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Role of Citation Databases in Research: A Study

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Abstract: This study attempts to overview the awareness and use of citations databases by researches and faculty members of MIT, MAHE, Manipal. The survey reveals that most of the research scholars are aware of the citation databases and largely use them for their research work and to update subject knowledge. Many of the respondents use the citation databases to select good journals for publishing their papers and to prepare the exhaustive bibliography at the end of their work easily. It is found that nearly 50% of respondents are satisfied with the search features and functionality of citation databases subscribed by MIT library.

1. INTRODUCTION:

It is a known fact that the value of the research study depends upon its quality and not quantity, which in turn is influenced by the knowledge of the person doing research. Research is nothing but search for knowledge or search for unknown things. So, research is the search in a systematic and scientific way. Research is the original contribution to the existing stock of knowledge marking for its advancement. Citation databases promote the research process of a researcher. Citation databases are used to search cited references, to find out citation data every year, investigating old as well as new literature. Many such citation databases help, guide and promote the research. MIT Central Library subscribes mainly two citation databases, viz. Scopus and Web of Science. The study also covers two open access databases, viz. Google Scholar and Research Gate

2. REVIEW OF LITERATURE:

K.G. Sudhier and V. Dileepkumar (2020)[1] conducted a study under the title "Scientometric Profile of Biochemistry Research in India: A Study Based on Web of Science." The purpose of this study is to examine the trend of biochemistry research in India, using the number of papers covered by web of science. The study has identified the areas of research in biochemistry, journals used for communication and highly cited papers. It was found that the Indian researchers are collaborating with the researchers of the USA in the field of Biochemistry. The features of Web of Science like citations, impact factor, H-index, etc. are used in the study.

Matthew E. Falagas and others (2020)[2] have compared various citation databases in their article "Comparison of PubMed, Scopus, Web of Science, and Google Scholar: strengths and weaknesses." In this study, they found that all databases were practically used by the clinicians and researchers. All the databases offered numerous search facilities. They also compared the content and various functional aspects of the utility. They found that PubMed is an important resource for clinicians and researchers. Scopus covers a more extensive journal range and offers the capability for citation analysis. It covers the recent articles (published after 1995) compared with Web of Science and Google Scholar.

Hilary I. Okagbue, Sheila A. and others (2020)[3] conducted a study under the title "Analysis of Percentiles of Computer Science, Theory and Methods Journals: CiteScore Versus Impact Factor." The paper has presented the relationships between the impact factor and CiteScore of 105 journals of computer science theory and methods subject category. The impact factor is highly positively correlated with CiteScore.

Nees Jan van Ec and K Ludo Waltman (2019)[4] have done a study on "Accuracy of citation data in Web of Science and Scopus." A large-scale analysis is undertaken to know the accuracy of the data in the two databases under study. The analysis is based on citations given in publications in Elsevier journals. They reveal significant data quality problems for both databases. They found that missing and incorrect references are important problems in Web of Science and duplicate publications are a serious problem in Scopus.

3.   OBJECTIVES OF THE STUDY:

❖ To know the features and functionality of citation databases;
❖ To know the awareness and usage of citation databases
❖ To know about the frequency of usage of citation databases
❖ To know the purpose of using citation databases;

4.   NEED FOR THE STUDY:

There are many departments in which research scholars and faculty members are doing their research in various fields at MIT. Central Library of MIT subscribes to many databases and also has access to many citation databases. A study is undertaken to know about the importance and use of these citation databases among faculty members and research scholars. Such a study was not conducted so far and the result of the survey can be used to suggest improvements in the features and functionality of the citation databases and also to improve the service of the library. Hence this topic is selected for the study.

5.   METHODOLOGY:

Survey methodology is used for the collection of data. A structured questionnaire was distributed among the faculty members and research scholars of Physics department Manipal Institute Technology, Manipal Academy of Higher Education, Manipal. The questionnaire was distributed to all the faculty members and all research scholars (both full time and part- time). Totally 60 questionnaires were distributed. Out of 60 questionnaires, 52 have been returned. The total response received for the study is 86.67%.

Table 1 Population size

No. of Questionnaires distributed	No. of filled-in questionnaires	Percentage of responses (%)
60	52	86.67

6. Data analysis and interpretation

6.1 Position wise distribution of respondents

Table 2 reveals that 28.8% of the respondents are faculty members and 71.2% are research scholars.

Table 2. Position wise distribution of respondents

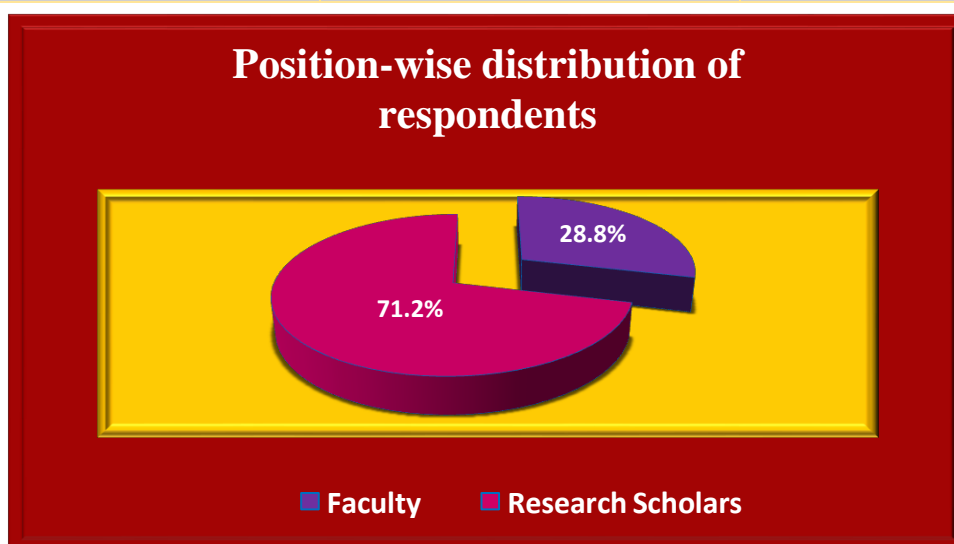| Position	Total Number of Respondents	Percentage (%)
Faculty	15	28.8
Research Scholars	37	71.2
Total	52	100

Fig. 1 Position wise distribution of respondents

6.2 Awareness about citation databases

Table 3 shows the awareness about Citation Databases among the respondents of the Department of Physics MIT. The chart indicates that 96% of respondents are aware of citation databases.

Table 3. Awareness about Citation Databases

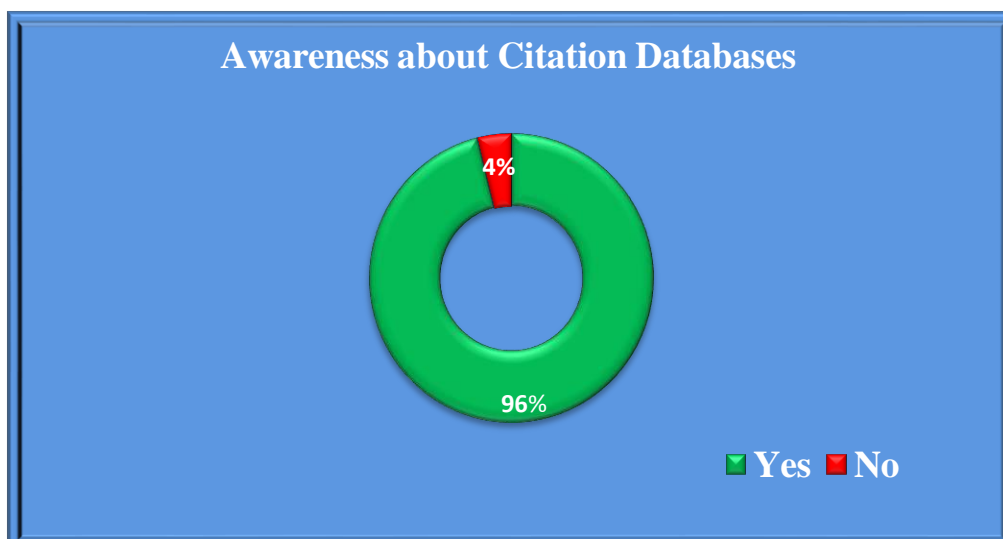| Sl. No.	Variables	Total Number of Respondents	Percentage (%)
1	Yes	50	96
2	No	2	4
	Total	52	100.0

Fig. 2 Awareness about Citation Databases

6.3 Awareness and usage of citation databases

While seeking the reply of the respondents about the usage of citation databases provided in the library they gave different opinions as tabulated below. The analyzed data reveals the majority of respondents (82.7%) are using Scopus. Web of Science is used by 71.2% of respondents. 80.8% of respondents use Google Scholar, 69.2% of respondents are using Research Gate. It was found from the study that many of the respondents are using Scopus and Google scholar more when compared to other citation databases.

Table 4 Awareness and Usage of Citation Databases

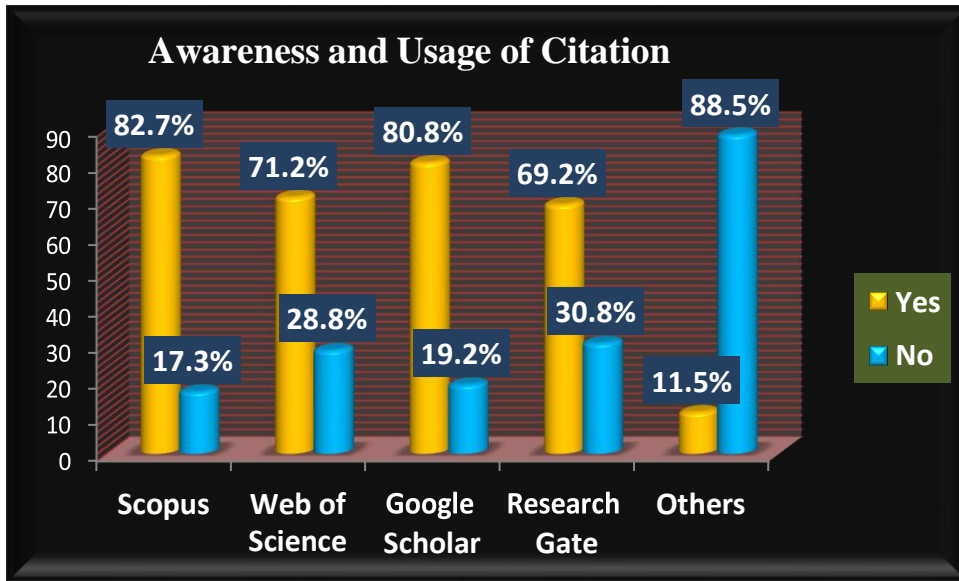| Sl. No.	Citation Databases	Responses		Percentage (%)	
		Yes	No	Yes	No
1	Scopus	43	9	82.7	17.3
2	Web of Science	37	15	71.2	28.8
3	Google Scholar	42	10	80.8	19.2
4	Research Gate	36	16	69.2	30.8
5	Others	6	46	11.5	88.5

Fig. 3. Awareness and Usage of Citation Database

6.4 Frequency of use of citation databases

Table 5 summarizes the details about the time spent by the respondents in using Citation Databases. The majority of respondents (23.1%) are using the Scopus database once in a week. 11 respondents use Web of Science at least 2 to 3 times a week. Most of the respondents (38.5%) are using Google Scholar daily. The majority of (28.8%) respondents are using Research Gate daily.

Table 5. Frequency of use of Citation Databases

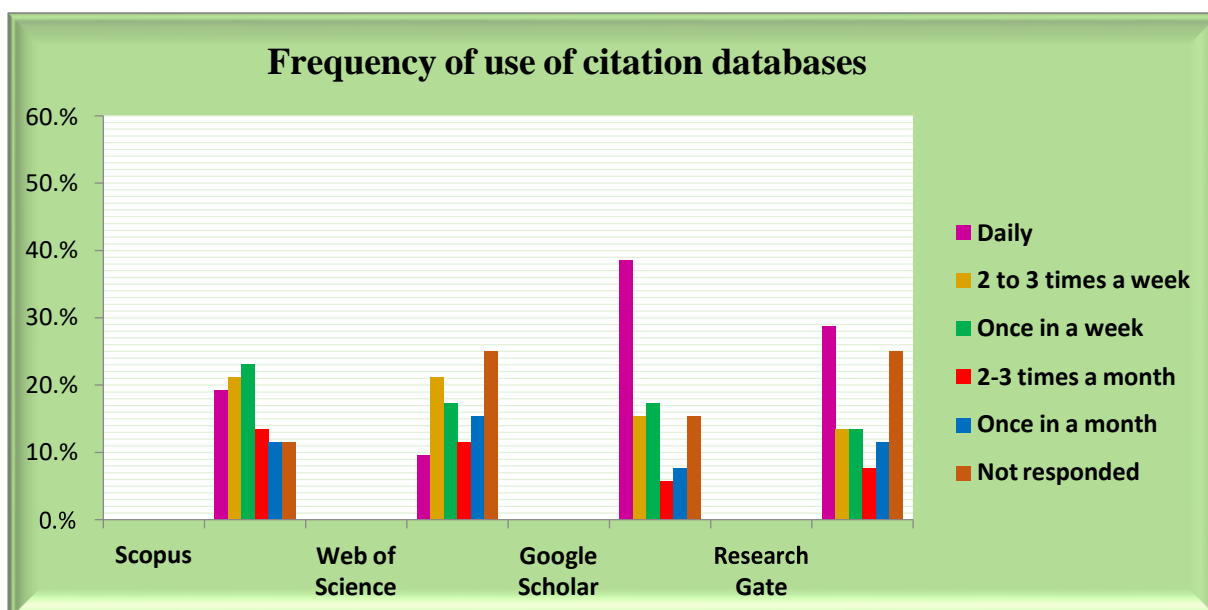| Citation Databases	Daily	2 to 3 times a week	Once in a week	2-3 times a month	Once in a month	Not responded	Total
Scopus	10 (19.2%)	11 (21.2%)	12 (23.1%)	7 (13.5%)	6 (11.5%)	6 (11.5%)	52 (100.0%)
Web of Science	5 (9.6%)	11 (21.2%)	9 (17.3%)	6 (11.5%)	8 (15.4%)	13 (25%)	52 (100.0%)
Google Scholar	20 (38.5%)	8 (15.4%)	9 (17.3%)	3 (5.8%)	4 (7.7%)	8 (15.4%)	52 (100.0%)
Research Gate	15 (28.8%)	7 (13.5%)	7 (13.5%)	4 (7.7%)	6 (11.5%)	13 (25%)	52 (100.0%)

Fig. 4. Frequency of use the Citation Databases

6.5 Purpose of using citation databases

The respondents are using citation databases for various purposes. Table 6 shows that 98.1% of respondents are using the citation databases to know about the work related to their field, 78.8% of respondents are using citation databases to select good journals for publishing articles/conference papers, 44.2% of respondents are using citation databases to know the h-index, 65.4% of respondents are using citation databases to know the impact factor of journals and only the 1.9% of respondents are using citation databases to find other details.

Table 6. Purpose of using citation databases

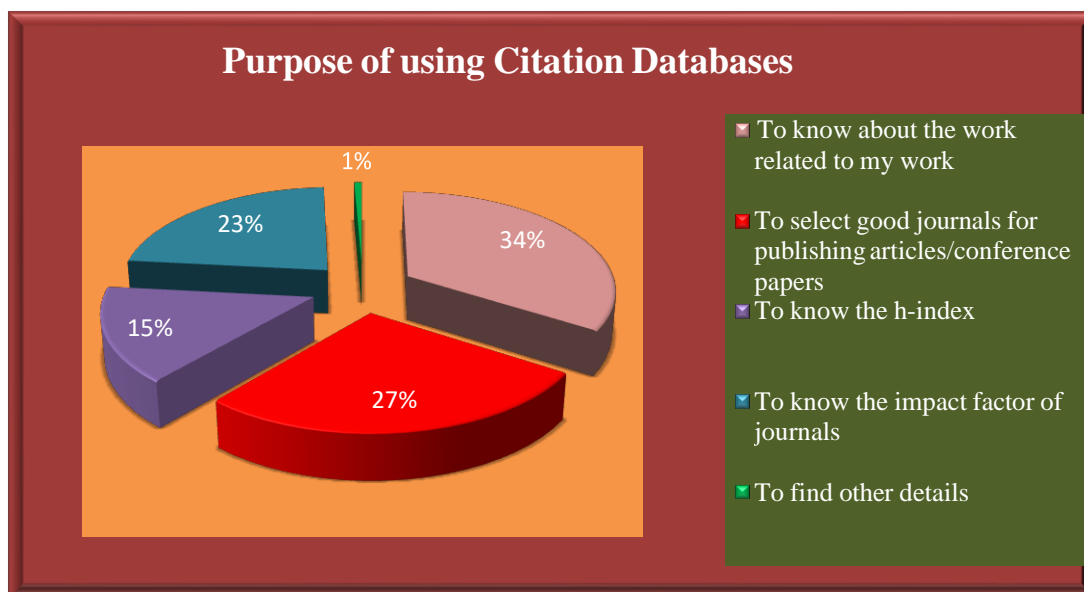| Sl. No.	Purpose of using Citation Databases	Total No. of Responses		Percentage (%)	
		Yes	No	Yes	No
1	To know about the works related to my field	51	1	98.1	1.9
2	To select good journals for publishing articles /conference papers	41	11	78.8	21.2
3	To know the h-index	23	29	44.2	55.8
4	To know the impact factor of journals	34	18	65.4	34.6
5	To know other details	1	51	1.9	98.1

Fig. 5. Purpose of using citation databases

6.6 Use of citation databases for literature search

All the respondents use citation databases for literature search.

Table 7. Use of citation databases for literature Search

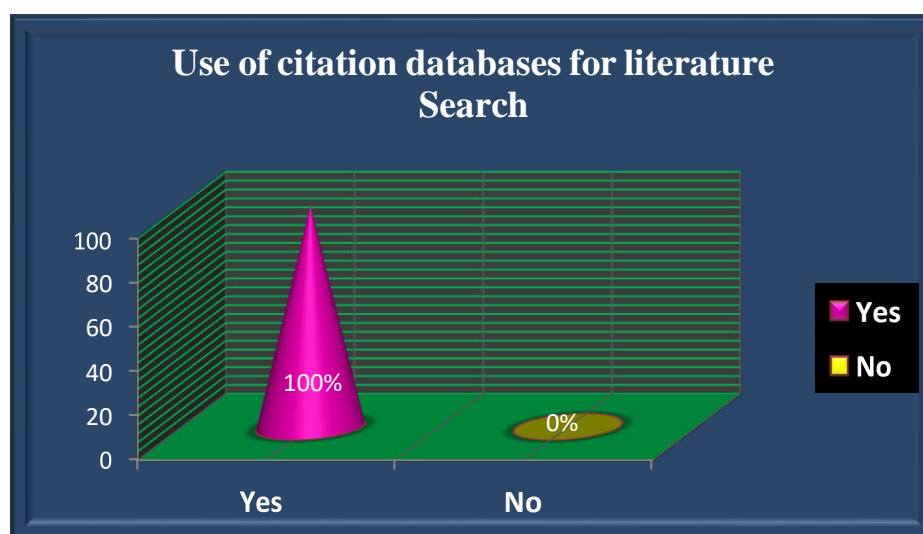| Responses	No. of Respondents	Percentage (%)
Yes	52	100
No	0	0
Total	52	100

Fig. 6. Use of citation databases for literature search

6.7 Helpfulness to find the top researchers

Table 8 gives the details of the helpfulness of the citation database to find the top researchers in different fields. 86.5% of respondents are using citation databases to find out the top researchers in their field and 13.5% of respondents have mentioned that they are not using citation databases for this reason.

Table 8. Helpfulness to find out top researchers

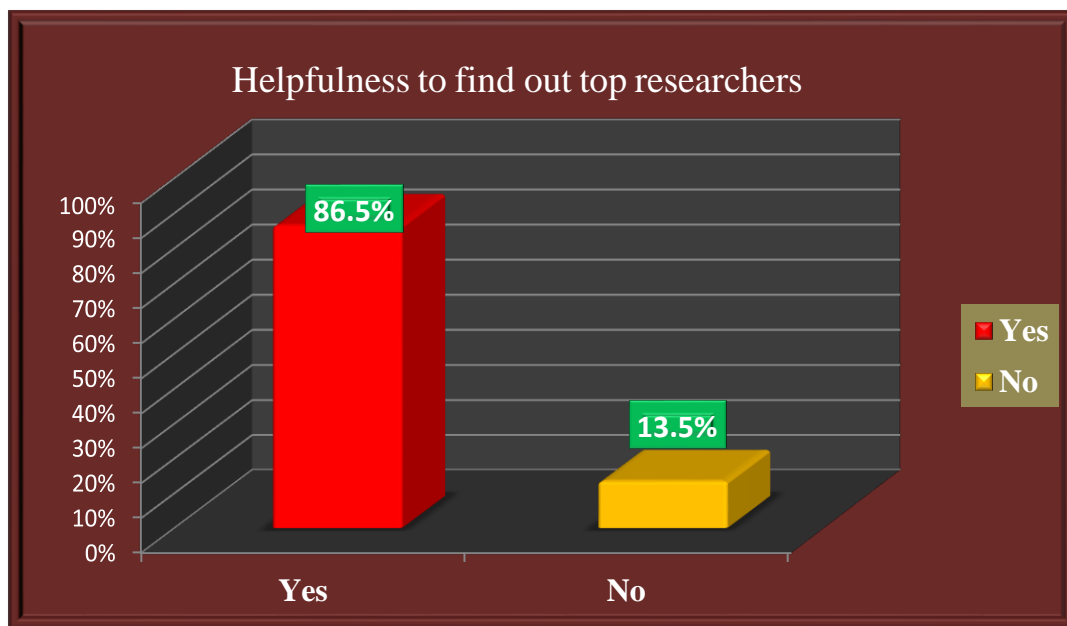| Variables	Total No. of Respondents	Percentage
Yes	45	86.5
No	7	13.5
Total	52	100

Fig.7. Helpfulness to find out top researchers

6.8 Usage of "export to bibliographic details" option of citation databases

The following table indicates that 63.5% of respondents are aware and have used the "export to bibliographic details" option available in citation databases.

Table 9. Usage of "export to bibliographic details" option of citation databases

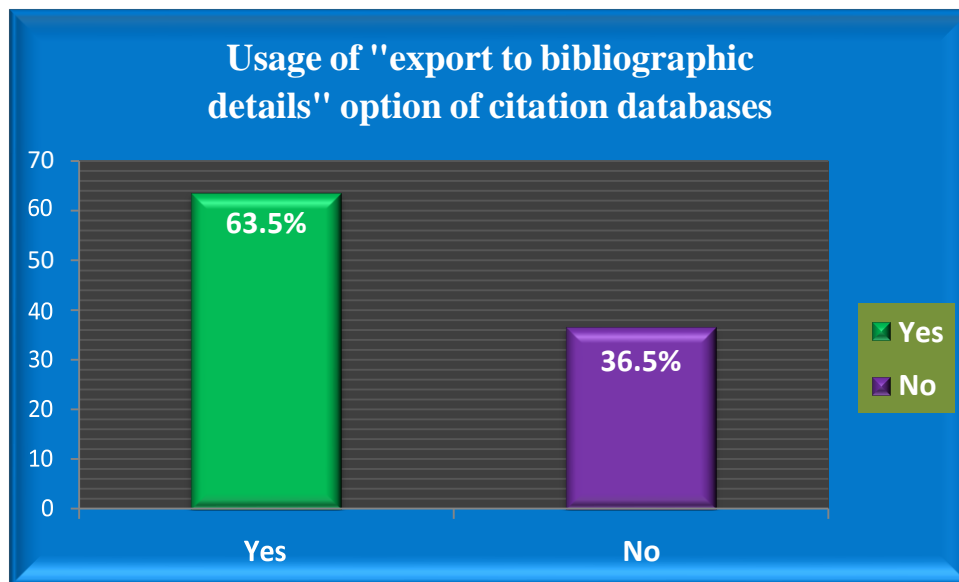| Responses	Total No. of Respondents	Percentage (%)
Yes	33	63.5
No	19	36.5
Total	52	100

Fig. 8. Usage of "export to bibliographic details" option of citation databases

6.9 Benefits of citation databases

Table 10 shows that 82.70% of respondents felt that citation databases have provided them better sources of information.76.90% of respondents have mentioned that use citation databases has improved their quality of academic work and also has helped to get up-to-date information.75% of respondents have considered citation databases as time-saving tools. 25% of respondents have used citation data to apply for grants and 2% of respondents have used for other reasons.

Table 10. Benefits of citation databases

Benefits	Responses		Percentage of
	Yes	No	responses
Time saving	40	12	(75%)
A better source of information	43	9	82.70%)
Improvement in the quality of academic work	40	12	(76.90%)
Access to Up-to-date information	40	12	(76.90%)
Citation data can be used to apply for grants	13	39	(25%)
Other reason	1	51	(2%)

7. **Conclusion and Recommendations**

The impact and advancement in technology has helped researchers to get the required information quickly and reduce a considerable amount of time required to complete the research work. Citation databases are the best tools for conducting literature search. The citation databases are also used for getting up to date knowledge with new literature, evaluation of scholarly work, choice of publication platform, and to carry out the research project. Therefore, the researchers, academicians and scholarly fraternity use the citation databases most effectively.

- From the study it is found that 96% of respondents are aware of the citation databases subscribed by the library.

- Out of the two subscribed databases, majority of the users (82.7%) are using Scopus database. because it has a well-structured user interface, uses primarily standard form elements which offer state of the art information to assistive technology. Scopus features and functionality are designed to be accessible by all and to access contents quickly and easily.

- 71.2% of the respondents use the web of science database which has a collection of high-quality scholarly content that allows searching and sorting the results by expected parameters.

- From the study, it is found that Google Scholar and Research Gate facilitates the discovery of not only the most familiar sources but also of sectors of scholarly communication that were previously hidden from view.

- From the study it was found that Scopus is used to know about the work related to their field and to select useful journals for publishing their articles because it makes the research workflow more efficient and effective and optimizes the analytic powers of researchers and the value of their output and also to know the H-index.

- Web of Science is used by respondents as it allows researchers and faculty members to search for all of the articles cited as research in a specific article and the citation data can be used to apply for grants.

- From the study it was found that the majority of researchers are aware about Google Scholar and are also using this database to get up-to-date information and to know the h-index of a particular author or institution.

8. **Recommendation:**

MIT library subscribes to Scopus and Web of Science databases and many other full-text databases. The citation databases can be made more usable by creating awareness in the form of training to faculty members and researcher scholars. Research guides can also take the initiative and guide the students to use more and more citation databases available in the library. The library can also arrange more literacy programs to improve the usage of citation databases.

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2. Falagas, Matthew E, Eleni I Pitsouni, George A Malietzis, and Georgios Pappas. (2020) "Comparison of PubMed, Scopus, Web of Science, and Google Scholar: Strengths and Weaknesses." FASEB Journal, 22, 338- 342. https://Doi.org/10.1096/fj.07-9492LSF.

3. Hilary I. Okagbue, Sheila A. Bishop, Patience I. Adamu, Abiodun A. Opanuga and Emmanuela C.M. Obasi, (2020) "Analysis of Percentiles of Computer Science, Theory and Methods Journals: CiteScore versus Impact Factor." DESIDOC Journal of Library & Information Technology, 40(1), 359-365. https://DOI.org/10.14429/djlit.40.1.1486

4. Eck, Van, Waltman, Ludo, and Nees. (2019) "Accuracy of Citation Data in Web of Science and Scopus." Paper published in the Proceedings of the 16th International Conference of the International Society for Scientometrics and Informetrics (pp. 1087-1092)