

# A STUDY ON RECENT TRENDS AND GROWTH OF INSTITUTIONAL REPOSITORIES IN SOUTH ASIAN COUNTRIES

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**Abstract** *This paper discussed about the recent trends and growth of Institutional Repository (IR) in south Asian countries. An institutional repository is an online locus for collecting, preserving, and disseminating - in digital form - the intellectual output of an institution, particularly a research institution. And it further deals about the name of the repositories, size, type, content and languages and various software. South Asian countries like India, Pakistan, Nepal, Bangladesh and Sri Lanka have institutional repositories in their respective libraries but Bhutan and Maldives are not having any repositories. Among the five countries, India 62(82.67%), Bangladesh 7(9.33%), Pakistan 3(4.00%), Sri Lanka 2(2.67%) and Nepal 1(1.33%) institutional repositories have developed respectively.*

**Keyword:** *Institutional Repositories, Software, Languages, Contents*

## INTRODUCTION

The Libraries are developing digital collection for the requirements of research scholars and the end users. There is an initiative for collecting all the institutional repositories into one place which called now as Institutional Digital Repository (IDR). An Institutional Repository is the process of collecting, preserving and disseminating to the required scholars and users. This type of IR is normally developed in the higher education institutions like universities, research organizations, etc. The IR contains theses and dissertations and institute publications like journals and magazines and other publications reports etc. This is institute created information which is useful to the user community and educational and research scholars.

## INSTITUTIONAL REPOSITORIES

Institutional repositories are contents which are created by the institutions. It is otherwise called institutions knowledge, power and information. Some of the reports of the institutions, developments of various sections, laboratories, new inventions, patents, publications of institute members, etc. The main contents of the institutional repositories are journal articles either pre-printed or author acceptance copies, institutionally developed e-learning materials, course materials, course contents, etc. The Repositories are in many shapes and size depends up on the collection nature it may be small special collection, departmental collection,

or every day work diary of the faculty members. Higher Education Institutions, at departmental or institutional level, which implies a certain level of commitment and intention to embed repository use and management into everyday work. Many institutional repositories initially focused on research outputs and some still limit their collections to this type of content. Others have started to widen the original remit to include learning and teaching materials.

## Definition

The mission of an IR is to be “institutionally defined, scholarly, cumulative and perpetual, open and interoperable” ‘A digital repository is one where digital content, assets, are stored and can be searched and retrieved for later use’<sup>1</sup>. ‘An institutional repository is the collective intellectual output of an institution recorded in a form that can be preserved and exploited. The use of repositories for research materials is now quite common ‘as much of the Institutional Repository work to date has concentrated on research outputs’.

According to Clifford Lynch (2005), “a university-based institutional repository is a set of services that a University offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. It is most essentially an organizational commitment to the stewardship of these digital materials, including long-term preservation where appropriate, as well as organization and access or distribution.”

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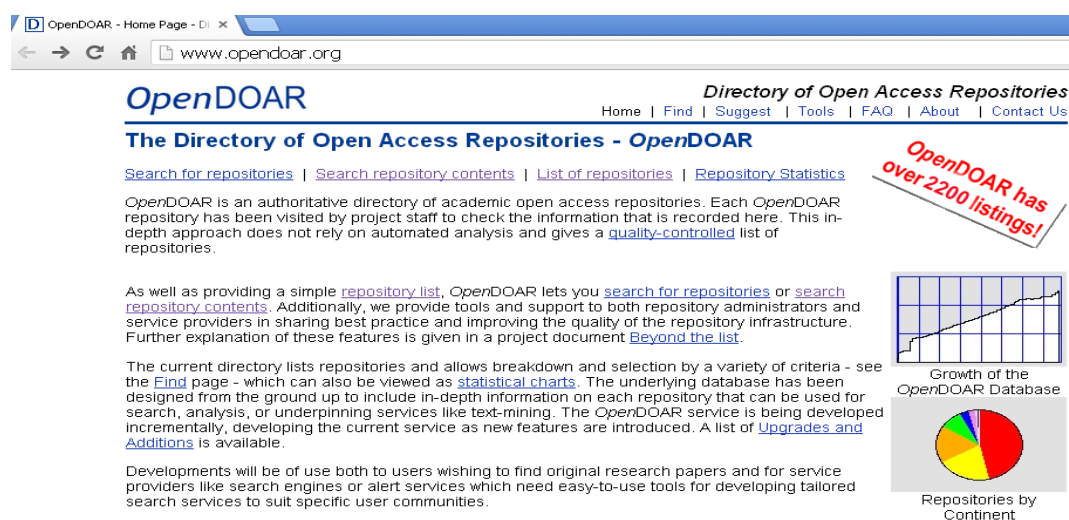


Figure 1. Home of Directory of Open Access Repositories

## NEED FOR THE STUDY

This study is made an attempt to find out growth and development of Institutional repositories in South Asian Countries. Repositories can be many shapes and sizes, from small specialist collections to national or international services. In this circumstances there is need to discuss about the Institutional repositories in South Asian Countries.

## OBJECTIVES OF THE STUDY

The following objectives are framed

1. To know the strength of IRs in the South Asian Countries
2. To identify the various software using in IRs
3. To assess the year of starting IRs in South Asian Countries
4. To findout subject wise IRs in South Asian Countries
5. To elicit languages were used in IRs

## Methodology

This study is to find out the growth and status of institutional repositories in South Asian Countries. The Institutional Repositories collected form DOAR. South Asian countries like India, Pakistan, Nepal, Bangladesh and Sri Lanka has the institutional repositories in their respective libraries but Bhutan and Maldives are not having any repositories. For this the required data has been collected from the open access directory from <http://www.opendoar.org/> on 5<sup>th</sup> October, 2013. It was analyzed by simple frequency method.

## Scope and Limitation of the Study

The present study is only limited to open access Institutional Repositories which are listed in the DOAR. It is only considered in South Asian countries and other countries are not considered.

## ANALYSIS AND INTERPRETATION

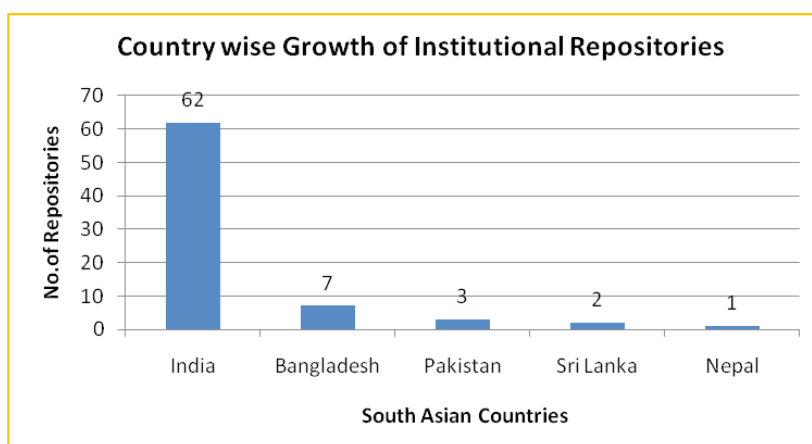
This study is based on Institutional Repositories in the South Asian Countries. The respected sources are collected from DOAR directory. The South Asian countries India, Pakistan, Nepal, Bangladesh and Sri Lanka have the institutional repositories in their respective libraries but Bhutan and Maldives are not having any repositories. The country wise repositories are discussed in the following table-1

The table 1 shows the country wise distribution of institutional repositories in South Asian Countries. Among the five countries, India 62(82.67%), Bangladesh 7(9.33%), Pakistan 3(4.00), Sri Lanka 2(2.67%) and Nepal 1(1.33%) institutional repositories started. It is concluded that among the total 75 repositories India occupy the first position in the South Asian Countries.

The data presented in the table 2 indicates the places wise distributions of repositories were started in South Asian Countries. Out of 75, 11(14.67%) institutional repositories were started from New Delhi (India) and it is in the first position in the South Asian Countries. And 8(10.67%) repositories from Bangalore (India), 7(9.33%) repositories from Dhaka (Bangladesh) and 5(6.67%) from Chennai (India) were established. It is found that 23 institutional repositories were started from different individual places in South Asian Countries.

**Table 1: Country wise Growth of Institutional Repositories**

SI.No.	South Asian Countries	No. of Repositories	Percentage	Cumulative Percentage
1	India	62	82.67	82.7
2	Bangladesh	7	9.33	92.0
3	Pakistan	3	4.00	96.0
4	Sri Lanka	2	2.67	98.7
5	Nepal	1	1.33	100.0
	Total	75	100.00	

**Figure 2. Country Wise No. of Institutional Repositories****Table 2: Places Wise Distribution of IRs in South Asian Countries**

SI.No.	Places	No. of Repositories	Percentage	Cumulative Percentage
1	New Delhi	11	14.67	14.67
2	Bangalore	8	10.67	25.33
3	Dhaka	7	9.33	34.67
4	Chennai	5	6.67	41.33
5	Mumbai	4	5.33	46.67
6	Hyderabad	3	4.00	50.67
7	Ahmedabad	2	2.67	53.33
8	Chandigarh	2	2.67	56.00
9	Cochin	2	2.67	58.67
10	Colombo	2	2.67	61.33
11	Islamabad	2	2.67	64.00
12	Mysore	2	2.67	66.67
13	Pune	2	2.67	69.33
14	Coimbatore	1	1.33	70.67
15	Dehradun	1	1.33	72.00
16	Dharward	1	1.33	73.33
17	Gandhinagar	1	1.33	74.67
18	Guragoan	1	1.33	76.00
19	Jamshedpur	1	1.33	77.33
20	Kanpur	1	1.33	78.67

21	Karachi	1	1.33	80.00
22	Kashmir	1	1.33	81.33
23	Kolkatta	1	1.33	82.67
24	Kottayam	1	1.33	84.00
25	Kozhikode	1	1.33	85.33
26	Lalitipur	1	1.33	86.67
27	Lucknow	1	1.33	88.00
28	Madurai	1	1.33	89.33
29	Nagaland	1	1.33	90.67
30	Nainital	1	1.33	92.00
31	Patiala, Punjab	1	1.33	93.33
32	Rajkot	1	1.33	94.67
33	Roorkee	1	1.33	96.00
34	Rourkela	1	1.33	97.33
35	Thane	1	1.33	98.67
36	Vadodara	1	1.33	100.00
	Total	75	100.00	

Table 3 represented the distribution of type’s institutional repositories in South Asian Countries. The types of repositories were classified under five headings by moderator. Among the 75 repositories, 25(33.33%) from Institutional-Operational, 4 (5.33%) from Aggregating-Operational, Disciplinary – Operational and Institutional-Trial and 3 (4.00%) from Institutional-Broken types are identified. In the case of country wise, 18(24.00%) from Institutional-Operational, 3(4.00%) from Institutional-Trial/Aggregating-Operational, 2(2.67%) from Institutional-Broken/Disciplinary-Operational and 34(45.33%) from others has type if institutional repositories in India. In Pakistan has 3(4.00) institutional repositories it includes each 1(1.33%) from Institutional broken, Aggregating operational and other types. From Sri Lanka has only two repositories in Institutional operational type and Nepal has only institutional repository in Disciplinary operational type. So, it is concluded that 25 institutional repositories are institutional-operational type.

**Chi-square test**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	53.556	20	.003
Likelihood Ratio	33.418	20	.221
N of Valid Cases	75		

The Chi-square test is applied for further discussion. The computed Chi-square value is 53.556 and the degrees of freedom value is 20 which is higher than its tabulated value at 5 percent level of significance. Hence the difference among the institutional repositories in country wise is statistically identified as significant.

Table 4 indicates the list of software are using in the institutional repositories in South Asian Countries. Among the 75 repositories, 47(62.67%) repositories are generated by using DSpace software, 20(26.67%) repositories are established by using Eprints and 4(5.33%) repositories are generated by using Greenstone software. And followed by remaining three repositories are generated by using individually Inmagic DBTextWorks, Digital commons and Nitya software. Finally one repository are not specified their software in the DOAR. In India among the 47(62.87) repositories, 41(54.67) are using DSpace software, 19(25.33%) are using Eprints software, 1(1.33%) is from Nitya software and 1 repository are not mentioned their software. So, it is evident from the table, DSpace software occupy the first position among the institutional repositories in the South Asian Countries.

**Chi-square Test**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	92.667	24	.000
Likelihood Ratio	40.502	24	.019
N of Valid Cases	75		

The Chi-square test is applied for further discussion. The computed Chi-square value is 92.667 and the degrees of freedom value is 24 which is higher than its tabulated value at 5 percent level of significance. Hence the difference among the institutional repositories in country wise is statistically identified as significant with respect to software and South Asian Countries.

The table 5 indicates the institutional repositories South Asian Countries were classified based on the no. of records

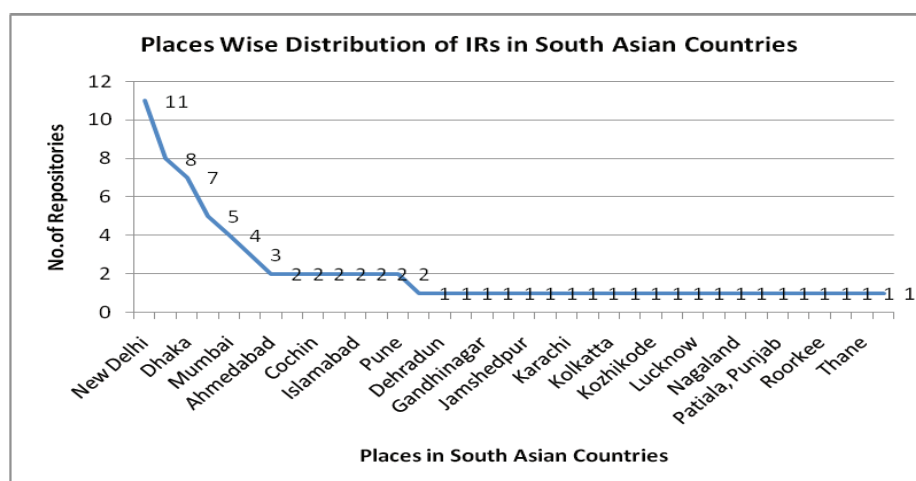


Figure 3. Places Wise Distribution of IRs in South Asian Countries

Table 3: Distribution of Types of IRs in South Asian Countries

Type of Institutional Repositories	Bangladesh	India	Nepal	Pakistan	Sri Lanka	Total
Aggregating-Operational	0	3(4.00)	0	1(1.33)	0	4(5.33)
Disciplinary-Operational	1(1.33)	2(2.67)	1(1.33)	0	0	4(5.33)
Institutional - Broken	0	2(2.67)	0	1(1.33)	0	3(4.00)
Institutional - Trial	1(1.33)	3(4.00)	0	0	0	4(5.33)
Institutional-Operational	5(6.67)	18(24.00)	0	0	2(2.67)	25(33.33)
Others	0	34(45.33)	0	1(1.33)	0	35(46.67)
Total	7(9.33)	62(82.67)	1(1.33)	3(4.00)	2(2.67)	75(100)

Table 4: Distribution of Software using IRs in South Asian Countries

Countries	Digital Common	DSpace	Eprints	Green-stone	Inmagic DBTextWorks	Nitya	Not specified	Total
Bangla-desh	0	4(5.33)	0	3(4.00)	0	0	0	7(9.33)
India	0	41(54.67)	19(25.33)	0	0	1(1.33)	1(1.33)	62(82.67)
Nepal	0	1(1.33)	0	0	0	0	0	1(1.33)
Pakistan	1(1.33)	0	1(1.33)	1(1.33)	0	0	0	3(4.00)
Sri Lanka	0	1(1.33)	0	0	1(1.33)	0	0	2(2.67)
Total	1(1.33)	47(62.87)	20(26.67)	4(5.33)	1(1.33)	1(1.33)	1(1.33)	75(100)

Table 5: IRs in South Asian Countries Vs No. of Records

No. of Records	Bangladesh	India	Nepal	Pakistan	Sri Lanka	Total
Up to 1000	4(5.33)	29(38.67)	1(1.33)	0	0	34(45.33)
1001-2000	1(1.33)	8(10.67)	0	0	0	9(12.00)
2001-3000	1(1.33)	8(10.67)	0	1(1.33)	1(1.33)	11(14.67)
3001-4000	0	0	0	0	1(1.33)	1(1.33)
4001-5000	1(1.33)	1(1.33)	0	0	0	2(2.67)
5001-6000	0	4(5.33)	0	0	0	4(5.33)
6001-7000	0	2(2.67)	0	0	0	2(2.67)
7001-8000	0	0	0	1(1.33)	0	1(1.33)
8001-9000	0	1(1.33)	0	1(1.33)	0	2(2.67)
9001-10000	0	2(2.67)	0	0	0	2(2.67)
Above 10001	0	7(9.33)	0	0	0	7(9.33)
Total	7(9.33)	62(82.67)	1(1.33)	3(4.00)	2(2.67)	75(100)

available in the repositories. The no. of records is classified under frequency of 1000 records. It is classified like that upto 1000, 10001-2000, 2001-3000, 3001-4000, 4001-5000, 5001-6000, 6001-7000, 7001-8000, 8001-9000, 9001-10000 and above 10001 records which are available in the sources. Among the 75 repositories, 34(45.33%) has up to 1000 records, 9(12.00%) has more 1000 but below 2000 records. It is found that 7(9.33%) repositories are having more than 10000 records in the collections. In the country wise analysis, among 62(82.67%) repositories in India 29(38.67) has in the category of below 1000 records and 8(10.67%) has records in two category namely 1001 to 2000 and 2001to 3000. But 7(9.33% repositories in India has more than 10,000 records in their collections. It is concluded that in all the countries in South Asia (except India) has below 5000 records in their repositories.

The table 6 stated the subject wise distribution of the institutional repositories in South Asian Countries. Among the 75 repositories, 42(56.00) are mentioned these in multidisciplinary in subject. And 6(8.00%) repositories equally from mentioned their subject Agriculture/Food/Veterinary/Biology/Biochemistry/Ecology/Health / Medicine and Mathematics/Statistics/Technology General/Mechanical Eng.and Materials. But in only one repository mentioned especially for library and information science subject.

Table 7 stated the distribution languages are used in the institutional repositories in South Asian Countries. Among the 75 repositories, 3(4.00%) repositories are using English and Hindi, 2(2.67%) are using English and Bengali and

2(2.67%) are using English, Hindi and Kannada. And followed by English and Arabic, English and Gujarati, English,/ Hindi/Arabic and Persian, Marathi, Nepali and English and Sanskrit/Malayalam/Hindi/English are used equally single repository in respective languages. In India among 62(82.67%) 51(68.00%) institutional repositories are in English, 3(4.00%) in Hindi/English., 2(2.67%) from English; Hindi; Kannada and 1(1.33%) from English/ Arabic, English/Bengali, English/Gujarati, English/Hindi/ Arabic/ Persian, Marathi and Sanskrit/Malayalam/Hindi/ English language are used. In Nepal only one institutional repository is created from Nepali/English languages. In is concluded that, all the repositories are also used English is one of the languages but only one repository are generated by using Marathi language only.

**Chi-square Test**

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	81.076	36	.000
Likelihood Ratio	16.626	36	.998
N of Valid Cases	75		

The Chi-square test is applied for further discussion. The computed Chi-square value is 81.076 and the degrees of freedom value is 36 which is higher than its tabulated value at 5 percent level of significance. Hence the difference among the institutional repositories in country wise is statistically identified as highly significant with respect to languages wise institutional repositories Vs South Asian Countries.

**Table 6: Subject Wise Distribution IRs in South Asian Countries**

SI.No	Subjects	Frequency	Percentage
1	Multidisciplinary	42	56.00
2	Physics and Astronomy	4	5.33
3	Agriculture, Food and Veterinary	2	2.67
4	Biology and Biochemistry; Health and Medicine	2	2.67
5	Health and Medicine	2	2.67
6	Mathematics and Statistics	2	2.67
7	Agriculture, Food and Veterinary; Biology and Biochemistry; Ecology; Health and Medicine	6	8.00
8	Biology and Biochemistry	3	4.00
9	Business and Economics	1	1.33
10	Chemistry and Chemical Technology	6	8.00
11	Library and Information Science	1	1.33
12	Mathematics and Statistics; Technology General; Mechanical Eng.and Materials	1	1.33
13	Multidisciplinary; Business and Economics	1	1.33
14	Science General	1	1.33
15	Technology General	1	1.33
	Total	75	100.00

**Table 7: Distribution of Languages using IRs in South Asian Countries**

Sl.No.	Languages	Bangladesh	India	Nepal	Pakistan	Sri Lanka	Total
1	English	6(8.00)	51(68.00)	0	3(4.00)	2(2.67)	62(82.67)
2	English; Arabic	0	1(1.33)	0	0	0	1(1.33)
3	English; Bengali	1(1.33)	1(1.33)	0	0	0	2(2.67)
4	English; Gujarati	0	1(1.33)	0	0	0	1(1.33)
5	English; Hindi; Arabic; Persian	0	1(1.33)	0	0	0	1(1.33)
6	English; Hindi; Kannada	0	2(2.67)	0	0	0	2(2.67)
7	Hindi; English	0	3(4.00)	0	0	0	3(4.00)
8	Marathi	0	1(1.33)	0	0	0	1(1.33)
9	Nepali; English	0	0	1(1.33)	0	0	1(1.33)
10	Sanskrit; Malayalam; Hindi; English	0	1(1.33)	0	0	0	1(1.33)
	Total	7(9.33)	62(82.67)	1(1.33)	3(4.00)	2(2.67)	75(100)

**Table 8: Distribution of Contents in IRs in South Asian Countries**

Sl.No.	Contents	Bangladesh	India	Nepal	Pakis-tan	Sri Lanka	Total
1	Articles	0	8(1067)	0	0	0	8(10.67)
2	Articles, conference, Thesis	6(8.00)	26(34.67)	0	0	2(2.67)	34(45.33)
3	Articles; Conferences	0	1(1.33)	0	0	0	1(1.33)
4	Articles; Conferences; Books	0	1(1.33)	0	0	0	1(1.33)
5	Articles; Conferences; Multimedia	0	1(1.33)	0	0	0	1(1.33)
6	Articles; Conferences; Theses; Multimedia	0	1(1.33)	0	0	0	1(1.33)
7	Articles; References	0	1(1.33)	0	0	0	1(1.33)
8	Articles; References; Theses	0	2(2.67)	0	0	0	2(2.67)
9	Articles; Theses	0	1(1.33)	0	0	0	1(1.33)
10	Articles; Theses; Books	0	1(1.33)	0	1(1.33)	0	2(2.67)
11	Articles; Theses; Learning Objects	0	9(12.00)	0	1(1.33)	0	10(13.33)
12	Articles; Theses; Multimedia	0	1(1.33)	0	0	0	1(1.33)
13	Books	0	2(2.67)	0	0	0	2(2.67)
14	References; Unpublished; Special	0	1(1.33)	0	0	0	1(1.33)
15	Special	0	0	1(1.33)	0	0	1(1.33)
16	Theses	0	5(6.67)	0	1(1.33)	0	6(8.00)
17	Theses; Unpublished; Special	1(1.33)	0	0	0	0	1(1.33)
18	Unpublished; Books; Multimedia	0	1(1.33)	0	0	0	1(1.33)
	Total	7(9.33)	62(82.67)	1(1.33)	3(4.00)	2(2.67)	75(100)

Table 7 indicates distribution types of contents listed in the institutional repositories in South Asian Countries. Among the 75 repositories, 62(82.67) from India, 7(9.33%) from Bangladesh 3(4.00%) Pakistan, 2(2.67%) from Sri Lanka and 1(1.33%) from Nepal were established. Among the 62 repositories in India, 26(34.67) repositories for Articles/ conference/ Thesis and 9(12.00) repositories for Articles/ Theses/Learning Objects were generated. Nearly 18 types of content were created in institutional repositories among the south Asian Countries, Out of 75, 34(45.33%) IR created for Articles/conference/ Thesis and 8(10.67%) created for only.

It is found that most institutional repositories are holding the article is the major contents.

#### Chi-square Test

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	110.535	68	.001
Likelihood Ratio	38.473	68	.999
N of Valid Cases	75		

The Chi-square test is applied for further discussion. The computed Chi-square value is 81.076 and the degrees of freedom value is 68 which is higher than its tabulated value at 5 percent level of significance. Hence the difference among the institutional repositories in country wise is statistically identified as highly significant with respect to content wise institutional repositories Vs South Asian Countries.

## FINDINGS

- Among the five countries, India 62(82.67%), Bangladesh 7(9.33%), Pakistan 3(4.00), Sri Lanka 2(2.67%) and Nepal 1(1.33%) institutional repositories were started. It is concluded that among the total 75 repositories India occupy the first position in the South Asian Countries.
- Out of 75, 11(14.67%) institutional repositories were started from New Delhi (India) and it is in the first position in the South Asian Countries.
- Among the 75 repositories. 25 institutional repositories are institutional-operational type.
- It is found that 7(9.33%) repositories are having more than 10000 records in the collections.
- DSpace software occupy the first position among the institutional repositories in the South Asian Countries
- Among the 75 repositories, 3(4.00%) repositories are using English and Hindi, 2(2.67%) are using English and Bengali and 2(2.67%) are using English, Hindi and Kannada.
- Out of 75, 34(45.33%) IR created for Articles/conference/ Thesis and 8(10.67%) created for only. It is found that most institutional repositories are holding the article is the major contents.

## CONCLUSION

Bhutan and Maldives countries are not established any institutional repositories in their respective libraries but remaining five countries were started institutional repositories in the South Asian Countries. So, the library professional trying to make the necessary initiatives to create the awareness programme like International level workshop, symposium and seminars. It is good effort for accessing all the IR in one place all over the world.

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