19? If the pandemic gets worse how the library should improve their service? Did the Covid-19 have any positive impact on your library activities? Please write what kind innovated service did your library implement during the Covid-19? What kind of serious problems does your library have due to the pandemic situation? How does your library should improve its service?</i>

**Analysis of Data**

We analyzed by comparing the related questions and the survey was conducted from 1,102 people, but some of the questions were not filled. The doubtful answers or not filled questionnaires were clarified during the interview with the librarians or patrons, and the results obtained from the interviews used for the final analysis. The results are presented in the table 3 and table 4.

Findings

Table 3

Analysis of the questionnaire survey and interview from patrons

Question	University libraries' patrons		Public libraries' patrons		Secondary school libraries' patrons		Not known		Total Number (#)		
	A1	A2	A1	A2	A1	A2	A1	A2			
(A1): Could you take your desired library service during the Covid-19?											
- yes	102		139		74		6		321		
- no	217		340		122		47		726		
(A1): How often do you use the digital library during the pandemic period? (A2): How often did you have the necessity of taking the library service during the pandemic period?											
- very much	117	179	38	91	16	17	2	6	173	293	
- some	216	162	116	111	44	58	8	12	384	343	
- not a lot	119	139	134	118	105	122	27	35	385	414	
- few	28	0	34	0	32	0	17	1	111	1	
(A1): Did the libraries' electronic databases provide your desired necessities during the Covid-19? (A2): Did the limited library service effect on your taking knowledge process badly?											
- yes	58	271	-	167	-	79	-	17	58	534	
- in some ways	288	95	-	58	-	47	-	17	288	217	
- no	100	100	-	87	-	64	-	17	100	268	
(A1): How did the Covid-19 effect on your taking knowledge and skill process? (A2): Could you take your required information during the Covid-19?											
- improved technological knowledge	- enough	101	57	81	42	35	20	7	6	224	125
- increased ability to search and use information online	in some ways	208	353	98	222	78	141	23	40	407	756
- the opportunity to visit and gain knowledge and information in person was limited	- no	124	57	97	47	51	30	15	6	287	140
- not affected		31		34		20		6		91	
(A1): Did librarian support you during the Covid-19?											
- provided inquiries and information on the required topic		117		102		54		8		281	
- provided information about the new book		33		45		44		7		129	
- provided advice on how to read the e-books		142		68		46		11		267	
- other		115		71		40		15		241	

(A1): If the pandemic gets to continue what kind of service do you want to take mostly?

- internal electronic and external online databases service	223	111	66	14	414
- inquiry and information service	38	21	24	6	89
- book delivery service	148	129	68	13	358
- advices for E-learning	44	39	25	10	118
- home delivery service	5	6	5	2	18

According to the survey result 62 % of those surveyed answered that they did not receive library services during the Covid-19, and public patrons answered with highest rate with 71 % on this question. We compared the frequency of library use prior to the Covid-19 with the needs which raised during the pandemic. The results of the survey showed that the total number of the patrons who wanted to receive a library services during the Covid-19 were more than the number of services during ordinary period without pandemic. 50,5 % of the respondents answered that they used the library a lot prior to the pandemic but 57,7 % of them answered that they wanted to use the library during the Covid-19 more than normal period. The patrons had more willing to use library services and develop themselves during the pandemic, but the most Mongolian libraries closed and did not give any services to the patrons, and the home delivery service stopped as well in many libraries. We compared the results of two questions which are whether the library's internal electronic and external online database services met the needs of patrons to the question of "Did the limited library services affect their ability to develop themselves during the Covid-19?". When asked whether the library's internal electronic and external online database services fully met the needs of customers during the pandemic, the university patrons responded that 22,4 % of them did not meet their needs at all and 64,5 % of them partially satisfied. The answers of the public, secondary school libraries patrons to the question of whether the electronic and external online database services met their needs were doubtful, so we tried to confirm during the interview study those questionable things and revealed that these libraries do not currently serve readers with internal electronic and external databases. According to the survey result the National Library has some internal databases with rare materials which were excluded from the analysis because we found that they did not provide any services to patrons with those databases. The secondary school libraries responded that they do not have any internal electronic and external databases. 48,4 % of the surveyed patrons said that the limited library services during the Covid-19 had a negative impact on their self-development opportunities and for the university patrons had it with highest rate as 58,1 %. The ability to search and use information in the online environment has increased for 36,9 %, the knowledge of technology for 20,3 %, but 26 % of the respondents answered that they had limited access to knowledge and information in person. 68,6 % of the surveyed patrons said that they could not get some information while 12,7 % of the respondents could not get any information at all during the pandemic. The survey concludes that the Covid-19 situation has had a positive effect on increasing patrons' technical knowledge and ability to work online, but the service of libraries had not fully met the information needs of their most users as 81,3 %. When asked what kind of support the librarian provided during the pandemic, 25,4 % of respondents said that they received inquiries on the topic,



11,7 % information about new books, and 24,2 % advice on reading e-books. 37,5 % of the respondents wanted the use the internal electronic and external online databases if the Covid-19 continues, which was the highest number for university patrons as 48,6 %. 32,4 % of the respondents wanted the book delivery service, which was the most desired service of the public library patrons as 42,1 %.

Table 4

**Analysis of the questionnaire survey and interview from librarians**

Question	University libraries' patrons		Public libraries' patrons		Secondary school libraries' patrons		Total Number (#)	
	Yes	No	Yes	No	Yes	No	Yes	No
<b>A1. What kind of negative impacts had on your library activities due to the Covid-19?</b>								
– the planned work of the library interrupted	13	1	14	3	15	1	42	5
– the number of the book collection decreased	9	5	5	12	4	12	18	29
– the library staff salaries decreased	4	10	0	17	1	15	5	42
– the library service performance decreased	10	4	14	3	8	8	32	15
<b>A2. Did the Covid-19 have any positive impact on your library activities?</b>								
– increased the electronic databases	10	4	6	11	3	13	19	28
– improved the technique and technology	4	10	1	16	4	12	9	38
– improved the opportunity working in online environment	10	4	15	2	12	4	37	10
– the management started to support the library activities more	3	11	0	17	3	13	6	41
<b>A3. What kind of difficulties have you had to work online suddenly due to the Covid-19?</b>								
– lack of techniques	10	4	16	1	10	6	36	11
– problems with internet	4	10	9	8	8	8	21	26
– lack of knowledge working in online environment	3	11	6	11	3	13	12	35
– lack of knowledge working in computer	3	11	1	16	0	16	4	43
<b>A4. If the pandemic gets worse how the library should improve their service?</b>								
– arise the internal database	5	-	7	-	11	-	23	-
– increase the internal online databases	11	-	14	-	6	-	21	-
– increase the external online databases	8	-	6	-	5	-	19	-
– start co-ownership of the electronic databases between libraries	6	-	8	-	7	-	21	-

A total of 47 libraries in three groups were surveyed, including 16 universities, 15 public and 16 secondary school libraries, each group's questions with the same content. 90 % of surveyed librarians said that the planned library activities had decreased and 68% of them responded that service performance decreased as well during the Covid-19. Public library salaries were not reduced, but 28 % of university and 6,2 % of secondary school librarians said that their salaries were reduced. In a study of the positive effects of the pandemic on the library, 67,8% of the respondents said that e-resources had increased and 78,7 % answered that their ability to work in an online environment had improved. 19 % of the librarians answered that the technology had improved, while only 12,7 % said that the management support had increased in the library. It is noteworthy that no one gave positive answer from the public library to the question of management support, and only one person answered that the technology had improved. When we asked what problems librarians faced when working online, 76,5 % of surveyed said that they lacked the equipment, 44,6 % had problems with the Internet, 25,5 % lacked the skills to work online and 8,5% said that they had some poor computer skills. Libraries defined their needs differently depending on the needs of their patrons. Librarians from secondary school responded that there is a great need for internal e-databases, while public and university libraries needed to increase their internal e-databases. For the purpose of monitoring, the main major libraries were selected and 15 librarians totally were interviewed, of them 11 from university, 3 from public and 1 from secondary school libraries. Due to uncertain responses to the use of online libraries, printed books and internal and external electronic databases, we clarified from interviewed librarians during the interview survey. In order to create a comfortable atmosphere and allow participants to express themselves freely, the interviews were conducted in the library where the participants are located.

The results of our surveys and interviews showed that Covid-19 has influenced the normal functioning of all organizations around the world, including the libraries. In our study, we used the Chi-square test method in order to double-check our result of Covid-19. The number used in the test are shown in yellow.

We found that the pandemic affected the National, Ulaanbaatar City and Central Children's Library through comparing the printed books usage during Covid-19 to the pre-Covid-19 period using Chi-square test method. According to our study “the chi-square value = 5,132”, “the critical value of the chi-square = 5.99 / $\alpha=0.05$ , degree of freedom = 2 /” (Table 5). We also found that the pandemic affected the Libraries of the National University of Mongolia, Mongolian University of Science and Technology, Mongolian State University of Education and University of Finance and Economics through comparing the printed books usage during Covid-19 to the pre-Covid-19 period using Chi-square test method. According to our study “the chi-square value = 28,039”, “the critical value of the chi-square = 7.81 / $\alpha=0.05$ , degree of freedom = 3 /” (Table 5).

Table 5

**A comparative study of printed books usage during Covid-19 and pre-Covid-19 period**

Library category	2019.02.01- 2019.05.31 Normal period	2020.02.01- 2020.05.31 Covid-19 period		2020.02.01- 2020.05.31 Covid-19 period	2021.02.01- 2021.05.31 Covid-19 period	
National Library	51,315	8,869	82,7% ↓	8869	3427	61,4% ↓
Ulaanbaatar city public library	126,129	16,709	86,8% ↓	16709	9488	43,2% ↓
Central Children's Library	27,508	9,895	64,1% ↓	9895	-	-
<b>CHI-SQUARE</b>						<b>5,132</b>
<b>Critical Value of Chi-square (=CHISQ.INV.RT(0.05, 2))</b>						<b>5.99</b>
Library of the National University of Mongolia	477,695	44,098	90,8% ↓	44098	48100	8,3% ↑
Library of Mongolian University of Science and Technology	90,487	2,515	97,3% ↓	2515	889	64,6% ↓
Library of Mongolian State University of Education	333,552	19,213	94,2% ↓	19213	4895	74,5% ↓
Library of University of Finance and Economics	37,134	1,309	96,5% ↓	1309	1154	11,8% ↓
<b>CHI-SQUARE</b>						<b>28,039</b>
<b>Critical Value of Chi-square (=CHISQ.INV.RT(0.05, 3))</b>						<b>7.81</b>

We compared two periods usage of printed materials such as Covid-19 beginning indicator to the exactly same period after a one year of time. In the beginning of Covid-19 the usage of printed books decreased in all libraries from 64,1 till 97,35% but the situation is improved in a year later of time. This phenomenon is explained by the fact that the libraries have found ways to improve the services over time during the pandemic. The library of the National University of Mongolia was the only one with growth result in 2021 and it was explained that during pandemic period the library gave some service such as home delivery and one reading hall was open. In the table 5, there is no indicator in 2021 in Central Children's Library and it explained that they closed the door and did not give any service during this survey period.

Table 6

**A comparative study of internal online databases usage  
 during Covid-19 and pre-Covid-19 period**

Library category	2019.02.01- 2019.05.31 Normal period	2020.02.01- 2020.05.31 Covid-19 period		2020.02.01- 2020.05.31 Covid-19 period	2021.02.01- 2021.05.31 Covid-19 period	
National Library	-	-	-	-	-	-
Ulaanbaatar city public library	-	-	-	-	-	-
Central Children's Library	-	-	-	-	-	-
Library of the National University of Mongolia	326411	320485	1,8% ↓	320485	680352	52,8% ↑
Library of Mongolian University of Science and Technology	-	-		-	-	
Library of Mongolian State University of Education	8216	12405	33,7% ↑	12405	32285	61,5% ↑
Library of University of Finance and Economics	8024	29920	73,1% ↑	29920	52476	42,9% ↑
<b>CHI-SQUARE</b>						<b>12,036</b>
<b>Critical Value of Chi-square (=CHISQ.INV.RT(0.05, 2))</b>						<b>5.99</b>

We found that the pandemic affected the main representatives of university libraries through comparing usage of the internal and external online databases during Covid-19 to the pre-Covid-19 period using Chi-square test method. According to our study for internal online database the chi-square value = 12,036, for external online database the chi-square value = 26,947; Critical Value of chi-square for both databases = 5.99”; / $\alpha=0.05$ , degree of freedom = 2 /” (Table 6, 7). During the pandemic time, it was assumed that staying at home would result increase the external and internal online database services, but the decline in most libraries was a major concern, we clarified the reason in our interview survey. In the case of the Library of the National University of Mongolia, the internal e-database has declined slightly since the beginning of the Covid-19 due to the fact that people often approached material from school library and did not know how to access it from home. As soon as the library was closed, the library of Mongolian State University of Education and the Institute of Finance and Economics focused on improving their internal electronic databases, and providing access from home, which influenced in the growth of their library's access. The library of National University of Mongolia had a higher number access of external online databases than other representative universities due to providing possibility of access from home. The library of the Mongolian University of Science and Technology refused to provide information on electronic

databases as a matter of school privacy that’s why we did not include to our analysis. According to the study, the usage of printed books fell sharply in the first year of the Covid-19. The high number access rate of patrons to the library's internal electronic database indicates the needs of libraries to digitalize their holdings. Prior to Covid-19, the use of external databases at most surveyed universities were high, but the indicators declined since the pandemic started. This was related to the fact that the access to the universities’ external databases were limited by external IP addresses, and patrons were generally less likely to use external databases as well.

Table 7

**A comparative study of external online databases usage during Covid-19 and pre-Covid-19 period**

Library category	2019.02.01- 2019.05.31 Normal period	2020.02.01- 2020.05.31 Covid-19 period		2020.02.01- 2020.05.31 Covid-19 period	2021.02.01- 2021.05.31 Covid-19 period	
National Library	-	-	-	-	-	
Ulaanbaatar city public library	-	-	-	-	-	
Central Children's Library	-	-	-	-	-	
Library of the National University of Mongolia	13509	26388	48,8% ↑	26388	39494	33,1% ↑
Library of Mongolian University of Science and Technology	-	-	-	-	-	
Library of Mongolian State University of Education	15350	7556	50,7% ↓	7556	6710	11,1% ↓
Library of University of Finance and Economics	1012436	698044	31,1% ↓	698044	663464	4,9% ↓
<b>CHI-SQUARE</b>						<b>26,947</b>
<b>Critical Value of Chi-square(=CHISQ.INV.RT(0.05, 2))</b>						<b>5.99</b>

**Results, Discussion and Recommendations**

While comparing activity of the public, university and secondary school libraries the history path was generally similar, but the results were different depending on the nature of the activity and the technological development. At the beginning of the pandemic, all libraries were closed according to the decision of the state emergency commission. But the students of all level started to study online and it was almost new thing in Mongolia. The libraries were faced with the problem of how to provide with necessary materials for those who wanted to use for their online study.

We found that the libraries operated differently during Covid-19, some libraries had been doing their internal work for almost two years without serving patrons even with online materials, while others have provided services such as home delivery, partly reading room open service for patrons and service with electronic databases. The results of the survey are summarized in the table 8.

Table 8

**A comparison of key changes in the surveyed libraries during the Covid-19**

Library changes	Changed things	Public Libraries	University Libraries	Secondary school libraries
		<i>If yes (+)</i>	<i>If no (-)</i>	
<b>Positive change</b>	Electronic databases added	+	+	+
	Technique and technology has improved	+	-	+
	Increased opportunities to work online	+	+	+
	Management started to support more library activities	-	+	+
	Librarians are more interested in self-improvement	+	+	+
	The digitalization of libraries has intensified	+	+	-
<b>Negative change</b>	The planned work of the library was interrupted	+	+	+
	The book purchase has decreased	+	+	-
	The salaries of library staff have decreased		+	
	Service performance decreased	+	+	+
	Limited services have negatively affected on patrons' learning	+	+	-

Although the issue of digitalization in Mongolian libraries has been discussed for some years and started in various ways but the librarians are still with lack of knowledge about the digital world. Covid-19 strongly warned libraries to speed up their digitalization as a matter of urgency, and the study found that despite the end of the pandemic, there is no longer possibility of providing adequate satisfied services by simply delivering printed materials to patrons. The research results show that the libraries need to be a tool that plays a key role in distance learning. Research has shown that Mongolian libraries had been unable to meet the needs of their patrons by closing their doors in the event of an emergency like Covid-19, and librarians had been very busy starting many activities during the pandemic, but patrons had not been able to know their activities. The main library users responded that they did not receive any library services during the pandemic and it indicates that the most Mongolian libraries were not ready at all in the case of an emergency. The results of the survey show that the public, university, and secondary school libraries differ in the nature of their activities and they have different kind of task urgency. In the table 9 we showed the first three tasks by priority that should be done not depending on whether the Covid-19 continue or not.

Table 9

**The three most important tasks by prioritization that need to be implemented systematically in the libraries**

Library category	The three most important tasks by prioritization
<b>Public Libraries</b>	<ol style="list-style-type: none"> <li>1. Create an internal electronic database, deliver to patrons and increase them basing on their needs</li> <li>2. Improve technology and internet speed</li> <li>3. Provide patrons the opportunity to work online</li> </ol>
<b>University Libraries</b>	<ol style="list-style-type: none"> <li>1. Increase the access to external online databases without location restrictions</li> <li>2. Increase the number of the internal electronic databases</li> <li>3. Open opportunities for universities to share electronic materials with each other</li> </ol>
<b>Secondary school libraries</b>	<ol style="list-style-type: none"> <li>1. Improve technique, technology and internet speed</li> <li>2. Develop an integrated plan and improve the overall understanding of what is the internal electronic databases and how to have it</li> <li>3. Systematize activities that support the learning process of the student</li> </ol>

**Conclusion**

The issue of digitalization in Mongolian libraries had been discussed for some years but still their main service has been traditional physical services. The study found that university libraries were more prepared to deal with sudden technological and organizational challenges than public libraries, and that the university libraries did not completely stop library services while closed the door. University libraries provided electronic and home delivering book service. Although university libraries provided online services, the survey found that the patrons were unable to access the materials they wanted due to lack of materials, which influenced their learning and development according to their thoughts. Libraries have a common Internet problem, but the internet problem of the public and secondary school libraries is worse than university libraries. The librarians' lack of skills obstructed to the students for learning at a distance. Although libraries are beginning to realize the need to intensify their digital work but behind the digital work there are many issues as copyright, financial, technological and software related, which slow the process. The pandemic has accelerated the digitalization of electronic content, courses, exhibitions and other digital events, and libraries have begun to focus on improving internet speeds, technique and technological communication skills in addition to adding online content. The patrons could not find necessary online materials for them which indicate that the libraries need to focus on digitalization systematically. According to the survey the patrons found their necessary materials through searching the Internet and it was one sign of the poor digital libraries.

Finally, the research has shown that Mongolian libraries do not meet the needs of their patrons, have poor internet connections, do not have enough electronic materials, infrastructure is not developed, and librarians have poor communication skills with technique and technology.

The results of the survey showed that the total number of patrons who participated in the survey wanted to receive library services more often than before, or that the demand for library services was higher during the quarantine than usual period. The patrons were more willing to use library services and self-improvement during the pandemic, but the Mongolian libraries' reading room service were stopped in almost all libraries, and the home delivery service was discontinued in most libraries, leaving patrons unable to take the services they needed. Therefore, regardless of whether the Covid-19 continues or not, libraries need to systematically improve their internal and external online databases, as well as home book delivery services.

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#### Information about the authors / Сведения об авторах

**Tseren Ganbaatar** – PhD, Associate Professor, Library Dean, National University of Mongolia, Mongolia, Ulaanbaatar, Ikh Surguuli St., 1, e-mail: [tseren@num.edu.mn](mailto:tseren@num.edu.mn), <https://orcid.org/0000-0003-4563-750X>

**Narantuya Otgondoo** – Library's Senior Specialist, National University of Mongolia, Mongolia, Ulaanbaatar, Ikh Surguuli St., 1, e-mail: [narantuya\\_o@num.edu.mn](mailto:narantuya_o@num.edu.mn)

**Naigalmaa Sergei** – Library's bibliographer, National University of Mongolia, Mongolia, Ulaanbaatar, Ikh Surguuli St., 1, e-mail: [naigalmaa@num.edu.mn](mailto:naigalmaa@num.edu.mn)

**Zolboo Mashbat** – Librarian, National University of Mongolia, Mongolia, Ulaanbaatar, Ikh Surguuli St., 1, e-mail: [zolboom@num.edu.mn](mailto:zolboom@num.edu.mn)

**Naranjargal Purev-Ochir** – Librarian, National University of Mongolia, Mongolia, Ulaanbaatar, Ikh Surguuli St., 1, e-mail: [naranjargalp@num.edu.mn](mailto:naranjargalp@num.edu.mn)

**Badamkhand Batjargal** – Librarian, National University of Mongolia, Mongolia, Ulaanbaatar, Ikh Surguuli St., 1, e-mail: [bkhandaa@num.edu.mn](mailto:bkhandaa@num.edu.mn)

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**Цэрэн Ганбаатар** – PhD, доцент, заведующая библиотекой Монгольского государственного университета, Монголия, г. Улан-Батор, ул. Университетская, 1, e-mail: [tseren@num.edu.mn](mailto:tseren@num.edu.mn), <https://orcid.org/0000-0003-4563-750X>

**Нарантуя Отгондоо** – главный специалист библиотеки Монгольского государственного университета, Монголия, г. Улан-Батор, ул. Университетская, 1, e-mail: [narantuya\\_o@num.edu.mn](mailto:narantuya_o@num.edu.mn)

**Найгалмаа Сергей** – библиограф библиотеки Монгольского государственного университета, Монголия, г. Улан-Батор, ул. Университетская, 1, e-mail: [naigalmaa@num.edu.mn](mailto:naigalmaa@num.edu.mn)

**Золбоо Машбат** – библиотекарь Монгольского государственного университета, Монголия, г. Улан-Батор, ул. Университетская, 1, e-mail: zolboom@num.edu.mn

**Наранжаргал Пурэв-Очир** – библиотекарь Монгольского государственного университета, Монголия, г. Улан-Батор, ул. Университетская, 1, e-mail: naranjargalp@num.edu.mn

**Бадамханд Батжаргал** – библиотекарь Монгольского государственного университета, Монголия, г. Улан-Батор, ул. Университетская, 1, e-mail: bkhandaa@num.edu.mn

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