
IMPLICATIVE PRODUCTIVITY STUDY AND UTILIZATION OF OPEN ACCESS JOURNALS AMONG THE FACULTY MEMBERS

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Abstract

With the increasing pace of technical competence, upgrading the technical skills is most critical part of faculty members in any higher technical educational establishments. With the availability of the paid versions of technical papers, this study is focused on understanding the productivity of Open Access Journal (OAJ) where there is no barrier of economical, legal, and technical factors of any sorts. The current study discusses about the situational analysis where the qualitative method is applied with experts opinion in some of the well known higher technical educational institutes in Karnataka, India. As majority of the libraries are exploring new dimensionality of exploring opportunities to influence the phenomenon of utilization of OAJ for technical competencies, hence, this paper discusses about an in depth study being performed in the educational establishments in Mysore district of Karnataka to understand the extent of impact of open access journal towards the usefulness among faculty members.

KEYWORDS :

OAJ, Electronic Resources, Open Access, Impact Factor

INTRODUCTION:

Open-access journals are scholarly journals that are available online to the reader "without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself." Some are subsidized, and some require payment on behalf of the author. Subsidized journals are financed by an academic institution, learned society or a government information center; those requiring payment are typically financed by money made available to researchers for the purpose from a public or private funding agency, as part of a research grant.

There have also been several modifications of open-access journals that have considerably different natures: hybrid open access journals and delayed open access journals. Open-access journals (sometimes called "the gold road to open access") are one of the two general methods for providing open access. The other one (sometimes called the "green road") is self-archiving in a repository. The publisher of an open-access journal is known as an "open-access publisher", and the process, open-access publishing". Moreover, open access models are beneficial in a number of ways (Antelman, 2004; Nicholas & Rowlands, 2005):

Research is available at no cost, and with no access restrictions, for readers around the globe; scholars in economically disadvantaged areas are no longer barred access to the current research.

Because research published via avenues of open access is openly accessible online, it is more easily discoverable both by scholars and by search engines.

For scholars in Science and Technology, where subject matter may be especially time sensitive, publication in open access journals occurs much more rapidly, and not necessarily with any impact on quality control.

Since research is available globally without access restrictions, scholars benefit from having a significantly larger, more diverse audience.

Increased exposure to research will also lead to more numerous citations.

These benefits are judged to be more or less uncontroversial, unlike the issue of cost which will be discussed more fully in a later section on the economic impact of open access. Let it suffice to say that open access is an issue worth investigation by academic libraries given the general trend of shrinking library budgets and growing journal prices, especially within the scientific, technical, and medical (STM) disciplines (Rovner, 2005; Crawford, 2005). In a number of articles on the subject of open access, in fact, the phrase "serials crisis" is bandied about, leading one to believe that there is at least some kernel of truth to the notion.

1.2 Impacts of Open Access

Shifting from the traditional model of scholarly communication to open access is a significant move, perhaps even a revolutionary one. There are numerous ways in which open access might impact an academic library, broken into the following categories in this paper: economic, technological, collection development & management, and the very roles that academic libraries play. Each of these impacts will be discussed in turn. There are impacts other than those examined in this paper, such as those concerning reference services, information literacy, and peer evaluation, but research in these areas was light at the time references were gathered.

Economic Factor: Those who use scholarly materials made available by sources conforming to the principles of open access are not required to pay for access, so publishers must find alternative methods of financially sustaining operations. Publication of materials does not come without cost, although one might be tempted to think that purely electronic resources cost less simply because there is no concern for production and distribution of print materials. However, electronic publications, of which open access materials are a subset, carry their own significant costs such as those associated with computer and network maintenance, sufficient bandwidth, staffing, and editorial review, among others. Scholarly communication thus changes "from a publishing model where readers pay for access to one where authors pay for publication" (Wren, 2005, p. 1128). Open access should not be thought of as being necessarily cheaper than traditional scholarly communication; the costs of publication and access are not eliminated but shifted to other sources. Some open access journals, such as BioMed Central, operate on a model where a university or college pays a membership fee to subsidize the cost of publication, which is useful especially for institutions with prolific faculties. As Tenopir (2004) points out, however, "a downside is that a membership fee sounds suspiciously like a subscription fee. Some big universities worry that their fees are an unfair burden, forcing them to pay for open access by others" (p. 33). The question then becomes what department at the university will assume these costs. At some universities and colleges, publication charges are shouldered by the libraries which, at schools with researchers that publish frequently, may find such costs to be as expensive as those associated with traditional journal subscriptions (Gass, 2005). A report by the Cornell University Libraries, as referenced by Gass (2005), indicates precisely this though it does not take into account the fact that much research is subsidized by grants and other sources of funding external to the libraries. One such funding agency is the UK's Wellcome Trust, which now requires all of the articles coming out of research it funds to be deposited in an appropriate open access source, whether an electronic journal or repository, within six months of publication (Bloom, 2005).

Technological Factor: Institutions that decide to support open access via implementation of an institutional repository or creation of an electronic journal also face a number of technological issues. One of the most crucial issues is how to handle citation permanence. Antelman (2004) points out "a study

performed using the Citebase data found that the more often a paper is downloaded, the more likely it is to be cited" (p. 373). Links to electronic resources are already quite fragile, and it is common to find outdated, broken links even on reputable, well-updated websites. Providers of open access materials thus need to address how they will be referenced, e.g., by using persistent identifier technologies such as DOI (Digital Object identifier), ARK (Archival Resource key), or PURL (Persistent Universal Resource Locator).

Collection Management Factor: The most challenging issue facing those who develop and manage library collections is how they will keep track of open access sources. Given the growing number of open access sources already out there, collection builders may struggle to bootstrap themselves by introducing such sources to their collections. As sources begin to distinguish themselves from others and lesser-known, less widely used ones fade into obscurity, the task may become easier. Academic librarians responsible for collections may need to come together with fellows at other institutions, and with scholars within their own institutions, to discover how others are dealing with the glut of open access sources and to determine which are being published in the most widely. As more and more legitimate scholarly journals adopt open access policies and come into being, and as an increasing number of scholars publish their research in open access sources, librarians (not to mention commercial publishers) may confront a very serious question: should they continue to pay for (or provide) fee-based scholarly journals? Giles (2005) notes that "the fear of publishers is that libraries will cancel their subscriptions if papers are made available for free" (p. 543). They may even be able to re-establish their levels of expenditure on monographs and humanities journals (Crawford, 2005a), rounding out their collections in a way unseen since the advent of the STM (Scientific, Technical, Medical) serials crisis.

1.3 Aim

The prime aim of the study is to get an in-depth and real-time analysis of effectiveness of OAJ for evaluating its respective contribution in usage and technical competence upgradation among the faculty members. For this purpose, Karnataka is selected for the purpose of conducting the investigation. Majority of the higher technical institutes are operated under the jurisdiction of the Universities in the state viz. Bangalore University, Kuvempu University, Mysore University, Mangalore University, Gulbarga University and Karnataka University. The preliminary target of the study was to identify the Engineering Colleges having research center in Karnataka and then to list out the research scholars in the Engineering Colleges and gather information about usage of OAJ. A standard questionnaire is designed where information is collected through Email, Blogging and Online Forums. The survey consent was sent to the participants who are primarily faculty members of the colleges in Karnataka. The consent was sent to over 1000 people where nearly 430 effective members confirmed their consent in participation of the interview process. The proposed study uses 2 types of sampling methods e.g. Judgment Sampling and Expert Opinion. The Judgment Sampling (Singh et al., 1996) (or commonly known as purposive sampling) is deployed where the researcher or some other "expert" (Ayyub, 2010) uses his/her judgment in selecting the units from the population for study based on the population's parameters. The basic reason for adopting this sampling procedure is that this type of sampling technique is the most appropriate if the population to be studied is difficult to locate or if some members are thought to be better (more knowledgeable, more willing, etc.) than others to interview. This determination is often made on the advice and with the assistance of the client (participants). The Expert opinion is often used to identify potential problems with products (OAJ) before they are released for more comprehensive evaluation, but can be used at any state of design. However it is important to ensure that those experts consulted have no prior involvement or interest in the design of the product to be evaluated, as otherwise it will be difficult to obtain impartial views.

1.4. Objectives

The specific objectives of the study are as follows:

- To find out the frequency of usage of OAJ
- To find out the dependency on open access journal
- To find out the available electronic resource utilization
- To find out the level of satisfaction

1.5. Scope and Limitations

The study covering 6 engineering colleges which come under Visvesvaraya Technical University in Karnataka. They offer various branches which include Computer Science, Mechanical, Electrical and Electronics, Electronics and communication, Environmental Science , Civil etc. Geographically the coverage of the institutions is limited to Mysore City Engineering colleges only. These colleges have been well established and are equipped with IT based infrastructural facilities.

1.6 Research Methodology

With this evolving OAJ environment as a backdrop, the researcher conducted an Investigation of engineering faculty at the engineering colleges that come under Mysore District in Karnataka in order to better understand this faculty's OAJ practices and attitudes. The Engineering Colleges selected for the studies has minimum of 5 streams extending to 16 maximum streams of higher technical education. The usage of OAJ is higher among lecturers, professor, as well as research candidates in Engineering Colleges, and hence the study considers faculty members are the prime participants of the investigation. The research methodology adopted is qualitative and quantitative. The qualitative technique will be adopted to design a questionnaire and distribute it to Engineering Colleges in Karnataka. Figure 1 shows the participants demographic.

Participant's Demographics (Fig.1)

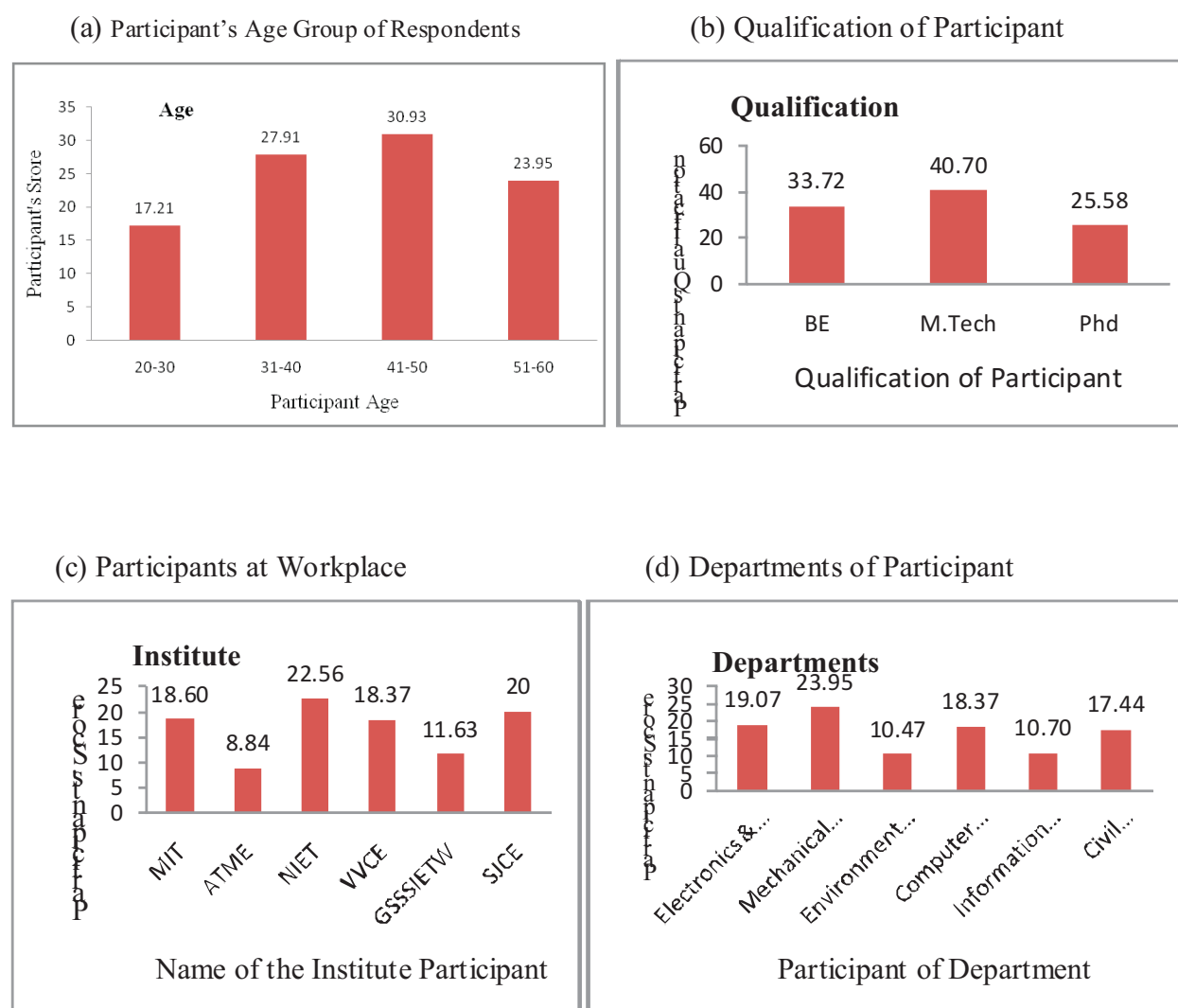


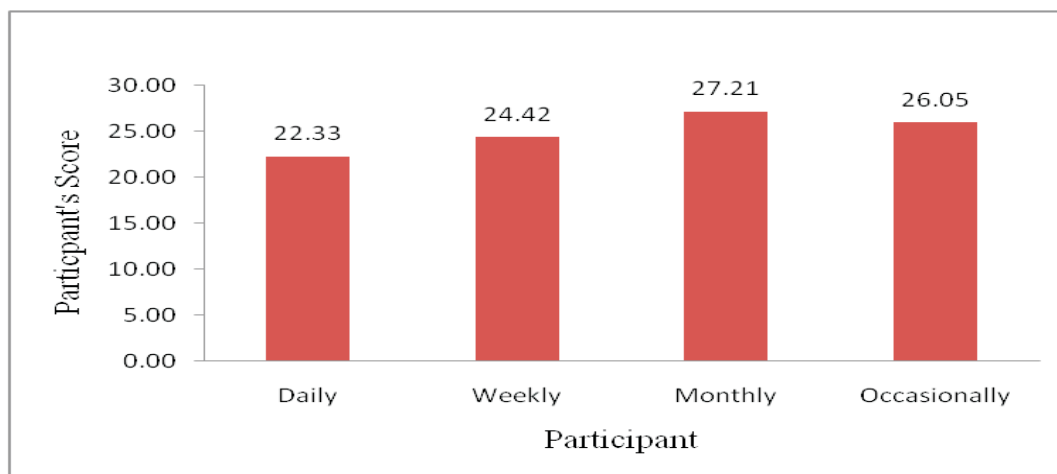
Fig.1(a) illustrates the age of the participants which shows that 30.93% of the participants falls under 41-50 years, while 27.91% of the respondents come under the range of 31-40 years followed by 23.95% of the participants under 50-61 years, whereas 17.21% of the participants come under 20-30 years. Fig.1 (b) illustrates educational qualification of the participants where it can be seen that 40.70% of the majority has completed Masters in Technology (M.Tech). 33.72% have completed Bachelor's of Engineering (B.E.), while 25.58% of the participants have been awarded doctorate (PhD). Fig.1(c) illustrates the Engineering Colleges from where the participants considered in the study belong. It shows that 18.60% of the participants are working in Maharaja Institute of Technology (MIT), 8.84% of the participants were from ATME College of Engineering(Mysore), 22.56% of the participants were from NIET School of Engineering, 18.37% of the participants have been working in Vidyavardhaka College of Engineering(VVCE), 11.63% of the participants are working in G.S.S Institute of Technology (GSSIT), and 20% of the participants are working in Sri Jayachamarajendra College of Engineering (SJCE). Fig.1(d) illustrates the respective department of the participants considered in the studies. It can be seen that 23.95% of the participants belongs to Mechanical department followed by 19.07% of the participants working in Electronics and Communication Engg. 18.37% of the participants belong to Computer Science, while 17.44% of the participants belong to Civil Engineering. 10.70% of the candidates are working in Information Science while 10.47% of the participants are associated with Environmental & Civil engineering.

The main goal to adopt research methodology of the proposed field is to generate new knowledge on application of open access journal for the benefits of the faculty members of Engineering Colleges in Karnataka. It can be seen that all the educational establishment, where the 430 participants are working come in Mysore district of Karnataka. Constructive Research aims at producing novel solutions to practically and theoretically relevant problems (Lukka, 2001). A case study in Mysore, Karnataka is considered to understand the issues and challenges currently existing in maintaining quality in higher technical education. The empirical model is designed to understand the impact of the open access journal for analyzing its impact and all possible enhancement it could bring on to the higher technical education system in Karnataka.

1.7 Data analysis

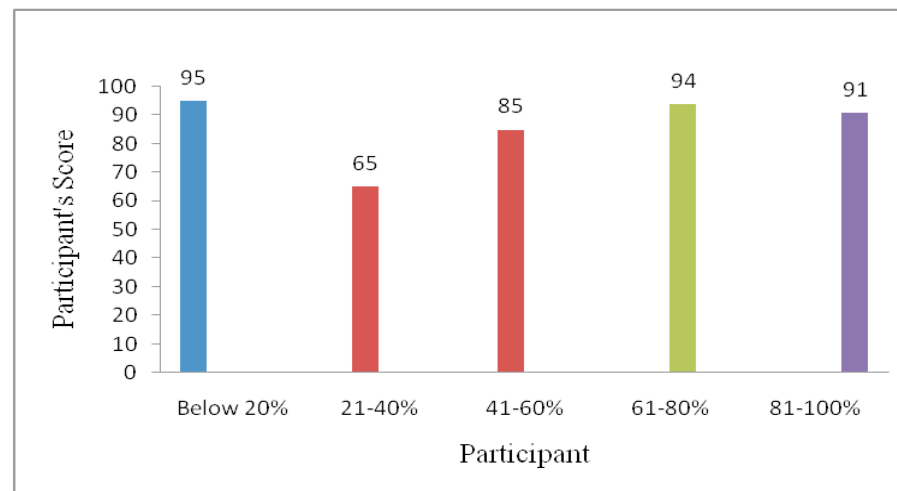
This section discusses analysis and interpretation of the study:

Frequency of Usage (Fig.2)



From Fig.2, it can be seen that 27.21% of the participants access the open access journals on various domains monthly, whereas 24.42% of the participants access it weekly. This is also followed by 22.33% of daily user.

Dependency on Open Access Journal (Fig.3)



As majority of the participants are working members of Engineering Colleges in Karnataka, hence it can be seen from Fig.3 that 91 participants claimed of higher dependency followed by 94 individuals. Although there are 65 individuals who claim lesser dependency, but still majority of the participants expressed that Open access journals are highly critical of their academic needs.

Usage of Internet (Fig.4)

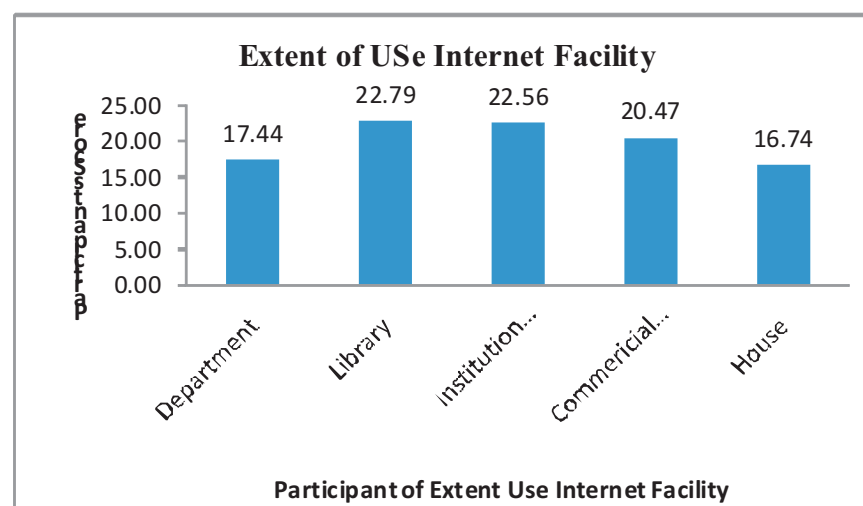


Fig.4 shows the 22.79% of the participants from Library has streamlined internet facility and like to use it, while 22.56% of the participants claimed that internet usage is higher in institution internet center as a privilege for student's and employees. However, it can be seen that internet usage is respectively less in department (17.44%) as well as in house (16.74%).

Available Electronic Resource Utilization (Fig.5)

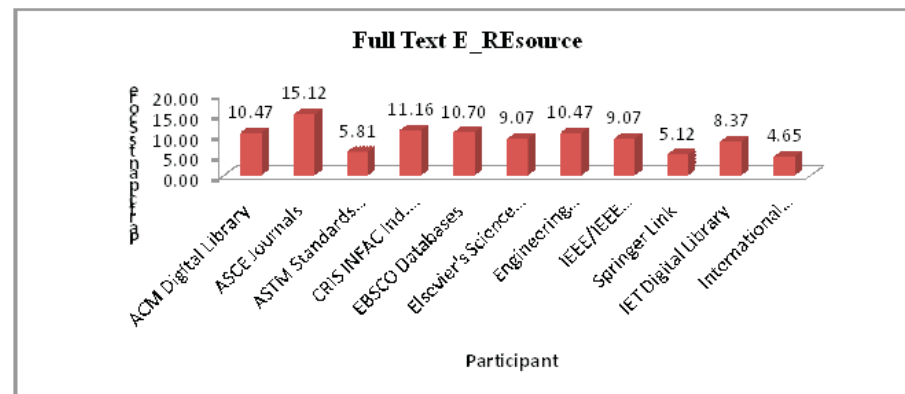


Fig.5 represents the available electronic resource utilization where it can be noted that 10.47% of the participants uses ACM digital library, 15.12% of the participants uses ASCE Journals, 5.81% uses ASTM standards followed by 11.16% of CRIS INFAC database. 10.70% uses EBSCO database, while 9.07% uses Elsevier. It can be amazingly seen that reputed IEEE is found with considerable lesser usage of 9.07% with Springer in 5.12%.

Used Open Access Journal (Fig.6)

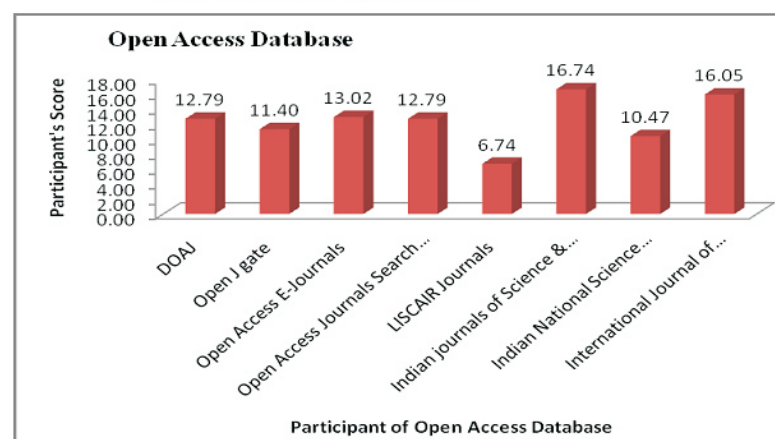


Fig.6 shows that 16.74% of the participants has already used Indian Journals of Science & Technology, followed by Indian Journals of Engineering and Architecture. Open Access Journals are found with 13.02% users followed by others databases.

Purpose of Using Open Access Journal (Fig.7)

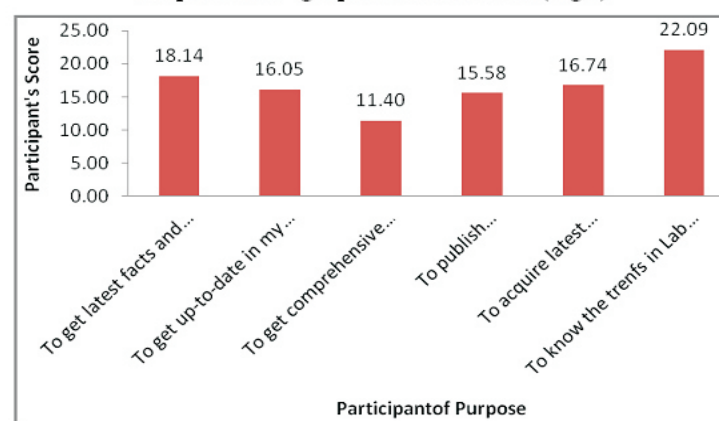


Fig.7 highlights the purpose of using open access journal, where it shows that 22.09% of participants use OAJ for knowing the trends in laboratory practices, 18.14% of the participants use it for knowing the latest facts and trends, whereas 15.58% of the participants use it for the purpose of r publication.

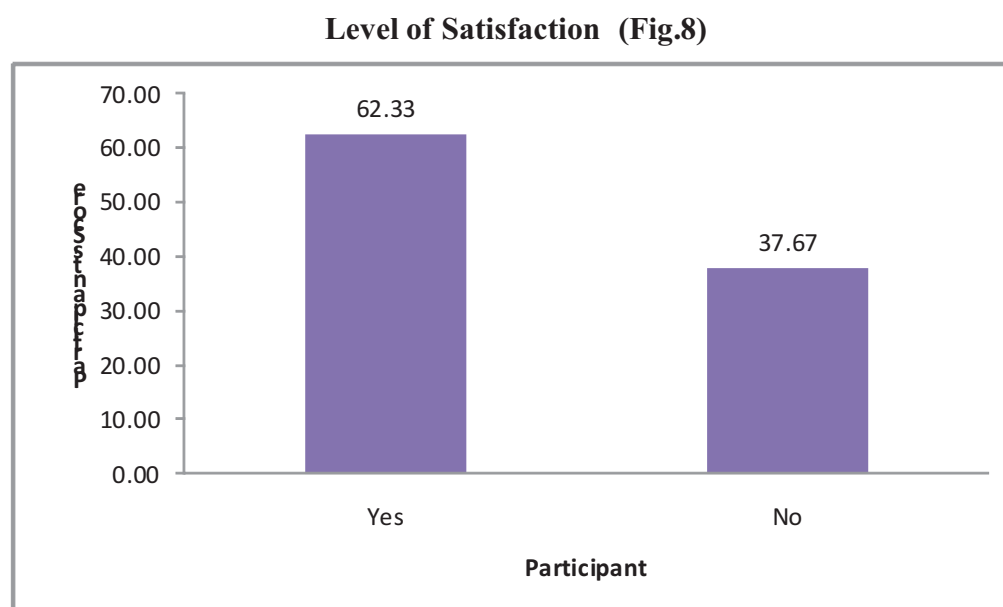


Fig.8 highlights the level of satisfaction of the participants for using the available open access journal. It can be seen that majority of 62.33% of users supported the fact that they are highly satisfied with the contents and the services, while 37.67% said the vice-versa.

1.8 Findings

The findings of the proposed study are as follows:

It was known from the participants that they use OAJ for fulfilling mainly for:

- 1.Enhancing their personal skills.
- 2.Extracting updates examples to be used in lecture delivery inside class.
- 3.Extracting preliminary ideas before allocating academic projects to the final year students.
- 4.Enhancing their specialization with subject skills.
- 5.Open Access Journals are found with 13.02% users followed by others databases.
- 6.The purpose of using open access journal,
 - a)where it shows that 22.09% of participants use OAJ for knowing the trends in laboratory practices.
 - b)whereas 18.14% of the participants use it for knowing the latest facts and trends.
 - c)whereas 15.58% of the participants use it for the purpose of Journal/Conferernce/Research publication.

7.It was also found that majority of the participants like to bookmark following OAJ:

a.Directory of Open Access Journal [<http://www.doaj.org/doaj?cpid=114&func=subject>]

b.OMICS Group [<http://www.omicsonline.org/open-access-journals-list.php>]

c.Registry of Indian Open Access Journals [http://oajse.com/rioaj_a-z_list.html]

8.It was also explored from the study that various non-faculty members e.g. management members have increasing trend to access contents of OAJ related to their subject issues.

9.However, it was also seen that some of the groups (especially from Computer Science, Information Science, Electronics and Communication) still feel that contents from close access journals e.g. transaction papers available in IEEE, Springer, Elsevier (ScienceDirect) are much more superior grade as compared to open source journals.

1.9 CONCLUSION

The study has witnessed various utilization trends towards the Open Access Journals (OAJ) over past few years along with the academic benefits and issues associated with it. The current study has been conducted in six reputed Engineering Colleges of Mysore, Karnataka, where the participants were mainly faculty members of the respective colleges. The study has attempted to understand the term 'utilization' with respect to few research parameters e.g. Frequency of Usage, Dependency on Open Access Journal, Usage of Internet, Available Electronic Resource Utilization, Used Open Access Journal, Purpose of Using Open Access Journal, Level of Satisfaction, etc. Various points have been explored from the study which highlights the upcoming inclination as well as upcoming challenges towards the usage of OAJ. From 'upcoming inclination' viewpoint, it can be said that due to cost effective nature of the OAJ, the adoption of OAJ is quite higher, but at the same time the contents of the OAJ are very hard to define it as reliable. This point can be said that as the study has used expert's opinion, hence from 'upcoming challenge' viewpoint, it can be said that reviews of OAJ needs to have more precise policy of paper acceptance, as currently, many participants equally thinks that richness of closed access journals are of superior quality with respect to its technical reliability of the contents. Hence, the study concludes that OAJ has an obvious clear-track future with some critical amendments in their content quality practices.

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