

AWARENESS AND USE OF INDEST-AICTE CONSORTIUM IN INDIAN INSTITUTE OF TECHNOLOGY, INDORE: A SURVEY

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Abstract

The study introduces INDEST and newly amalgamated e-Shodh Sindhu. Examine awareness and utilization of consortium by PG students, research scholars and faculty members of IIT, Indore. The study reveals that 43% of the respondents are aware of the consortium, 28% respondents use this consortia 2 to 3 times a week, 73% respondents use it for research work, 92% users use consortia in university/college library, 85% users evaluate the consortia as good & 15% unsatisfactory and 33% respondents answered that consortium help to expedited the research/project work. Most respondents have one or other grievances & need improvement in number of e-journals, high bandwidth and need more access time & need more on line journals.

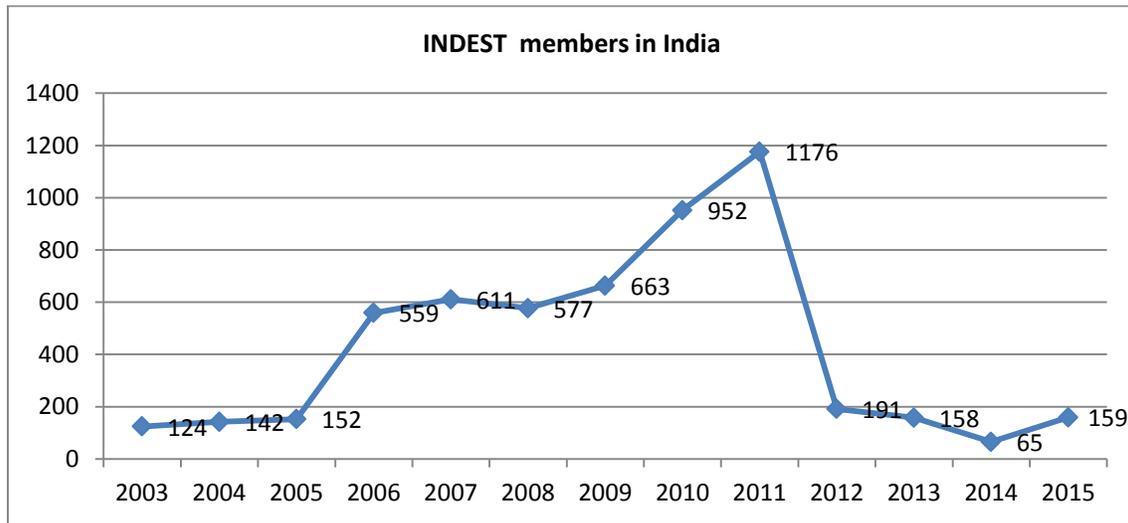
Key words: INDEST-AICTE Consortium, e-Shodh Sindhu, IIT

1.0 Introduction

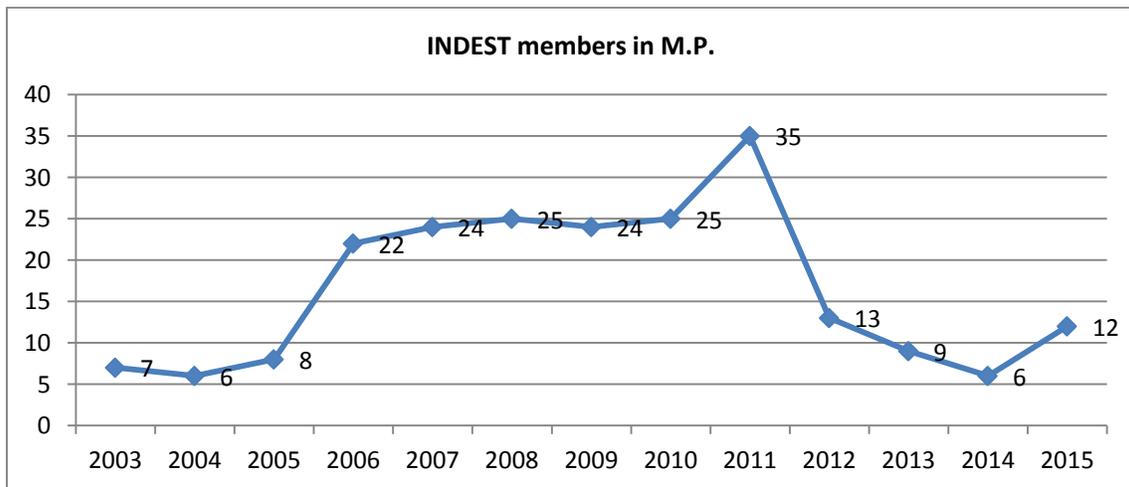
The concept of INDEST Consortium is an outcome of a national seminar on "Knowledge in engineering & technology education and research" held at Indian Institute of Technology Delhi in December 2000 under the Ministry of Human Resource Development (MHRD), Govt. of India. The Ministry set-up the "Indian National Digital Library in Engineering Science and Technology (INDEST) Consortium in 2003 based on the recommendations by the expert group appointed by the ministry. The IIT Delhi was designated as the consortiums headquarter to coordinate its activities. In 2005 due to increased role of AICTE it was renamed as INDEST-AICTE Consortium which recently has been amalgamated in e-shodh sindhu.

Under the project – HRD ministry provides funds required for subscription to electronic resources for centrally-funded government institutions including IITs, IISs, Bangalore, NITs, ISM, IIITs, IIMs, NITTTRs etc. A few other institutions were also enrolled as core members. The benefits are also extended to other educational institutions .It was governed by National Steering Committee (NSC) as notified by the MHRD (1). The INDEST-AICTE Consortium has three types of members based on funding namely core members supported by MHRD, AICTE supported members and Self-supported members. The number of members slashed after 2010. The graph 1&2 show number of members in INDEST consortium during 2003-2015 in India and Madhya Pradesh.

Graph 1.Number of INDEST members in India



Graph 2.Number of INDEST members in M.P.



Probably due to decreasing trend in the use of INDEST alone or demand of more e-resources, a new consortium has been launched named e-Shodh Sindhu. It has amalgamated three consortia initiatives in India, namely UGC-INFONET Digital Library Consortium, NLIST Consortium of Inflibnet and INDEST-AICTE Consortium. The newly formed consortium provides current as well as archival access to more than 15,000 core and peer-reviewed journals, 3135,000 plus e-books and a number of bibliographic, citation and factual databases in different disciplines from a large number of publishers and aggregators to its member institutions including centrally-funded technical institutions, AICTE funded engineering colleges, universities and colleges that are covered under 12(B) and 2(f) Sections of the UGC Act.(3) With this amalgamation now readers can get more e-resources available in the library but the concept of INDEST still have the same value as it is merged not died(4)

2. Indian Institute of Technology (Indore), M.P

This survey has been conducted in Indian Institute of Technology, Indore. IIT, I is an institute of national importance established by Government of India in the year 2009.It is an autonomous public institute functioning

within the Institute of Technology Act 1961. The act, lists sixteen institutes located at Chennai, Delhi, Guwahati, Kanpur, Kharagpur, Mumbai, Roorkee, Bhubaneswar, Gandhinagar, Hyderabad, Indore, Jodhpur, Mandi, Patna, Ropar and Varanasi. In 2015&2016, seven new IITs located at Palakkad, Tirupati, Dhanbad, Bhilai, [Goa](#), [Jammu](#) and Dharwad have been established. These are in various states of the country. The IIT, Indore started functioning from 2009-10 under mentorship of IIT Bombay. Shri Arjun Singh, the then Union HRD minister, laid the foundation of the permanent campus, spread over an area of around 510-acre (2.1 km²), on 17th February 2009 at Simrol, a location on Khandwa Road. By now the institute was functioning from two locations: first one at Institute of Engineering and Technology of Devi Ahilya University (IET-DAVV) campus (Khandwa Road) and another at PACL(Pithampur Auto CLuster) campus(Hardnia Khedi Village, Indore-MHOW Road)(1). Recently the IET location has been shifted to its new own building in Simrol. The institute offers B.Tech M.Tech & Ph.D in engineering and M.Sc programs in basic sciences and humanities etc. (5)

2.1 The Central Library

Presently the IIT, Indore library has one deputy librarian, one assistant librarian, four library assistants and two library attendants. The library has approx. 29,000+ books, including text books. The library provides 6000 electronic journals through individual as well as full text databases and bibliographic databases (6). Beside being member of INDEST & now e-Shodh Sindhu it also provides data available on it.

Following online resources were available on the institute's website before merger of consortia, made available from various databases & consortium, namely

- a. EMERALD journals <http://www.emeraldinsight.com/>
- b. EMERALD journals user guide
- c. How to use Knimbus
- d. IEEE-Wiley e-books
- e. Knimbus-a research platform
- f. List of engineering journals
- g. List of management journals
- h. Nature journal user guide
- i. Sage journal user guide
- j. SciFinder user registration guide

From INFLIBNET

- a. AIP/APS
- b. ASME <http://www.asme.org/pubs/journals/>
- c. IEEE-ASPP <http://ieeexplore.ieee.org/>
- d. Springer link <http://www.springerlink.com/>
- e. MathSciNet <http://www.ams.org/mathscinet/>
- f. SciFinder <http://www.cas.org/>
- g. Scopus Database <http://www.scopus.com/home.url>

From INDEST-AICTE Consortium

- a. ACM Digital Library <http://dl.acm.org/>

b. Science Direct <http://www.sciencedirect.com/>

Now recently full texts have been taken through e-Shodh Sindhu instead of INFLIBNET & INDEST. A few more databases have been included such as ASTM, SEDL, CSDS, JSTOR etc. Beside it has included some e-journals, RemoteXS, plagiarism software Turnitin, e-books etc (6). This shows the reason why e-Shodh Sindhu was necessary because many institutes were taking membership of many databases & consortia beside INDEST.

3.0 Review of literature

The paper has reviewed some studies made on related topics on consortia e-resources. On e-resources **Rai and Thandavamoorthy (2014)** examined the use and impact of e-resources by UG, PG, research scholars and faculty members of selected 135 colleges under Visvesvaraya Technological University, Belgaum, Karnataka & found 44% using it. Suggests for orientation programs(7). **Singh and Meera (2013)** examine the utilization of e-resources by students, research scholars and faculty members of Indian Institute of Management, Indore & found : (i) 88.89% respondents are well aware about IIM consortium and 81.48% recognize INDEST-AICTE consortium (ii) 55.55% respondents participated in orientation/training programs(8). **Kaur and Verma(2009)** studied the use of electronic information resources by UG, PG, research scholars and faculty members of Thapar University, Patiala. Findings show that 36.29% users were aware of e-resources, 55.65% users use UGC-Infonet consortium (9). On INDEST-AICTE Consortium **Suman and Sharma (2016)** studied the utilization of INDEST by B. Tech., M. Tech. and research scholars of IIT, Roorkee & found 60.47% respondents are aware about it. Suggests training program, evaluate the INDEST periodically, include more journals etc(10). **Choudhury(2015)** conducted a survey on utilization of INDEST and other e-resources by students and teachers of four government and two private engineering institutions of Assam & found that maximum students and teachers don't use it. Suggests development of infrastructure, orientation program, separate library web page, etc(11).. **Parveen Kumar (2012)** studied utilization of INDEST-AICTE Consortium by faculty and students at Punjab University. Finds out that 86.66% user are aware. Users face problems such as need more terminals, lack of internet bandwidth and insufficient time for use it(12). **Nisha, Naushad and Others (2008)** explain INDEST-AICTE and UGC-Infonet Consortium and examine the use of databases in Delhi University and IIT (Delhi).Results indicate slow downloading, lack of maintenance, lack of training, lack of infrastructure and language, etc. Suggest for staff orientation, periodically evaluation of consortium, organization of workshops & more subscription to e- journals etc (13).

4.0 Objectives

Following are the main objectives of the study:

1. To know the awareness of the consortium;
2. To know from where got awareness of the consortium;
3. To know purpose of using consortium e-resources;
4. To identify the frequency of use of consortium e-resources;
5. To know the place of access of consortium e-resources;
6. To know influence of consortium on the efficiency of academic work; and
7. To identify the major problems faced by the users while accessing the consortium e resources.

5.0 Hypotheses

Following two hypotheses have been used for study:

1. There is no significance difference between users(PG& RSF) and awareness of INDEST-AICTE Consortium; and
2. There is association between users (PG&RSF) and purpose (research/project work) of using INDEST-AICTE Consortium.

6.0 Methodology

In this survey questionnaire method has been used for collecting the primary data. The secondary data and information have been collected from the librarian and website of the institute. The survey was conducted in academic session 2014-15. Questionnaire was distributed & collected personally to postgraduates, research scholars and faculty members of IIT, Indore. Stratified sampling techniques have been used.

7.0 Data analysis and interpretation

In all 80 questionnaires were distributed in IIT, of which 60 have been received. Out of these 60, 25(41.7%) respondents are PG students and 35(58.3%) are research scholars & faculty members. Only 11(18.3%) females have responded. The data has been analyzed in the tables. In this study some table have been modified by merging some nearby options for validity of test. Chi-square test has been applied on those tables for data interpretation. Each table show number of respondents & p value by applying Chi-square test.

For the application of Chi-square test each expected frequencies should be equal or greater than five. If any expected frequency is less than five, test is not valid. If in any 2x2 table, the expected frequencies less than five, than Fisher Exact test is applied. This has been followed in statistical analysis.

(a) Awareness of Consortium

Table 1 shows 43% respondents are aware of INDEST Consortium e-resources whereas more than 56% respondents are not aware about it.

Table No. 1 Awareness of INDEST-AICTE consortium e-resources

Awareness	Categories of the respondents		Total(N=60)	χ^2 (df)	P
	PG (N=25)	R.S. & F.(N=35)			
Yes	13(52.0%)	13(37.1%)	26(43.3%)	1.311(1)	.252
No	12(48.0%)	22(62.9%)	34(56.7%)		

(Sources: Primary data obtained from the questionnaire)

As shown in the table the chi-square test for independence of attributes ($\chi^2_{(1)} = 1.311, p > 0.05$) is not found significant at the 5 percent level of significance because value of “p” 0.252 is above 0.05. Hence there is no significant association between awareness of INDEST-AICTE Consortium e-resources and users (PG&RSF). Thus awareness of consortium e-resources by users is independently distributed to category of respondents.

(b) Sources of awareness

Table 2 shows that there are various sources to be aware of INDEST-AICTE Consortium e-resources these are (43% users as in table 1) that are aware of it. Institute website and library staffs are less helpful then supervisors & friends. Users are not aware about orientation program.

Table No.2 Source awareness of INDEST-AICTE Consortium e-resources

Sources of awareness		Categories of the respondents			χ^2 (df)	P
		PG (N=25)	R.S. & F.(N=35)	Total(N=60)		
a. Library orientation programs	Yes	0(0.0%)	0(0.0%)	0(0.0%)		
	No	25(100.0%)	35(100.0%)	60(100.0%)		
b. Library professional	Yes	4(16.0%)	4(11.4%)	8(13.3%)	.264(1)	.708
	No	21(84.0%)	31(88.6%)	52(86.7%)		
c. Faculty/research supervisors	Yes	6(24.0%)	6(17.1%)	12(20.0%)	.429(1)	.513
	No	19(76.0%)	29(82.9%)	48(80.0%)		

d.Friends/colleagues	Yes	5(20.0%)	10(28.6%)	15(25.0%)	.571(1)	.450
	No	20(80.0%)	25(71.4%)	45(75.0%)		
e. Institution website	Yes	4(16.0%)	5(14.3%)	9(15.0%)	.034(1)	1.000
	No	21(84.0%)	30(85.7%)	51(85.0%)		
f. Printed sources	Yes	0(0.0%)	0(0.0%)	0(0.0%)		
	No	25(100.0%)	35(100.0%)	60(100.0%)		
g.Any other	Yes	2(8.0%)	0(0.0%)	2(3.3%)	2.897(1)	.169
	No	23(92.0%)	35(100.0%)	58(96.7%)		

(Sources: Primary data obtained from the questionnaire)

As shown in the table the chi-square tests for independence of various attributes between sources (library professional, faculty/research supervisors, friends/colleagues, and institution website) vs. category of respondents have been calculated and find that they are not significant at the 5 percent level as values of “p” are 0.708,0.513,0.450 and 1.000 respectively, which are greater than 0.05. Hence it can be concluded that these four sources are independently distributed to category of respondents.

(c)Frequency

Table 3 shows that there is major difference between PG & RSF in frequency of using consortium e-resources. More RSF use this consortium either daily or 2-4 times in a month than PG. While more PG use this consortium either 2-3 time in a week or occasionally than RSF.

Table No. 3 Frequency of using INDEST-AICTE consortium e-resources

Frequency of using INDEST-AICTE consortium	Categories of the respondents			χ^2 (df)	P
	PG (N=25)	R.S.& F.(N=35)	Total(N=60)		
Daily	1(4.0%)	13(37.1%)	14(23.3%)	16.480(3)	.001*
Weekly 2-3 day	13(52.0%)	4(11.4%)	17(28.3%)		
Monthly 2-4 time	4(16.0%)	10(28.6%)	14(23.3%)		
Occasionally in a year	7(28.0%)	8(22.9%)	15(25.0%)		
Never	0(0.0%)	0(0.0%)	0(0.0%)		

(Sources: Primary data obtained from the questionnaire)

As shown in the table the chi-square test for independence of attributes ($\chi^2_{(3)} = 16.480, p < 0.05$) is significant at the 5 percent level of significance because value of “p” .001 is lesser than 0.05. Hence there is a significant association between frequency of using consortium e-resources and type of users. Thus frequency of using consortium e-resources is associated with category of respondents.

(d)Purposes

Table 4 shows that there is difference between type of user & purposes. 60% PG & 83%RSF use it for research/project work. Consortiums is less used for writing article, studying course work & update the subject knowledge by 20%, 16% and 11% respondents, respectively.

Table No. 4 Purpose of using INDEST-AICTE Consortium e-resources

Purpose		Categories of the Respondents			χ^2 (df)	P
		PG (N=25)	R.S. & F.(N=35)	Total(N=60)		
a.For studying course work	Yes	5(20.0%)	5(14.3%)	10(16.7%)	.343(1)	.728
	No	20(80.0%)	30(85.7%)	50(83.3%)		
b.For research work/project	Yes	15(60.0%)	29(82.9%)	44(73.3%)	3.896(1)	.048*
	No	10(40.0%)	6(17.1%)	16(26.7%)		
c.For teaching purpose	Yes	0(0.0%)	0(0.0%)	0(0.0%)		
	No	25(100.0%)	35(100.0%)	60(100.0%)		
d.To update the subject knowledge	Yes	3(12.0%)	4(11.4%)	7(11.7%)	.005(1)	1.000
	No	22(88.0%)	31(88.6%)	53(88.3%)		
e.For writing article/research papers	Yes	3(12.0%)	9(25.7%)	12(20.0%)	1.714(1)	.190
	No	22(88.0%)	26(74.3%)	48(80.0%)		
f.Any other	Yes	0(0.0%)	0(0.0%)	0(0.0%)		
	No	25(100.0%)	35(100.0%)	60(100.0%)		

(Sources: Primary data obtained from the questionnaire)

As shown in the table the value of chi-square test for purpose research/project work is significant because a value of “p”0.048 is less than 0.05. Hence there is a significant association between research/project work and users. Thus research/project work is associated with category of respondents.

But the chi-square tests for independence of attributes between purposes (studying course work, update the subject knowledge and writing articles/research papers) vs category of respondents are not significant at 5% level as values of “p” are 0.728,1.000 and 0.190 respectively, which are greater than 0.05. Hence it can be concluded that these three purposes are independently distributed to category of respondents.

(e)Place of access

Table 5 shows 92% users use consortia in institute’s library. Very few use at computer centre or hotel/chamber/home.

Table No. 5 Place of access INDEST-AICTE consortium e-resources

Place of access		Categories of the respondents			χ^2 (df)	P
		PG (N=25)	R.S.& F.(N=35)	Total(N=60)		
a. Institute library	Yes	23(92.0%)	32(91.4%)	55(91.7%)	.006(1)	1.000
	No	2(8.0%)	3(8.6%)	5(8.3%)		
b.Computer centre	Yes	2(8.0%)	3(8.6%)	5(8.3%)	.006(1)	1.000
	No	23(92.0%)	32(91.4%)	55(91.7%)		
c.Hostel/ chamber residential flat	Yes	2(8.0%)	5(14.3%)	7(11.7%)	.559(1)	.688
	No	23(92.0%)	30(85.7%)	53(88.3%)		
d.Any other	Yes	2(8.0%)	0(0.0%)	2(3.3%)	2.897(1)	.089
	No	23(92.0%)	35(100.0%)	58(96.7%)		

(Sources: Primary data obtained from the questionnaire)

As shown in the tables the chi-square tests for independence of attributes between places (institute library, computer centre and hostel/chamber) vs. category of respondents found no significant at 5% level as values of “p” are 1.000, 1.000 and 0.688 respectively, which are more than 0.05. Hence it can be concluded that these three places are independently distributed to category of respondents.

(f). Evaluating of consortium

Table 6 shows overall evaluation of the consortium. 85% respondents rated it good while only 15% respondents rated it unsatisfactory.

Table No. 6 Evaluation rate of INDEST-AICTE Consortium

Evaluation rate	Categories of the respondents			χ^2 (df)	p	Level of signification
	PG (N=25)	R.S. & F. (N=35)	Total (N=60)			
Satisfactory	21(84.0%)	30(85.7%)	51(85.0%)	.034(1)	1.000	Not significant
Unsatisfactory	4(16.0%)	5(14.3%)	9(15.0%)			

(Sources: Primary data obtained from the questionnaire)

As shown in the table the chi-square test for independence of attributes ($\chi^2_{(1)} = 0.034, p > 0.05$) found no significant at the 5 percent level of significance because value of “p” 1.000 is more than 0.05. Hence there is no significant association between evaluation rate of consortium e-resources and users (PG&RSF). Thus evaluation rate of consortium e-resources is independently distributed to category of respondents

(g)Influence of consortium

Table 7 shows 33% respondents answered that consortium help to expedite the research/project work. 28% answered that help in improving professional competences. Other options have lesser percentages. This can be observed in the table.

Table No. 7 Influence of INDEST-AICTE Consortium e-resources on the efficiency of academic work

Influences		Categories of the respondents			χ^2 (df)	P
		PG (N=25)	R.S. & F.(N=35)	Total(N=60)		
a. Expedite the research/ project process	Yes	6(24.0%)	14(40.0%)	20(33.3%)	1.680(1)	.195
	No	19(76.0%)	21(60.0%)	40(66.7%)		
b.Improve professional competences	Yes	6(24.0%)	11(31.4%)	17(28.3%)	.396(1)	.529
	No	19(76.0%)	24(68.6%)	43(71.7%)		
c.Expedited the teaching process	Yes	1(4.0%)	2(5.7%)	3(5.0%)	.090(1)	1.000
	No	24(96.0%)	33(94.3%)	57(95.0%)		
d.Access to wider range of information	Yes	7(28.0%)	6(17.1%)	13(21.7%)	1.013(1)	.314
	No	18(72.0%)	29(82.9%)	47(78.3%)		
e.Easier and faster access to information	Yes	5(20.0%)	7(20.0%)	12(20.0%)	.000(1)	1.000
	No	20(80.0%)	28(80.0%)	48(80.0%)		
f.Any other	Yes	0(0.0%)	0(0.0%)	0(0.0%)		
	No	25(100.0%)	35(100.0%)	60(100.0%)		

(Sources: Primary data obtained from the questionnaire)

As shown in the table the chi-square test for independence of attributes between influence (expedite the research/project, improve profession competence, Expedited the teaching process, access to wider range of information and easier & faster access to information) vs category of respondents are not significant at 5% level as values of “p” are 0.195, 0.529, 1.000, 0.314 and 1.000 respectively all these values are greater than 0.05. Hence these five influences are independently distributed to category of respondents.

(h)Problems faced in accessing

Table 8 analyses various problems faced in accessing the consortium such as lack of system speed (26.7%), difficulty in accessing full-text (28.3%) and lack of sufficient e-journals (28.3%). Some of the difficulties user face but their percentages are not on higher side. It means larger number of users do not have these difficulties.

Table No. 8 Problems faced while accessing the INDEST-AICTE Consortium e-resources

Problem faced		Categories of the respondents			χ^2 (df)	P
		PG (N=25)	R.S. & F.(N=35)	Total(N=60)		
a.Lack of system speed	Yes	5(20.0%)	11(31.4%)	16(26.7%)	.974(1)	.324
	No	20(80.0%)	24(68.6%)	44(73.3%)		
b.Low bandwidth	Yes	3(12.0%)	8(22.9%)	11(18.3%)	1.148(1)	.332
	No	22(88.0%)	27(77.1%)	49(81.7%)		
c.Limited access terminals	Yes	6(24.0%)	5(14.3%)	11(18.3%)	.919(1)	.500
	No	19(76.0%)	30(85.7%)	49(81.7%)		
d.Insufficient time & training	Yes	3(12.0%)	10(28.6%)	13(21.7%)	2.360(1)	.125
	No	22(88.0%)	25(71.4%)	47(78.3%)		
e.Difficulty in accessing full-text	Yes	9(36.0%)	8(22.9%)	17(28.3%)	1.241(1)	.265
	No	16(64.0%)	27(77.1%)	43(71.7%)		
f.Difficulty in finding the relevant information	Yes	6(24.0%)	0(0.0%)	6(10.0%)	9.333(1)	.004*
	No	19(76.0%)	35(100.0%)	54(90.0%)		
g.Lack of sufficient e-journals	Yes	9(36.0%)	8(22.9%)	17(28.3%)	1.241(1)	.265
	No	16(64.0%)	27(77.1%)	43(71.7%)		
h.Not comfortable on computer reading	Yes	4(16.0%)	2(5.7%)	6(10.0%)	1.714(1)	.223
	No	21(84.0%)	33(94.3%)	54(90.0%)		

(Sources: Primary data obtained from the questionnaire)

As shown in the table the value of chi-square test for difficulty in finding the relevant information is significant at 5% level as value of “p”0.004 is lesser than 0.05. Hence this problem is associated with category of respondents.

But chi-square test values for other attributes (lack of system speed, low bandwidth, limited access terminals, insufficient time & training , Difficulty in accessing full-text , Lack of sufficient e-journals and Not comfortable on computer reading) vs category of respondents are not significant as values of “p” are 0.324,0.332,0.500,0.125,0.265,0.265 and 0.223 respectively, which are greater than 0.05. Hence these five problems are independently distributed to category of respondents.

(i) Organize training program

The table 9 shows that only 21.7% respondents accepted that the institute providing training on how to use consortium e-resources, whereas 20% respondents do not got training. 58% respondents answered don't know.

Table No. 9 Organize orientation/training program for using INDEST-AICTE Consortium e-resources

Provide orientation/ training program	Categories of the respondents			χ^2 (df)	P
	PG (N=25)	R.S. & F.(N=35)	Total(N=60)		
Yes	7(28.0%)	6(17.1%)	13(21.7%)	1.921(2)	.383
No	6(24.0%)	6(17.1%)	12(20.0%)		
Don't know	12(48.0%)	23(65.7%)	35(58.3%)		

(Sources: Primary data obtained from the questionnaire)

As shown in the table the p is 0.383 > 0.05 hence no significant association found. Thus orientation/ training programs are independently distributed to category of respondents.

(j) Need of training program

The analysis shows that more number (81%) of respondents feels the need of user orientation/training program for using INDEST-AICTE Consortium e-resources, whereas only 18% respondents do not need it.

Table No. 10 Feel the need of user orientation/training program for using INDEST-AICTE Consortium e-resources

Need of users orientation/training program	Categories of the respondents			χ^2 (df)	P
	PG (N=25)	R.S.& F.(N=35)	Total(N=60)		
Yes	21(84.0%)	28(80.0%)	49(81.7%)	.156(1)	.748
No	4(16.0%)	7(20.0%)	11(18.3%)		

(Sources: Primary data obtained from the questionnaire)

As shown in the table the p=0.748 > 0.05 hence need of orientation/training program is independently distributed to category of respondents.

(k) Advantages

Table 10 shows advantages of using consortium e-resources. 48% respondents stated it is more informative and 37% respondents stated it is easy to use. The percentages for time saving & preferred are less.

Table No.11 Advantages of using INDEST-AICTE Consortium e-resources

Advantages		Categories of the respondents			χ^2 (df)	P
		PG (N=25)	R.S. & F.(N=35)	Total(N=60)		
Time saving	Yes	7(28.0%)	14(40.0%)	21(35.0%)	.923(1)	.337
	No	18(72.0%)	21(60.0%)	39(65.0%)		
Easy to use	Yes	10(40.0%)	12(34.3%)	22(36.7%)	.205(1)	.651
	No	15(60.0%)	23(65.7%)	38(63.3%)		
More Informative	Yes	15(60.0%)	14(40.0%)	29(48.3%)	2.336(1)	.126
	No	10(40.0%)	21(60.0%)	31(51.7%)		
More preferred	Yes	3(12.0%)	3(8.6%)	6(10.0%)	.190(1)	.686
	No	22(88.0%)	32(91.4%)	54(90.0%)		

(Sources: Primary data obtained from the questionnaire)

As shown in the table the chi-square tests for independence of attributes between advantages (time saving, easy to use, more informative and more preferred) vs category of respondents are not significant at 5% level as values of “p” are 0.337, 0.651, 0.126 and 0.686 respectively, which more than 0.05. Hence these four advantages are independently distributed to category of respondents.

8.0 Test of hypothesis

H₀: There is no significance difference between users (PG& RSF) and awareness of INDEST-AICTE Consortium.

H₁: There is significance difference between users (PG& RSF) and awareness of INDEST-AICTE Consortium.

Table 1 analyzes that only 43% users (PG& RSF) are aware of INDEST-AICTE Consortium. The value of chi-square test in the table reveals that there is no significance difference between awareness and category of respondents because value of $p=0.252>0.05$.

So the hypothesis H₀ is accepted.

H₀: There is association between users (PG&RSF) and purpose (research/project work) of using INDEST. .

H₁: There is no association between users (PG&RSF) and for purpose (research/project work) of using INDEST. .

The table 4 shows that 60%PG & 83% RSF use INDEST for research work. The value of the chi-square test in the table shows that there is significant association between research work and category of respondents because value of $p=0.048<0.05$.

So the hypothesis H₁ is accepted.

9.0 Observations

On the basis of the study following can be observation have been made;

1. Approx. half of the respondents are aware of the INDEST Consortium;
2. Most of the users use it regularly or occasionally;
3. Mostly users use it for research and project work;
4. Most of them use it in institute library;
5. Most respondents find INDEST good;
6. It helps them in their research/project;
7. Some problems faced by users are difficulty in accessing full-text, lack of insufficient e-journals, lack of system speed, insufficient time & training, low bandwidth and limited access terminals;
8. Most respondents are not aware about orientation/training programs, organize by institution; and
9. Most respondents feel need for orientation/training program.

10.0 Conclusion

The study reveals that INDEST is widely used both by PG students, research scholars and faculty members in study, & research & project works. It is more commonly used within the library premises. The demand for more e-resources is high, (probably a reason for amalgamation of three consortia to fulfill their demand). At institution level infrastructure facilities can be improved by providing more computer nodes & high speed bandwidth and opening libraries for longer hours even 24× 7 days. The new generation 4G & 5G internet connections with very high speed can solve their problems of bandwidth & downloading time. There should be continuous evaluation of services by conducting surveys to fulfill future needs of the users.

11.0 Suggestions

1. Institute library should convert the non-users into actual users by educating them about the potentiality of the consortium e- resources for their academic activities.
2. Institute library should take a leading role to create awareness among students, research scholars & faculty members about the consortium e-resources by conducting training programs, workshops, audio-visual presentations, demonstrations, etc., on regular basis.
3. The infrastructure facilities should be enhanced for the better utilization.
4. Evaluate the consortium periodically, include more journals and library should update.

5. Library should increase the number of internet nodes for users.
6. Internet bandwidth should be increased. Today we have entered in 4G era but in most institutions are still equipped with 2G & 3G configurations. They need to be updated. Tomorrow we may go in 5G configurations should be upgradable to next generation technology.
7. Libraries should develop small modules on the use of e-resources and their awareness under various orientation programs. These modules may be like:-
8. Introduction to hardware;
9. Introduction to software;
10. Introduction to databases;
11. Introduction to use of various databases;
12. Introduction to e-resources; and
13. Evaluating e-resources/databases, etc.

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