

Embedded Library Services: Innovative Strategies for Central Libraries of IITs in India

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Abstract:- Embedded technology implemented and used in Higher Education System; as well as changing view of librarianship. Therefore, today's librarianship is moving towards an embedded librarianship. "Researcher traces the genesis and growth in scholarly use of this "embedded Library and Information services" by faculty, researcher and Students in worldwide. Also trace an important role of Librarian for providing "embedded Library and Information services" to students and researchers for their research work in global development. Due to the changing economic and political developments around the world, the quality of research is becoming an important focal point for every nation. Researcher review for how to provide higher education to students via virtual classroom; Librarians are making strong relationship with faculty, researchers, and students. To promote literacy, communication, and good participation in the 21st century, especially in research centres all over the world, "Indian Institutes of Technology" (IIT's in India) have created collaborative opportunities for researchers using e-skills, internet and social media, embedded library information services. "In other words, technology is not enough to bridge this gap, but instead, collaborative human partnerships are needed to harness the participatory power of this technology and provide context and learning spaces for people to enhance their digital and information literacy skill.

Embedded librarianship creating connections with faculty & scientist community so that you can build a sense of trust and show faculty & scientist you are fully invested in enhancing their learning experiences. This chapter focuses on changing and challenging role of embedded Information's or embedded librarianship worldwide.

Keywords:- Informationist, Embedded Librarianship, EL Services, Embedded Library and Information Services, Virtual Classroom, IIT's in India, Embedded Librarian, IIT, Indian Institute of India.

I. INTRODUCTION

Embedded Librarianship Defined Librarians have attempted to define the practice of embedded librarianship for quite some time now. In fact, the genesis of embedding academic librarians began in branch libraries, where librarians would help to curate the small collections held by faculty members, which were eventually folded into larger libraries, which then became branches. One of the main tenets of embedded librarianship, collaboration, goes back as far as the nineteenth century. So, precedence, of sorts, has been set. There are countless variations wherever embedded librarianship is being practiced and to be sure, the practice is still growing, evolving, changing, and adapting. But we still have not defined it, have we? The term embedded is one that most people will know from the news, travelled with military units in order to report from the front lines. Embedded was a perfect way to describe the practice: up close and personal, in and among the fray. There. Involved. Throughout the history of the profession, in one way or another, librarians have often been embedded, but the term was not used until recently.

II. EMBEDDED LIBRARY SERVICES PROVIDED BY CENTRAL LIBRARIES OF IITS IN INDIA

Figure: 1 and Table No. 1 reveals that, Embedded Library Services provided by Central Libraries of IITs in India. Where in the old IITs, at 7 (100%) central libraries of old IITs Embedded Library Services - 'Development & Evaluating Information Resources (Such as evaluating resources etc.)' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kharagpur", "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 7 (100%) central libraries of old IITs Embedded Library Services- 'Citation verification, Quick Fact checking for Researcher' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kharagpur", "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee".

Table 1: Embedded Library Services Provided by Central Libraries of IITs in India

Source: Compile by Researcher

Embedded Library Services	Old IITs								New IITs									
	IITK GP	IIT B	IIT K	IIT M	I I T D	I I T G	I I T R	Total	I I T B S	I I T G N	IIT R P R	I I T I	I I T B H U	IITP KD	IIT TP	IIT I SM	IITG OA	Total
Development & Evaluating Information Resources	√	√	√	√	√	√	√	7 (100)	√	√	√	√	√	---	---	√	---	6 (66.67)
Citation verification, Quick Fact checking for Researcher	√	√	√	√	√	√	√	7 (100)	√	√	√	√	√	---	---	√	---	6 (66.67)
In-depth, topical research	√	√	√	√	√	√	√	7 (100)	√	√	√	√	√	---	---	√	---	6 (66.67)
Interlibrary Loan and/or document delivery	√	√	√	√	√	√	√	7 (100)	√	√	√	√	√	---	√	√	---	7 (77.78)
Evaluating, synthesizing, summarizing the literature	---	√	√	√	√	√	√	6 (85.72)	√	√	√	√	√	---	√	√	---	7 (77.78)
Current awareness, news alerting	√	√	√	√	√	√	√	7 (100)	√	√	√	√	√	√	---	√	√	8 (88.89)
Competitive Intelligence for Research work	√	---	√	√	√	√	√	6 (85.72)	√	√	√	√	√	√	---	√	---	7 (77.78)
Data analysis (such as trends, industry, research)	√	---	√	√	√	√	√	6 (85.72)	√	√	√	√	√	---	√	√	---	7 (77.78)
Provide “How To” Pathfinders or Manuals	√	√	√	√	√	√	√	7 (100)	√	√	√	√	√	---	---	√	---	6 (66.67)
Content management for wiki, intranet and web sites	√	√	√	√	√	√	√	7 (100)	√	√	√	√	√	---	---	√	---	6 (66.67)
As an ‘Embedded librarian’ playing role of a classroom instructor	√	√	√	√	√	√	√	7 (100)	√	√	√	√	√	---	---	√	---	6 (66.67)
Training on the use of information services	√	√	√	√	√	√	√	7 (100)	√	√	√	√	√	---	√	√	---	7 (77.78)
Dissemination of specialized information on What’s app Group	---	√	√	---	√	√	- - -	4 (57.15)	√	√	---	---	-- -	---	---	---	---	2 (22.23)
E-Mail Based specialized reference service	√	√	√	√	√	√	√	7 (100)	√	√	√	√	√	√	√	√	---	8 (88.89)
Virtual Library Tour	---	---	√	√	√	√	√	5 (71.43)	√	√	√	√	√	√	---	√	---	7 (77.78)
E-Content Alerts	√	√	√	√	√	√	√	7 (100)	√	√	√	√	√	√	---	√	√	8 (88.89)
Support to Online database search	√	---	√	√	√	√	√	6 (85.72)	√	√	√	√	√	√	√	√	√	9 (100)
Video conferencing/ webinar with Faculty/Scientists	√	---	√	√	√	√	√	6 (85.72)	√	√	√	√	√	---	---	√	---	6 (66.67)
Embedded Q.R. code to resources for quick delivery service	---	√	√	√	√	√	√	6 (85.72)	√	√	√	√	√	---	---	√	---	6 (66.67)
Graded Discussion Board	√	---	√	√	√	√	√	6 (85.72)	√	√	√	√	√	---	√	√	---	7 (77.78)
content module within Blackboard (Research Project/work)	√	---	√	√	√	√	√	6 (85.72)	√	√	--	√	-- -	---	---	√	---	4 (44.45)
Journal Citation Reports	√	√	---	√	√	√	√	6 (85.72)	√	√	√	√	√	---	---	√	---	6 (66.67)
research-focused discussion forum	√	√	√	√	√	√	√	7 (100)	√	√	√	√	√	---	√	√	---	7 (77.78)
Support to Access to Network Consortia’s, Institutional	√	√	√	√	√	√	√	7 (100)	√	√	√	√	√	---	---	√	---	6 (66.67)

Repository																		
Discussion Forums	√	√	√	√	√	√	√	7 (100)	√	√	√	√	√	---	√	---	---	6 (66.67)
Other (Please specify)	---	√	√	√	√	√	√	6 (85.72)	√	√	---	√	√	√	---	√	---	6 (66.67)

(Figures with in parenthesis are% 'percentage')

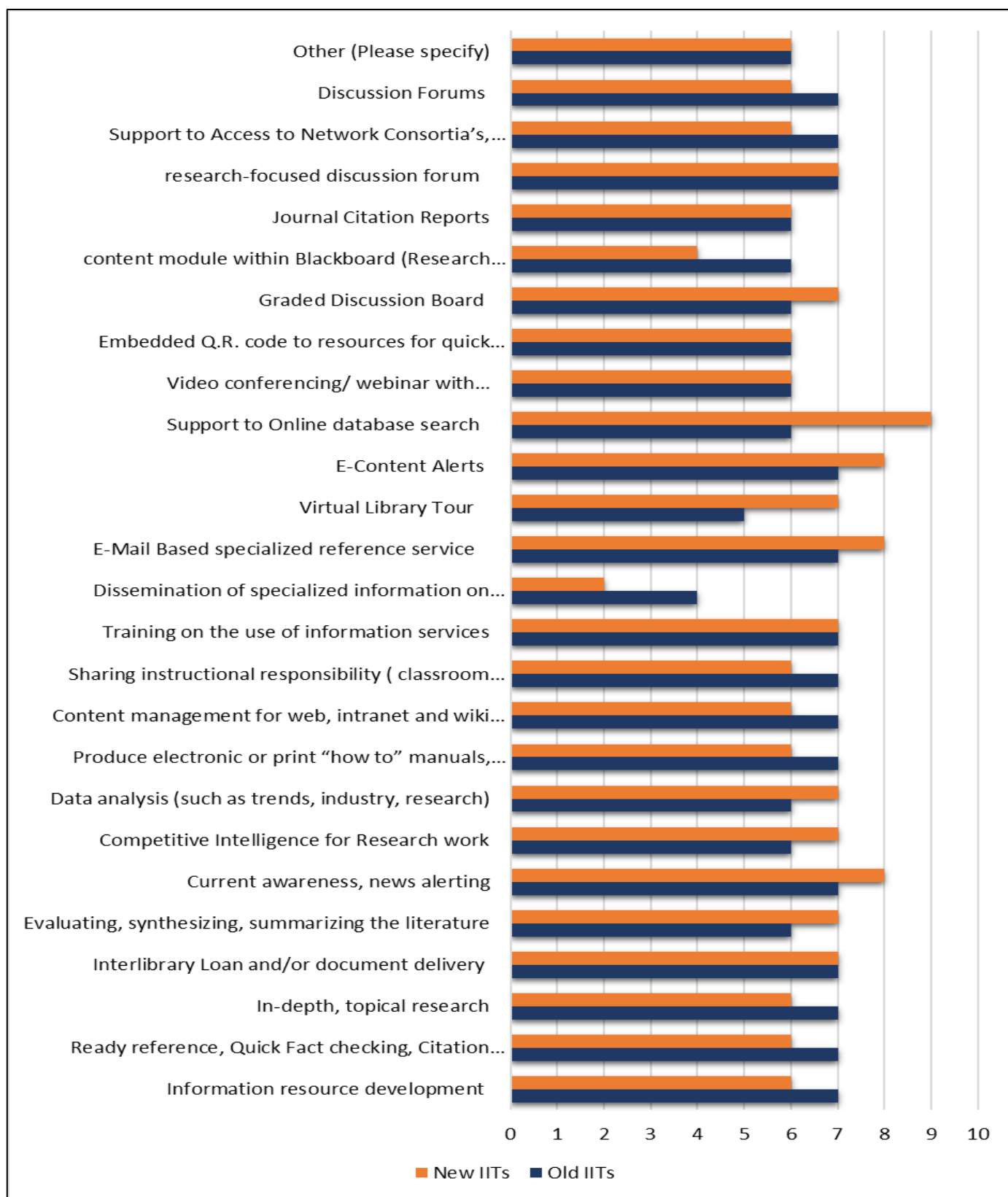


Fig 1: Multiple Bar Diagram Showing the Embedded Library Services Provided by Central Libraries of IITs in India

At 7 (100%) central libraries of old IITs Embedded Library Services- 'In-depth, Topical Research' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kharagpur", "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 7 (100%) central libraries of old IITs Embedded Library Services- 'Interlibrary Loan and/or Document Delivery on Faculty Demand' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kharagpur", "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 6 (85.72%) central libraries of old IITs Embedded Library Services- 'Evaluating, Synthesizing, Summarizing the Literature' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 7 (100%) central libraries of old IITs Embedded Library Services- 'Current Awareness, News Alerting' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kharagpur", "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 6 (85.72%) central libraries of old IITs Embedded Library Services- 'Competitive Intelligence for Research Work' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kharagpur", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 6 (85.72%) central libraries of old IITs Embedded Library Services- 'Data Analysis (such as Trends, Industry, Research)' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kharagpur", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 7 (100%) central libraries of old IITs Embedded Library Services- 'Provide "How To" Pathfinders or Manuals' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kharagpur", "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 7 (100%) central libraries of old IITs Embedded Library Services- 'Content management for wiki, intranet and web sites' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kharagpur", "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 7 (100%) central libraries of old IITs Embedded Library Services- 'Sharing Instructional Responsibility (such as participating with subject faculty in a Classroom Instruction)' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kharagpur", "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 7 (100%) central libraries of old IITs Embedded Library Services- 'Training on The Use of Information Services' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kharagpur", "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 4 (57.15%) central libraries of old IITs Embedded Library Services- 'Dissemination of Specialized Information on What's App Group on Demand of Research Team (Faculty/Scientists)' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Bombay", "IIT Kanpur", "IIT Delhi", and "IIT Guwahati". At 7 (100%) central libraries of old IITs

Embedded Library Services- 'E-Mail Based Specialized Reference Service on Demand of Research Team (Faculty/Scientists)' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kharagpur", "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 5 (71.43%) central libraries of old IITs Embedded Library Services- 'Virtual Library Tour' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 7 (100%) central libraries of old IITs Embedded Library Services- 'E-Content Alerts' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kharagpur", "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 6 (85.72%) central libraries of old IITs Embedded Library Services- 'Support to Online Database search' provided to faculty, Scientists and Research Scholars; i.e., Central Library of IIT Kharagpur, "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 6 (85.72%) central libraries of old IITs Embedded Library Services- 'Video Conferencing/ Webinar with Faculty/Scientists' provided to faculty, Scientists and Research Scholars; i.e., Central Library of IIT Kharagpur, "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 6 (85.72%) central libraries of old IITs Embedded Library Services- 'Embedded Q.R. Code to Resources for Quick Delivery Service' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 6 (85.72%) central libraries of old IITs Embedded Library Services- 'Graded Discussion Board (i.e., Faculty/Scientists Interact with the Librarian via a Discussion Board)' provided to faculty, Scientists and Research Scholars; i.e., Central Library of IIT Kharagpur, "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 6 (85.72%) central libraries of old IITs Embedded Library Services- 'Librarian Creates a Content Module Within Blackboard and Provides Relevant Materials (Research Project/Work)' provided to faculty, Scientists and Research Scholars; i.e., Central Library of IIT Kharagpur, "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 6 (85.72%) central libraries of old IITs Embedded Library Services- 'Journal Citation Reports' provided to faculty, Scientists and Research Scholars; i.e., Central Library of IIT Kharagpur, "IIT Bombay", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 7 (100%) central libraries of old IITs Embedded Library Services- 'Librarian Creates and Moderates a General, Research-Focused Discussion Forum as a Space to Support Faculty/Scientists Needs' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kharagpur", "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 7 (100%) central libraries of old IITs Embedded Library Services- 'Support to Access to Network Consortia's, Institutional Repository' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Kharagpur", "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 7 (100%) central libraries of old IITs Embedded Library Services- 'Discussion Forums' provided to faculty, Scientists and Research

Scholars; i.e., Central Library of “IIT Kharagpur”, “IIT Bombay”, “IIT Kanpur”, “IIT Madras”, “IIT Delhi”, “IIT Guwahati”, and “IIT Roorkee”. At 6 (85.72%) central libraries of old IITs Embedded Library Services- “Other (Please specify)—‘Print Study Material, NDLI, etc.(Specified by CLITs),” provided to faculty, Scientists and Research Scholars; i.e., Central Library of “IIT Bombay”, “IIT Kanpur”, “IIT Madras”, “IIT Delhi”, “IIT Guwahati”, and “IIT Roorkee”.

In the New IITs, at 6 (66.67%) central libraries of new IITs Embedded Library Services - ‘Development & Evaluating Information Resources (Such as evaluating resources etc.)’ provided to faculty, Scientists and Research Scholars; i.e. Central Library of “IIT Bhubaneswar”, “IIT Gandhinagar”, “IIT Ropar”, “IIT Indore”, “IIT (BHU) Varanasi”, and IIT (ISM) Dhanbad. At 6 (66.67%) central libraries of new IITs Embedded Library Services- ‘Citation verification, Quick Fact checking for Researcher’ provided to faculty, Scientists and Research Scholars; i.e. Central Library of “IIT Bhubaneswar”, “IIT Gandhinagar”, “IIT Ropar”, “IIT Indore”, “IIT (BHU) Varanasi”, and IIT (ISM) Dhanbad. At 6 (66.67%) central libraries of new IITs Embedded Library Services- ‘In-depth, Topical Research’ provided to faculty, Scientists and Research Scholars; i.e., Central Library of “IIT Bhubaneswar”, “IIT Gandhinagar”, “IIT Ropar”, “IIT Indore”, “IIT (BHU) Varanasi”, and IIT (ISM) Dhanbad. At 7 (77.78%) central libraries of new IITs Embedded Library Services- ‘Interlibrary Loan and/or Document Delivery on Faculty Demand’ provided to faculty, Scientists and Research Scholars; i.e., Central Library of “IIT Bhubaneswar”, “IIT Gandhinagar”, “IIT Ropar”, “IIT Indore”, “IIT (BHU) Varanasi”, IT Tirupati, and IIT (ISM) Dhanbad. At 7 (77.78%) central libraries of new IITs Embedded Library Services- ‘Evaluating, Synthesizing, Summarizing the Literature’ provided to faculty, Scientists and Research Scholars; i.e., Central Library of “IIT Bhubaneswar”, “IIT Gandhinagar”, “IIT Ropar”, “IIT Indore”, “IIT (BHU) Varanasi”, IT Tirupati, and IIT (ISM) Dhanbad. At 8 (88.89%) central libraries of new IITs Embedded Library Services- ‘Current Awareness, News Alerting’ provided to faculty, Scientists and Research Scholars; i.e., Central Library of “IIT Bhubaneswar”, “IIT Gandhinagar”, “IIT Ropar”, “IIT Indore”, “IIT (BHU) Varanasi”, Intralake, IIT (ISM) Dhanbad, and IIT Goa. At 7 (77.78%) central libraries of new IITs Embedded Library Services- ‘Competitive Intelligence for Research Work’ provided to faculty, Scientists and Research Scholars; i.e., Central Library of “IIT Bhubaneswar”, “IIT Gandhinagar”, “IIT Ropar”, “IIT Indore”, “IIT (BHU) Varanasi”, “IIT Palakkad”, and IIT (ISM) Dhanbad. At 7 (77.78%) central libraries of new IITs Embedded Library Services- ‘Data Analysis (such as Trends, Industry, Research)’ provided to faculty, Scientists and Research Scholars; i.e., Central Library of “IIT Bhubaneswar”, “IIT Gandhinagar”, “IIT Ropar”, “IIT Indore”, “IIT (BHU) Varanasi”, IIT Tirupati, and IIT (ISM) Dhanbad. At 6 (66.67%) central libraries of new IITs Embedded Library Services- ‘Provide “How To” Pathfinders or Manuals’ provided to faculty, Scientists and Research Scholars; i.e., Central Library of “IIT Bhubaneswar”, “IIT Gandhinagar”, “IIT Ropar”, “IIT Indore”, “IIT (BHU)

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Board)' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Bhubaneswar", "IIT Gandhinagar", "IIT Ropar", "IIT Indore", "IIT (BHU) Varanasi", IIT Tirupati, and IIT (ISM) Dhanbad. At 4 (44.45%) central libraries of new IITs Embedded Library Services- 'Librarian Creates a Content Module Within Blackboard and Provides Relevant Materials (Research Project/Work)' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Bhubaneswar", "IIT Gandhinagar", "IIT Indore", and IIT (ISM) Dhanbad. At 6 (66.67%) central libraries of new IITs Embedded Library Services- 'Journal Citation Reports' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Bhubaneswar", "IIT Gandhinagar", "IIT Ropar", "IIT Indore", "IIT (BHU) Varanasi", and IIT (ISM) Dhanbad. At 7 (77.78%) central libraries of new IITs Embedded Library Services- 'Librarian Creates and Moderates a General, Research-Focused Discussion Forum as a Space to Support Faculty/Scientists Needs' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Bhubaneswar", "IIT Gandhinagar", "IIT Ropar", "IIT Indore", "IIT (BHU) Varanasi", IIT Tirupati, and IIT (ISM) Dhanbad. At 6 (66.67%) central libraries of new IITs Embedded Library Services- 'Support to Access to Network Consortia's, Institutional Repository' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Bhubaneswar", "IIT Gandhinagar", "IIT Ropar", "IIT Indore", "IIT (BHU) Varanasi", and IIT (ISM) Dhanbad. At 6 (66.67%) central libraries of new IITs Embedded Library Services- 'Discussion Forums' provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Bhubaneswar", "IIT Gandhinagar", "IIT Ropar", "IIT Indore", "IIT (BHU) Varanasi", and IIT Tirupati. At 6 (66.67%) central libraries of new IITs Embedded Library Services- "Other (Please specify)—'Print Study Material, NDLI, etc.(Specified by CLIITs)'," provided to faculty, Scientists and Research Scholars; i.e., Central Library of "IIT Bhubaneswar", "IIT Gandhinagar", "IIT Indore", "IIT (BHU) Varanasi", "IIT Palakkad" and IIT (ISM) Dhanbad.

➤ *It is Thus Observed That:*

- 68.75% (13) central libraries of IITs out of 16 IITs Embedded Library Service- 'Development & Evaluating Information Resources (Such as evaluating resources etc.)' provided to faculty, Scientists and Research Scholars. Except- CLIITPKD, CLIITTP and CLIITGOA.
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- 68.75% (13) central libraries of IITs out of 16 IITs Embedded Library Service- 'In-depth, topical research' provided to faculty, Scientists and Research Scholars. Except- CLIITPKD, CLIITTP and CLIITGOA.
- 87.5% (14) central libraries of IITs out of 16 IITs Embedded Library Service- 'Interlibrary Loan and/or document delivery on faculty demand' provided to faculty, Scientists and Research Scholars. Except- CLIITPKD, and CLIITGOA.

- 68.75% (13) central libraries of IITs out of 16 IITs Embedded Library Service- 'Evaluating, synthesizing, summarizing the literature' provided to faculty, Scientists and Research Scholars. Except- CLIITKGP, CLIITPKD, and CLIITGOA.
- 93.75% (15) central libraries of IITs out of 16 IITs Embedded Library Service- 'Current awareness, news alerting' provided to faculty, Scientists and Research Scholars. Except- CLIITTP only.
- 68.75% (13) central libraries of IITs out of 16 IITs Embedded Library Service- 'Competitive Intelligence for Research work' provided to faculty, Scientists and Research Scholars. Except- CLIITB, CLIITTP, and CLIITGOA.
- 68.75% (13) central libraries of IITs out of 16 IITs Embedded Library Service- 'Data analysis (such as trends, industry, and research)' provided to faculty, Scientists and Research Scholars. Except- CLIITB, CLIITPKD, and CLIITGOA.
- 68.75% (13) central libraries of IITs out of 16 IITs Embedded Library Service- 'Provide "How To" Pathfinders or Manuals' provided to faculty, Scientists and Research Scholars. Except- CLIITPKD, CLIITTP, and CLIITGOA.
- 68.75% (13) central libraries of IITs out of 16 IITs Embedded Library Service- 'Content management for wiki, intranet and web sites' provided to faculty, Scientists and Research Scholars. Except- CLIITPKD, CLIITTP, and CLIITGOA.
- 68.75% (13) central libraries of IITs out of 16 IITs Embedded Library Service- 'Sharing instructional responsibility (such as participating with subject faculty in a classroom instruction)' provided to faculty, Scientists and Research Scholars. Except- CLIITPKD, CLIITTP, and CLIITGOA.
- 87.5% (14) central libraries of IITs out of 16 IITs Embedded Library Service- 'Training on the use of information services' provided to faculty, Scientists and Research Scholars. Except- CLIITPKD, and CLIITGOA.
- 37.5% (6) central libraries of IITs out of 16 IITs Embedded Library Service- 'Dissemination of specialized information on what's app Group on demand of Research team (Faculty/Scientists)' provided to faculty, Scientists and Research Scholars; i.e., CLIITB, CLIITK, CLIITD, CLIITG, CLIITBBS, and CLIITGN.
- 93.75% (15) central libraries of IITs out of 16 IITs Embedded Library Service- 'E-Mail Based specialized reference service on demand of Research team (Faculty/Scientists)' provided to faculty, Scientists and Research Scholars. Except- CLIITGOA only.
- 75% (12) central libraries of IITs out of 16 IITs Embedded Library Service- 'Virtual Library Tour' provided to faculty, Scientists and Research Scholars. Except- CLIITKGP, CLIITB, CLIITTP, and CLIITGOA.
- 93.75% (15) central libraries of IITs out of 16 IITs Embedded Library Service- 'E-Content Alerts' provided to faculty, Scientists and Research Scholars. Except- CLIITTP only.

- 93.75% (15) central libraries of IITs out of 16 IITs Embedded Library Service- ‘Support to Online database search’ provided to faculty, Scientists and Research Scholars. Except- CLIITB only.
- 75% (12) central libraries of IITs out of 16 IITs Embedded Library Service- ‘Video conferencing/ webinar with Faculty/Scientists’ provided to faculty, Scientists and Research Scholars. Except- CLIITB, CLIITPKD, CLIITTP, and CLIITGOA.
- 75% (12) central libraries of IITs out of 16 IITs Embedded Library Service- ‘Embedded Q.R. code to resources for quick delivery service’ provided to faculty, Scientists and Research Scholars. Except- CLIITKGP, CLIITPKD, CLIITTP, and CLIITGOA.
- 68.75% (13) central libraries of IITs out of 16 IITs Embedded Library Service- ‘Graded Discussion Board (i.e., Faculty/Scientists interact with the librarian via a discussion board)’ provided to faculty, Scientists and Research Scholars. Except- CLIITB, CLIITPKD, and CLIITGOA.
- 62.5% (10) central libraries of IITs out of 16 IITs Embedded Library Service- ‘Librarian creates a content module within Blackboard and provides relevant materials (Research Project/work)’ provided to faculty, Scientists and Research Scholars. Except- CLIITB, CLIITRPR, CLIITBHU, CLIITPKD, CLIITTP, and CLIITGOA.
- 75% (12) central libraries of IITs out of 16 IITs Embedded Library Service- ‘Journal Citation Reports’ provided to faculty, Scientists and Research Scholars. Except- CLIITK, CLIITPKD, CLIITTP, and CLIITGOA.
- 87.5% (14) central libraries of IITs out of 16 IITs Embedded Library Service- ‘Librarian creates and moderates a general, research-focused discussion forum as a space to support Faculty/Scientists needs’ provided to faculty, Scientists and Research Scholars. Except- CLIITPKD, and CLIITGOA.
- 68.75% (13) central libraries of IITs out of 16 IITs Embedded Library Service- ‘Support to Access to Network Consortia’s, Institutional Repository’ provided to faculty, Scientists and Research Scholars. Except- CLIITPKD, CLIITTP, and CLIITGOA.
- 68.75% (13) central libraries of IITs out of 16 IITs Embedded Library Service- ‘Discussion Forums’ provided to faculty, Scientists and Research Scholars. Except- CLIITPKD, CLIITISM, and CLIITGOA.
- 75% (12) central libraries of IITs out of 16 IITs Embedded Library Service- ‘Other (Please specify)’ provided to faculty, Scientists and Research Scholars. Except- CLIITKGP, CLIITRPR, CLIITTP, and CLIITGOA.

III. STATUS OF CUSTOMERS GROUPS BETWEEN ‘FIRST BEGAN PROVIDING EL SERVICES TO TILL’

Table 2 reveals the status of customers groups between ‘first began providing EL services to till’ of central libraries of IIT’s. Where in old IITs, 6 (85.72%) central libraries of IITs status of customers groups between ‘first began providing EL services to till’ are ‘Increased’; i.e., Central Library of IIT Kharagpur, “IIT Kanpur”, “IIT Madras”, “IIT Delhi”, “IIT Guwahati”, and “IIT Roorkee”.

One (14.28%) central library of “IIT Bombay” status of customers groups between ‘first began providing EL services to till’ is ‘Stayed about the same.’

In new IITs, 5 (55.56%) central libraries of IITs status of customers groups between ‘first began providing EL services to till’ are ‘Increased’; i.e. Central Library of IIT Gandhinagar, “IIT Ropar”, “IIT Indore”, “IIT (BHU) Varanasi”, and IIT (ISM) Dhanbad.

One (11.12%) central library of “IIT Bhubaneswar” status of customers groups between ‘first began providing EL services to till’ is ‘Stayed about the same.’

➤ *Thus, Such Conclusion is:*

- 68.75% (11) central libraries of IITs out of 16 IITs status of customers groups between ‘first began providing EL services to till’ are ‘Increased’; Except, CLIITB, CLIITBBS, CLIITPKD, CLIITTP and CLIITGOA.
- 12.5% (2) central libraries of IITs out of 16 IITs status of customers groups between ‘first began providing EL services to till’ are ‘Stayed about the same’; i.e., CLIITB and CLIITBBS.
- 0% (‘0’ Zero) central libraries of IITs out of 16 IITs status of customers groups between ‘first began providing EL services to till’ are ‘Decreased’.
- 18.75% central libraries of IITs out of 16 IITs are not till began providing EL services; i.e., CLIITPKD, CLIITTP and CLIITGOA.

Table 2: Status of Customers Groups between ‘First Began Providing EL Services to Till

“Indian Institutes of Technology”		Status of Customers Groups Between ‘First Began Providing EL Services to till’		
		Increased	Decreased	Stayed About the Same
Old IITs (N=7)	IITKGP	√	---	---
	IITB	---	---	√
	IITK	√	---	---
	IITM	√	---	---
	IITD	√	---	---
	IITG	√	---	---
	IITR	√	---	---
Total=		6 (85.72%)	0 (00%)	1 (14.28%)
New IITs (N=9)	IITBBS	---	---	√
	IITGN	√	---	---
	IITRPR	√	---	---
	IITI	√	---	---
	IITBHU	√	---	---
	IITPKD	---	---	---
	IITTP	---	---	---
	IITISM	√	---	---
	IITGOA	---	---	---
Total=		5 (55.56%)	0 (00%)	1 (11.12%)

(Source: Compile by Researcher)

IV. WORKING WITH CUSTOMERS GROUPS AND PROVIDING EL SERVICES IN YEARS

Figure: 2 and Table 3 shows that, “Embedded Librarian” working with customers groups and providing Embedded Library services in years at central libraries of IIT’s. Where in old IITs, all 7 (100 %) central libraries of old IITs “Embedded Librarian” working with customers groups and providing Embedded Library services from ‘7 or more (from 2012 or before)’ years; i.e. Central Library of “IIT Kharagpur”, “IIT Bombay”, “IIT Kanpur”, “IIT Madras”, “IIT Delhi”, “IIT Guwahati”, and “IIT Roorkee”.

In new IITs, one (11.12 %) central library “IIT Ropar” “Embedded Librarian” working with customers groups and providing Embedded Library services from ‘1-2 years (from 2016-2017)’ years. One (11.12 %) central library “IIT Indore” “Embedded Librarian” working with customers groups and providing Embedded Library services from ‘3-4 years (from 2015-2016)’ years. Three (33.34 %) central libraries of new IITs “Embedded Librarian” working with customers groups and providing Embedded Library services from ‘5-6 years (from 2014-2015)’ years; i.e., Central library of IIT.

Table 3: Working with Customers Groups and Providing EL Services in Years

“Indian Institutes of Technology”		Working with Customers groups and providing EL Services in Years				
		Less than 1 year (from 2017-2018)	1-2 years (from 2016-2017)	3-4 years (from 2015-2016)	5-6 years (from 2014-2015)	7 or more (from 2012 or before)
Old IITs (N=7)	IITKGP	---	---	---	---	√
	IITB	---	---	---	---	√
	IITK	---	---	---	---	√
	IITM	---	---	---	---	√
	IITD	---	---	---	---	√
	IITG	---	---	---	---	√
	IITR	---	---	---	---	√
Total=		0 (00%)	0 (00%)	0 (00%)	0 (00%)	7 (100 %)
New IITs (N=9)	IITBBS	---	---	---	√	---
	IITGN	---	---	---	√	---
	IITRPR	---	√	---	---	---
	IITI	---	---	√	---	---
	IITBHU	---	---	---	---	√
	IITPKD	---	---	---	---	---
	IITTP	---	---	---	---	---
	IITISM	---	---	---	√	---
	IITGOA	---	---	---	---	---
Total=		0 (00%)	1 (11.12 %)	1 (11.12 %)	3 (33.34 %)	1 (11.12 %)

(Source: Compile by Researcher)

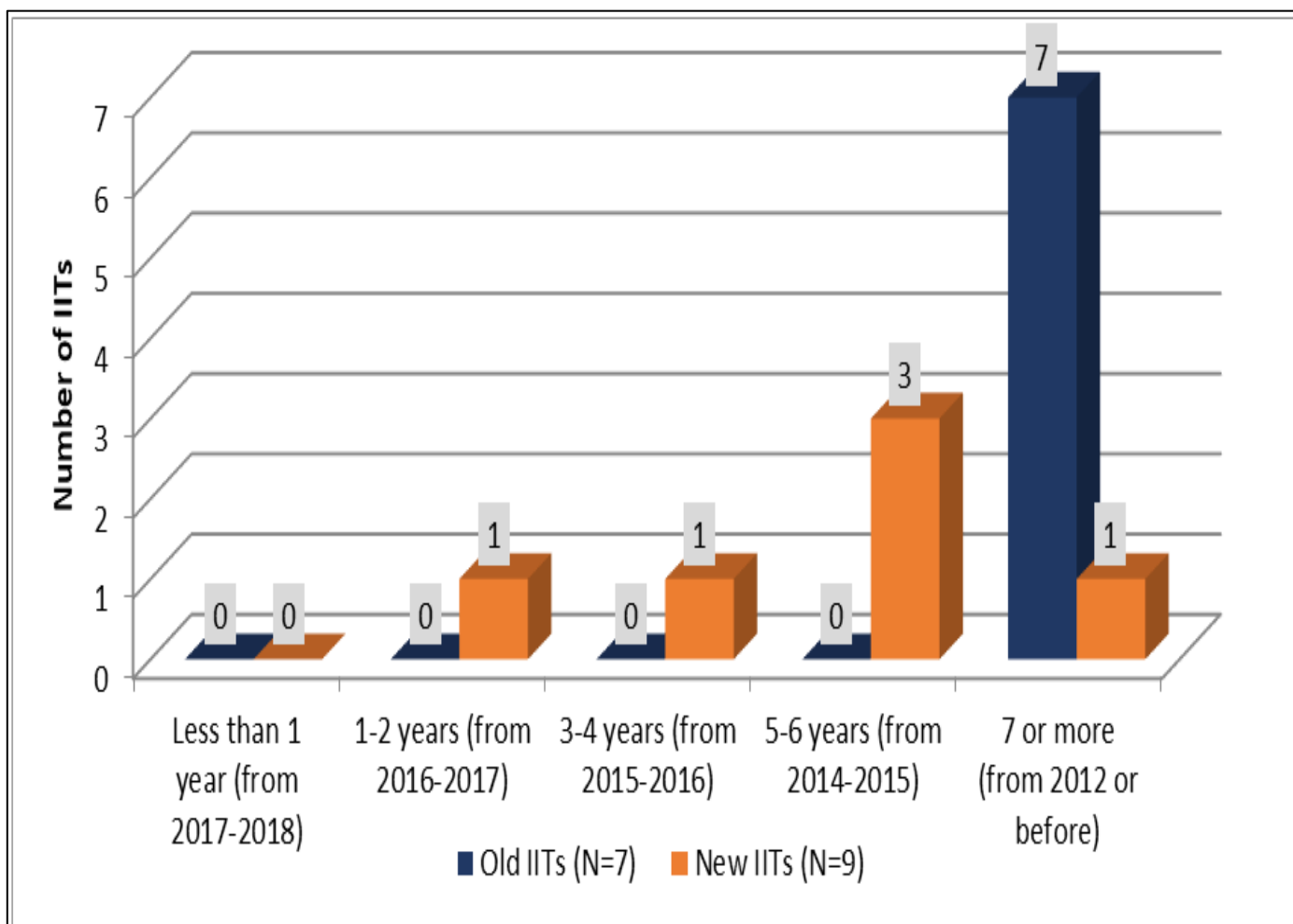


Fig 2: Multiple Bar Diagram Showing the Number of IITs Working with Customers Groups and Providing EL Services in Years

Bhubaneswar, “IIT Gandhinagar” and IIT (ISM) Dhanbad. And at one (11.12 %) central library “IIT (BHU) Varanasi” “Embedded Librarian” working with customers’ groups and providing Embedded Library services from ‘7 or more (from 2012 or before)’ years.

➤ *It is Thus Observed That:*

- 0% (‘0’ Zero) central libraries of IITs out of 16 IITs “Embedded Librarian” working with customers groups and providing Embedded Library services from ‘Less than 1 year (from 2017-2018)’ years.
- 6.25% (1) central library of “IIT Ropar” out of 16 IITs “Embedded Librarian” working with customers groups and providing Embedded Library services from ‘1-2 years (from 2016-2017)’ years.
- 6.25% (1) central library of “IIT Indore” out of 16 IITs “Embedded Librarian” working with customers groups and providing Embedded Library services from ‘3-4 years (from 2015-2016)’ years.
- 18.75% (3) central libraries of IITs out of 16 IITs “Embedded Librarian” working with customers groups and providing Embedded Library services from ‘5-6 years (from 2014-2015)’ years; i.e., CLIITBBS, CLIITGN and CLIITISM.
- 50% (8) central libraries of IITs out of 16 IITs “Embedded

Librarian” working with customers groups and providing Embedded Library services from ‘7 or more (from 2012 or before)’ years; i.e., CLIITKGP, CLIITB, CLIITK, CLIITM, CLIITD, CLIITG, CLIITR and CLIITBHU.

V. NUMBER OF LIS STAFF EMBEDDED WITH CUSTOMERS GROUPS

Figure: 3 and Table 4 reveals that, Number of Library and Information Professional Staff Embedded with Customers groups and providing Embedded Library services at central libraries of IIT’s. Where in old IITs, At3 (42.86 %) central libraries of old IITs ‘2 (in addition to Librarian)’ means 1+ 2 = 3 Library and Information Professional Staff Embedded with customers groups and providing Embedded Library services; i.e. Central Library of “IIT Kanpur”, “IIT Madras”, and “IIT Guwahati”. At 2 (28.58 %) central libraries of old IITs ‘3-5 (in addition to Librarian)’ means 1+ 3 to 5 = 4 to 6 Library and Information Professional Staff Embedded with customers groups and providing Embedded Library services; i.e. Central Library of “IIT Bombay”, and “IIT Delhi”. At 2 (28.58 %) central libraries of old IITs ‘More than 5’ means 5+ Library and Information Professional Staff Embedded with customers groups and providing Embedded Library services; i.e. Central Library of “IIT Kharagpur” and “IIT Roorkee”.

Table 4: Number of LIS Staff Embedded with Customers Groups

“Indian Institutes of Technology”		Number of LIS Staff Embedded with Customers groups				
		0 (in addition to Librarian)	1 (in addition to Librarian)	2 (in addition to Librarian)	3-5 (in addition to Librarian)	More than 5
Old IITs (N=7)	IITKGP	---	---	---	---	√
	IITB	---	---	---	√	---
	IITK	---	---	√	---	---
	IITM	---	---	√	---	---
	IITD	---	---	---	√	---
	IITG	---	---	√	---	---
	IITR	---	---	---	---	√
Total=		0 (00%)	0 (00%)	3 (42.86 %)	2 (28.58 %)	2 (28.58 %)
New IITs (N=9)	IITBBS	---	√	---	---	---
	IITGN	---	---	---	√	---
	IITRPR	---	√	---	---	---
	IITI	---	√	---	---	---
	IITBHU	---	---	√	---	---
	IITPKD	---	---	---	---	---
	IITTP	---	---	---	---	---
	IITISM	---	√	---	---	---
	IITGOA	---	---	---	---	---
Total=		0 (00%)	4 (44.45 %)	1 (11.12 %)	1 (11.12 %)	0 (00%)

(Source: Compile by Researcher)

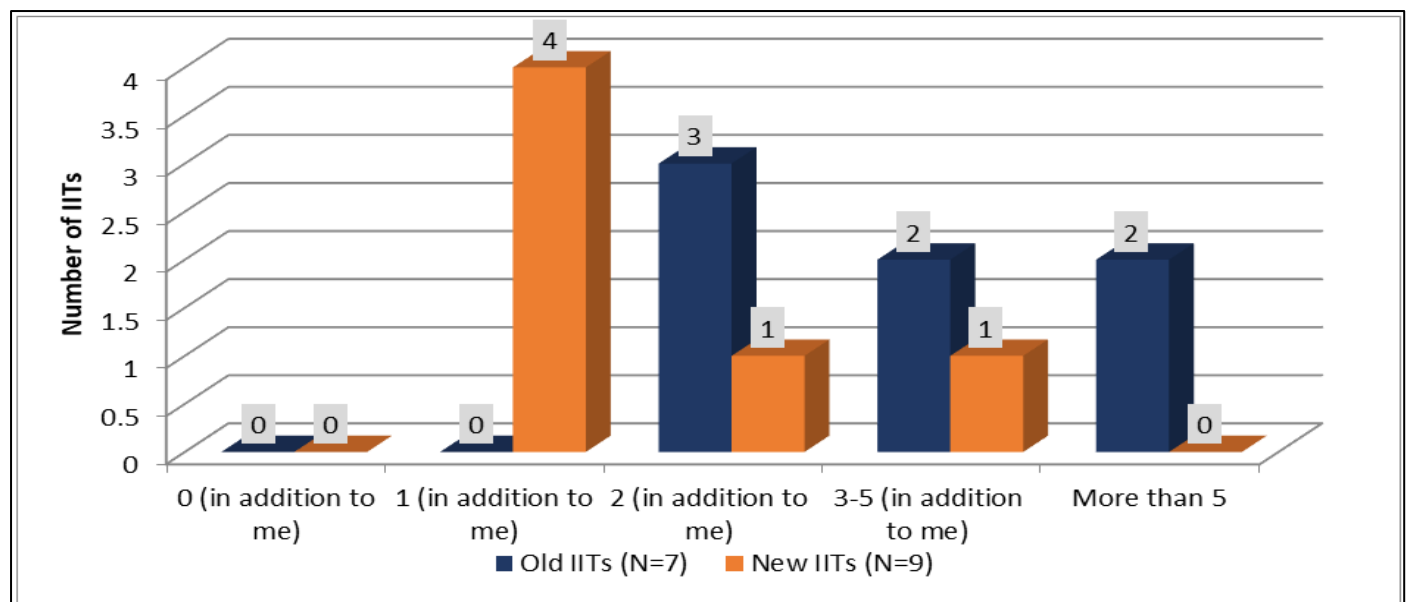


Fig 3: Multiple Bar Diagram Showing the Number of LIS Staff Embedded with Customers Groups

In new IITs, At 4 (44.45 %) central libraries of old IITs ‘1 (in addition to Librarian)’ means 1+ 1 = 2 Library and Information Professional Staff Embedded with customers groups and providing Embedded Library services; i.e., Central Library of “IIT Bhubaneswar”, “IIT Ropar”, “IIT Indore” and IIT (ISM) Dhanbad. At one (11.12 %) Central Library of “IIT (BHU) Varanasi” ‘2 (in addition to Librarian)’ means 1+ 2 = 3 Library and Information Professional Staff Embedded with customers groups and providing Embedded Library services. At one (11.12 %) Central Library of “IIT Gandhinagar” ‘3-5 (in addition to Librarian)’ means 1+ 3 to 5 = 4 to 6 Library and Information Professional Staff Embedded with customers groups and providing Embedded Library services.

➤ *It is Thus Concluded That:*

- 0% (‘0’ Zero) central libraries of IITs out of 16 IITs, ‘0 (in addition to Librarian)’ means ‘only one’ Library and Information Professional Staff Embedded with customers groups and providing Embedded Library services.
- 25% (4) central libraries of IITs out of 16 IITs, ‘1 (in addition to Librarian)’ means 1+ 1 = 2 Library and Information Professional Staff Embedded with customers groups and providing Embedded Library services.
- 25% (4) central libraries of IITs out of 16 IITs, ‘2 (in addition to Librarian)’ means 1+ 2 = 3 Library and Information Professional Staff Embedded with customers groups and providing Embedded Library services.

- 18.75% (3) central libraries of IITs out of 16 IITs, '3-5 (in addition to Librarian)' means 1+ 3 to 5 = 4 to 6 Library and Information Professional Staff Embedded with customers groups and providing Embedded Library services.
- 12.5% (2) central libraries of IITs out of 16 IITs, 'More than 5' means 5+Library and Information Professional Staff Embedded with customers groups and providing Embedded Library services.

VI. EDUCATION LEVEL OF EMBEDDED LIS STAFF

Figure: 4 and Table 5 shows that, Education level of Embedded Library and Information Professional Staff at central libraries of IITs in India. Where in old IITs, At 7 (100%) central libraries of old IITs all Embedded Library and Information Professional Staff have qualified 'B. Lib. & I. Sc. - U.G.', 'M. Lib. & I. Sc. - P.G.', 'Ph.D.' degree; i.e., Central Library of "IIT Kharagpur", "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee".

Table 5: Education Level of Embedded LIS Staff

"Indian Institutes of Technology"		Education level of Embedded LIS Staff				
		B. Lib. & I. Sc. U.G.	M. Lib. & I. Sc. P.G.	Ph.D.	Other U.G.	Other P.G.
Old IITs (N=7)	IITKGP	√	√	√	---	---
	IITB	√	√	√	---	---
	IITK	√	√	√	---	---
	IITM	√	√	√	---	---
	IITD	√	√	√	---	---
	IITG	√	√	√	---	---
	IITR	√	√	√	---	---
Total=		7 (100%)	7 (100%)	7 (100%)	0 (00%)	0 (00%)
New IITs (N=9)	IITBBS	√	√	√	---	---
	IITGN	√	√	√	√	√
	IITRPR	√	√	√	---	---
	IITI	√	√	√	---	---
	IITBHU	√	√	√	---	---
	IITPKD	√	√	---	---	---
	IITTP	√	√	---	---	---
	IITISM	√	√	√	---	---
	IITGOA	√	√	---	---	---
Total=		9 (100%)	9 (100%)	6 (66.67 %)	1 (11.12%)	1 (11.12%)

(Source: Compile by Researcher)

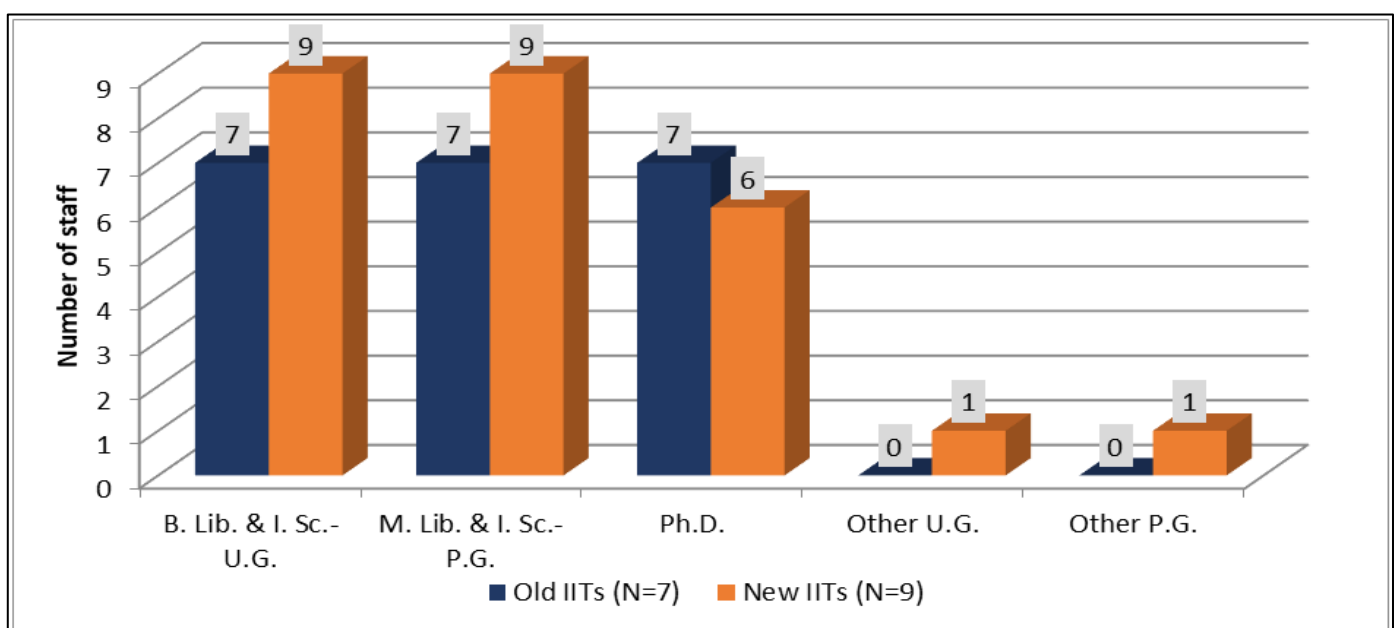


Fig 4: Multiple Bar Diagram Showing Education Level of Embedded LIS Staff

In new IITs, at 9 (100%) central libraries of new IITs all Embedded Library and Information Professional Staff has qualified 'B. Lib. & I. Sc. - U.G.', 'M. Lib. & I. Sc. - P.G.' degree; i.e., Central Library of "IIT Bhubaneswar", "IIT Gandhinagar", "IIT Ropar", "IIT Indore", "IIT (BHU) Varanasi", "IIT Palakkad", IIT Tirupati, "IIT (ISM) Dhanbad" and IIT Goa.

At 6 (66.67%) central libraries of new IITs all Embedded Library and Information Professional Staff has qualified 'Ph.D.' degree; i.e., Central Library of "IIT Bhubaneswar", "IIT Gandhinagar", "IIT Ropar", "IIT Indore", "IIT (BHU) Varanasi", and IIT (ISM) Dhanbad.

At one (11.12%) central library of "IIT Gandhinagar" all Embedded Library and Information Professional Staff has qualified 'Other U.G. and Other P.G.' degree.

➤ *It is Thus Observed as Follows:*

- 100% (16) central libraries of IITs out of 16 IITs, all Embedded Library and Information Professional Staff has qualified 'B. Lib. & I. Sc. - U.G.', 'M. Lib. & I. Sc. - P.G.' degree.
- 81.25% (13) central libraries of IITs out of 16 IITs, all Embedded Library and Information Professional Staff has qualified 'Ph.D.' degree.
- 6.25% (1) central libraries of IITs out of 16 IITs, all Embedded Library and Information Professional Staff has qualified 'Other U.G. and Other P.G.' degree; i.e., Central Library of "IIT Gandhinagar".

VII. WORK EXPERIENCE OF EMBEDDED LIBRARY AND INFORMATION STAFF

Figure: 5 and Table 6 reveals that, Work Experience of Embedded Library and Information Professional Staff at central libraries of IITs in India. Where in old IITs, At 7 (100%) central libraries of old IITs all Embedded Library and Information Professional Staff has Work Experience '5 + Years work experience' and Experience of attended 'Classes/ Conferences'; i.e. Central Library of "IIT Kharagpur", "IIT Bombay", "IIT Kanpur", "IIT Madras", "IIT Delhi", "IIT Guwahati", and "IIT Roorkee". At 2 (28.58 %) central libraries of old IITs all Embedded Library and Information Professional Staff has Work Experience 'Certification in related field work' and 'Degree in related field work'; i.e. Central Library of "IIT Kharagpur" and "IIT Delhi".

In new IITs, At 5 (55.56%) central libraries of new IITs all Embedded Library and Information Professional Staff has Work Experience '5 + Years work experience'; i.e. Central Library of "IIT Gandhinagar", "IIT Ropar", "IIT Indore", "IIT (BHU) Varanasi", and IIT (ISM) Dhanbad. At 7 (77.78%) central libraries of new IITs all Embedded Library and Information Professional Staff has Work Experience of attended 'Classes/ Conferences'; i.e. Central Library of IIT Bhubaneswar, "IIT Gandhinagar", "IIT Indore", "IIT (BHU) Varanasi", IIT Tirupati, "IIT (ISM) Dhanbad" and IIT Goa. At 2 (22.23 %) central libraries of new IITs all Embedded Library and Information Professional Staff has Work Experience 'Certification in related field work' and 'Degree in related field work'; i.e. Central

Table 6: Work Experience of Embedded Library and Information Staff

"Indian Institutes of Technology"		Work Experience			
		5 + Years work experience	Classes/ Conferences	Certification in related field work	Degree in related field work
Old IITs (N=7)	IITKGP	√	√	√	√
	IITB	√	√	---	---
	IITK	√	√	---	---
	IITM	√	√	---	---
	IITD	√	√	√	√
	IITG	√	√	---	---
	IITR	√	√	---	---
		7 (100%)	7 (100%)	2 (28.58 %)	2 (28.58 %)
New IITs (N=9)	IITBBS	---	√	---	---
	IITGN	√	√	---	---
	IITRPR	√	---	---	---
	IITI	√	√	---	---
	IITBHU	√	√	√	√
	IITPKD	---	---	---	---
	IITTP	---	√	---	---
	IITISM	√	√	√	√
	IITGOA	---	√	---	---
		5 (55.56%)	7 (77.78%)	2 (22.23 %)	2 (22.23 %)

(Source: Compile by Researcher)

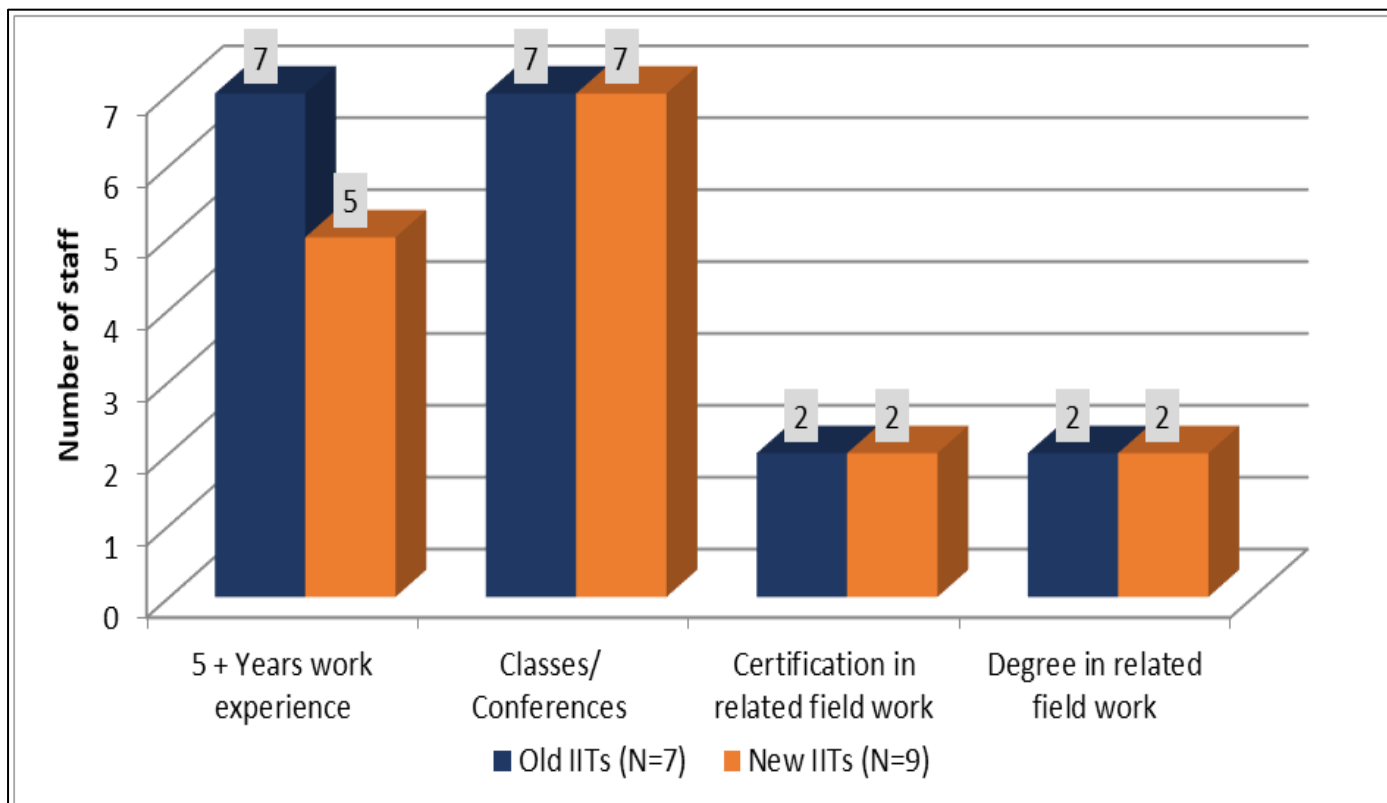


Fig 5: Multiple Bar Diagram Showing Work Experience of Embedded Library and Information Staff

Library of “IIT (BHU) Varanasi”, and IIT (ISM) Dhanbad.

➤ *It is Thus Concluded That:*

- 75% (12) central libraries of IITs out of 16 IITs, all Embedded Library and Information Professional Staff has Work Experience ‘5 + Years work experience’; except, CLIITBBS, CLIITPKD, CLIITTP and CLIITGOA.
- 87.5% (14) central libraries of IITs out of 16 IITs, all Embedded Library and Information Professional Staff has Work Experience ‘Classes/Conferences’; except, CLIITRPR, and CLIITPKD.
- 25% (4) central libraries of IITs out of 16 IITs, all Embedded Library and Information Professional Staff has Work Experience ‘Certification in related field work’ and ‘Degree in related field work’; i.e., CLIITKGP, CLIITD, CLIITBHU and CLIITISM.

VIII. CONCLUSION

The study was conducted to find the Embedded Librarianship in the central libraries of Indian Institutes of Technologies (IITs) in India. This Research explains the findings of the study with reference to objectives of the study with testing of hypothesis, conclusions and suggestions that can be drawn from the analysis and interpretation of data. It also presents a real picture of the central libraries of Indian Institutes of Technology. This Research concludes with suggestions and recommendations on the basis of users’ feedback for further research in the context of central libraries of IITs.

We would turn up the corner of my lips in a strained Smile at the questions or the references to embedded journalists. In essence, we have always believed that the best advertisement for what we do is to do it, and engage in it the best way possible every single day. The years leading up to our role as an embedded librarian and the semesters actually spent doing it did not widely change the perception of librarians, particularly on campus, but it helped.

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