

Influence of gender on Utilization of Citation Databases - A Study

Praveen Kapoor¹ and Ashok Kumar Upadhyay²

^{1,2}*Department of Library and Information Science,
Mangalayatan University, Aligarh, UP 202146*

*Email: praveenkapoor2003@yahoo.co.in
ashok.upadhyay@mangalayatan.edu.in*

Abstract

The purpose of this research study is to analyze the ways in which gender affects the utilization of citation databases like Web of Science, Scopus and Google Scholar among library users at the University of Petroleum and Energy Studies, Dehradun. This investigation seeks to ascertain the impact of gender on the level of awareness, the purposes and impact of citation databases, the satisfaction level of users, and the challenges associated with using these databases. We employed the survey method to gather primary data from the university library users. A carefully designed questionnaire was employed to gather data and a total of 328 valid responses were received, which were analyzed with the help of MS Excel and IBM SPSS Statistics 24. The results show no significant variations between male and female respondents in terms of awareness, purpose of use, user satisfaction, and the impact of citation databases; however, gender influences the challenges users face when using these databases.

Keywords

Citation Database, Citation Index, Gender differences, Google Scholar Scopus, Usage pattern, User Study, Web Citations, Web of Science.,

1 Introduction

The growth of citation databases has been accelerated due to the emergence of web-based citation databases. Bibliometric assessment of journals, conferences, institutes, and individual scholars is predominantly based on citation analysis. Citation analysis is frequently used in bibliometrics to assess publications, researchers, institutions, and even academic disciplines. (Frachtenberg, 2023). Bibliometric analysis and Citation analysis pertain to distinct fields that examine the dynamics of disciplines as evidenced by their literary output. Bibliographic/Indexing databases, and citation databases are commonly used online database resources for various bibliometric and citation analysis. Automated citation indexing revolutionises citation analysis studies by analysing millions of citations for trends and knowledge discovery. Citation indices or citation indexes provide different kind of data for citation analysis. Various abstract and citation databases are available in the market and widely used by researchers for literature review, search cited references to find citation data, analysing old and new literature, discover trends or patterns in emerging research areas, to find out funding agencies etc. Citation indices also enable to discover the research productivity of an individual as well as institution, which help a researcher to collaborate with peers (Rahimi, 2013). Citation databases may be categorized on the basis of different criteria like commercial and non-commercial citation databases, subject specific citation databases or multi-disciplinary citation databases etc. Various citation databases provide distinct features and functionalities. Features & functionalities of subscription-based citation databases and open access citation databases are different, similarly coverage of subject

specific citation databases and multidisciplinary citation databases might be different (Kapoor & Upadhyay, 2023). Web of Science (WOS), Scopus, Research Gate, Google Scholar, Dimensions, Microsoft Academic and Indian Citation databases are among the most popular citation databases.

Online citation databases are electronic resource used for academic or research purposes. Use of e-resources depend on various aspects such as usefulness of resources, ease of use, availability of online content, availability of IT infrastructure to access e-resources and attitudes of user towards usage of e-resources. Similarly gender could be an influential factor to use of e-resources (Ebijuwa, 2018). Numerous fields, including academics, the business, politics, science and technology, and even religious organisations, are currently debating the distinctions between the male and female (Bassi & Camble, 2011). Studies indicate that there is a substantial variance between usage of online content among male and female users and result indicated that access to and use of e-resources may discriminate against female students, hence contributing to the "gender digital divide". (Manda & Mukangara, 2007). Research has shown that there is a gender disparity in the "digital divide" and contemporary technologies have an effect on women's lives. The study indicates a gender disparity in internet usage, with males exhibiting greater confidence than females in managing technology. Few other studies concluded that gender is no longer an issue when it comes to the need of acquiring IT skills and being proficient with electronic resources; people of all genders require these abilities to successfully traverse the information landscape (Bamidele & Adekanmbi, 2019). This raised a significant issue for examination regarding the differences in attitudes between genders in the utilisation of electronic resources and citation databases.

This research study is to investigate the usage pattern of various available citation databases among male and female library users at University of Petroleum and Energy Studies, Dehradun. Using a standardised questionnaire, researchers conducted survey-based studies among library patrons. Academic fraternities will be aided in using relevant resources and decision-makers will be aided in utilizing them by this study.

2 Review of Literature

Electronic information resources hold enormous importance in contemporary education and research, offering easy and reliable access to current data and information. In contrast to the abundance of literature on electronic resources and databases, very little is known about the usage pattern of citation databases. Citation databases serve as vital resources for researchers, providing a unified platform for accessing vast collections of scholarly literature. These databases facilitate literature searches, enable citation tracking, allow for the analysis of research trends, and assist in evaluating the impact of publications. Scopus and Web of Science are major subscription-based citation databases that provide comprehensive coverage of scholarly literature from journals, books, conference proceedings, etc., enabling users to perform searches across different subject areas (Gireesh Kumar TK., 2013). Citation databases, such as WOS and Scopus, facilitate the research endeavors of a scholar. Various databases are employed for citation analysis, each possessing different features and offering diverse services (Naik & Pai, 2020). The most common research databases employed across nearly all disciplines are the Web of Science and Scopus, both of which require a subscription for access. Although Google Scholar is a freely accessible citation database, its limited coverage and lack of features and tools for citation analysis prevent its use for bibliometric analysis. Pubmed is also a freely available citation database for the biomedical and life science domains. (AIRyalat et al., 2019). Web of Science is

subscription based citation databases, consisting various citation indices and cover approx 21000 online active journals. Google scholar is freely available citation database and majorly used by researchers to monitor their research productivity, track citations, connect with peers and perform literature search. Google Scholar profiles offer research groups an efficient, accessible, and cost-free method for monitoring their collective scholarly output. Google Scholars facilitate to measure and evaluate the scholarly productivity of scholarly organizations (Thoma & Chan, 2019). Google Scholar serves as a widely utilised online citation database that facilitates the researchers and academicians by providing a transparent and easily accessible platform for literature search and research metrics, such as number of citations, times cited, h-index, and i10, to evaluate the productivity of authors as well as institutions (AIRyalat et al., 2019). Study indicate that Google Scholar offers a more user-friendly citation database than Microsoft Academic, primarily due to its extensive collection of academic literature (Arumugam & Prakash, 2017). In a study researcher identified usage patterns of citation databases. Researchers determined the reasons for the use of citation databases, assessed users' comprehension of their functionalities, and examined the application of their search features. Researchers discovered that 96% of participants were familiar with Scopus, Web of Science, Google Scholar, and ResearchGate. The survey indicated that the majority of users utilize citation databases to locate current literature and information within their discipline. The study concluded that half of the respondents express satisfaction with the distinctive characteristics and capabilities of the citation databases to which they are subscribed. (Naik & Pai, 2020). Another study revealed that determined the goal of utilising Web of Science, researchers' familiarity with the WOS interface, challenges faced, and academics' satisfaction levels when utilising the site. A study indicates that 68.7% of scholars utilise the WOS database, whereas 31.3% do not. 55.9% of researchers utilise this database for literature searches, while 27.7% employ it to stay informed about current trends in their field. 67% of scholars necessitate user awareness training for optimal utilisation of the Web of Science platform (Pratap & Prasad, 2017). Researcher concluded a survey based doctoral study in Banaras Hindu University that most of the respondents are aware and use Google Scholar and Web of Science databases to search of scholarly literature, to find out current trends and publication in their subject area. 81% of respondents choose Google scholar as their preferred tool where as 55% respondents choose Web of Science as their preferred resources. Study shows that majority of respondents facing challenges in accessing Google scholars and Web of Science due to lack of knowledge of access mechanism (Pratap, 2017). Research study conducted at University of Kerala indicate that research scholars are familiar with Google Scholar and use for various purposes such as "preparation of research papers", "seminar presentations", to find out "current developments" & "citation tracking" etc. Majority of the research scholars have positive opinion with the retrieved results and 38% are not satisfied. More than 50% research scholars have positive opinion on "relevance of search results". Bibliometric indicators in Google Scholar are minimally utilised (Mohan et al., 2018). Research conducted at the Banaras Hindu University concluded that 82.7% research scholars are using Google Scholar for various purpose and 17.3% research scholars are not using Google Scholar. Three fourth research scholars use Google Scholar and found useful, where as 9.3% use it but did not find it useful. 16% research Scholars did not use it. Results shows that 64% research scholars need training for better utilization of the Google Scholars (Prasad & Pratap, 2014). A survey-based research study was undertaken at the University of Minnesota, and the result shows that 60% of respondents use Google Scholar (Cothran, 2011). Study ascertain the utility of Google Scholar among PG students at the University of Ilorin, Nigeria and the findings discovered that a most of the people surveyed support the use of Google Scholar, with approximately 92% expressing satisfaction with the search results obtained from the platform. (Tella et al., 2017).

Like electronic resources, the utilisation of citation databases is dependent on factors such as availability, IT infrastructure, user attitudes, and utility and user-friendliness. In addition to these factors, gender may also influence the utilisation of citation databases. A study determined that gender correlates with the usage of online resources, revealing that male PG students exhibited a higher propensity for using e-resources than female students. Findings indicate that even when controlling for attitudes towards the use of e-resources or training in their use, the correlation between gender and e-resources persisted. The study discovered that female students may experience marginalisation as a result of their use and engagement with electronic resources, giving rise to the term "gender digital divide" (Manda & Mukangara, 2007). The gender gap in using academic databases in Adamawa State, Nigeria's university libraries was the subject of a recent study. The results demonstrate that male students make more use of e-resources compared to female students. Results show that students' attitudes and the ways in which they use electronic resources differ between male and female students, and that students use these tools for different reasons (Bassi & Camble, 2011). The majority of UG students in university libraries in Jigawa State, Nigeria, demonstrated strong information literacy skills when using electronic resources, although gender differences were evident. In addition, the study found that different search tactics are used by undergraduates to gather information from online resources. However, a substantial difference exists in the search tactics employed by male and female UG students. The study's results demonstrate that students utilise diverse electronic information resources, revealing substantial variations in usage between male and female students. However, there were no significant differences in the challenges faced in using these resources based on gender. The study found that gender was a barrier to utilizing electronic resources. (Buba et al., 2018). A survey-based research study carried out among students from selected private universities in Nigeria indicated that gender had a significant impact on the utilisation of electronic resources. (Ebijuwa, 2018). A study conducted among scholars at Alagappa University, Karaikudi, Tamil Nadu, indicated that the information literacy skills of female respondents are somewhat lower, revealing gender differences between male and female scholars. It is recommended that female scholars participate in special programs or workshops to reach the expected level of proficiency (Jeyshankar & Nachiappan, 2021). On the contrary, study carried out among undergraduates at selected universities in Southwest Nigeria indicated that there is no rhyme or reason for the gender gap when it comes to using electronic resources for information gathering. It is essential that both genders receive equal priority in every aspect, particularly those concerning the utilisation of electronic resources and the improvement of capabilities through ICT skill training and development (Bamidele & Adekanmbi, 2019). Based on the aforementioned literature study, we conclude that the impact of gender on the utilisation of citation databases varies widely.

3 Objectives of Study

The current investigation took place among library users with the following key objectives:

- To measure the gender wise usage and frequency of use of Citation Databases.
- To examine the Influence of gender on awareness, purposes of using Citation Databases, level of satisfaction among users, Impact, challenges encountered while using Citation Databases.

This study was limited in scope to assess the usage pattern of Citation databases among library users at university.

4 Methodology

To assess the usage pattern of citation databases among users of citation Databases, the researcher used the survey method. Aneffectively organised survey questionnaire was designed to collect primary data using 5-point Likert scale. This questionnaire has several questions that pertain to the utilization of citation databases and distributed in hybrid mode.Total of four hundred fifty online and offline survey questionnaire were distributed among university library users which consist of faculty members, research scholars and students. Data was collected from respondents through offline survey questionnaire and online questionnaire form. Total 362 responses received,and more than 90% responses i.e. 328 valid questionnaires were found eligible for data analysis. Collected data were processed and organised in tabular form using MS Excel and SPSS Statistics 24 package. Various statistical tools such as percentage, frequency, Mean, Standard Deviation (SD) and T-test were employed for data analysis.

5 Result and Discussion

5.1 DemographicInformation

Table 1 exhibits the gender-wise and age-wise distribution of the respondents. Table shows that out of 328 respondents, approx. 41% are female and 59% are male. The result shows that approx. 80% of respondents are below the age of 35 and approx. 20% of users are from the age of more than 36 years.

Table 1: Age-wise andGender-wise Distribution of Respondents

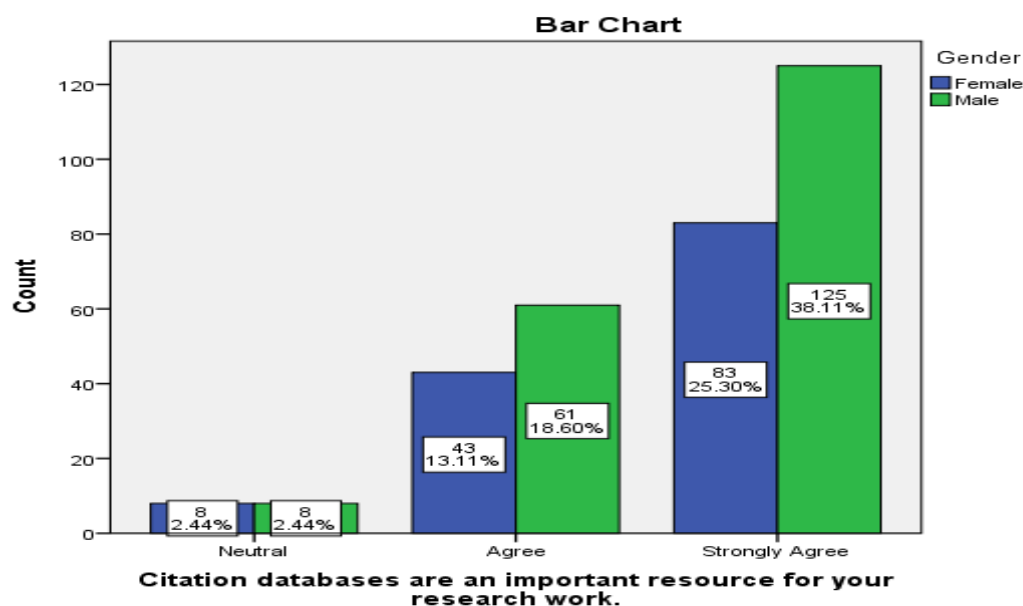
Age Group * Gender Crosstabulation			
Age Group	Female	Male	Total
Below 25 Years	92	77	169
	68.66%	39.69%	51.52%
26-35 Years	31	61	92
	23.13%	31.44%	28.05%
36-45 Years	10	41	51
	7.46%	21.13%	15.55%
Above 46 Years	1	15	16
	0.75%	7.73%	4.88%
Total	134	194	328
	100.00%	100.00%	100.00%

Table 1 also reflects that out of 134 female respondents, 91.79% are from the age group of 35 years or less, whereas only 71.13% of males are from this age group. The Table indicates that a greater proportion of male respondents than female respondents utilise libraries.

5.2 Citation databases are an important resource for research work

Using a Likert scale, respondents were requested to rate their understanding of the importance of citation databases in their research work. The citation database's importance level and different categories (gender) of respondents are used to analyse the collected responses using the Crosstabulation option in SPSS. The bar chart clearly indicates that the most of respondents agree or strongly agree with the statement that "citation databases are an

important resource for your research work.” 56.71% of male respondents are higher as compared to 38.41% of female respondents, who agree or strongly agree with the statement.



Influence of gender on importance of citation databases in research work (Independent T-Test analysis)

To verify the difference in understanding of the importance of citation databases in their research work between male and female, an independent sample t-test was performed. Table 2 (B) shows result of the independent t-test, where $t_{(326)} = -0.661$, $p = 0.509$ which indicates $P\text{-Value} > 0.05$ hence there was no significant difference found between male respondents ($M = 4.60$, $SD = 0.569$) and female respondents ($M = 4.56$, $SD = 0.607$), hence no influence of gender on understanding of the importance of citation databases in their research work.

Table 2 (A) Group Statistics

Gender	N	Mean (X)	Std. Deviation (SD)	Std. Error Mean
Female	134	4.56	0.607	0.052
Male	194	4.60	0.569	0.041

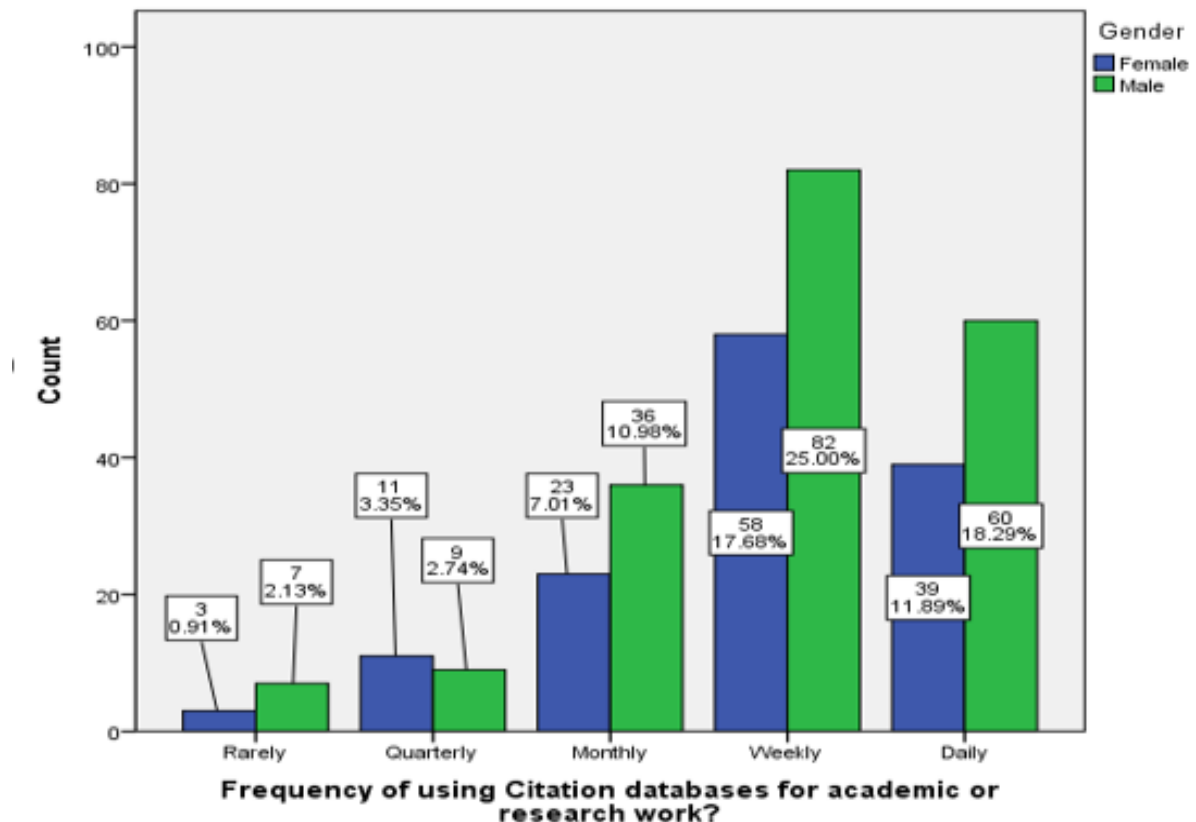
Table 2 (B) Independent Samples Test – Importance of using Citation Databases

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.430	0.233	-0.661	326	0.509	-0.043	0.066	-0.173	0.086
Equal variances not assumed			-0.653	273.798	0.514	-0.043	0.066	-0.174	0.087

not assumed									
-------------	--	--	--	--	--	--	--	--	--

5.3 Gender-wise information on Frequency of using Citation databases

Using five (5) point Likert scale, respondents were requested to rate frequency of using citation databases. Frequency of using citation databases and different categories (gender) of respondents are used to analyse the collected responses using the Crosstabulation option in SPSS. The bar chart clearly shows that most of the respondents use citation databases on a weekly or daily basis. 25% of male respondents use citation databases weekly, compared to 17.68% of female respondents, and 18.29% use them daily, compared to 11.89% of female respondents.



Influence of gender on frequency of citation databases in research work (Independent T-Test analysis)

To verify the difference in frequency of using citation databases between male and female, an independent sample t-test was performed. Table 3 (B) shows result of the independent t-test, where $t_{(326)} = -0.309$, $p = 0.758$ which indicates P-Value > 0.05 hence there was no significant difference found between male respondents ($M = 3.92$, $SD = 1.002$) and female respondents ($M = 3.89$, $SD = 0.994$), hence no influence of gender in frequency of using citation databases in their research work.

Table 3 (A) Group Statistics

Gender	N	Mean (X)	Std. Deviation (SD)	Std. Error Mean

Female	134	3.89	0.994	0.086
Male	194	3.92	1.002	0.072

Table 3 (B) Independent Samples Test - Frequency of using Citation databases

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	0.027	0.869	-0.309	326	0.758	-0.035	0.112	-0.255	0.186
Equal variances not assumed			-0.309	287.682	0.757	-0.035	0.112	-0.255	0.186

Influence of gender on awareness of citation databases (Independent T-Test analysis)

To examine the awareness of citation databases among users, six question statements were used in the questionnaire. Respondents were asked to mark their response on the Likert 5-choice scale on a set of six statements like "I am aware of citation databases" ; "I use citation databases for research purposes," "Citation databases help me to find relevant and good quality research papers," "I am capable of utilizing the search functionalities and filters provided by citation databases," "I am using the export feature to get citation data and references from the citation database for my research work," and "My library provides access to citation databases.". The average mean of these 6 statements for females and males is more than 4, which means both females and male respondents are well aware of citation databases. However mean value of male respondents is comparatively high as compared to female respondents.

To verify the difference in awareness of citation databases between male and female, an independent sample t-test was conducted. Table 4 (B) shows result of the independent t-test, where $t_{(326)} = -0.756$, $p = 0.45$ which indicates $P\text{-Value} > 0.05$ hence there was no significant difference found between male respondents ($M = 4.2646$, $SD = 0.69302$) and female respondents ($M = 4.2065$, $SD = 0.67296$), hence no influence of gender on awareness of use of citation databases.

Table 4 (A):Group Statistics

Gender	N	Mean (X)	Std. Deviation (SD)	Std. Error Mean
Female	134	4.2065	0.67296	0.05813
Male	194	4.2646	0.69302	0.04976

Table 4 (B):Analysis of Influence of gender on awareness of citation databases

(Independent t-test)

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	0.026	0.872	-0.756	326	0.450	-0.05814	0.07693	-0.2095	0.09321
Equal variances not assumed			-0.76	291.448	0.448	-0.05814	0.07652	-0.2087	0.09247

Influence of gender on purposes of using citation databases (Independent T-Test analysis)

The purpose of using citation databases may differ from user to user, set of six statements were used in questionnaire to ascertain the purpose of using citation databases. "Literature review or search", "To know current developments and research in your subject area", "To Collaborate with other and find trends in other subject areas", "To measure your research output & find out citation metrics", "For citation tracking" and "To retrieve full text document" are major purpose of using citation databases and average Mean of these statement is more than 4 for both male and female respondents, however mean value of male respondents is slightly high as compared to female respondents. Results indicates that both male and female respondents are agree with these statements showing various purpose of using citation databases.

To verify the difference in purposes of using citation databases between male and female, an independent sample t-test was conducted. Table 5 (B) shows result of the independent t-test, where $t_{(326)} = -0.349$, $p = 0.727$ which indicates $P\text{-Value} > 0.05$ hence there was no significant difference found between male respondents ($M = 4.0954$, $SD = 0.67902$) and female respondents ($M = 4.0697$, $SD = 0.61833$), hence no influence of gender on purpose of using citation databases.

Table 5 (A): Group Statistics

Gender	N	Mean (X)	Std. Deviation (SD)	Std. Error Mean
Female	134	4.0697	0.61833	0.05342
Male	194	4.0954	0.67902	0.04875

Table 5 (B): Analysis of Influence of gender on purpose of using citation databases (Independent t-test)

	Levene's Test for Equality of Variances	t-test for Equality of Means						

	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	0.062	0.803	-0.349	326	0.727	-0.02571	0.07357	-0.17044	0.11902
Equal variances not assumed			-0.356	302.306	0.722	-0.02571	0.07232	-0.16802	0.11660

Influence of gender on Level of satisfaction while using citation databases (Independent T-Test analysis)

Respondents were asked to indicate their opinion on set of seven question statements used in survey questionnaire to ascertain the level of satisfaction while using citation databases. Users satisfaction level is assessed on these seven statements like “Content Coverage”, “User Interface (Web Page)”, “Ease of Use”, “Search Result - Quality and relevance of retrieved data”, “Availability of full text”, “Up to date content” and “Citation information retrieved” and respondents shows their satisfaction level on the Likert 5-choice scale from highly satisfied to highly dissatisfied. Average mean of these statement for female and male respondents is more than 4, which indicate that respondents are satisfied with the use of citation databases, however mean value of male respondents is slightly high as compared to female respondents..

To verify the difference on level of satisfaction while using citation databases between male and female respondents, an independent sample t-test was conducted. Table 6 (B) shows result of the independent t-test, where $t_{(326)} = -0.618$, $p = 0.537$ which indicates $P\text{-Value} > 0.05$ hence there was no significant difference found between male respondents ($M = 4.1878$, $SD = 0.54060$) and female respondents ($M = 4.1503$, $SD = 0.53890$), hence no influence of gender on level of satisfaction while using citation databases.

Table 6 (A): Group Statistics

Gender	N	Mean (X)	Std. Deviation (SD)	Std. Error Mean
Female	134	4.1503	0.53890	0.04655
Male	194	4.1878	0.54060	0.03881

Table 6 (B): Analysis of Influence of gender on Level of satisfaction while using citation databases (Independent t-test)

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	

							nce	Lower	Upper
Equal variances assumed	0.097	0.756	-0.618	326	0.537	-0.03746	0.06065	-0.15676	0.08185
Equal variances not assumed			-0.618	286.697	0.537	-0.03746	0.06061	-0.15676	0.08184

Influence of gender on impact of citation databases (Independent T-Test analysis)

To evaluate the impact of citation databases, set of 6 statements were used in the survey questionnaire and respondents were asked to indicate their agreement with these statements. The result of examining the statements like “Enhanced the strength of your research work”, “Enriched the impact and visibility of your research”, “Help in collaborating with peer researcher”, “Support to keep up with the latest research trends”, “Enhance professional expertise” and “Enhanced career growth opportunities” related to impact of citation databases shows that average mean on the Likert scale is more than 4 for female and male respondents both and result shows that respondents are agree with the statements, however mean value of male respondents is comparatively high as compared to female respondents.

To verify the difference on impact of citation databases between male and female respondents, an independent sample t-test was conducted. Table 7 (B) shows result of the independent t-test, where $t_{(326)} = -1.794$, $p = 0.074$ which indicates $P\text{-Value} > 0.05$ hence there was no significant difference found between male respondents ($M = 4.2397$, $SD = 0.56267$) and female respondents ($M = 4.1231$, $SD = 0.60038$), hence no influence of gender on impact of citation databases.

Table 7 (A): Group Statistics

Gender	N	Mean (X)	Std. Deviation (SD)	Std. Error Mean
Female	134	4.1231	0.60038	0.05186
Male	194	4.2397	0.56267	0.04040

Table 7 (B): Analysis of Influence of gender on impact of citation databases (Independent t-test)

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.618	0.204	-1.794	326	0.074	-0.11656	0.06496	-0.24436	0.01125

Equal variances not assumed			- 1.77 3	273.8 68	0.077	-0.11656	0.06574	- 0.2459 8	0.01287
--------------------------------------	--	--	----------------	-------------	-------	----------	---------	------------------	---------

Influence of gender on Challenges encountered while using citation databases (Independent T-Test analysis)

To ascertain the challenges encountered while using citation databases, six question statements such as “Do not get relevant result”, “Inaccurate search results are provided”, “Inappropriate content coverage of citation databases”, “Lack of awareness about content coverage”, “Lack of knowledge of the access mechanisms” and “Inaccessibility of full-text documents” were used in the survey questionnaire. Respondents were asked to indicate their agreement on set of these question statements on the Likert scale. Average mean of these statements is around 3 for female and male both respondents, however mean value of male respondents is comparatively high as compared to female respondents. Study indicated that respondents were neither agreed nor disagreed on these statements. This shows that respondents were able to access citation databases and same time they are facing few challenges and need regular training for better utilisation of resources.

To verify the difference on challenges encountered while using citation databases between male and female respondents, an independent sample t-test was conducted. Table 8 (B) shows result of the independent t-test, where $t_{(320.827)} = -2.454$, $p = 0.015$ which indicates $P\text{-Value} < 0.05$ hence there was significant difference found between male respondents ($M = 3.1529$, $SD = 0.93996$) and female respondents ($M = 2.9254$, $SD = 0.73621$), hence there is significant influence of gender on challenges encountered while using citation databases.

Table 8 (A): Group Statistics

Gender	N	Mean (X)	Std. Deviation (SD)	Std. Error Mean
Female	134	2.9254	0.73621	0.06360
Male	194	3.1529	0.93996	0.06748

Table 8 (B): Analysis of Influence of gender on Challenges encountered while using citation databases (Independent t-test)

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	11.560	0.001	-2.348	326	0.019	-0.22755	0.09690	-0.41818	0.03692
Equal			-	320.827	0.015	-0.22755	0.09273	-	-

variances not assumed			2.454					0.40999	0.04511
-----------------------------	--	--	-------	--	--	--	--	---------	---------

Major Findings

Findings of this study are mentioned as follows:

- Majority of the female (94%) and male (95.9%) respondents believe that citation databases are an important resource for their research work and no influence of gender on understanding of the importance of citation databases in their research work.
- Majority of the female (72.4%) and male (73.2%) respondents use citation databases very frequently, on weekly or daily basis and there was no influence of gender in frequency of using citation databases in their research work.
- Finding of the research study reveals that both female and male respondents are well aware about citation databases and there was no influence of gender on awareness of use of citation databases.
- Result of the study also shows that both female and male respondents agree with the statements showing different purpose(such as literature search, to collaborate with others, to find out current developments and research, etc.)of using citation databases and there is no influence of gender on purpose of using citation databases.
- Result also shows that female and male respondents are agree with the statements showing satisfaction level of the respondents while using citation databases and no influence of gender is recorded.
- Findings also reveals that female and male respondents are agree with the statements and acknowledge the impact of citation databases on their research work and professional endeavours. Result shows that no influence of gender is recorded on various statements representing impact of citation databases on respondent's research work and professional endeavours.
- Result also shows that both female and male respondents are neutral on the various statements representing challenges encountered while using citation databases, which indicates that female and male respondents are neither agree nor disagree with the statements, but significant influence of gender is recorded on challenges encountered while using citation databases.

Conclusion

This study concluded that majority of respondents believe that citation databases such as Scopus, Web of Science and Google Scholars are very important resources for their research work and use these databases on daily or weekly basis. In this study, the respondents are categorised as either male or female and result shows that respondents are well aware of citation databases and there is no substantial variance in awareness of citation databases in terms of gender. Study reveals that citation databases are used by researchers and academicians for research, teaching and learning purpose. Citation databases are widely used by researchers for literature search, collaboration with other researchers, citation tracking and to find out current developments etc. Study shows that respondents are satisfied with the citation databases and acknowledge the impact of these resources on their research and professional endeavour, however there is no influence of gender on purpose of usage of citation databases, satisfaction level of users and impact of these resources. Citation databases are well-known to users, but they are not being utilized properly. The study reveals that there

are significant differences in the challenges faced by male and female respondents when using citation databases. “Lack of knowledge of the access mechanisms” and “Lack of awareness about content coverage” are major challenges faced by the respondents and influence of gender is recorded on these challenges faced by the user while using such resources. It is recommended that extensive user awareness programs must be conducted to raise the familiarity of such citation databases among users.

Moreover, thorough investigation can be carried out to explore subscription-based commercial citation databases and freely available citation databases like Google Scholars.

Funding

For the purpose of this study, no funding was obtained.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Reference

- AIRyalat, S. A. S., Malkawi, L. W., & Momani, S. M. (2019). Comparing bibliometric analysis using pubmed, scopus, and web of science databases. *Journal of Visualized Experiments*, 2019(152). <https://doi.org/10.3791/58494>
- Arumugam, J., & Prakash, M. (2017). A study on Microsoft academic search and Google scholar: A gateway for researchers. *International Journal of Multidisciplinary Research and Development* *Www.Allsubjectjournal.Com*, 4(2007), 41–47. www.allsubjectjournal.com
- Bamidele, O., & Adekanmbi, O. (2019). Influence of Gender Differences on Usage Patterns of Electronic Information Sources among Undergraduates of Selected Universities in Southwest , Nigeria. *International Journal of Library Science*, 8(2), 27–33. <https://doi.org/10.5923/j.library.20190802.01>
- Bassi, M. D., & Camble, E. (2011). Gender differences in use of electronic resources in University Libraries of Adamawa State, Nigeria. *Library Philosophy and Practice*, 2011(AUGUST). <https://doi.org/https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=7012&context=libphilprac>
- Buba, A. A., Abdullahi, Z. M., & Muhammed, A. A. (2018). Gender Differences on the Use of Electronic Information Resources by Undergraduate Students in University Libraries of Jigawa State, Nigeria. *International Journal of Applied Technologies in Library and Information Management*, 4(3), 66–76. <https://www.ajol.info/index.php/ict/article/view/173738>
- Cothran, T. (2011). Google Scholar acceptance and use among graduate students: A quantitative study. *Library and Information Science Research*, 33(4), 293–301. <https://doi.org/10.1016/j.lisr.2011.02.001>
- Ebijuwa, A. S. (2018). Gender Differentiation and Perceived Ease of Usage of Electronic Resources by University Students in Selected Private Universities in Nigeria. *SRELS Journal of Information Management*, 55 (3)(June), 117–127. <https://doi.org/10.17821/srels/2018/v55i3/123059>
- Frachtenberg, E. (2023). Citation analysis of computer systems papers. *PeerJ Computer Science*, 9(e), 1389. <https://doi.org/10.7717/peerj-cs.1389>
- Gireesh Kumar TK. (2013). Comparative Analysis of Search Features of Scopus and Web of Science. *Information Products and Services in the Environment, Nacinprose*, 373–377.

- Jeyshankar, R., & Nachiappan, N. (2021). Study on Gender Differences in Information Literacy Skills among Research Scholars of Alagappa University, Karaikudi, Tamil Nadu. *Library Philosophy and Practice*, 2021, 1–29. <https://doi.org/https://digitalcommons.unl.edu/libphilprac/4946>
- Kapoor, P., & Upadhyay, A. K. (2023). Comparative Study of Citation Databases: Web of Science & Scopus. *Empowering Libraries, . Connecting Communities Lnnovation, Collaboration A-nd Entrepreneurship*, 212-223p.
- Manda, P. A., & Mukangara, F. (2007). Gender Analysis Of Electronic Information Resource Use: The Case Of The University Of Dar Es Salaam, Tanzania. *The University of Dar Es Salaam Library Journal*, 9(1), 31–52. <https://doi.org/10.4314/udslj.v9i1.26660>
- Mohan, G. P., Rajan, J. S., & Kabir, S. H. (2018). Awareness and Use of Google Scholar among the Research Scholars in University of Kerala. *LIS Journal of Librarianship and Informatics*, 1(1), 49–57.
- Naik, G., & Pai, R. (2020). Role of Citation Databases in Research : A Study Role of Citation Databases in Research : A Study. *Library Philosophy and Practice (e-Journal)*. <https://doi.org/https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=8116&context=libphilprac>
- Prasad, H. N., & Pratap, D. (2014). Use of google scholar among research scholars of faculty of arts and faculty of social sciences of Banaras Hindu University: A study. *Gyankosh-The Journal of Library and Information Management*, 5(2), 49. <https://doi.org/10.5958/2249-3182.2014.00010.0>
- Pratap, D. (2017). *Comparative Study of Google Scholar and Web of Science from Users Perspective* (Issue 285314). <http://hdl.handle.net/10603/268445>
- Pratap, D., & Prasad, H. N. (2017). Use of Web of Science among Research Scholars of Institute of Science , Banaras Hindu University : a Study. *Library Waves*, 3(1), 18–26.
- Rahimi, S. (2013). *A comparison of citation pattern of traditional and web citation databases in medicine.* (Issue November) [University of Madras]. <http://hdl.handle.net/10603/195151>
- Tella, A., Oyewole, M., & Tella, A. (2017). An analysis of perceived usefulness of Google Scholar by the postgraduate students of the University of Ilorin, Nigeria. *SA Journal of Information Management*, 19(1), 1–9. <https://doi.org/10.4102/sajim.v19i1.793>
- Thoma, B., & Chan, T. M. (2019). Using Google Scholar to track the scholarly output of research groups. *Perspectives on Medical Education*, 8(3), 201–205. <https://doi.org/10.1007/s40037-019-0515-4>

Short Biographical Notes of Contributors

Mr. Praveen Kapoor is a research scholar in the Department of Library and Information Science, Mangalayatan University, Aligarh. He is also working as Sr. Associate Librarian at the University of Petroleum and Energy Studies, Dehradun. He has about 21 years of rich experience in the field of library and information science at various reputed academic organizations. He has qualified for the University Grants Commission–National Eligibility Test exam in the subject of Library and Information science and pursuing a Ph. D in Library and Information Science. His area of specialization is information technology, library automation and technology, electronic resources, information retrieval and repackaging. He has published research articles in various journals, conferences, and edited books. He has also presented papers at national and international conferences.

Dr. Ashok Kumar Upadhyay is presently working as a librarian and Head, Department of Library and Information Science, Mangalayatan University, Aligarh. He holds a Ph.D. in Library and Information Science from AMU, Aligarh. Dr. Upadhyay has nearly 16 years of academic and administrative experience as a library professional in various reputable organizations. His area of specialization is information technology, library management, and information retrieval and repackaging. He has published more than 120 quality research articles in various national and international journals, conferences, and edited books. He has participated in various national and international seminars, conferences, workshops, and LDPs and presented a number of quality research articles on different aspects of library and information science. He has also contributed his expertise in establishing the various libraries in the district jails of Ghaziabad, Aligarh, Gautam Budh Nagar, Lucknow, and Meerut. He has also been a member of the editorial team of various reputed journals with high impact factors. He has been the recipient of the Best Practicing University Librarian Award 2023 and the Global Eminent Academician Award 2023. He also visited the National Library of the Maldives, Male, for the academic assignment sponsored by SAARC, Documentation Centre.

ORCID

Praveen Kapoor ID <https://orcid.org/0000-0003-1522-4480>

Ashok Kumar Upadhyay ID <https://orcid.org/0000-0002-1859-675X>