Chapter V
Findings, Recommendation and Conclusion

5.1 Introduction

Information of any type related to the area of research plays an important role in both academia and research. To access these resources there are various gateways, viz., open access and commercial publications. There are various issues related to accessing the information and the awareness about the utility of this information, accessing the information varies very much among the users of these. The attitude also varies depending on how the users use the information in their respective areas of research.

It is observed that, open access resources are becoming increasingly popular in the present world academia and research because of its no restrictions on accessing information. From the viewpoint of a user, most of them need free and reusable materials. Whereas an author wants to keep all form of copyrights of material with them only. This causes the attitude to vary among them. Students from major portion of users of these information, whereas the teaching faculty and research scholars form the group of authors. Research scholars play both the role of an author occasionally and a frequent user as well.

The present study aims to assess the awareness and attitude towards open access sources and services among various designations, viz., students, research scholars, and teaching faculty. The selected designations give an insight about the attitude and awareness towards open access materials from the viewpoint of a user of open access (students and research scholars) and an author (research scholars and teaching faculty).

5.2 Findings of the present study

The specific findings of the study are as follows:
5.2.1 Awareness about the open access sources that host papers on Business Management/Administration

- On the whole, about 56.99 percent of the selected sample had little to very little level awareness of the Open Journal Access System. Further, research scholars were found to have higher levels of awareness than the faculty and students.

- For the statement, “Directory of Open Access Journals”, 62.84 percent of the respondents had moderate to high level of awareness. Further, research scholars were found to have higher levels of awareness than students and faculty.

- As per the results on “Directory of Open Access Books”, 66.2 percent of the respondents indicated moderate to high level of awareness. Further, research scholars had higher awareness, followed by faculty and students.

- On the whole we find that 63.49 percent of the respondents had moderate to high awareness towards “American libraries.” In addition, faculty had higher awareness compared to researchers and students.

- In the case of, “Canadian Libraries”, 66.09 percent of the respondents indicated little to very little level of awareness. Added to this, researchers had significantly higher awareness than faculty and students.

- As far as awareness regarding “University Digital Libraries” is concerned, 73.57 percent of the respondents had little to very little awareness. Further, we find that researchers had high awareness followed by faculty and students.

- As far as awareness regarding “Community Books” is concerned, about 72.81 percent of the respondents had little to very little awareness; researchers had high awareness followed by students and faculty.

- As far as awareness regarding OPEAN is concerned, 77.36 percent of the respondents had little to very little awareness, addition to this research scholars had high awareness followed by students and faculty.

- For, “Biz/ed: Business studies teaching and education resources”, 66.31 percent of the respondents indicated little to very little level of awareness.
Adding to these research scholars had significantly higher awareness compared to the faculty and students.

- When, “BCStats (British Colombia)” was analyzed, 14.52 percent of the respondents had moderate to high awareness. In addition to this, researchers had significantly higher awareness compared to the faculty and students.

- On the whole, 66.31 percent of the respondents indicated moderate to high awareness towards arXiv. Further, test statistics indicated that both researchers had significantly higher awareness compared to the faculty and students.

- On the whole, 53.09 percent of the respondents indicated moderate to high awareness towards WWW Virtual Library: Business and Economics. Regarding this, the faculty had significantly higher awareness compared to the students and research scholars.

- On the whole, 6.07 percent of the respondents indicated moderate to high awareness regarding SOSIG: Social Science Information Gateway. Further, test statistics indicated that researchers had significantly higher awareness compared to students and faculty.

- For, “MIT Open Courseware”, 74 percent of the respondents indicated moderate to high awareness. In addition to this, the faculty had higher awareness compared to researchers and students.

- As far as awareness regarding Open Learn (OU) is concerned 76.17 percent of the respondents had little to very little awareness. Further, we find that researchers high had awareness followed by faculty and students.

- On the whole we find that 14.63 percent of the respondents had moderate to high levels of awareness towards “University of Michigan Open Courseware”. However, test statistics indicated that researchers had significantly high awareness compared to faculty and students.

- For, “Cross Archive Search Service for Indian Institutional Repositories (CASSIR)”, 13 percent of the respondents indicated moderate to high awareness. In supplement to this researchers had significantly high awareness compared to faculty and students.
When, “OAIster Digital Repository” was analyzed, 5.53 percent of the respondents indicated moderate to high awareness. In addition to this, test statistics indicated that faculty and students had significantly least awareness than researchers.

For, “CORE (COnnecting REpositories)”, 70.75 percent of the respondents indicated little to very little awareness. Further, the faculty had higher awareness than researchers and students.

For, “BASE – Biefeld Academic Search Engine”, 79.74 percent of the respondents indicated little to very little level of awareness. Added to this, both research scholars had higher awareness than faculties and students.

On the whole, we find that 60.99 percent of the respondents had moderate to high levels of awareness towards RePEc (Research Papers in Economics). However, test statistics indicated that the faculty had significantly high awareness compared to researchers and students.

When, “Social Science Research Network” was analyzed, 67.08 percent of the respondents indicated little to very little level of awareness. Supplement to this test statistics indicated that the faculty had significantly high awareness than students and researchers.

5.2.2 Purpose of use of open access sources and services by the respondents

On the whole, we find that 72.26 percent of the sample respondents used open access for study, 55.79 percent for research, 52 percent for publication, 38.67 percent for examination, and 36.40 percent for teaching purposes.

All the students and research scholars used open access for “study” purposes.

Most of the faculty and research scholars used open access for “research” and “publications” purposes.

Most of the students used open access for “examination” (72.34%) purposes.

All the faculty used open access for “teaching” purposes.
5.2.3 Time since using open access sources and services by respondents:

- On the whole, the sample respondents indicated that 48.30 percent of them have been using open access for 1-2 years, 21.10 percent for 2-5 years, 15.80 percent for less than a year, and the remaining 14.70 percent 5 years and above.

- The study found that the faculty used open access for higher duration than students and researchers. Further, gender-wise comparison revealed that male respondents had significantly higher duration, than female respondents in using open access.

5.2.4 Adequacy of information in open access sources

- For the statement, “Principles of open access are optimum?”, 76.84 percent of the respondents agreed to strongly agreed. Adding to this, the test statistics indicated that agreement from faculty was significantly high disagreement compared to researchers and students.

- For the statement, “Open access sources provide comprehensive information”, 57.92 percent of the respondents agreed to strongly agreed. Adding to this faculty was significantly high agreement compared to research scholars and students.

- For the statement, “Provide current /up-to-date information”, 67.61 percent of the respondents agreed to strongly agreed. In addition to this, the faculty was significantly high compared to students and research scholars.

- 71.73 percent of the respondents disagreed to strongly disagreed, about “Clear structure and display of material available”. Supplement to this agreement from researchers was significantly high compared to faculty and students.

- The analysis for the statement, “Restrict access to type of material available” revealed that 71.51 percent of the respondents disagreed to strongly disagreed. Further, agreement from faculty was significantly high compared to researchers and students.
• For the statement, “Archives available at open access sources”, 81.04 percent of the respondents disagreed to strongly disagreed. Further, research scholars were significantly high compared to researchers and students.

• The analysis for the statement, “Subject wise access of document available at open access sources” revealed that, 70.21 percent of the respondents agreed to strongly agreed. Adding to this, the faculty was significantly high compared to students and research scholars.

• For the statement, “A to Z title wise access to material available in open access sources”, 69.99 percent of the respondents disagreed to strongly disagreed. Agreement from faculty was significantly high compared to researchers and students.

• 83.64 percent of the respondents disagreed to strongly disagreed towards the statement “Indexing system available at open access sources”. Where test statistics indicated that a non significant association.

• For the statement, “RSS feeds inform about new additions in open access sources”, 77.35 percent of the respondents disagreed to strongly disagreed. Further, indicating that faculty had higher levels of agreement than students and researchers.

• The analysis for the statement, “Bibliographical details available for material in open access sources” revealed that 76.38 percent of the respondents disagreed to strongly disagreed. Supplement to this researchers were significantly high compared to faculty and students.

• 81.69 percent of the respondents disagreed to strongly disagreed for the statement “Exporting facility to bibliographical details available in open access sources. Where test statistics indicated that researchers had higher levels of agreement than students and faculty.

• For the statement, “available print option for full text document in open access sources”, 71.91 percent of the respondents agreed to strongly agreed. Further, indicating that research scholars had higher levels of agreement than faculty and students.
5.2.5 Attitude towards publishing scholarly literatures in open access platform

- For the statement, “I have necessary knowledge to publish in open access outlets”, 18.31 percent of the respondents agreed, to strongly agreed. Related to this faculty had high level of disagreement than students and researchers.

- The analysis for the statement, “Guidance is available to use the Internet effectively for information access” revealed that 9.31 percent of the respondents agreed to strongly agreed. Agreement from faculty had high level of disagreement than students and research scholars.

- The analysis for the statement, “Agreement on availability of quality control system” revealed that 54.86 percent of the respondents agreed, to strongly agreed. Supplement to this research scholar and faculty had higher levels of agreement than students.

- For the statement, “Preferences of publishing in open access”, 67.07 percent of the respondents agreed to strongly agreed. Further, indicated that agreement from researchers was significantly high followed by students and faculty.

- On the whole, 81.69 percent of the respondents agreed to strongly agreed, to “Lack of review process in open access. Test statistics indicated that agreement from faculty was significantly high compared to researchers and students.

- For the statement, “Papers get more citations in open access”, 81.15 percent of the respondents agreed to strongly agreed. Adding to these researchers was significantly high compared to students and faculty.

- When the statement, “Flexible copyright restrictions available in open access” is analysed, 77.03 percent of the respondents agrees to strongly agreed. Further test statistics revealed a non-significant association between the 3 respondents groups indicating a similarity in their response pattern.

- For the statement, “Publications for my career development”, 69.44 percent of the respondents agreed to strongly agreed. In addition to this agreement from researchers was significantly high compared to faculty and students.
• On the whole, 78.33 percent of the respondents agreed to strongly agreed, for the statement “Keeping own copy of the manuscript that is the same in all respects as published version in the process of producing a journal article for publication”. Where test statistics indicated that agreement from researchers was significantly high compared to faculty and students.

5.2.6 Attitude about quality of the contents in open access

• We find that 83.1 percent of the respondents had moderate to high awareness for the statement, “Quality of the contents in open access increase reputation of authors”. Adding to this indicated that faculty had significantly high preferences.

• We find that 88.3 percent of the respondents had moderate to high awareness, for the statement, “Quality of the contents in open access increase reputation of publishers. Further, faculty had significantly high preferences compare to student and research scholars.

• We find that 90.25 percent of the respondents had moderate to high levels of awareness towards “Quality of the contents in open access increase reputation of organization/societies”. Supplement to this faculty and research scholars had significantly high preferences than students

• We find that 85.48 percent of the respondents had moderate to high levels of awareness, for the statement, “Quality of the contents in open access increase peer review process”. Further faculties had significantly high preferences than researchers and students.

• We find that 84.18 percent of the respondents had moderate to high awareness, for the statement, “Quality of the contents in open access increase brand of e-resources”. Addition to this faculty had significantly high preferences.
5.2.7 Importance of open access sources in the area of management education

- For “Free of cost to access full text”, 57.21 percent of the respondents had agreed to strongly agreed. In addition to this result, the statistics indicated that agreement from research scholars was significantly high, compared to faculty and students.

- For, “Speed of publication”, 61.21 percent of the respondents agreed to strongly agreed. Further, test statistics indicated that agreement from researchers was significantly high agreement compared to students and faculty.

5.2.8 Attitude towards sharing educational resources

- When the statement, “Sharing resources enhances reputation of author” was analyzed, 70.64 percent of the respondents agreed to strongly agreed. Further, test statistics revealed a significant association between the 3 respondents groups indicating a research scholar had high agreement compare to faculty and students.

- For the statement, “Feel happy if someone adapts educational resources”, 80.72 percent of the respondents agreed to strongly agreed. Agreement from faculty was significantly high compared to researchers and students.

- On the whole, 71.18 percent of the respondents agreed to strongly agreed, towards “Feel concerns over copyright”. Adding to this test, the statistics indicated that agreement from faculty was significantly high compared to research scholars and students.

5.2.9 Attitude towards Institutional Repository (IR)

- 76.49 percent of the respondents agreed to strongly agreed for the statement “Open education materials enhances the reputation of institution”. Supplement to this However, this pattern was found to be same for students, researchers and faculty, where test statistics indicated that a non significant association.
• For the statement, “Papers could be deposited in institutional repositories without author’s restrictions ”, 11.7 percent of the respondents agreed to strongly agreed. Adding to this, researchers had higher levels of agreement than faculty and students.

• The analysis for the statement, “Depositing authors contribution to Institutional Repository set up by institution” revealed that 56.12 percent of the respondents agreed, to strongly agreed. Agreement from research scholars had higher levels of agreement than students and faculty.

• 76.82 percent of the respondents disagreed to strongly disagreed, for the statement “Institution recognizes open access. However, this pattern was found to be differ from students, researchers and faculty, where test statistics indicated that a significant association and faculty had high level of disagreement compare to researchers and students.

• 57.51 percent of the respondents agreed to strongly agreed for the statement “IR Play a key role in dissemination of research work”. However, this pattern was found to be different from students, researchers and faculty, where test statistics indicated that a significant association and researchers had high level of disagreement compare to faculty and students.

• For the statement, “IRs give good visibility to Authors/Institutions/Colleges”, 75.73 percent of the respondents agreed to strongly agreed. Further indicating that faculty had higher levels of agreement than students and research scholars.

• The analysis for the statement, “IRs serve as single point archive of yours institution’s research output” revealed that 71.4 percent of the respondents agreed to strongly agreed. Agreement from faculty had higher levels of agreement than students and research scholars.

• The analysis for the statement, “IRs provides statistics of your publications” revealed that 63.38 percent of the respondents agreed to strongly agreed. In addition to this agreement from research scholars had higher levels of agreement than students and faculty.
• For the statement, “IRs provides Links to deposited papers from personal website”, 67.17 percent of the respondents agreed to strongly agreed. Further indicating that researchers had higher levels of agreement than faculty and students.

5.2.10 Open access sources versus commercial publishers

• 83.32 percent of the respondents agreed to strongly agree for the statement “OA-journals are considered to be more important than commercial journals. However, this pattern was found to be different for students, researchers and faculty, where test statistics indicated that significant association, among the respondent’s research scholars had high agreement than faculties and students.

• For the statement, “OA-journals are as good as commercial journals in quality”, 78.88 percent of the respondents agreed to strongly agreed. Supplement to this indicating that faculty had higher levels of agreement than students and research scholars.

• For the statement, “Authors prefer to publish in journals of reputed publishers (brand value of journals)”, 76.49 percent of the respondents agreed to strongly agreed. In addition to this indicating that research scholars had higher levels of agreement than faculty and students.

• For the statement, “Personally think that in their discipline OA-journals should play a major role in future”, 60.24 percent of the respondents agreed to strongly agreed. Addition to this ), indicating that research scholars had higher levels of agreement than faculty and students.

• The analysis for the statement, “Peer review process is as rigorous as commercial publishers in open access” revealed that 55.69 percent of the respondents agreed to strongly agreed. Agreement from research scholars had higher levels of agreement than faculty and students.
5.2.11 Role of libraries in familiarising open access sources and services

- For the statement, “Library staff should provide guidance or education to user/authors”, 81.15 percent of the respondents agreed to strongly agreed. Further contingency coefficient analysis revealed a significant association between respondents and their response pattern indicating that research scholars had high agreement compare to faculties and students.

- For the statement, “Orientation and training need to be conducted to increase your familiarity about open access sources”, 69.66 percent of the respondents agreed to strongly agreed. Further indicating that research scholars had higher levels of agreement than students and faculty.

- The analysis for the statement, “Library staff should help users in archiving their paper on to OA platform sites like institutional repository” revealed that 83.21 percent of the respondents agreed to strongly agreed. Adding to this research scholars had higher levels of agreement than faculty and students.

- 68.47 percent of the respondents agreed to strongly agreed for the statement “Common single window portal can increase access of open access sources and services. Further indicating higher levels of agreement from faculty, followed by researchers and students.

- For the statement, “Rely upon open access sources in the absence of print and subscription based e-resources”, 65.87 percent of the respondents agreed to strongly agreed. Further contingency coefficient analysis revealed significant association between respondents and their response pattern indicating research scholars had high agreement compare to faculties and students.

- The analysis for the statement, “Open access sources are good alternative to overcome financial constraints of library as information is accessible freely” revealed that 71.18 percent of the respondents agreed to strongly agreed. However, this pattern was found to be different for students, researchers and faculty, where test statistics indicated that research scholars had higher levels of agreement than students and faculty.
The analysis for the statement, “Library should subscribe to subscription based e-journal and e-books and print sources even if open access sources are available in their respective field” revealed that 73.18 percent of the respondents agreed to strongly agreed. However, this pattern was found to be different for students, researchers and faculty, where test statistics indicated that research scholars had higher levels of agreement than students and faculty.

5.3 Discussion of the results with respect to hypotheses

5.3.1 There is significant difference among users towards awareness and familiarity of different types of open access sources and services.

5.3.2 Respondents have different purposes of use of open access sources and services.

5.3.3 The frequency of access to open access sources and services among respondents differ significantly.

5.3.4 Respondents differ significantly in identifying the most preferred open access resources and services.

5.3.5 There is a significant difference in their attitude on the adequacy of information available in the open access sources and services.

5.3.6 Attitudes towards open access sources and services as author and as user differ significantly among respondents.

5.3.7 Respondents differ significantly in their opinion towards role of libraries in popularizing open access resources and services.

5.3.1 Awareness and familiarity towards open access sources and services

Hypothesis-1: There is significant difference among users towards awareness and familiarity of different types of open access sources and services.

Hypothesis 1 formulated as “There is significant difference among users towards awareness and familiarity of different types of open access sources and services” is accepted since the test statistics showed significant association between the
respondent groups and their awareness and familiarity of different types of open access sources and services.

As far as respondent groups are concerned, researchers had higher levels of awareness towards open access sources than faculty and students. Researchers had higher levels of awareness towards Open Journal Access System, Directory of Open Access Books, Directory of Open Access Journals, Canadian Libraries, University Digital Libraries, Biz/ed: Business studies teaching and education resources, BC Stats (British Colombia), arXiv, SOSIG: Social Science Information Gateway, Open Learn (OU), University of Michigan Open Courseware, Cross Archive Search Service for Indian Institutional Repositories (CASSIR), OAIster Digital Repository, and BASE – Biefeld Academic Search Engine.

However, students had high level of awareness regarding Community books and OPEAN. These open access sources are more related to study material related to the subject matter.

Likewise, faculty members had high level of awareness towards American Libraries, WWW Virtual Library: Business and Economics, MIT Open Courseware, CORE (COnnecting REpositories), RePEc (Research Papers in Economics), and Social Science Research Network. Hence, there is a specific need for each respondent group, and they are specifically aware of open access sources, which are totally need based.

The findings of the present study are in agreement with the studies done elsewhere. Rolfe (2012) and Rolfe et al. (2008) in their studies found that respondents were less aware of open access resources, its potential benefits, and less likely to adopt e-learning strategies in their teaching. It is evident that majority of the researchers are familiar with the usage of Scholarly Content of Open Access resources (Manjunath, Joshi & Lata, 2015). Research scholars, purely need open access sources in terms of findings/literature in their own field; they may be more aware of the open access sources for their research needs and since faculties needs for of teaching related material, they have more awareness of specific open access source including research. This clearly shows that there is a need to create awareness towards open access sources and services.
5.3.2 Purpose of use of open access sources

Hypothesis-2: Respondents have different purposes of use of open access sources and services.

Hypothesis 2 formulated as “Respondents have different purposes of use of open access sources and services” is accepted, since the test statistics showed significant association between the respondent groups and their purpose and use of different types of open access sources and services.

The purpose of access is depending upon user need. On the whole, we find that 72.26 percent of the sample respondents used open access for study, 55.79 percent for research, 52 percent for publication, 38.67 percent for examination, and 36.40 percent for teaching purposes. As seen, majority (72.26%) of the respondents used open access for study, research, and publication purposes. But more usage related teaching purpose indicated by all faculties, All the students indicated open access being used for “examination” purposes. As far as respondent groups are concerned, more faculty and research scholars indicated open access being used for “research” and “publications” purposes.

The findings of the present study are in agreement with the previous studies. Adding to that there is no significant difference between the importance and use of subscribed and open access sources. Subject knowledge, searching experience, and purpose of use resources counts a lot in accessing any types of sources (Rose Muzammil & Ameen, 2013). Palmer (1991) in his study clustered scientists’ information behaviour into five groups of seekers and non-seekers according to discipline and experience in their field. The way they involve/participate in these activities may slightly vary according to their discipline (Rose Muzammil & Ameen, 2013, Ellis, Cox & Hall, 1993).

Scientists always want faster and easier information. Familiarity is the key to use of information sources (Rose Muzammil & Ameen, 2013). The dependent variables and independent variables affect the use of information resources mentioned by Pinelli in

5.3.3 Frequency of access to open access sources and services

Hypothesis 3: The frequency of access to open access sources and services among respondents differ significantly.

Hypothesis 3 formulated as “The frequency of access to open access sources and services among respondents differ significantly” is accepted since the test statistics showed significant associations between the respondent groups and in frequency of access the open access sources and services.

The study finds that the frequency of usage of open access sources among the respondents was found to be very less over a specified time period. Only 14.70 percent of them had used open access sources for more than 5 years and above, 48.30 percent for 1-2 years, 21.10 percent for 2-5 years, and 15.80 less than a year. The study finds that the faculty (49.1%) used open access higher than the students and researchers. Further, gender-wise comparison revealed that male respondents had significantly higher duration of frequency of use than female respondents in using open access.

This finding is in conformity to the study done by Mallik, Saxena and Roy (2007), where they found that the usage of online resources differ from one to another in their usage methods of access and in their frequency of use of online resources and that lack of use or awareness of the resources, which could have prevented some users from using the resources (Ivwighreghweta & Onoriode, 2012). Also Kodandarama, Swamy and Kumar (2014) found that a large percentage of users among research scholars frequently use e-books and e-journals. Gakibayo, Ikoja-Odongo and Okello-Obura, Constant (2013) in their research found that majority of the respondents indicated that e-resources were not used frequently. The frequency of utilization of e-resources indicates that a lot has to be done to attract users to use these resources regularly.
5.3.4 Most preferred open access sources and services

**Hypothesis 4: Respondents differ significantly in identifying the most preferred open access resources and services.**

Hypothesis 4 formulated as “Respondents differ significantly in identifying the most preferred open access resources and services” is accepted since the test statistics showed significant association between the respondent groups and identifying the most preferred open access resources and services.

The study finds that only 31.18 percent open access sources were most preferred by the respondents. As far as respondent groups are concerned, researchers had higher levels of awareness towards open access sources than the faculty and students. Directory of Open access journals: business and economics (62.84), Directory of Open Access Books (66.2%), American Libraries (63.49%), arXiv (66.31), WWW Virtual Library: Business and Economics (53.09), MIT Open Courseware (74%), and RePEc (Research Papers in Economics, 60.99%) are the most preferred open access sources by the respondents. Among the respondents, students were found to have least awareness towards open access sources and services.

The study also finds that maximum number of respondent have high preference for simple search (59.92%), using keywords (70.32%), author name (80.5%), title (73.57%), and subject (73.89%) for accessing open access sources, but very little preference for advance search (19.79%). Among the respondents, the faculty had high preference towards simple, keywords, title, and subject search. Research scholars had high preferences towards author and advanced search.

The above finding is related of statement made by Manjunath, Joshi & Lata (2015), who stated that DOAJ is the most preferred and most frequently accessed directory of online journals and other e-resources. Including to the above statement the authors recommended that majority of the researchers are having awareness of online resources, even though there is a need to create more awareness among users in order to acquire and accessing of OA resources.
Zainab (2010) stated that the future of scholarly communication will definitely be dominated by OA electronic sources as a channel for communication, and should be planned on an initiative in various focused subject areas as exemplified by arXiv.org and E-print in Library and Information Science (E-LIS), which encourage authors to submit their articles to the e-print repositories.

5.3.5 Adequacy of information in open access sources

Hypothesis 5: There is a significant difference in their attitude on the adequacy of information available in the open access sources and services.

Hypothesis 5 formulated as “There is a significant difference in their attitude on the adequacy of information available in the open access sources and services” is accepted since the test statistics showed significant association between the respondent groups and adequacy of information available in open access sources and services.

On the whole, the respondents have indicated disagreement on all the statements. Among the respondents, faculty and research scholars indicated high agreement followed by students, who had least agreement for majority of the statements on open access. Researchers had higher levels of agreement on clear structure and display of material available, archives available at open access sources, bibliographical details available for material in open access sources, and exporting facility to bibliographical details available in open access sources.

Faculty members had higher levels of agreement on principles of open access are optimum, open access sources provide comprehensive information, Provide current / up-to-date information, restrict access to type of material available, subject- wise access of document available at open access sources, A to Z title- wise access to material available in open access sources, and RSS feeds inform about new additions in open access sources. Faculties and research scholars had similar opinion for the statement on available print option for full text document in open access sources, and there is a non-significant association among the respondents on the statement indexing system available at open access sources.
In the present study, the respondents were not aware of open clear structure and display of material available, restrict access to type of material available, archives available at open access sources, subject-wise access of document available at open access sources, a to z title-wise access to material available in open access sources, indexing system available at open access sources, RSS feeds inform about new additions in open access sources, and bibliographical details available for material in open access sources because of lack of experience and lack of awareness towards open access sources. Further, the respondents indicated disagreements towards, principles of open access are optimum, and open access sources provide comprehensive information, and provide current / up-to-date information.

A similar study by Dulle (2010) revealed that respondents had weakness in terms of their Internet self-efficacy in dissemination rather than accessing information using online sources. However, based on the researchers’ actual usage of open access, it can safely be argued that low Internet self efficacy as reported by many respondents, in a way, explains why many researchers accessed rather than disseminated scholarly content using open access outlets. Both the Internet usage skills and self-efficacy have been acknowledged as the key determinants of effective exploitation of information under the digital environment (Dulle, 2010, Waldman, 2003; White and Gendall, 2005). Wang and Su (2006) asserted that in order to benefit from open access initiatives, readers should improve their information and computer literacy skills (Dulle, 2010). Equally important is for researchers to become Internet literate in order to use the electronic media environment more effectively for accessing and disseminating scholarly content (Dulle, 2010).

5.3.6 Attitudes towards open access sources and services

**Hypothesis 6: Attitudes towards open access sources and services as author and as user differ significantly among respondents.**

Hypothesis 6 formulated as “Attitudes towards open access sources and services as author and as user differ significantly among respondents” is accepted since the test statistics showed significant association between the respondent groups and their attitudes towards open access sources and services as an author and as a user.
In the present study, majority of the respondents had a positive attitude towards open access sources and services. Among the respondents, faculty and research scholars had more positive attitude towards open access sources and services followed by students. Faculty members had a positive opinion towards lack of review process in open access (92.06%), papers get more citations in open access (85.2%), quality of the contents in open access increase reputation of authors (93.85%), quality of the contents in open access increase reputation of publishers (95.66%), quality of the contents in open access increase peer review process (90.96%), quality of the contents in open access increase brand of e-resources (81.58 %), quality of the contents in open access increase reputation of organization/societies (90.96%), feel happy if someone adapts educational resources (92.42%), feel concerns over copyright (87.72%), Open education materials enhances the reputation of institution (85.83%) IRs give good visibility to Authors/Institutions/Colleges (93.5%), and IRs serve as single point archive of yours institution's research output (81.59%).

Research scholars had positive opinion towards preferences of publishing in open access (77.84%), publications for their career development (91.48%), keeping own copy of the manuscript that is the same in all respects as published version in the process of producing a journal article for publication (87.5%), free of cost to access full text (75.57%), speed of publication (88.63%), sharing resources enhances reputation of author (86.36%), depositing authors contribution to Institutional Repository set up by institution (64.2%), IR Play a key role in dissemination of research work (74.33%), IRs provides statistics of your publications (76.7%), and IRs provides Links to deposited papers from personal website (77.27%). Both research scholars and faculty members had a similar positive attitude towards availability of quality control system and quality of the contents in open access increase reputation of organization/societies.

But the respondents had a negative attitude towards having necessary knowledge to publish in open access outlets, guidance is available to use the internet effectively for information access, papers could be deposited in institutional repositories without author's restrictions, and institution recognizes open access.
A number of similar studies have also revealed that majority of the authors as well as non-authors had a positive attitude towards open access (Swan and Brown, 2004; Schroter, Tite and Smith, 2005; Hess et al, 2007, Dulle, 2010). Hess et al (2007), stated “for example, established that within information systems, medical science and others, over 90 percent of the respondents reported to have positive or very positive attitude towards open access (Dulle, 2010).

Dulle (2010) found that, “majority of the researchers had very positive attitudes towards open access publishing. Over 80 percent of the respondents considered open access as beneficial to the scholarly community and that access and use of open access as well as publishing in open access were good ideas”. Gadd, Oppenheim and Probert (2003) reported that 57.8 percent of 456 respondents were reported to have submitted papers to open access journals (Dulle, 2010).

According to Wang and Su (2006), without authors’ support and submission, the open access movement cannot be meaningful and successful. While their positive views could promote open access development, opposite views could undermine its progress (Dulle, 2010). Ideally, researchers’ access to free scholarly content is expected to be a motivation for them to disseminate their scholarly output using similar outlets (Dulle, 2010). This should be the case for any researcher who wishes to disseminate her/his research findings widely for more impact. In this respect, it is assumed that usage of free content by scholars also makes them more aware of the benefits of open access (Dulle, 2010).

5.3.7 Role of libraries in familiarizing open access sources and services

Hypothesis 7: Respondents differ significantly in their opinion towards role of libraries in popularizing open access resources and services.

Hypothesis 7 formulated as “Respondents differ significantly in their opinion towards role of libraries in popularizing open access resources and services” is accepted since the test statistics showed significant association between the respondent groups and role by librarians in popularizing the open access resources and services.
In the present study, majority of the respondents indicated high agreement towards role of libraries in popularizing the open access resources and services. Among the respondents, research scholars had high level of agreement compared to faculty members and students. Research scholars had high agreement towards “On orientation and training need to be conducted to increase your familiarity about open access sources” (80.11%), “Library staff should help users in archiving their paper on to OA platform sites like institutional repository (90.4%)”, “rely upon open access sources in the absence of print and subscription based e-resources” (75%), “Open access sources are good alternative to overcome financial constraints of library as information is accessible freely (86.37%)” and “library should subscribe to subscription based e-journal and e-books and print sources even if open access sources are available in their respective field (75%)”. Faculty members had high agreement towards “Library staff should provide guidance or education to user/authors” (82.31%) and “Common single window portal can increase access of open access sources and services (90.26%)”.

A similar study by Deoghuria and Roy (2007) revealed that “scientists said they would need specific assistance (from a computer or library personnel) in order to publish their works in such outlets” (Dulle, 2010). “The shortage of facilitating conditions in terms of both infrastructure as well as technical know-for many reasons for minimum encouragement of open access in most developing countries” (Muthayan, 2003; Hirwade & Rajyalakshmi, 2006; McCulloch, 2006; Christian, 2008; Dulle, 2010). It is thus necessary to improve both technological and human factors in the universities addressed by this study in order to improve the adoption of open access (Dulle, 2010).

5.4 Recommendations of the study

- From the results it is clear that awareness is like here say or sensibility while searching for information except the authors who publish the article are being requested for depositing the article for institution repository. Hence, it is required to provide proper awareness so that some of the myths about the quality of OA will be eventually removed.
While creating awareness, it is required to stress upon the type of materials most suitable to the level of users and type of needs like course material for students, research article for researchers, and teaching materials for faculty.

There is a need to overcome plagiarized content in the research papers published in open access platform. Therefore, it is recommended to use plagiarism detection tools to know the extent of similar contents in the papers/articles/monographs being submitted. This process will ensure originality of research output and improved quality research.

Literature search has to bring research papers for open access platform; this extreme process of literature search will support the contention of authors. Quality of research can also be enhanced by referring to previous studies. Literature search helps to overcome duplication of research.

Scholars are thorough with the printed sources available in their disciplines. The sources that are made available on open access platform serve as supplementary and complementary. Mere dependency on open access sources, freely available may not be reliable as their quality and accuracy is under question.

Scholars who have basic knowledge of the subject obtained from printed sources can read open access information sources for additional information which will serve as supplementary information.

5.5 Suggestions for further research

Suitable activities in academic and research system where awareness about the open access can be integrated and comprehensive research is the need of hour.

Studies aimed to derive curriculum and pedagogy integrated information literacy activities for various levels of users and information resources with identified training and teaching activities such department-wise, on-site guidance, or creating teachers as trainers-of-trainers could be conducted.

Intellectual Property Rights, publishers and authors, including sole publishing authors’ attitudes towards the Open access model can be studied.

Derivation of suitable national digital repository system to consolidate all the open access resources at national and international level.
5.6 Conclusion

The aim of the study was to find out the awareness and attitude towards open access sources and services among the user community of management. The responses of 923 respondents for various questions in the questionnaire were analyzed accordingly. It was found that there is a significant difference in the responses of respondents towards open access sources and services. Among the respondents the research scholars had high awareness towards most of the resources compare to others.

In the present study, majority of the respondents had a positive attitude towards open access sources and services. Among the respondents, faculty and research scholars had more positive attitude towards open access sources and services followed by students. But the respondents had a negative attitude towards having necessary knowledge to publish in open access outlets, guidance is available to use the Internet effectively for information access, papers could be deposited in institutional repositories without author's restrictions, and institution recognizes open access.

Majority of the respondents indicated high agreement towards role of libraries in popularizing the open access resources and services. There are many promotive, proactive, and compelling factors supporting the growth of open access model in specific and growth of science and innovation at large. It is required to continue studies periodically on many of these factors. Since creating awareness exclusively on open access is not very encouraging, it is better be integrated with research methods and funding with library budget. The policy makers can make decisions regarding open access information availability in academic field in particular and to general public at large. Since there is least awareness towards open access among the general public, initiation of such activities may improve the knowledge among them, which may lead to prospective life for the individual and for the nation.
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