

Electronic Information Resources available in and accessible to the university libraries in West Bengal: a study

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Abstract: Electronic Information Resources (EIRs) are supposed to have more potential for academic support in the university. Many university libraries are presently developing their library resources with substantial EIR collection like e-journals, e-books and databases through individually subscribing and/or purchasing and by accessing through different consortia along with their digitized resources created in-house. The experience of the study of the university libraries in West Bengal shows that, with the right combination of sufficient EIR collection and its delivering access, EIRs can be very helpful to the university library users in accessing required information.

It is observed from this study that not all the university libraries in West Bengal have EIR collection yet. Chi square test also was applied to find out whether there was any relationship between category-wise (establishment year, type and location) distribution of the university libraries with respect to availability and non-availability of EIRs.

Index Terms - E-resources, Electronic Information Resources, University library, West Bengal

1. INTRODUCTION

University libraries are important centres of various academic and research-based activities and they perform an indispensable role in successfully attaining the academic objectives of the concerned mother institutions and this successful pursuit of objectives can be realized only through developing and maintaining rich library collection of resources along with proffering seamless service along with wider and easy access to information and resources (Sasikala, Nagaratnamani, & Dhanraju, 2013). With the unprecedented growth of information, proliferation of knowledge and ever increasing needs of readers, library users demand use of Information and Communication Technologies (ICTs) (Mal, 2009) to avail modern library services. So, in order to meet the requirement of the library users, library introduces various ICT based services. Hence, today's information handling technologies have significantly influenced the basic nature of traditional print-based libraries and have created electronic, digital and virtual libraries containing Electronic Information Resources (EIRs) like e-books, e-journals, databases, etc. (Pall, 2014).

In this context, it is seen that the university libraries too are not the out of this recent trend of developing EIR collection for providing e-information services to their users. Consequently, in the present day, university libraries have concentrated on having access to EIR collection more and more in different modes from different sources in addition to the print resources because of the perceived benefits of EIR such as easy access to information and its comprehensiveness (Patra, 2014). The university libraries, therefore, have access to EIRs through consortia and/or they subscribe to and/or purchase EIRs individually; alongside creating EIRs by digitizing their in-house print resources.

2. OBJECTIVES

The objectives of the study are:

- ✚ to identify the collection status of Electronic Information Resources (EIRs) available in and accessible to the university libraries in West Bengal.
- ✚ to study the availability of EIR collection with respect to establishment year of the university libraries in West Bengal;
- ✚ to study the availability of EIR collection with respect to type of the university libraries in West Bengal;
- ✚ to study the availability of EIR collection with respect to location of the university libraries in West Bengal; and
- ✚ to identify the impact of establishment year, type and location of the university libraries on availability of EIR collection in West Bengal.

3. METHODOLOGY

3.1 Scope and coverage of the study

There are total 36 universities in West Bengal, of which 27 universities are government aided and remaining 09 universities are private (University Grants Commission, n.d.). This study covered all the libraries of government aided universities which were offering educational programmes in the regular mode in the state of West Bengal. Netaji Subhas Open University, Kolkata is an open university imparting education in the distance learning mode. So, this state aided open university was not considered in this study. Therefore, the scope and coverage of this study included total 26 university libraries in West Bengal.

Based on the availability and accessibility of EIRs in the university libraries in West Bengal, EIRs on the internet were broadly classified into three categories namely e-journal, e-book and database for convenience of the study. Moreover, digitization of in-house print resources is another kind of EIR available in the university libraries in West Bengal and it was also taken into consideration here.

Open access EIRs available online were not considered in this study. Both subscribed, purchased EIRs and/or EIRs accessed through consortia by the university libraries in West Bengal were taken into consideration in this study.

In view of the above consideration of EIRs for this study, it is found from the collected data that out of the total 26 government aided university libraries in West Bengal under this study, 17 university libraries had EIR collection. The remaining nine university libraries in West Bengal had neither online EIR, whether subscribed, purchased and/ or accessed through consortia, nor digitized resources.

Out of the total 26 government aided university libraries in West Bengal under this study, seventeen university libraries had EIR collection and the list of the university libraries was presented in the Table 3.1.1.

Table 3.1.1: List of all the university libraries having EIR collection in West Bengal

Sl. No.	Name of the University	Establishment year	Location	Type
1	Aliah University	2007 (In 21 st century)	Urban	General
2	Bankura University	2014 (In 21 st century)	Non-urban	General
3	Bidhan Chandra Krishi Viswavidyalaya	1974 (Before 21 st century)	Non-urban	Special
4	Jadavpur University	1955 (Before 21 st century)	Urban	General
5	Maulana Abul Kalam Azad University of Technology	2001 (In 21 st century)	Urban	Special

Sl. No.	Name of the University	Establishment year	Location	Type
6	Presidency University	2010 (In 21 st century)	Urban	General
7	Rabindra Bharati University	1962 (Before 21 st century)	Urban	General
8	Sidho-Kanho-Birsha University	2010 (In 21 st century)	Non-urban	General
9	The West Bengal National University of Juridical Science	2004 (In 21 st century)	Urban	Special
10	University of Burdwan	1960 (Before 21 st century)	Non-urban	General
11	University of Calcutta	1857 (Before 21 st century)	Urban	General
12	University of Kalyani	1960 (Before 21 st century)	Non-urban	General
13	University of North Bengal	1962 (Before 21 st century)	Non-urban	General
14	Uttar Banga Krishi Viswavidyalaya	2001 (In 21 st century)	Non-urban	Special
15	Vidyasagar University	1981 (Before 21 st century)	Non-urban	General
16	Visva-Bharati	1921 (Before 21 st century)	Non-urban	General
17	West Bengal University of Animal and Fishery Sciences	1995 (Before 21 st century)	Urban	Special

Table 3.1.2 shows that out of the total 26 government aided university libraries in West Bengal under this study, nine university libraries did not have any EIR collection.

Table 3.1.2: List of the university libraries not having EIR collection in West Bengal

Sl. No.	Name of the University	Establishment year	Location	Type
1	Cooch Behar Panchanan Barma University, Cooch Behar	2012 (In 21 st century)	Non-urban	General
2	Diamond Harbour Women's University, South 24 Parganas	2013 (In 21 st century)	Non-urban	General
3	Kazi Nazrul University, Burdwan	2012 (In 21 st century)	Non-urban	General
4	Raiganj University, Uttar Dinajpur	2015 (In 21 st century)	Non-urban	General
5	The Sanskrit College and University,	2015	Urban	Special

Sl. No.	Name of the University	Establishment year	Location	Type
	Kolkata	(In 21 st century)		
6	The West Bengal University of Health Sciences, Kolkata	2002 (In 21 st century)	Urban	Special
7	The West Bengal University of Teachers' Training, Education Planning and Administration, Kolkata	2015 (In 21 st century)	Urban	Special
8	University of Gaur Banga, Malda	2007 (In 21 st century)	Non-urban	General
9	West Bengal State University, North 24 Parganas	2007 (In 21 st century)	Non-urban	General

3.2 Data collection

As the research work was designed to collect the basic inputs from the university libraries in West Bengal, a descriptive survey method was adopted for collecting data and other information required for this study. For that purpose, one well-structured questionnaire for the University Librarian / Library In-Charge was designed for collecting data from the university libraries in West Bengal. The filled up questionnaires were collected from the university libraries for data analysis and interpretation.

The researcher analyzed the collected data of the university libraries from different points of view such as establishment year of the university libraries, type of the university libraries and location of the university libraries in West Bengal.

- ✚ Here, year of establishment was considered before and in 21st century such as university libraries established before 21st century and university libraries established in 21st century.
- ✚ In the case of types of university libraries, there were general type and special type.
- ✚ For location of the university libraries urban and non-urban area were considered.

Data for this study were collected over the years and finally those were checked, rectified and presented here based on the latest data on collection received during the first quarter of the last year.

3.3 Statistical methods used

The collected data were classified, tabulated, thoroughly analyzed and graphically represented according to the objectives stated. In order to study the impact, Chi-Square test had been applied at 5% level. The values of the statistical analyses were worked out with the help of Microsoft Excel.

4. ANALYSIS AND FINDINGS

4.1 Status of EIR collection in the university libraries in West Bengal

It is observed from the Table 4.1.1 that 65.38 per cent of the university libraries in West Bengal had EIR collection and 34.62 per cent of the university libraries had neither access to online resources nor collection of digitized resources.

Table 4.1.1: Distribution of university libraries with respect to present status of availability of EIRs

EIR availability	No. of libraries	%
EIR available	17	65.38
EIR not available	09	34.62

Total	26	100.00
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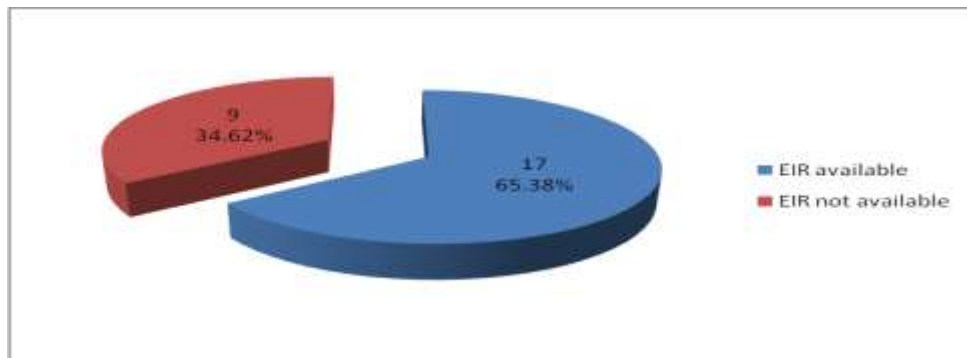


Figure 4.1.1: Distribution of university libraries with respect to present status of availability of EIRs

Table 4.1.2 reveals that all the university libraries established before 21st century in West Bengal had EIR collection, whereas only 43.75 per cent university libraries established in 21st century had EIR collection.

Table 4.1.2: Distribution of university libraries with respect to availability of EIR collection and establishment year of university libraries

Establishment year	Availability of EIR (No. of libraries)	%
Before 21 st century (N=10)	10	100.00
In 21 st century (N=16)	07	43.75



Figure 4.1.2: Distribution of university libraries with respect to availability of EIR collection and establishment year

It is seen from the Table 4.1.3 that 66.67 per cent general type university libraries had EIR collection, whereas 62.50 per cent special type university libraries had EIR collection.

Table 4.1.3: Distribution of university libraries with respect to availability of EIR collection and type of university libraries

Type	Availability of EIR (No. of libraries)	%
General type university libraries (N=18)	12	66.67
Special type university libraries (N=8)	05	62.50

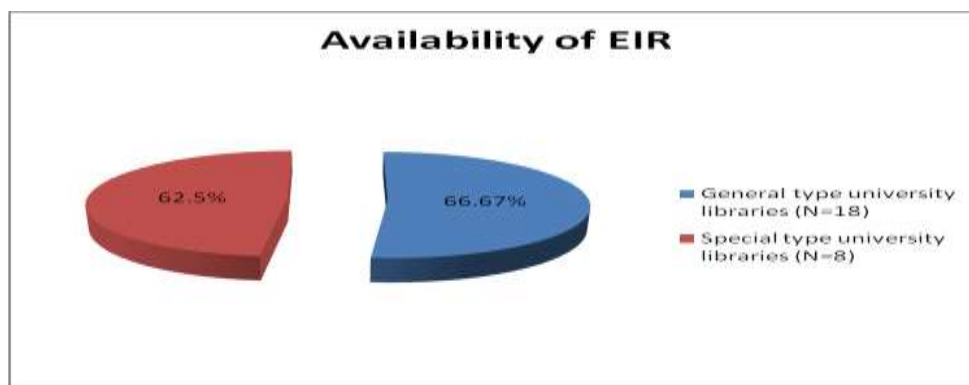


Figure 4.1.3: Distribution of university libraries with respect to availability of EIR collection and type of university libraries

Further, Table 4.1.4 shows that 72.73 per cent urban university libraries had EIR collection while 60 per cent university libraries in non-urban area had EIR collection.

Table 4.1.4: Distribution of university libraries with respect to availability of EIR collection and location

Location	Availability of EIR (No. of libraries)	%
Urban (N=11)	8	72.73
Non-urban (N=15)	9	60.00

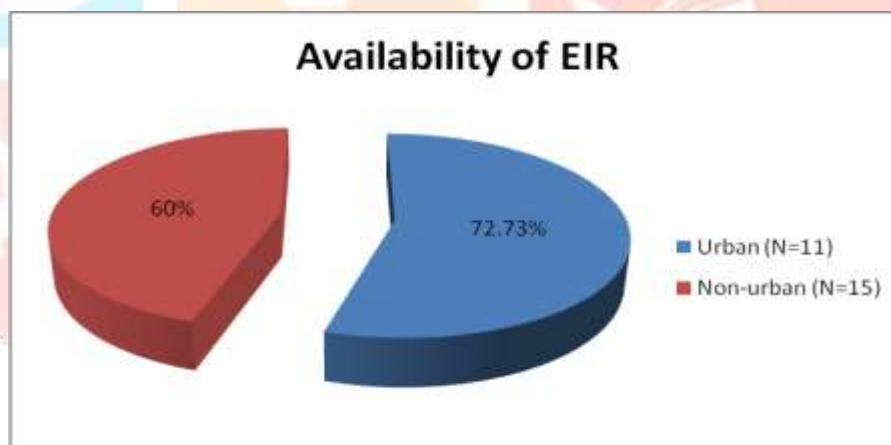


Figure 4.1.4: Distribution of university libraries with respect to availability of EIR collection and location

4.2 Distribution of university libraries having EIR collection

The resultant data as reflected in the Table 4.2.1 reveals the distribution of university libraries having EIR collection with respect to establishment year.

Table 4.2.1: Distribution of university libraries having EIR collection with respect to establishment year

Establishment year	Availability of EIR (No. of libraries)	%
Before 21 st century	10	58.82
In 21 st century	07	41.18

Total	17	100.00
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It is observed from the Table 4.2.1 that out of the university libraries having EIR collection (N=17), 58.82 per cent university libraries established before 21st century, whereas 41.18 per cent university libraries established in 21st century.

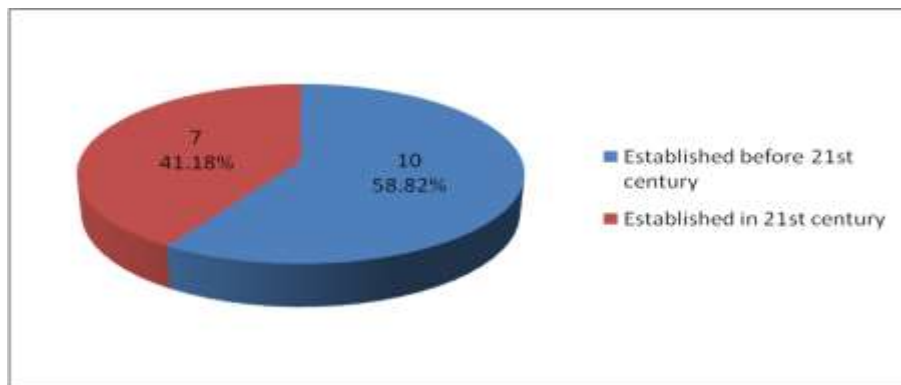


Figure 4.2.1: Distribution of university libraries having EIR collection with respect to establishment year

The resultant data as reflected in the Table 4.2.2 reveals the distribution of university libraries having EIR collection with respect to type.

Table 4.2.2: Distribution of university libraries having EIRs with respect to type

Location	Availability of EIR (No. of libraries)	%
General type university libraries	12	70.59
Special type university libraries	05	29.41
Total	17	100.00

Table 4.2.2 shows that 70.59 per cent general type university libraries had EIR collection while only 29.41 per cent special type university libraries had EIR collection.

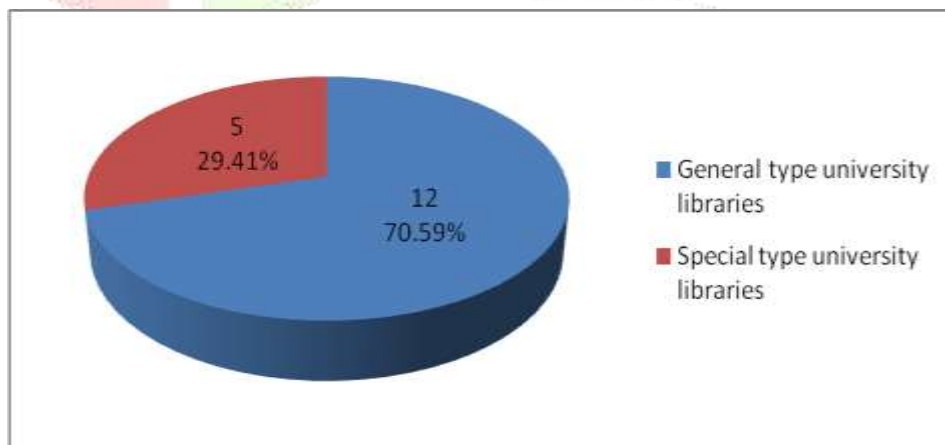


Figure 4.2.2: Distribution of university libraries having EIRs with respect to type

The resultant data as reflected in the Table 4.2.3 reveals the distribution of university libraries having EIR collection with regard to location.

Table 4.2.3: Distribution of university libraries having EIRs with respect to location

Location	Availability of EIR (No. of libraries)	%
Urban	08	47.06
Non-urban	09	52.94
Total	17	100.00

It is quite evident from the data presented in Table 4.2.3 that 47.06 per cent urban university libraries and 52.94 per cent non-urban university libraries had EIR collection.

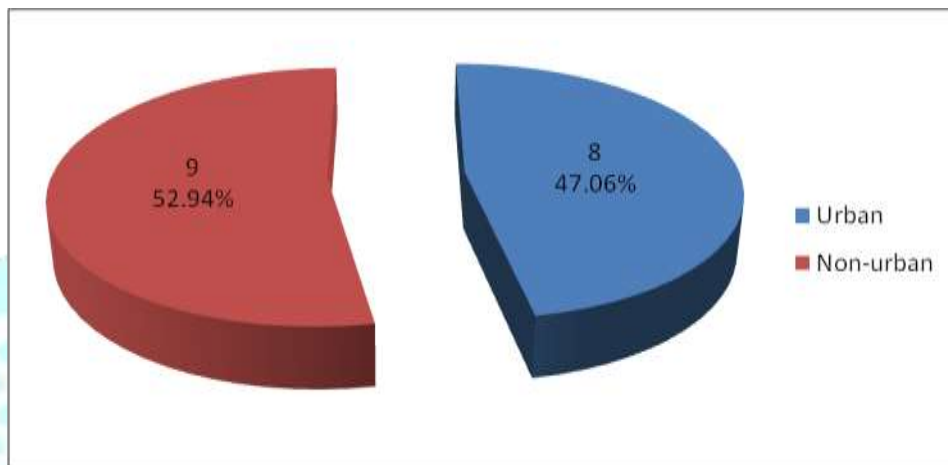


Figure 4.2.3: Distribution of university libraries having EIRs with respect to location

Table 4.2.4 reveals that out of the total urban university libraries having EIR collection (N=8), the percentage of university libraries established before 21st century and in 21st century was 50 per cent each. As far as non-urban university libraries are concerned, out of the total non-urban university libraries in West Bengal having EIRs (N=9), 66.67 per cent university libraries were established before 21st century and 33.33 per cent were established in 21st century.

Table 4.2.4: Distribution of university libraries having EIRs with respect to location and establishment year

Establishment year	Urban (N=8)		Non-urban (N=9)	
	No. of libraries	%	No. of libraries	%
Before 21 st century (N=10)	04	(50) [40.00]	06	(66.67) [60.00]
In 21 st century (N=07)	04	(50) [57.14]	03	(33.33) [42.86]

Percentage with respect to location given within (Round bracket), percentage with respect to establishment year given within [Square bracket]

Further, out of the total number of university libraries established before 21st century having EIRs (N=10), 40 per cent were located in urban area and 60 per cent were located in non-urban area. Similarly, out of the total university libraries established in 21st century having EIR collection (N=7), 57.14 per cent were located in urban area and 42.86 per cent were located in non-urban area.

Table 4.2.5 depicts that out of the total general type university libraries having EIR collection (N=12), 66.67 per cent university libraries were established before 21st century and 33.33 per cent university libraries were established in 21st century.

Table 4.2.5: Distribution of university libraries having EIRs with respect to type and establishment year

Establishment year	General (N=12)		Special (N=5)	
	No. of libraries	%	No. of libraries	%
Before 21 st century (N=10)	08	(66.67) [80.00]	02	(40.00) [20.00]
In 21 st century (N=07)	04	(33.33) [57.14]	03	(60.00) [42.86]

Percentage with respect to type of university libraries given within (Round bracket) & percentage with respect to establishment year given within [Square bracket]

Likewise, as far as special type university libraries are concerned, out of special type university libraries in West Bengal having EIR collection (N=5), 40 per cent of the university libraries were established before 21st century and 60 per cent were established in 21st century.

Further, out of the university libraries established before 21st century having EIR collection (N=10), 80 per cent were general type and 20 per cent were special type while out of the university libraries established in 21st century having EIR collection (N=7), 57.14 per cent were general type and 42.86 per cent were special type.

Table 4.2.6 shows that out of the general type university libraries having EIR collection (N=12), 41.67 per cent were located in urban area and 58.33 per cent were located in non-urban area. Further, as far as special type university libraries are concerned, out of the special type university libraries having EIRs (N=5), 60 per cent were located in urban area and 40 per cent were located in non-urban area.

Table 4.2.6: Distribution of university libraries having EIRs with respect to type and location

Location	General (N=12)		Special (N=05)	
	No. of libraries	%	No. of libraries	%
Urban (N=08)	05	(41.67) [62.5]	03	(60.00) [37.5]
Non-urban (N=09)	07	(58.33) [77.78]	02	(40.00) [22.22]

Percentage with respect to type of university libraries given within (Round bracket) & percentage with respect to location given within [Square bracket]

Similarly, out of the university libraries located in urban area having EIR collection (N=8), 62.5 per cent were general type and 37.5 per cent were special type and out of the non-urban university libraries having EIR collection (N=9), 77.78 per cent were general type and 22.22 per cent were special type.

4.3. Impact of establishment year, type and location of the university libraries on availability of EIR collection

Here, Chi square test was applied to find out whether there was any relationship between category-wise (establishment year, type and location) distribution of the university libraries with respect to availability and non-availability of e-journal and the result is presented in the table 4.3.1.

Table 4.3.1: Impact of establishment year, type and location of the university libraries on availability of e-journal collection: Chi square test

Sl. No.	Categories		Chi square	df	Table value	Remark
1	Establishment year	Established before 21st century	7.843	01	3.841	Associated
		Established in 21st century				
2	Type	General	0.163	01	3.841	Not Associated
		Special				
3	Location	Urban	0.202	01	3.841	Not Associated
		Non-urban				

As far as establishment year of the university libraries is concerned, there was a significant relationship in availability of e-journals between the university libraries established before 21st century and in 21st century as calculative value i.e. 7.843 was higher than table value i.e. 3.841.

The result of the chi square test reveals that there was no significant association in availability of e-journals between general and special type university libraries in West Bengal as calculative value i.e. 0.163 was less than table value i.e. 3.841.

Further, with respect to location of the university libraries, there was no significant association in availability of e-journals between the urban and non-urban university libraries in West Bengal as calculative value i.e. 0.202 was less than table value i.e. 3.841.

The category-wise (establishment year, type and location) distribution of the university libraries in West Bengal with respect to availability and non-availability of e-books were considered here and chi square test was applied to find out the relationship between them and the result is presented in the table 4.3.2.

Table 4.3.2: Impact of establishment year, type and location of the university libraries on availability of e-book collection: Chi square test

Sl. No.	Categories		Chi square	df	Table value	Remark
1	Establishment year	Established before 21st century	6.838	01	3.841	Associated
		Established in 21st century				
2	Type	General	0.019	01	3.841	Not Associated
		Special				
3	Location	Urban	4.812	01	3.841	Associated
		Non-urban				

As far as establishment year of the university libraries is concerned, there was a significant association with availability of e-book collection between the university libraries established before 21st century and in 21st century as calculative value i.e. 6.838 was higher than table value i.e. 3.841.

With respect to availability of e-book collection between general and special type university libraries in West Bengal, the test reveals that there was no significant association between the two as calculative value i.e. 0.019 was less than table value i.e. 3.841.

So far as location of the university libraries is concerned, there was a significant relationship with respect to availability of e-book collection between university libraries located in urban and non-urban areas as calculative value i.e. 4.812 was higher than table value i.e. 3.841.

Table 4.3.3: Impact of establishment year, type and location of the university libraries on availability of database collection: Chi square test

Sl. No.	Categories		Chi square	df	Table value	Remark
1	Establishment year	Established before 21st century	13.095	01	3.841	Associated
		Established in 21st century				
2	Type	General	0.202	01	3.841	Not Associated
		Special				
3	Location	Urban	0.465	01	3.841	Not Associated
		Non-urban				

Table 4.3.3 reveals that there was a significant association with availability of databases between the university libraries established before 21st century and in 21st century as calculative value i.e. 13.095 was higher than table value i.e. 3.841.

The above test also reveals that there was no significant association with respect to availability of databases between general and special type university libraries in West Bengal as calculative value i.e. 0.202 was less than table value i.e. 3.841.

Further, it can be surmised that availability of databases was not dependent on location (urban and non-urban) of the university libraries as calculative value i.e. 0.465 was less than table value i.e. 3.841.

The university libraries are distributed with respect to availability and non-availability of digitized resources into different categories of university libraries (establishment year, type and location) and chi square test was applied to find out whether there was any association between them and the result is presented in the table 4.3.4.

Table 4.3.4: Impact of establishment year, type and location of the university libraries on availability of digitized resource collection: Chi square test

Sl. No.	Categories		Chi square	df	Table value	Remark
1	Establishment year	Established before 21st century	9.642	01	3.841	Associated
		Established in 21st century				
2	Type	General	0.520	01	3.841	Not Associated
		Special				
3	Location	Urban	0.051	01	3.841	Not Associated
		Non-urban				

It is observed that there was a significant relationship in availability of digitized resources between the university libraries established before 21st century and in 21st century as calculative value i.e. 9.642 was higher than table value i.e. 3.841.

The result of the above test reveals that there was no significant dependence of availability of digitized resources on type (general and special type) of the university libraries in West Bengal as calculative value i.e. 0.520 was less than table value i.e. 3.841.

The availability of digitized resources between the urban and non-urban university libraries was not associated with location of the university libraries, as calculative value i.e. 0.051 was less than table value i.e. 3.841.

5. CONCLUSION

In 21st century, the university libraries are trying to build their library collection with the combination of print and electronic information resources. Electronic Information Resources (EIRs) are supposed to have more potential for academic support in the university. Many university libraries are presently developing their library resources with substantial EIR collection like e-journals, e-books and databases through individually subscribing and/or purchasing and by accessing through different consortia along with their digitized resources created in-house. The experience of the study of the university libraries in West Bengal shows that, with the right combination of sufficient EIR collection and its delivering access, EIRs can be very helpful to the university library users in accessing required information. In the current context, EIR collection and its proper delivering access in the library is an essential constituent of academic infrastructure. As it stands, EIR has established itself as an indispensable resource for university libraries and their users.

Therefore, for providing better services to the users, the university libraries in West Bengal, apart from accessing EIRs through consortia, should give due importance on the one hand to subscribing to/ purchasing EIRs on their own and developing digital archives of institutional repositories on the other.

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