

## A STUDY OF INSTITUTIONAL REPOSITORY OF INDIAN INSTITUTE OF TECHNOLOGY OF ROPAR AND MANDI

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### ABSTRACT

*Institutional repositories aid in the dissemination of research and academic achievement to a wider population and share the knowledge bases of individual institutions. It is the research output of faculty, research scholars, staff members, and students have made digitally available and accessible over LAN and the Web. The institutional repositories support continuing research by supporting the need for knowledge with a wide range of materials, including theses, dissertations, research papers (written by staff and students), publications, and more. Academic and research institutions in India have been putting a lot of efforts into developing IR in their various domains for the last 10 years in order to highlight and disseminate their combined research output and earn greater acceptance and recognition. IITs, IIMs, and a few Special Organizations, as well as Academic Universities, such as IIT Mandi, IIT Ropar have successfully designed and developed IRs (Central Library IR). The paper comprehensively presents the need, characteristics, technological requirements, and resources available with regard to Intellectual Property Rights, as well as other issues and challenges of Institutional Repositories.*

**Keywords:** Institutional Repository, Archive, open access, Institution, Digital, Growth and Development, IIT Mandi, IIT Ropar, IIT India.

### 1. INTRODUCTION

Information plays a vital role in all the fields. In today's information technology era, an environment of academic and research library is drastically changed. On the other hand, information seeking behaviour of the peoples throughout the world changing simultaneously. A repository is a place where things are stored and can be found. Similar way the institutional repositories generally store or preserve theses, research reports and conference papers, full-text contents of journal articles, book chapters, project reports, dissertations, patents, presentations, computer programs, tutorials, convocation addresses, video materials, course materials, audio materials, data books, handbooks, multimedia materials, monographs and technical manuals. It is a responsibility of academic and research institutions to preserve institutional intellectual output and provides open access of such informative database to the information seekers. For this purpose, academic and research institute should need to establish the institutional repository and to contribute world open access movement. The institutional repositories provide access to its own digital documents. Institutional repository stimulates scholarly communication movement, boost visibility across worldwide and knowledge gain. The researcher will get worldwide attention through academic and research institutes institutional repository (Shinde 2018).

A new type of repository called an institutional repository (IR) has the capacity to store any amount of information in a small space and preserve it for the long term. Because of this, many university libraries are required to create Institutional Repositories (IRs). According to Clifford Lynch (2003), a university or institution gives its community members a package of services for the management and distribution of digital resources produced by the institution and its members. It essentially entails an organisational commitment to the management of these digital artefacts, which includes organisation, access, and dissemination as well as suitable long-term preservation. A web-based database (repository) of scholarly content that is institutionally defined (as opposed to a subject-based repository), cumulative and perpetual (a collection of record), open and interoperable (e.g., using OAI-compliant software), and thus gathers, stores, and disseminates information is described as an institutional repository (IR) by Mark Ware (is part of the process of scholarly communication). Most people would also agree that one of IRs' primary functions is the long-term preservation of digital materials.

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Institutional repositories are, in the words of Barton and Walker of the MIT Libraries, "intended to manage, host preserve and facilitate diffusion of the scholarly output of an institution." An online location known as an institutional repository allows for the collection, preservation, and digital sharing of a certain institution's intellectual output—typically a research institution. This might also contain other digital assets produced by typical academic life, such as administrative records, course notes, or learning objects. For a university, this would include items like research journal articles, peer reviews, and digital versions of theses and dissertations.

## 2. OBJECTIVES OF THE STUDY

- i) To find out the resources and services provided by IR of the select IIT Libraries;
- ii) To study about researcher's self-archive their research output and how can improve the visibility, usage and impact of research conducted at an institution.
- iii) To identify and compare the subject coverage and content of Institutional repositories of select IIT's.
- iv) To study the problems in addition and management of resources along with copyright issues

## 3. SCOPE OF THE STUDY

The study will confine to Indian Institute of Technology libraries that are:

- i. IIT Ropar Library
- ii. IIT Mandi Library

## 4. REVIEW OF LITERATURE

Institutional repository (IR): A library of digital objects and associated metadata from a single institution. The phrase 'institutional repository' is often used informally to differentiate between systems and services to collect and disseminate scholarly content (peer-reviewed articles written by faculty, electronic theses, and dissertations) versus those systems and services supporting other types of digital objects (i.e., digital images of artwork). We can distinguish IR in two contexts, first one is Commercial, it means institution pay for IR and provider take care of it, and second one is open access, it means anyone can use it freely and create his/her own repository. Here some researcher doing research in this area:

According to Abhilasha Priyadarshani (2019) the purpose of her study is to review the institutional repository literature. The study primarily focuses on the expansion and development of IR globally. This essay will explain how institutional repositories (IR) came to be in various nations, as well as their current state. Philip Hunter and Michael Day (2005) talked about in their paper "Institutional repositories, aggregator services and collection development" focuses on University and other research-based institutions manage collections of their intellectual output called institutional repositories. In this study, collection development concerns are introduced from two different angles. First, it draws attention to potential problems that institutional repositories as OAI data providers may need to resolve. For instance, repositories may need to decide on submission workflows, rights management, access, sustainability, and evaluation as well as the type, quality, and format of content. The report will also take into account related challenges from the viewpoint of independent service providers, such as e-Prints UK, who extract specific metadata from institutional repositories. The final section will offer some advice on the best ways for repositories to facilitate this kind of harvesting. According to Sofi Gh Mohiuddin Jeelani, Haamid Amin Mir, Basharat Ahmad Wani and Shabir Ahmad Ganaie (2016) focused on their paper that the current society is an information society where information is valuable in all spheres of life and where information production, archiving, maintenance, and transmission never cease. The transmission of knowledge to the appropriate person at the appropriate time is a major goal that can be attained in part through institutional repositories. An institutional repository is a collection of formally organised and managed digital contents produced by faculty, staff, and students at an institution. These repositories are concerned with gathering, managing, preserving, and disseminating the digital intellectual output of a specific

institution both inside and outside the institution. The study provides a comprehensive list of institutional repositories in India, together with information on the qualities and features that make them valuable to their user community. While conducting their research, Indian academics face a number of obstacles, including the deterioration of primary sources, the distance issue, and the lack of necessary sources. The involved Institutional repositories are the sole place to find this lost research. Although numerous studies on the founding, expansion, and development of Indian Institutional Repositories have been conducted, no attempt has been made to examine the various types of documents housed in these repositories. An effort in this regard is the current study.

Soohyung Joo, Darra Hofman and Youngseek Kim's (2019) paper based on a survey of academic librarians, the goal of this research is to examine the range of concerns and challenges facing institutional repositories in academic libraries. This study focuses on the obstacles and problems with data management that institutional repositories must deal with. The study employs a survey methodology to rank the importance of the main issues confronting institutional repositories across six dimensions, including data, metadata, technology requirements, user needs, ethical considerations, and administrative difficulties. The survey's findings show that academic librarians consider a lack of funding and staff to be the main obstacle to the creation and/or implementation of services in institutional repositories. The report also identifies significant obstacles in various aspects of institutional repositories, such as the sheer volume of data, institutional support for the development of metadata, and the sensitive nature of data. With an emphasis on data management in institutional repositories, this study is one of a select handful that thoroughly outlined the range of difficulties that institutional repositories encounter in running academic libraries. In this study, six aspects of institutional repositories were broken down into 37 different difficulty kinds. More significantly, the importance of those difficulties was evaluated from the viewpoint of academic librarians involved in providing services for institutional repositories

Bhuva Narayan and Edward Luca's (2017) article "Issues and challenges in researchers' adoption of open access and institutional repositories: a contextual study of a university repository" try to find out the difficulties a university library has in persuading academics and researchers to use open access, particularly with regard to storing articles in institutional repositories, are discussed in this study. Academics and researchers were questioned about their understanding of open access and use of the university repository. The repository was designed using an action research methodology to resolve concerns on an ongoing basis. Heuristic evaluation Results was used to analyse the repository data and thematic content analysis was used to analyse the interview data. According to the findings, researchers are unaware of open access and its benefits, and they are also uncertain about the copyright policies of publishers and the reputation of individual researchers. The difficulties a university library has in persuading academics and researchers to use open access, particularly with regard to storing articles in institutional repositories, are discussed in this study. Academics and researchers were questioned about their understanding of open access and use of the university repository. The repository was designed using an action research methodology to resolve concerns on an ongoing basis.

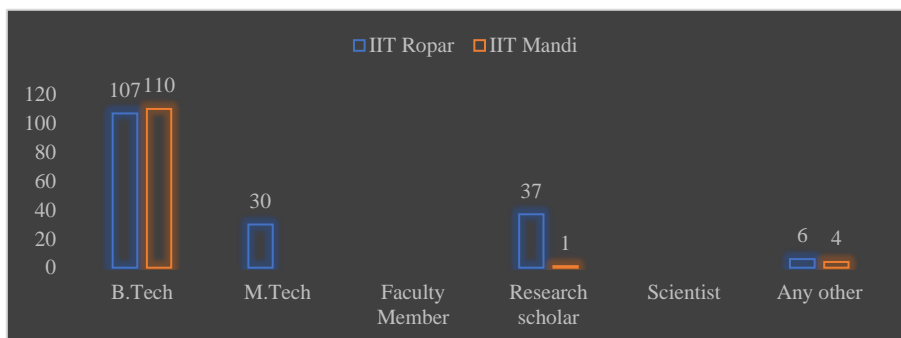
The paper "*Usage Pattern of Institutional Repositories for Scholarly Communication by Academician in Maharashtra*" written by Rashmi Rekha Gohain and Mallikarjun Angadi (2019) focuses on the study intends to investigate how academics in Maharashtra are aware of and use institutional repositories. Professors, Associate Professors, Assistant Professors, Senior Scientists, Research Scholars, and Post-Doctorate Fellows from the chosen universities are some of the various user categories that make up the academics. A total of 1021 questionnaires were given out, and 584 of those responses were chosen for analysis. This is a response rate of 12.67% of the 4611 total population. According to the study's findings, the majority of users in the arts, humanities, social sciences, and pure sciences prefer to publish their research in open access journals and self-archive in institutional repositories. The study suggests encouraging self-archiving among academics by holding seminars, workshops, and tutorials.

## 5. DATA ANALYSIS AND INTERPRETATION

**Table No. 1: User Population**

User category	IIT Ropar	IIT Mandi	Total
B.Tech	107	110	217(73.56%)
M.Tech	30	0	30 (10.17%)
Faculty Member	0	0	0
Research scholar	37	1	38 (12.88%)
Scientist	0	0	0
Any other	6	4	10 (3.38%)
<b>Total</b>	<b>180 (61.02%)</b>	<b>115 (38.98%)</b>	<b>295 (100%)</b>

It is evident from the table no. 1 data that maximum users responded to the questionnaires administered to them were from IIT Ropar i.e., 180 (61.02%) and then IIT Mandi i.e., 115 (38.98%). Further it is clearly visible that B.Tech. category users 217(73.56%) were maximum respondents in all categories seconded by M. Tech 30 (10.17%) users, 38 (12.88%) Research scholars and 10 (3.38%) users from any other category.



**Graph No. 1: User Population**

**Table No. 2: Library Visit**

Library visit	IIT Ropar						IIT Mandi						Total
	B.Tech	M.Tech	RS	FM	AO	Total	B.Tech	M.Tech	RS	FM	AO	Total	
<b>Daily</b>	51	18	20	0	6	95	50	0	1	0	4	55	<b>150 (49.18%)</b>
<b>Twice a week</b>	25	6	5	0	0	36	20	0	0	0	0	20	<b>56 (18.36)</b>
<b>Once a week</b>	5	2	3	0	0	10	2	0	0	0	0	2	<b>12 (3.93%)</b>
<b>Fortnightly</b>	3	1	0	0	0	4	2	0	0	0	0	2	<b>6 (1.94%)</b>
<b>Once in Month</b>	3	1	2	0	0	6	1	0	0	0	0	1	<b>7 (2.29%)</b>
<b>Occasionally</b>	30	2	7	0	0	39	35	0	0	0	0	35	<b>74 (24.26%)</b>
<b>Total</b>	<b>117</b>	<b>30</b>	<b>37</b>	<b>0</b>	<b>6</b>	<b>190</b>	<b>110</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>115</b>	<b>305</b>

It is evident from data of table no. 2 with regard to library visit that maximum user of libraries i.e., 150 (49.18%) users daily visit their respective libraries; 74 (24.26%) visits occasionally; 56 (18.36%) users visit twice a week; 12 (3.93%) users once a week; 7 (2.29%) users visit library once a month and only 6 (1.94%) users visit on fortnightly basis.

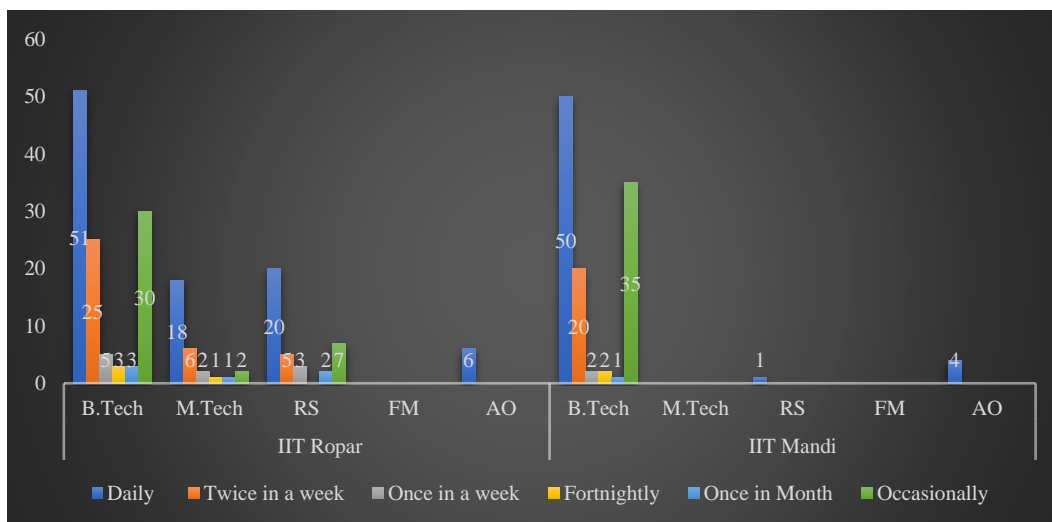


Figure No. 2: Library Visit

Table No. 3: Awareness about an Institutional Repository (IR)

Awareness about IR	IIT Ropar					IIT Mandi					Total
	B.Tech.	M.Tech.	RS	FM	AO	B.Tech.	M.Tech.	RS	FM	AO	
Yes	37	13	28	0	6	30	0	1	0	4	119 (40.33%)
No	70	17	9	0	0	80	0	0	0	0	176 (59.66%)
<b>Total</b>	<b>107</b>	<b>30</b>	<b>37</b>	<b>0</b>	<b>6</b>	<b>110</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>295</b>

The data of table no. 3 shows that maximum users i.e. 176 (59.66%) of both libraries didn't aware about facility IR whereas only 119 (40.33%) users knew about it.

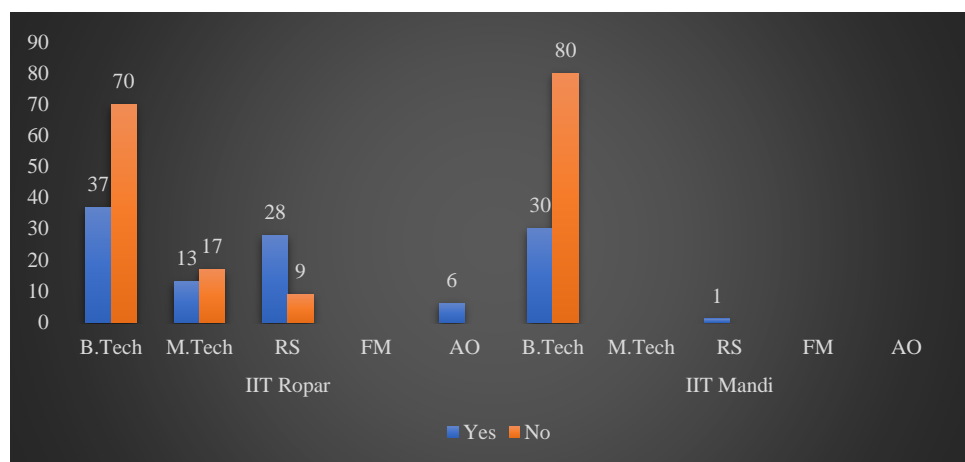


Figure No. 3: Awareness About an Institutional Repository (IR)

Table No. 4: Source of IR Information

Source of IR Information	IIT Ropar					IIT Mandi					Total
	B.Tech	M.Tech	RS	FM	AO	B.Tech	M.Tech	RS	FM	AO	
Through Classmates	20	8	9	0	3	21	0	0	0	2	63 (16.89%)
Through Teacher's	7	4	4	0	1	5	0	0	0	2	23 (6.16%)
Through library staff	6	4	5	0	2	6	0	1		4	28 (7.50%)
Through library orientation/Information literacy programme	11	10	0	0	4	10	0	0	0	0	35 (9.38%)

Through Internet	10	6	8	0	2	15	0	0	0	3	<b>44</b> <b>(11.79%)</b>
Library Website/Blog	7	2	5	0	1	6	0	1	0	3	<b>25</b> <b>(6.70%)</b>
Brochure/leaflets on IR	2	0	2	0	0	1	0	0	0	0	<b>5</b> <b>(1.34%)</b>
Via e-mails/ e-forum of your institution	15	5	8	0	1	12	0	0	0	0	<b>41</b> <b>(10.99%)</b>
Through Seminars/ Workshops	5	1	6	0	1	4	0	0	0	1	<b>18</b> <b>(4.82%)</b>
Through friends	16	4	8	0	4	18	0	0	0	0	<b>50</b> <b>(13.40%)</b>
Social media	0	0	0	0	2	0	0	0	0	1	<b>3</b> <b>(0.80%)</b>
Any other (please mention)	17	3	2	0	4	12	0	0	0	0	<b>38</b> <b>(10.18%)</b>
<b>Total</b>	<b>116</b>	<b>47</b>	<b>57</b>	<b>0</b>	<b>25</b>	<b>110</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>16</b>	<b>373</b> <b>(100%)</b>

It is evident from the data of table no. 4 with regard to source of IR that maximum users of both libraries i.e. 63(16.89%) responded through classmates; seconded by 50(13.40%) through friends; 44(11.79%) users responded through Internet; 41(10.99%) users responded via e-mails/ e-forum of their institution; 38(10.18%) users responded any other source; 35(9.38%) respondents responded through library orientation/Information literacy programme; 28(7.50%) through library staff; 25(6.70%) through library website/ blog; 23(6.16%) respondents responded through teacher's; 18(4.82%) respondents responded through seminars/ workshops; 5(1.34%) users responded brochure/ leaflets on IR and least 3(0.80%) users responded through social media.

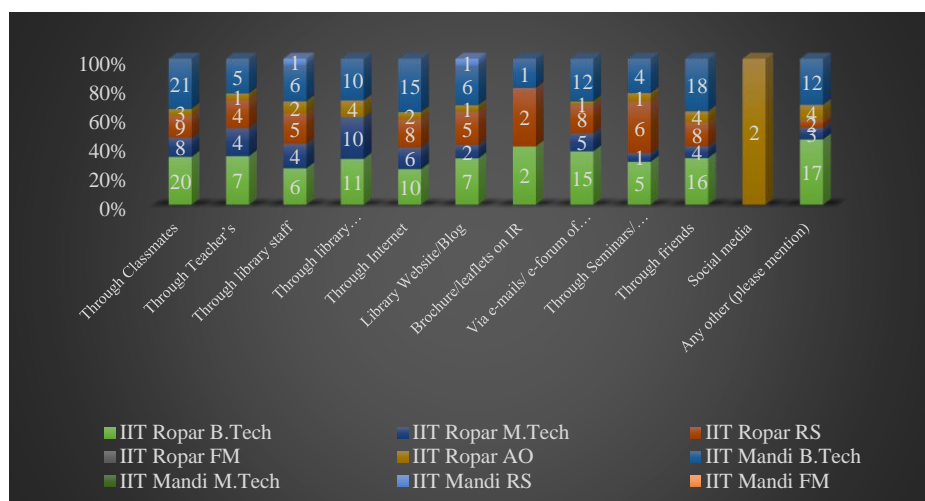


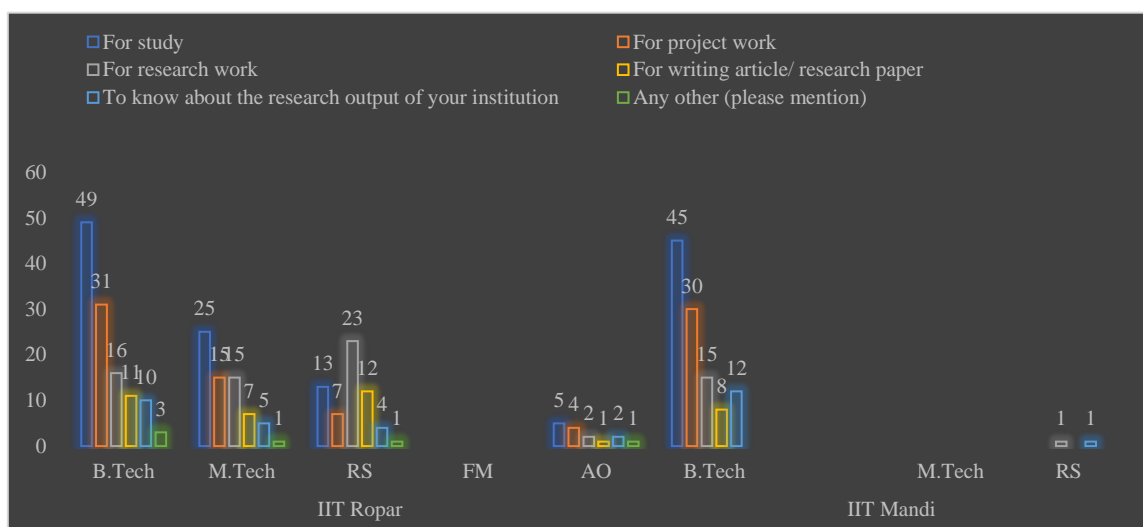
Figure No. 4: Sources of IR Information

Table No. 5: Purpose of Accessing IR Resources

Please mention the purpose of accessing IR resources (choose all that apply)	IIT Ropar					IIT Mandi					Total
	B.Tech	M.Tech	RS	FM	AO	B.Tech	M.Tech	RS	FM	AO	
For study	49	25	13	0	5	45	0	0	0	1	<b>138</b> <b>(36.03%)</b>
For project work	31	15	7	0	4	30	0	0	0	1	<b>88</b> <b>(22.97%)</b>

<b>For research work</b>	16	15	23	0	2	15	0	1	0	2	<b>74 (19.32%)</b>
<b>For writing article/ research paper</b>	11	7	12	0	1	8	0	0	0	1	<b>40 (10.44%)</b>
<b>To know about the research output of your institution</b>	10	5	4	0	2	12	0	1	0	3	<b>37 (9.66%)</b>
<b>Any other (please mention)</b>	3	1	1	0	1	0	0	0	0	0	<b>6 (1.56%)</b>
<b>Total</b>	<b>120</b>	<b>68</b>	<b>60</b>	<b>0</b>	<b>15</b>	<b>110</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>8</b>	<b>383 (100%)</b>

It is clear from the data of table no. 5 that maximum number of respondents i.e., 138(36.03%) of both IITs opined study purpose; seconded by 138(22.08%) respondents for project work; 125(20%) respondents for research work; 69(11.04%) for writing articles/ research paper; 57(9.12%) for research output of their respective institution and least i.e., 10(1.60%) responded for any other purpose.



**Figure No.5: Purpose of Accessing IR Resources**

**Table No. 6: Documents/ Resources Searched and Used from IR**

What kind of documents/ resources searched & used from IR (multiple answer permitted)	IIT Ropar					IIT Mandi					Total
	B.Tech	M.Tech	RS	FM	AO	B.Tech	M.Tech	RS	FM	AO	
<b>Theses</b>	21	20	27	0	4	17	0	1	0	3	<b>93(14.97%)</b>
<b>Dissertation</b>	8	16	19	0	3	8	0	1	0	2	<b>57(9.18%)</b>
<b>Bibliography</b>	5	5	7	0	1	7	0	0	0	1	<b>26(4.18%)</b>
<b>Journal Articles</b>	20	17	29	0	4	17	0	1	0	3	<b>91(14.65%)</b>
<b>Conference Proceedings</b>	3	5	8	0	0	2	0	0	0	0	<b>18(2.90%)</b>
<b>Manuscripts</b>	3	2	9	0	1	3	0	0	0	0	<b>18(2.90%)</b>

Periodicals	2	2	6	0	1	10	0	0	0	1	22(3.54%)
Newspaper	17	8	7	0	4	20	0	0	0	0	56(9.01%)
Patents	15	4	5	0	1	12	0	0	0	0	37(5.96%)
Microfilm	0	0	0	0	0	0	0	0	0	0	0
Microfiche	1	2	2	0	0	0	0	0	0	0	5(0.80%)
Lecture PPT	18	7	5	0	1	12	0	0	0	0	43(6.92%)
Annual Reports	4	6	2	0	4	5	0	0	0	0	21(3.38%)
Technical Reports	15	7	2	0	1	9	0	0	0	0	34(5.47%)
Books/Book Chapter	25	10	18	0	4	20	0	1	0	2	80(12.88%)
Post print article	0	0	5	0	0	0	0	0	0	0	5(0.80%)
Preprint articles	2	0	2	0	1	2	0	0	0	0	7(1.12%)
Media conference proceedings	0	0	0	0	0	2	0	0	0	0	2(0.32%)
Others	4	0	0	0	0	2	0	0	0	0	6(0.96%)
<b>Total</b>	<b>163</b>	<b>111</b>	<b>153</b>	<b>0</b>	<b>30</b>	<b>148</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>12</b>	<b>621</b>

It is clear from the data of table no. 6 that maximum respondents i.e., 158(15.23%) of both IITs responded for Theses; seconded by 149(14.36%) responded for Journal Articles; 129(12.43%) to search book/ book chapter; 97(9.35%) for Dissertation; 90(8.67%) for newspaper; 77(7.42%) respondents responded for lectures ppt; 59(5.68%) respondents for technical reports; 57(5.49%) for patents; 42(4.05%) responded for Bibliography; 38(3.66%) for Periodicals; 33(3.18%) for Annual Reports; 32(3.08%) responded for Manuscript; 29(2.79%) for Conference Proceedings; 12(1.15%) for Preprint articles; 10(0.96%) responded for Microfiche; 9(0.86%) responded for post print articles; 8(0.77%) responded for others; 7(0.67%) responded for Media Conference Proceedings and least i.e., 1(0.09%) responded for microfilm.

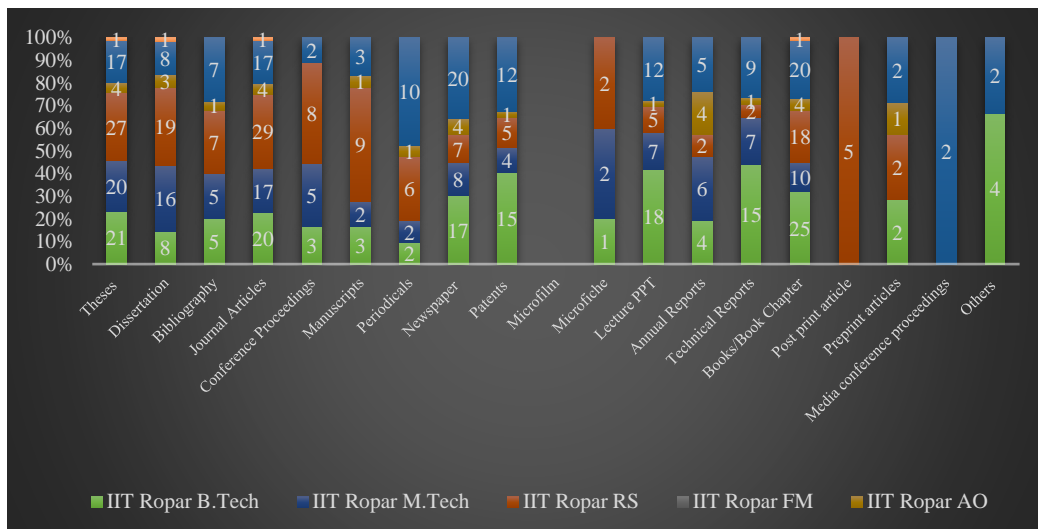


Figure No. 6: Documents/ Resources Searched and Used from IR

Table No. 7: IR Resources

Are the IR resources?	IIT Ropar					IIT Mandi					Total
	B.Tech	M.Tech	RS	FM	AO	B.Tech	M.Tech	RS	FM	AO	
Free	57	28	31	--	4	60	--	1	--	4	185 (100%)
Paid	--	--	--	--	--	--	--	--	--	--	--

It is evident from the data of table no. 7 that 185 (100%) respondents of both IITs in one voice confirmed that IR resources are freely accessible through their respective IRs.



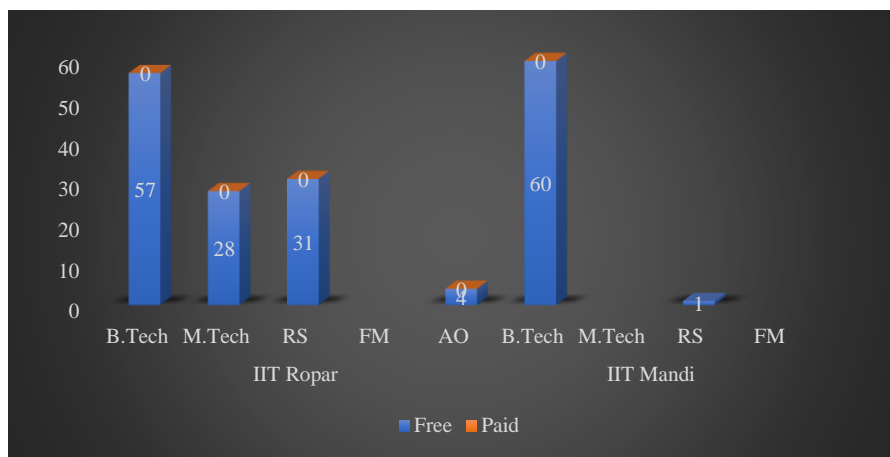


Figure No. 7: IR Resources

Table No. 8: Contribution to the IR Collection

Have you ever contributed to IR resources?	IIT Ropar					IIT Mandi					Total
	B.Tech	M.Tech	RS	FM	AO	B.Tech	M.Tech	RS	FM	AO	
Yes	--	--	5	--	1	--	--	--	--	--	6(2.32%)
No	90	24	30	--	3	100	--	1	--	4	252(97.67%)
<b>Total</b>	<b>90</b>	<b>24</b>	<b>35</b>	<b>--</b>	<b>4</b>	<b>100</b>	<b>--</b>	<b>1</b>	<b>--</b>	<b>4</b>	<b>258(100%)</b>

It is clear from the data of table no. 8 that maximum user i.e., 394 (96.57%) did not contribute to IR resources whereas 14 (3.43%) users contributed to the IR resources of their respective library IRs collection only.

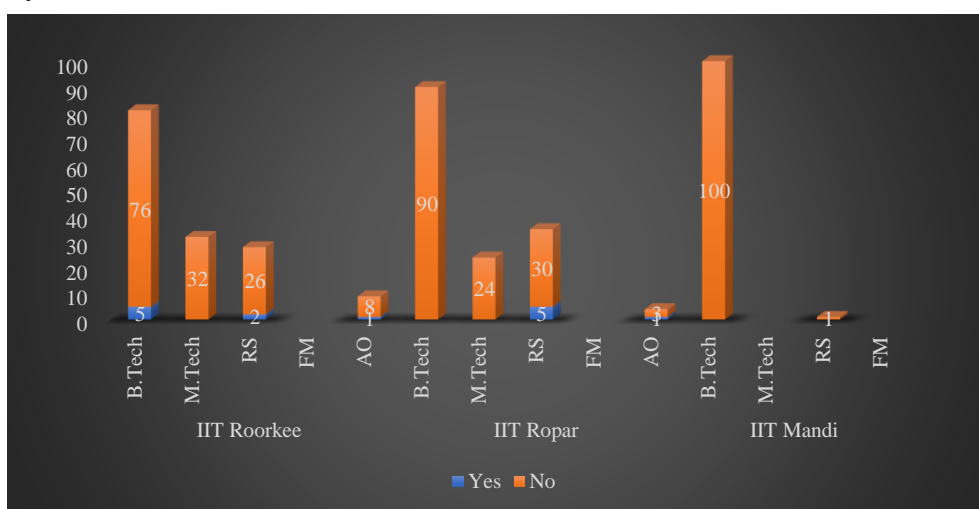


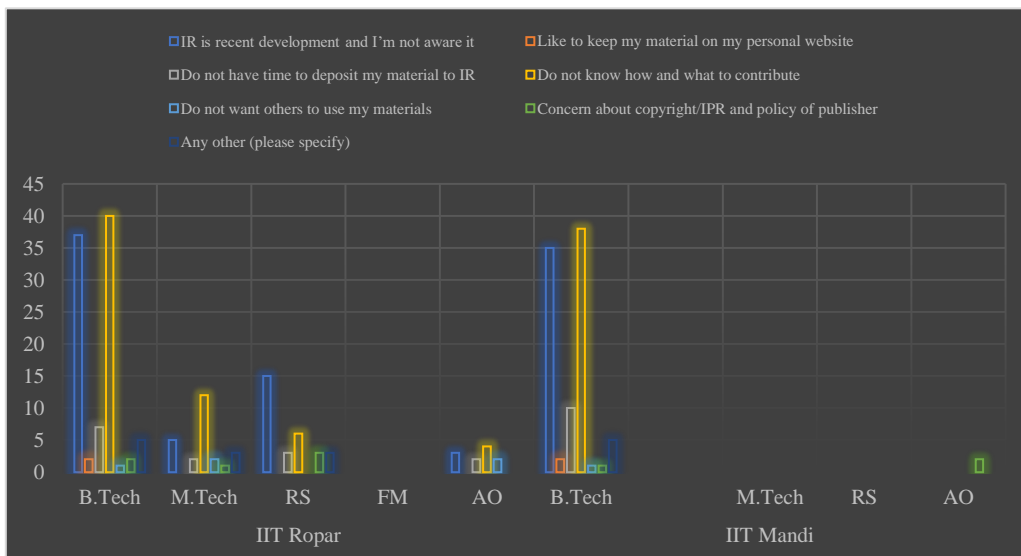
Figure No. 8: Contribution to the IR Collection

Table No. 9: Reasons for Not Contribution to the IR

Reason(s) for not contributing to IR?	IIT Ropar					IIT Mandi					Total
	B.Tech	M.Tech	RS	FM	AO	B.Tech	M.Tech	RS	FM	AO	
IR is recent development and I'm not aware it	37	5	15	0	3	35	0	0	0	0	95(37.40%)
Like to keep my material on my personal website	2	0	0	0	0	2	0	0	0	0	4(1.57%)

<b>Do not have time to deposit my material to IR</b>	7	2	3	0	2	10	0	0	0	0	<b>24(9.44%)</b>
<b>Do not know how and what to contribute</b>	40	12	6	0	4	38	0	0	0	0	<b>100 (39.37%)</b>
<b>Do not want others to use my materials</b>	1	2	0	0	2	1	0	0	0	0	<b>6(2.36%)</b>
<b>Concern about copyright/IPR and policy of publisher</b>	2	1	3	0	0	1	0	0	0	2	<b>9(3.54%)</b>
<b>Any other (please specify)</b>	5	3	3	0	0	5	0	0	0	0	<b>16(6.30%)</b>
<b>Total</b>	<b>94</b>	<b>25</b>	<b>30</b>	<b>0</b>	<b>11</b>	<b>92</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>254(100%)</b>

The data of table no. 9 shows that with regard to reasons for not contribution to the IR, maximum respondents 160 (39.50%) responded don't know how and what to contribute; seconded by 149(36.79%) responded IR is recent development and they are unaware of it; 38(9.38%) responded don't have time to submit my material to IR; 25(6.17%) respondents responded any other reason; 15(3.70%) respondents responded concern about copyright/ IPR and policy of publishing, 10(2.46%) respondents responded don't want others to use their materials; and least respondent i.e., 8(1.97%) responded likes to keep their material on personal website.



**Figure No. 9: Reasons for Not Contribution to the IR**

**Table No. 10: Benefits of IR**

Do you think that the IR has following benefits?	IIT Ropar					IIT Mandi					Total
	B.Tech	M.Tech	RS	FM	AO	B.Tech	M.Tech	RS	FM	AO	
<b>Preserves the research output/heritage of your institute</b>	42	20	22	0	4	40	0	1	0	4	<b>133(18.57%)</b>
<b>Facilitates communications among researchers</b>	26	12	15	0	3	25	0	0	0	2	<b>83(11.59%)</b>

<b>Enhance the prestige of the Institution</b>	21	8	11	0	2	72	0	1	0	2	<b>117(16.34%)</b>
<b>Easy availability of research material</b>	41	12	18	0	3	36	0	1	0	3	<b>114(15.92%)</b>
<b>Wider access and visibility</b>	35	17	15	0	1	30	0	1	0	0	<b>99(13.82%)</b>
<b>Eases the job of others to search my research publication</b>	8	9	7	0	0	10	0	1	0	1	<b>36(5.02%)</b>
<b>Facilities me to search current research</b>	11	13	15	0	2	12	0	1	0	2	<b>56(7.82%)</b>
<b>Increase citation count</b>	7	6	4	0	1	10	0		0	1	<b>29(4.05%)</b>
<b>Innovative channel of research communication</b>	16	7	7	0	0	15	0	1	0	3	<b>49(6.84%)</b>
<b>Total</b>	<b>207</b>	<b>104</b>	<b>114</b>	<b>0</b>	<b>16</b>	<b>250</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>18</b>	<b>716(100%)</b>

It is evident from the data of table no. 10 regarding IRs benefits, maximum respondents i.e. 210 (18.45%) responded to preserve the research output/heritage of respective institute; 188 (16.52%) responded easy availability of research material; 159 (13.97%) responded each to enhance the prestige of respective Institution and wider access and visibility; 135 (11.86%) responded to facilitates communications among researchers; 92(8.08%) responded facilitates us to search current research; 73(6.41%) responded to innovative channel of research communication; 70(6.15%) responded to eases the job of other to search my research publication; and least 52(4.56%) responded to increase their citation count.

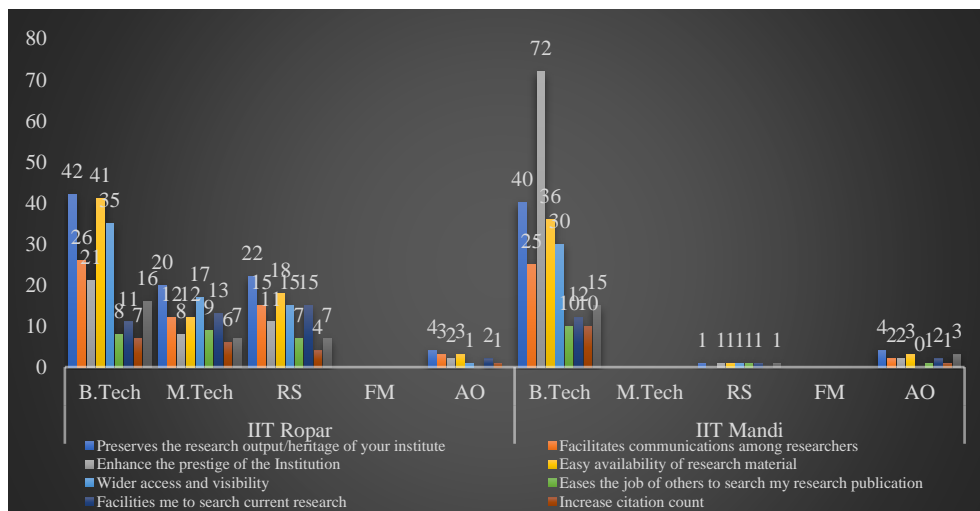


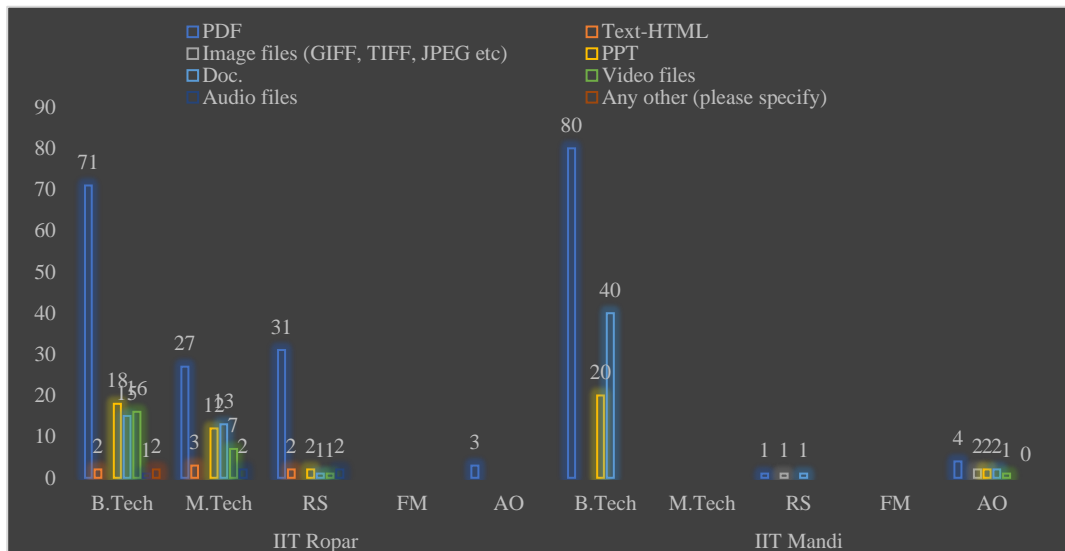
Figure No. 10: Benefits of IR

Table No. 11: Preferred Format for Downloading Content from IR

Which is your preferred format for downloading content from IR?	IIT Ropar					IIT Mandi					Total
	B.Tech	M.Tech	RS	FM	AO	B.Tech	M.Tech	RS	FM	AO	
<b>PDF</b>	71	27	31	0	3	80	0	1	0	4	<b>217(56.36%)</b>
<b>Text-HTML</b>	2	3	2	0	0	0	0	0	0	0	<b>7(1.81%)</b>

<b>Image files (GIF, TIFF, JPEG etc)</b>	0	0	0	0	0	0	0	1	0	2	<b>3(0.78%)</b>
<b>PPT</b>	18	12	2	0	0	20	0	0	0	2	<b>54(14.02%)</b>
<b>Doc.</b>	15	13	1	0	0	40	0	1	0	2	<b>72(18.70%)</b>
<b>Video files</b>	16	7	1	0	0	0	0	0	0	1	<b>25(6.49%)</b>
<b>Audio files</b>	1	2	2	0	0	0	0	0	0	0	<b>5(1.29%)</b>
<b>Any other (please specify)</b>	2	0	0	0	0	0	0	0	0	0	<b>2(0.52%)</b>
<b>Total</b>	<b>125</b>	<b>64</b>	<b>39</b>	<b>0</b>	<b>3</b>	<b>140</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>11</b>	<b>385(100%)</b>

The data of table no. 11 shows preferred format for downloading content from IR in both IITs that maximum respondents i.e. 349(56.01%) responded pdf format; seconded by 100(16.05%) respondents responded doc file format; 84(13.84%) respondents responded ppt format; 49(7.86%) respondents responded video files format; 14(2.24%) respondents responded image files; 12(1.92%) respondents responded Text-HTML format; 10(1.60%) respondents responded Audio files format; and least i.e., 5(0.80%) responded any other format.



**Figure No. 11: Preferred Format for Downloading Content from IR**

**12: Problems/ Constraints with Regard to Access and Usage of IR Resources**

Problems/ Constraints with regard to access and usage of IR resources	IIT Ropar					IIT Mandi					Total
	B.Tech	M.Tech	RS	FM	AO	B.Tech	M.Tech	RS	FM	AO	
<b>Lack of awareness</b>	71	26	21	0	4	60	0	0	0	1	<b>183(60.20%)</b>
<b>No help from library staff</b>	6	0	0	0	0	4	0	0	0	0	<b>10(3.29%)</b>
<b>No library Orientation about IR</b>	25	7	6	0	1	20	0	0	0	0	<b>59(19.41%)</b>
<b>Not well adapt with the technology documents are only</b>	9	4	2	0	2	5	0	0	0	0	<b>22(7.24%)</b>

available in readable format/ can't download											
Limited time to access IR	2	2	0	0	0	2	0	0	0	0	6(1.97%)
Not updated	4	3	0	0	2	3	0	0	0	0	12(3.94%)
Poor browsability and search options	5	1	0	0	1	5	0	0	0	0	12(3.94%)
Any other (please specify)	0	0	0	0	0	0	0	0	0	0	0
Total	122	43	29	0	10	99	0	0	0	1	304(100%)

It is clear from the data of table no. 12 data regarding problems/ constraints faced by users in access and usage of IR resources that maximum respondents 306(59.88%) responded lack of awareness; seconded by i.e., 95(18.59%) respondents responded no library orientation about IR; 34(6.65%) respondents responded search options and not well adapt with the technology documents are only available in readable format/can't download, 22(4.30%) respondents responded no help from library staff, 21(4.10%) respondents responded poor browsability; 19(3.71%) respondents responded not updated; 12(2.34%) respondents responded limited time to access IR; and least 2(0.39%) respondents responded any other problems/ constraints to access and usage of IR resources.

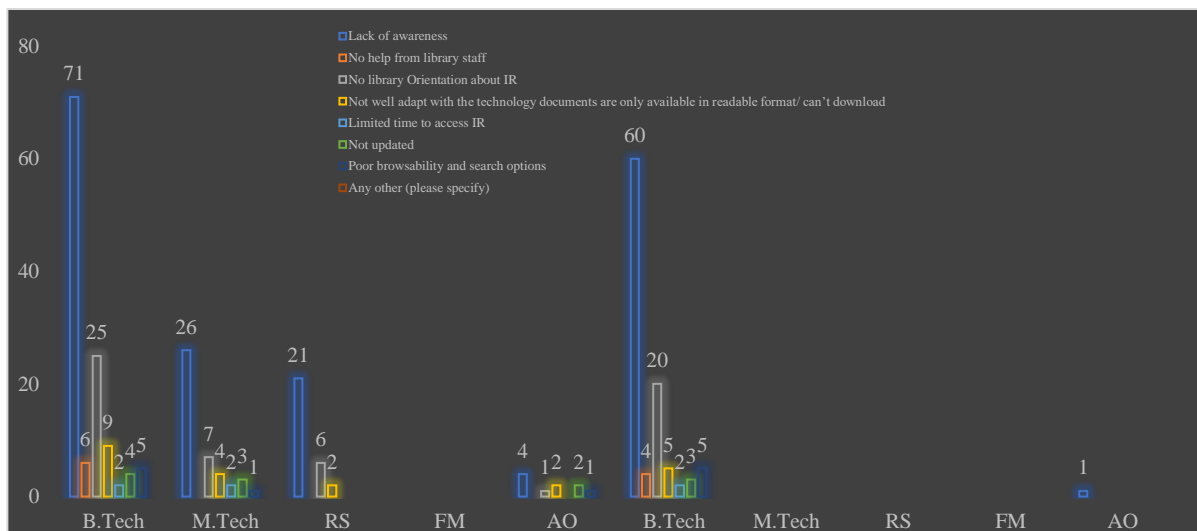


Figure No.12: Problems/ Constraints with Regard to Access and Usage of IR Resources

Table No. 13: IR Resources which is Not Available in IR But Available in Another Institute's IR

If any category of sources not available in your IR but in other Institutional IR, that you have tried to discuss with the IR department of the library?	IIT Ropar					IIT Mandi					Total
	B.Tech	M.Tech	RS	FM	AO	B.Tech	M.Tech	RS	FM	AO	
Yes	6	1	5	0	0	10	0	0	0	0	22 (16.79%)
No	56	29	24	0	0	0	0	0	0	0	109 (83.21%)
Total	62	30	29	0	0	10	0	0	0	0	131 (100%)

With regard to data of table no. 13 that 38(15.02%) respondents tried to discuss with the IR department of the library if any particular category of sources not available in IR but in other Institutional IR whereas 215(84.98%) didn't do it.

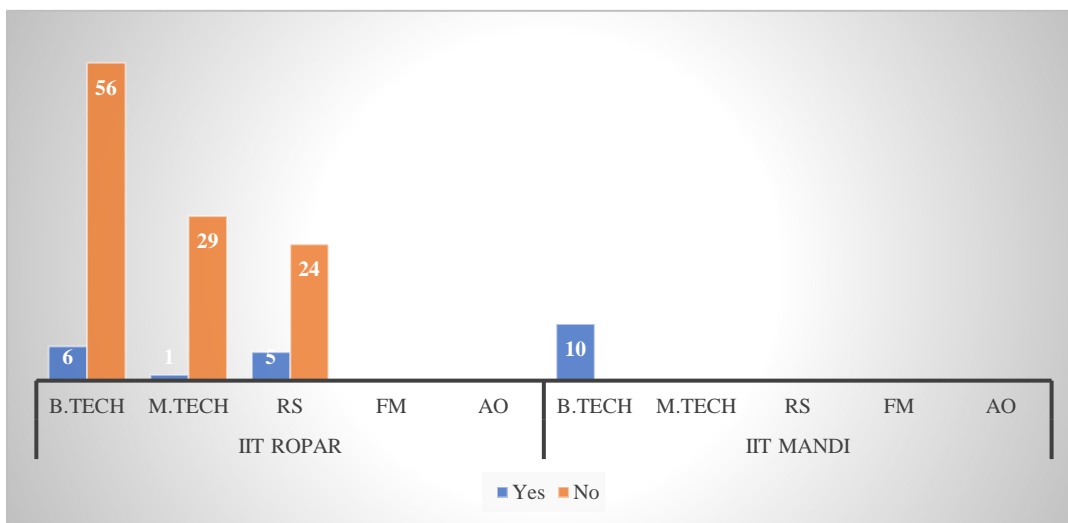


Figure No. 13: IR Resources which is Not Available in IR but Available in Another Institute's IR

Table No. 14: Work as Per Your Request

If yes, did they accepted and worked accordingly as per request	IIT Ropar					IIT Mandi					Total
	B.Tech	M.Tech	RS	FM	AO	B.Tech	M.Tech	RS	FM	AO	
Yes	5	0	0	0	0	5	0	0	0	0	10 (76.92%)
No	3	0	0	0	0	0	0	0	0	0	3 (23.08%)
<b>Total</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13 (100%)</b>

It is evident from the data of table no. 14 work as per your request that 24(57.14%) respondents agreed that IR department accepted and worked accordingly as per your request whereas 18(42.86%) respondents disagreed from that.

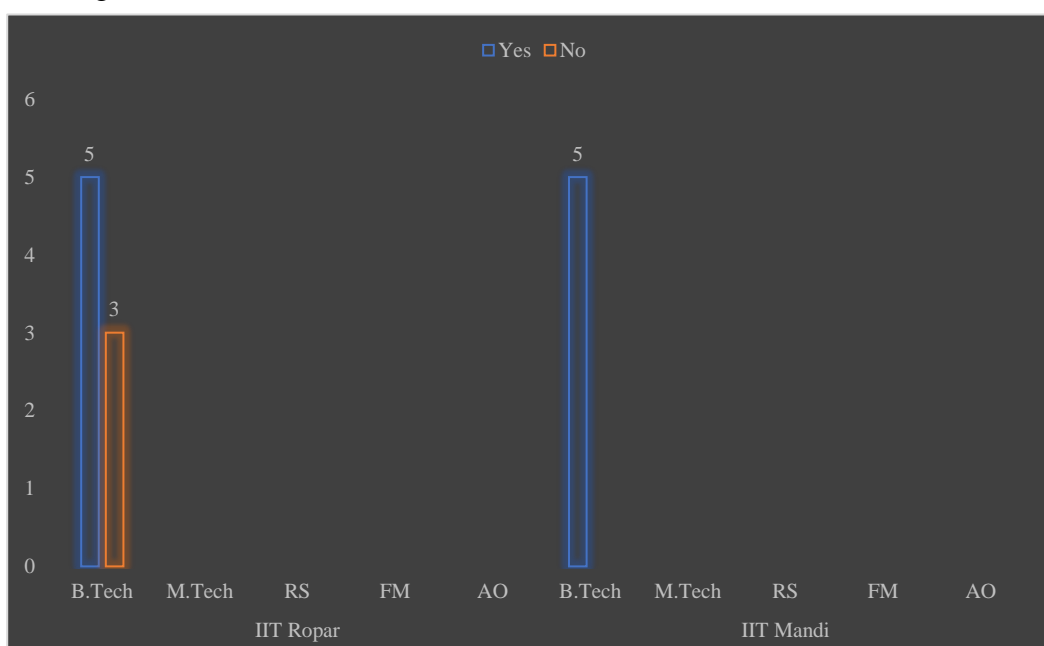
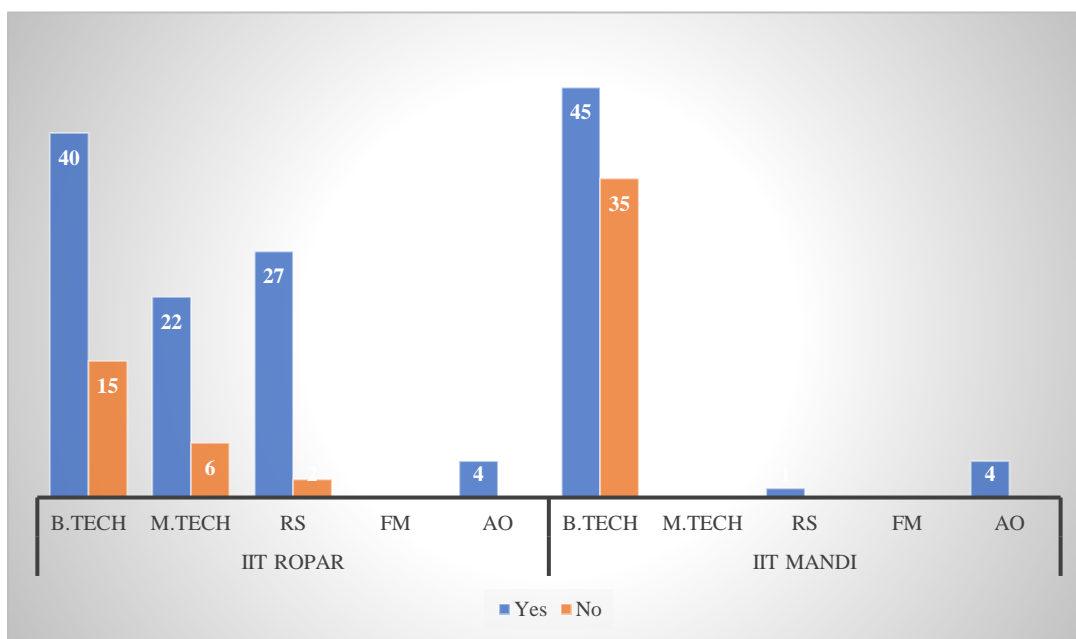


Figure No. 14: Work as Per Your Request

**Table No. 15: Satisfaction Regarding IR Collection**

Are you satisfying with your IR?	IIT Ropar					IIT Mandi					Total
	B.Tech	M.Tech	RS	FM	AO	B.Tech	M.Tech	RS	FM	AO	
Yes	40	22	27	0	4	45	0	1	0	4	143 (71.14%)
No	15	6	2	0	0	35	0	0	0	0	58 (28.85%)
<b>Total</b>	<b>55</b>	<b>28</b>	<b>29</b>	<b>0</b>	<b>4</b>	<b>80</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>201 (100%)</b>

It is evident from the data of table no. 15 that in both IITs 229(73.63%) respondents satisfied with their IR in comparison to the 82(26.37%) respondents unsatisfied.

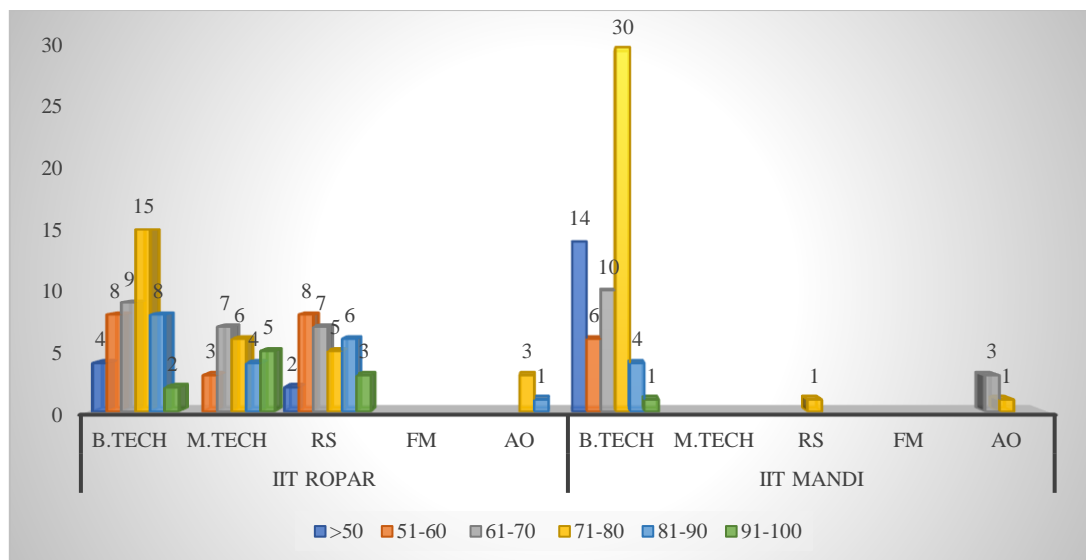


**Figure No. 15: Satisfaction Regarding IR Collection**

**Table No. 16: Overall Satisfaction with IR**

If yes, then mark anyone of the below	IIT Ropar					IIT Mandi					Total
	B.Tech	M.Tech	RS	FM	AO	B.Tech	M.Tech	RS	FM	AO	
>50	4	0	2	0	0	14	0	0	0	0	20 (11.36%)
51-60	8	3	8	0	0	6	0	0	0	0	25 (14.20%)
61-70	9	7	7	0	0	10	0	0	0	3	36 (20.45%)
71-80	15	6	5	0	3	30	0	1	0	1	61 (34.66%)
81-90	8	4	6	0	1	4	0	0	0	0	23 (13.06%)
91-100	2	5	3	0	0	1	0	0	0	0	11 (6.25%)
<b>Total</b>	<b>46</b>	<b>25</b>	<b>31</b>	<b>0</b>	<b>4</b>	<b>65</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>176 (100%)</b>

The data of table no. 16 shows that with regard to overall satisfy with their respective IR in both IITs, maximum respondents i.e., 87(32.70%) responded to 71-80%; seconded by 52(19.54%) responded to 61-70%; further at the third position 46(17.29%) responded to 51-60%; 41(15.41%) responded to 81-90%; 25(9.39%) respondents satisfied >50% and least 15(5.63%) respondent satisfied 91-100% with their respective IRs.



**Figure No. 16: Overall Satisfaction with IR**

## 6. CONCLUSION

Although institutional repositories (IRs) are essential for providing free access to materials for academic and research purposes, most students of the institutions only know about the library's documents and paid databases. They made advantage of these resources to meet their needs. To improve the use of IR resources, library personnel should inform their users about the institutional repository and time to time conduct orientation program to aware their users about Institutional Repository.

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