

## Use of Rotated Component Matrix technique to Access E-Resources by the Academia: A Study

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### Abstract

*This study examines the use reliability test for different factors, ways and means of obtaining and using, skills required, purpose of using, limitation, availability and accessibility, core purpose and satisfaction of using INDEST E-Resources by faculty members of top seven Indian Institutes of technology (IITs). The Rotated Component Matrix to different factors affecting the use of INDEST E-Resources by the faculty of top seven IITs. The investigators distributed 1050 questionnaire through e-mail to faculty members of top seven IITs and received 411 filled questionnaires making a moderate response rate of 39% which was found adequate for the analysis. Major findings of the study include: the Satisfaction has the highest (0.948) Cronbach's Alpha value and 'F6 Strength in accessing network' has the lowest (0.720) Cronbach's Alpha value. The analysis found that faculty has positive attitudes about the use of INDEST E-Resources.*

**Keywords:** INDEST Consortium, AICTE Consortium, IITs, E-Resources, Academia, INDEST E-Resources

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### INTRODUCTION

Information is a resource, which enriches the world and provides a high quality of life to the people. Information is a source of power, and nowadays considered as a commodity. Library is a storehouse of information, which is meant for collecting, organizing and disseminating information to the end users. Information is at the stage of explosion and to cope up with this explosion, libraries are adopting new and advanced technology to make information reach people in a very short duration of time. The advent of Information Communication Technology in the libraries has brought a remarkable change in their functioning, and the end users are greatly benefitted by this. In order to provide quick and simultaneous access of information resources to the end users, there is a fast transition from print to electronic formats in the libraries. Internet plays a vital role in accessing e-resources in libraries. It is a gateway to the e-resources. In a digital library, the digital collection mainly includes e-books, e-journals, e-newsletters, e-

references, electronic thesis and dissertation, etc. Due to the budget constraint, faced by most of the libraries, there is a tradition of resource sharing among a group of libraries. This group of libraries come together to fulfill a common objective of cooperation and sharing of resources, generally called as a consortium. Consortium is very important for the libraries for solving the today's burning problems like information explosion, diversity of users need, financial crunch and so on.

Some of the examples of library consortia initiatives in India are INDEST-AICTE Consortium, UGC INFONET Consortium, FORSA Consortium, CSIR Consortium, ISRO Consortium, IIM Consortium, HELINET Consortium, ICMR Consortium, etc. Consortia-based subscription of electronic resources provides wider access of electronic resources at subsequently lower cost.

The electronic journals are the sources of original and updated information mainly covering studies of science and technology. E-

journal, therefore, finds its maximum usage in science and technical institute.

## LITERATURE REVIEW

Some of the similar studies carried out in this area of work are reported here. Arora and Kruti (2010) depicted real capacities, exercises and services of the INDEST-AICTE Consortium [1]. They have quickly touched upon resources subscribed, terms of licenses, strategies and practices for archival back-ups, enrollment projects including center individuals, AICTE-upheld foundations, and self-bolstered classification of participation. The powerful execution of Consortia amongst participating organizations, the financial aspects of the Consortium is also discussed [2].

UGC is providing access to electronic resources to Indian colleges through the UGC-Infonet Digital Library Consortium. The favored academicians are using accessible e-resources widely and ideally. How the social science faculty working in Indian colleges has been utilizing e-resources, what are the issues they are confronting in getting to e-resources. Authors highlight some imperative issues concerning use, acknowledgment and arranging of this consortium. Choudhury (2015), primarily the aim is to know how the e-resource are utilizing by the under graduates and educators of designing school (Both Private and Government) of Assam, and to realize what are the issues they confronted by utilizing e-journals [3]. From this, it will help to discover the issues and ought to make fundamental move to fathom these to get more beneficial environment to utilize e-journals in designing universities of Assam. As indicated by Uvaraj and Kumar (2015) say that UGC INFONET Digital Library Consortium is a creative venture launched by UGC to give access to electronic resources and bibliographic databases to the scholastic group in India [4]. 105 respondents were surveyed and 84 valid responses were received. The study uncovers that most of the respondents access UGC INFONET Digital Library consortium. Cattaneo, Motta and Gurtner (2015) say that in Switzerland, 99% of teenagers own a mobile phone and use it as their primary spare-time activity [5]. After introducing the major issues characterizing mobile learning and their relevance to the VET

context, the paper presents a project involving apprentice chefs and their teacher, with the aim of exemplifying and exploring VET learning between workplace and classroom, as a conversation between the learner, the teacher and the in-company trainer, and to evaluate the results of its implementation in terms of usability, effectiveness, and satisfaction. Sinha (2012) discusses the degree of Internet Literacy amongst the University Library Users [6]. The Internet education and access of e-resources, overview strategy has been received by the examiner. The highlights in ICT and Internet Literacy Skills, Internet use example, Training and a few issues confronted by the respondents also couple of proposals and suggestions. Present study is new compared to the previous studies and no such study has been conducted on the status of use of INDEST E-Resources by the faculty of IITs. Therefore, in this study an attempt is made to study the application of Rotated Component Matrix to different factors affecting the Accessing of INDEST E-Resources by the Academia.

## OBJECTIVES OF THE STUDY

The main objectives of the study are:

1. To identify the use patterns of e resources among the faculty of IITs using Cronbach's Alpha test.
2. To apply rotated compound Matrix to examine how different variables influence the utilization of e resources.
3. To know the advantage, disadvantages, core purpose, augmented of using INDEST E-Resources.
4. To know the availability, strength, limitation, value addition, expected in using INDEST E-Resources.
5. To know the level of satisfaction of IIT faculty in using INDEST E-Resources.

## SCOPE AND LIMITATION OF THE STUDY

The present study focuses on the use pattern of INDEST consortia by the faculty of top seven Indian Institute of Technology (IITs). This study is limited to top seven Indian Institute of Technology and all of them are governed by the Institutes of Technology Act, 1961, which has declared them as institutions of national importance and further lays down their powers, duties, and framework for governance (Table 1).

**Table 1: List of Top Seven IITs.**

| S/N | Name          | Acronym | Year of Established | Location  | State/Union Territory |
|-----|---------------|---------|---------------------|-----------|-----------------------|
| 1   | IIT Kharagpur | IITKGP  | 1951                | Kharagpur | West Bengal           |
| 2   | IIT Bombay    | IITB    | 1958                | Mumbai    | Maharashtra           |
| 3   | IIT Madras    | IITM    | 1959                | Chennai   | Tamil Nadu            |
| 4   | IIT Kanpur    | IITK    | 1959                | Kanpur    | Uttar Pradesh         |
| 5   | IIT Delhi     | IITD    | 1963                | New Delhi | New Delhi             |
| 6   | IIT Guwahati  | IITG    | 1994                | Guwahati  | Assam                 |
| 7   | IIT Roorkee   | IITR    | 2001                | Roorkee   | Uttarakhand           |

## METHODOLOGIES

The survey method was considered most appropriate for this study because it can measure Faculty' background, experience and what they know about electronic information, and it was well suited to the research questions taken up for this study. The data has been obtained by using questionnaires; this data has been standardized for comparison. The questionnaire was designed, keeping in view the objectives of the study for collecting usage data from faculty of different departments of seven IITs. Along with averages, percentages, mean SD, several advanced statistical tools like factor analysis, **Cronbach's Alpha Test**, **Rotated Component Matrix**, were used for the purpose of analysis and interpretation.

## RESULTS AND DISCUSSION

This section deals with the reliability test for different factors, ways and means of obtaining and using, skills required, purpose of using, limitation, availability and accessibility, core purpose and satisfaction of using INDEST E-Resources by faculty members of top seven IITs.

### Cronbach's Alpha Test Result

Table 2 shows the reliability test for the different factors. 'Satisfaction' has the highest Cronbach's Alpha value of 0.948 followed by 'Importance', 'F2 Disadvantages', 'F1 Basic Advantage', 'F3 Augmented Purpose' and 'F5 Limitation of accessing system' with Cronbach's Alpha value of 0.904, 0.893, 0.873, 0.862 and 0.851, respectively. The Cronbach's Alpha value for 'F9 Value Addition' is 0.827, 'F4 Availability and accessibility' is 0.810, 'F7 Expected Facilitation' is 0.806, 'F8 Core purpose' is 0.734 and 'F6 Strength in accessing network' is 0.72.

### Factor Analysis

An attempt was made to know the general purpose of factor analysis is to discover a strategy for condensing the information contained in number of unique variables to a smaller set of new composite dimensions (factors) with minimum loss of information. That is, the Factor Analysis tries to recognize and define the underlying dimensions in the original variables.

### Rotated Component Matrix

Table 3 gives there are several methods available for rotating factor matrix. The one utilized as a part of this examination is Varimax Rotation. This is the most generally utilized method and endeavors to minimize the number of variables that have high loadings on a factor. This should enhance the interpretability of the factors. The Rotated Component Matrix utilizing Varimax rotation is given as a part of the Table 3, where every factor identifies itself with a few set of variables.

### Summary

Thus, the 32 variables in the data were reduced to nine factor models and each factor was identified and named with the corresponding variables as shown in the Table 3. The factors are Basic Advantages; Disadvantages; Augmented Purpose; Availability and accessibility; Limitation of accessing system; Strength in accessing network; Expected Facilitation; Core purpose and Value addition.

### Descriptive

This section gives the detail description of basic advantages, disadvantage, augmented purpose, availability and accessibility, limitation of accessing system, strength in accessing network, expected facilitation, core purpose and value addition of accessing INDEST E-Resources.

**Table 2: Test Result.**

| Constructs                        | Cronbach's Alpha |
|-----------------------------------|------------------|
| F1 Basic Advantages               | 0.873            |
| F2 Disadvantages                  | 0.893            |
| F3 Augmented Purpose              | 0.862            |
| F4 Availability and accessibility | 0.810            |
| F5 Limitation of accessing system | 0.851            |
| F6 Strength in accessing network  | 0.720            |
| F7 Expected Facilitation          | 0.806            |
| F8 Core purpose                   | 0.734            |
| F9 Value addition                 | 0.827            |
| Satisfaction                      | 0.948            |
| Importance                        | 0.904            |

**Table 3: Rotated Component Matrix.**

| Rotated Component Matrix       |  | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9 |
|--------------------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|---|
| Basic Advantages               | User-friendly interface  | 0.875 |       |       |       |       |       |       |       |   |
|                                | Retrieval possibilities  | 0.866 |       |       |       |       |       |       |       |   |
|                                | Search ability/search capabilities                             | 0.807 |       |       |       |       |       |       |       |   |
|                                | Currency (Up-to-date information)                              | 0.712 |       |       |       |       |       |       |       |   |
|                                | Convenience  | 0.661 |       |       |       |       |       |       |       |   |
| Disadvantages                  | Perishable citation  |       | 0.889 |       |       |       |       |       |       |   |
|                                | Format that a large proportion of e-journal use                |       | 0.863 |       |       |       |       |       |       |   |
|                                | Lack of standardized formats                                   |       | 0.818 |       |       |       |       |       |       |   |
|                                | Authenticity   |       | 0.772 |       |       |       |       |       |       |   |
|                                | Search engines ignores PDF files                               |       | 0.543 |       |       |       |       |       |       |   |
| Augmented Purpose              | To be up-to-date in the subject                                |       |       | 0.828 |       |       |       |       |       |   |
|                                | Preparing for seminars, workshops etc                          |       |       | 0.805 |       |       |       |       |       |   |
|                                | To get latest facts and statistics                             |       |       | 0.776 |       |       |       |       |       |   |
|                                | To know the trends in Technical field                          |       |       | 0.749 |       |       |       |       |       |   |
|                                | To get comprehensive knowledge and be competitive in the field |       |       | 0.734 |       |       |       |       |       |   |
|                                | To write Articles  |       |       | 0.503 |       |       |       |       |       |   |
| Availability and accessibility | Prompt accessibility (7/24 hours a day)                        |       |       |       | 0.861 |       |       |       |       |   |
|                                | Desktop availability   |       |       |       | 0.831 |       |       |       |       |   |
|                                | Free access  |       |       |       | 0.781 |       |       |       |       |   |
|                                | Multiuser access   |       |       |       | 0.602 |       |       |       |       |   |
| Limitation of accessing system | Difficulty reading computer screens                            |       |       |       |       | 0.841 |       |       |       |   |
|                                | Limitations of computer monitor                                |       |       |       |       | 0.83  |       |       |       |   |
|                                | Often not included in indexing and abstracting services        |       |       |       |       | 0.679 |       |       |       |   |
| Strength in accessing network  | Accuracy   |       |       |       |       |       | 0.851 |       |       |   |
|                                | Credibility  |       |       |       |       |       | 0.841 |       |       |   |
| Expected Facilitation          | Connecting people  |       |       |       |       |       | 0.595 |       |       |   |
|                                | Requiring special equipment                                    |       |       |       |       |       |       | 0.804 |       |   |
|                                | Requiring training   |       |       |       |       |       |       | 0.782 |       |   |
| Core purpose                   | Teaching   |       |       |       |       |       |       |       | 0.904 |   |
|                                | Research   |       |       |       |       |       |       |       | 0.6   |   |

|  |                           |  |  |  |  |  |  |  |  |       |
|--|---------------------------|--|--|--|--|--|--|--|--|-------|
| Value addition   | Downloading possibilities |  |  |  |  |  |  |  |  | 0.662 |
|  | Full text retrieval       |  |  |  |  |  |  |  |  | 0.595 |
| Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. |                           |  |  |  |  |  |  |  |  |       |
| Rotation converged in nine iterations.   |                           |  |  |  |  |  |  |  |  |       |

### Basic Advantages in Accessing INDEST E-Resources

An attempt was made here to find out the basic advantages in accessing INDEST E-Resources by faculty of top seven IITs shown in Table 4 provides the details of the Mean score and Standard deviation for the five attributes of Basic Advantages. The mean score for the ‘Search ability/search capabilities’ is 4.31 and the Standard Deviation is 0.79 followed by ‘Convenience’, ‘Currency (Up-to-date information)’, ‘User-friendly interface’ and ‘Retrieval possibilities’ with mean score of 4.31, 4.28, 4.25 and 4.25 and their respective Standard Deviation is 0.81, 0.8, 0.78 and 0.83. ‘F1 Basic Advantages’ has a mean score of 4.28 and the Standard Deviation is 0.66.

### Disadvantages in Accessing INDEST E-Resources

An attempt was made here to find out the disadvantages in accessing INDEST E-Resources by faculty of top seven IITs shown in Table 5 shows the mean value and the Standard Deviation for the five attributes of Disadvantages. ‘Lack of Standardized formats’ has the highest mean score of 2.55 and Standard Deviation is 1.2 followed by ‘Format that a large proportion of e-journals use’ and ‘Perishable Citation’ with mean score of 2.37 and 2.33 and their Standard Deviation is 1.03 and 1.06. ‘Authenticity’ has a mean score of 2.21 and the Standard deviation is 1.11. ‘Search engines ignores PDF files’ has the lowest mean score of 2.04 and the SD is 1.06. The mean value and Standard Deviation for ‘F2 Disadvantages’ is 2.28 and 0.92.

### Augmented Purpose for using INDEST E-Resources

An attempt was made here to find out the disadvantages in accessing INDEST E-Resources by faculty of top seven IITs shown in Table 6 shows the details of the mean score and SD for the six attributes of augmented purpose. ‘To be up-to-date in the subject’ has

the mean score of 4.42 and the SD is 0.93 followed by ‘To write Articles’, ‘To know the trends in Technical field’, ‘To get comprehensive knowledge and be competitive in the field’, ‘To get latest facts and statistics’ and ‘Preparing for seminars, workshops etc’ with mean score of 4.39, 4.2, 4.17, 4.11 and 4.08 and their respective SD is 0.78, 1.09, 1.01, 1.01 and 0.97. ‘F3 augmented Purpose’ has a mean score of 4.24 and the SD is 0.75.

**Table 4:** Basic Advantages in accessing INDEST E-Resources.

| S/N | Attributes                         | N          | Mean        | SD          |
|-----|------------------------------------|------------|-------------|-------------|
| 1   | User-friendly interface            | 411        | 4.25        | 0.78        |
| 2   | Retrieval possibilities            | 411        | 4.23        | 0.83        |
| 3   | Search ability/search capabilities | 411        | 4.31        | 0.79        |
| 4   | Currency (Up-to-date information)  | 411        | 4.28        | 0.80        |
| 5   | Convenience                        | 411        | 4.31        | 0.81        |
|     | <b>Basic Advantages</b>            | <b>411</b> | <b>4.28</b> | <b>0.66</b> |

**Table 5:** Disadvantages in accessing INDEST E-Resources.

| S/N | Attributes                                      | N          | Mean        | SD          |
|-----|---|------------|-------------|-------------|
| 1   | Perishable citation                             | 411        | 2.33        | 1.06        |
| 2   | Format that a large proportion of e-journal use | 411        | 2.37        | 1.03        |
| 3   | Lack of standardized formats                    | 411        | 2.55        | 1.20        |
| 4   | Authenticity                                    | 411        | 2.21        | 1.11        |
| 5   | Search engines ignores PDF files                | 411        | 2.04        | 1.06        |
|     | <b>Disadvantages</b>                            | <b>411</b> | <b>2.28</b> | <b>0.92</b> |

**Table 6:** Augmented Purpose for using INDEST E-Resources.

| S/N | Attributes   | N          | Mean        | SD          |
|-----|--|------------|-------------|-------------|
| 1   | To be up-to-date in the subject                                | 411        | 4.42        | 0.93        |
| 2   | Preparing for seminars, workshops etc                          | 411        | 4.08        | 0.97        |
| 3   | To get latest facts and statistics                             | 411        | 4.11        | 1.01        |
| 4   | To know the trends in Technical field                          | 411        | 4.20        | 1.09        |
| 5   | To get comprehensive knowledge and be competitive in the field | 411        | 4.17        | 1.01        |
| 6   | To write Articles  | 411        | 4.39        | 0.78        |
|     | <b>Augmented Purpose</b>                                       | <b>411</b> | <b>4.24</b> | <b>0.75</b> |

**Availability and Accessibility of INDEST E-Resources**

This show about availability and accessibility of INDEST E-Resources shown in the Table 7 shows the mean score and the Standard Deviation for the four attributes of ‘Availability and Accessibility’. ‘Desktop availability’ has the highest mean score of 4.29 and Standard Deviation is 0.98. The mean score for ‘Prompt accessibility (7/24 h a day)’, ‘Free access’ and ‘Multiuser access’ is 4.26, 4.06 and 3.49 and their respective Standard Deviation is 1.04, 1.04 and 1.24, respectively. ‘F4 Availability and Accessibility’ has a mean score of 4.03 and the Standard Deviation is 0.86.

**Limitation of Accessing INDEST E-Resources**

Table 8 provides the details of the mean score and Standard Deviation for the three attributes of ‘Limitations of accessing system’. ‘Difficulty reading computer screens’ has the highest mean score of 2.56 and the Standard Deviation is 1.35 followed by ‘Often not included in indexing and abstracting services’ and ‘Limitations of computer monitor’ with mean score of 2.47 and 2.37 and their Standard Deviation is 1.34. ‘F5 Limitation of accessing system’ has a mean score of 2.47 and the Standard Deviation is 1.19.

**Strengths in Accessing INDEST E-Resources**

The attempt was made to know the strengths in accessing INDEST E-Resources by the faculty of to seven IITs shown in Table 9 provides the details of the mean score and Standard Deviation for the three attributes of ‘Strengths in accessing’. ‘Accuracy’ has the highest mean score of 4.01 and the Standard Deviation is 0.82 followed by ‘Credibility’ and ‘Connecting people’ with mean score of 4 and 3.4 and their respective Standard Deviation is 0.88 and 1.19. ‘F6 Strengths in accessing’ has a mean score of 3.81 and the Standard Deviation is 0.78.

**Expected Facilitation in accessing INDEST E-Resources**

The below details shows the expected facilitation in accessing INDEST E-Resources Table 10 shows the mean score and Standard Deviation for the two attributes of ‘Expected

Facilitation’. ‘Requiring special equipment’ has the highest mean score of 2.18 and the Standard Deviation is 1.16 followed by ‘Requiring Training’ with mean score of 2.15 and the Standard Deviation is 1.05. ‘F7 Expected Facilitation’ has a mean score of 2.16 and the Standard Deviation is 1.02.

*Table 7: Availability and Accessibility of INDEST E-Resources.*

| S/N | Attributes                              | N          | Mean        | SD          |
|-----|---|------------|-------------|-------------|
| 1   | Prompt accessibility (7/24 hours a day) | 411        | 4.26        | 1.04        |
| 2   | Desktop availability                    | 411        | 4.29        | 0.98        |
| 3   | Free access                             | 411        | 4.06        | 1.04        |
| 4   | Multiuser access                        | 411        | 3.49        | 1.24        |
|     | <b>Availability and accessibility</b>   | <b>411</b> | <b>4.03</b> | <b>0.86</b> |

*Table 8: Limitation of Accessing INDEST E-Resources.*

| S/N | Attributes  | N          | Mean        | SD          |
|-----|---|------------|-------------|-------------|
| 1   | Difficulty reading computer screens                     | 411        | 2.56        | 1.35        |
| 2   | Limitations of computer monitor                         | 411        | 2.37        | 1.34        |
| 3   | Often not included in indexing and abstracting services | 411        | 2.47        | 1.34        |
|     | <b>Limitation of accessing</b>                          | <b>411</b> | <b>2.47</b> | <b>1.19</b> |

*Table 9: Strengths in Accessing INDEST E-Resources.*

| S/N | Attributes                           | N          | Mean        | SD          |
|-----|--------------------------------------|------------|-------------|-------------|
| 1   | Accuracy                             | 411        | 4.01        | 0.82        |
| 2   | Credibility                          | 411        | 4.00        | 0.88        |
| 3   | Connecting people                    | 411        | 3.40        | 1.19        |
|     | <b>Strength in accessing network</b> | <b>411</b> | <b>3.81</b> | <b>0.78</b> |

*Table 10: Expected Facilitation in accessing INDEST E-Resources.*

| S/N | Attributes                   | N          | Mean        | SD          |
|-----|------------------------------|------------|-------------|-------------|
| 1   | Requiring special equipment  | 411        | 2.18        | 1.16        |
| 2   | Requiring training           | 411        | 2.15        | 1.05        |
|     | <b>Expected Facilitation</b> | <b>411</b> | <b>2.16</b> | <b>1.02</b> |

**Core Purposes of using INDEST E-Resources**

With regard to the Core Purpose of using INDEST E-Resources is shown in Table 11 provides the details of the mean score and Standard Deviation for the two attributes of

‘Core Purpose’. ‘Teaching’ has represents with the mean score of 3.89 with a corresponding Standard Deviation is 0.97 followed by ‘Research’ with a highest mean score of 4.77 with a corresponding Standard Deviation is 0.52. ‘F8 Core purpose’ has a mean score of 4.35 and the Standard Deviation is 0.64.

### Value Addition in accessing INDEST E-Resources

Table 12 provides the details of the mean score and Standard Deviation for the two attributes of ‘Value addition’. ‘Full text retrieval’ has the highest mean score of 4.44 and the Standard Deviation is 0.76 followed by ‘downloading possibilities’ with mean score of 4.40 and Standard Deviation is 0.67. ‘F9 Value addition’ has an average mean score of 4.42 and the Standard Deviation is 0.66.

### Satisfaction of using INDEST E-Resources

With regard to the satisfaction of using INDEST E-Resources shown in Table 13 provides the details of the mean score and Standard Deviation for the seven attributes of ‘Satisfaction’. The highest mean score is for ‘Infrastructure available to Access INDEST E-Resources’ 4.15 and the Standard Deviation are 0.9. ‘Required INDEST E-Resources subscribed by the library’ has a mean score of 4.01 and the Standard Deviation is 0.98 followed by ‘Satisfaction obtained from using INDEST E-Resources’, ‘Subject coverage of available INDEST E-Resources in your library’, ‘Number of INDEST E-Resources available in library’, ‘How far INDEST E-Resources available in library enable you to meet your needs’ and ‘Back volumes of INDEST E-Resources available in library’ with mean score of 3.96, 3.86, 3.78, 3.78 and 3.58 and their respective Standard Deviation is 0.8, 0.99, 0.99, 1.07 and 1.07, respectively. ‘Satisfaction’ has an average mean score of 3.88 and the Standard Deviation is 0.85.

**Table 11: Core Purposes of using INDEST E-Resources.**

| S/N | Attributes          | N          | Mean        | SD          |
|-----|---------------------|------------|-------------|-------------|
| 1   | Teaching            | 411        | 3.89        | 0.97        |
| 2   | Research            | 411        | 4.77        | 0.52        |
|     | <b>Core purpose</b> | <b>411</b> | <b>4.35</b> | <b>0.64</b> |

**Table 12: Value Addition in accessing INDEST E-Resources.**

| S/N | Attributes                | N          | Mean        | SD          |
|-----|---------------------------|------------|-------------|-------------|
| 1   | Downloading possibilities | 411        | 4.40        | 0.67        |
| 2   | Full text retrieval       | 411        | 4.44        | 0.76        |
|     | <b>Value addition</b>     | <b>411</b> | <b>4.42</b> | <b>0.66</b> |

**Table 13: Satisfaction of using INDEST E-Resources.**

| S/ N | Attributes  | N          | Mean        | SD          |
|------|---|------------|-------------|-------------|
| 1    | Required INDEST E-Resources subscribed by the library                         | 411        | 4.01        | 0.98        |
| 2    | Subject coverage of available INDEST E-Resources in your library              | 411        | 3.86        | 0.99        |
| 3    | Number of INDEST E-Resources available in library                             | 411        | 3.78        | 0.99        |
| 4    | Back volumes of INDEST E-Resources available in library                       | 411        | 3.58        | 1.07        |
| 5    | How far INDEST E-Resources available in library enable you to meet your needs | 411        | 3.78        | 1.07        |
| 6    | Satisfaction obtained from using INDEST E-Resources                           | 411        | 3.96        | 0.80        |
| 7    | Infrastructure available to Access INDEST E-Resources                         | 411        | 4.15        | 0.90        |
|      | <b>Satisfaction</b>   | <b>411</b> | <b>3.88</b> | <b>0.85</b> |

### CONCLUSION

The growth in electronic library systems has forced to review of the library services. Top seven Indian Institutes of Technology in India, imparting higher education in the field of Science and Technology.

The study shows that IIT faculty opined that they get up to date information from INDEST E-Resources, IIT faculty use INDEST to be up-to-date in the subject, IIT faculty opined that all the INDEST E-Resources are Desktop availability, they opined that limitations of computer monitor is not a limitation in using INDEST e-resources, faculty opined that accuracy is the main strength in accessing INDEST e-resources, most of the faculty expressed that they don’t want any training to access and use INDEST e-resources, the core purpose of using INDEST is to do research they use, faculty expressed that full text retrieval is the value addition in accessing INDEST e-resources and IIT faculty are satisfied in using INDEST e-resources to fulfill their academic needs.

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