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Google Scholar's Contribution to Scholarly Pursuits: A Comprehensive Overview

Subhajit Panda¹ and Vikky Kushwaha²

¹Assistant Librarian, University Library, Chandigarh University, Mohali, Punjab, India; and, Researcher, DLIS, Punjabi University, Patiala, Punjab, India

Email: suvapanda007@gmail.com

²Assistant Librarian, Galgotia College of Engineering and Technology, Greater Noida, UP, India

Email: vikkykushwaha55@gmail.com

Abstract

The quest for searching and retrieving authentic information is of great importance for scholars. With the growing dominance of Google Scholar as a first-stop resource for scholars and researchers, an investigation of its influence on citation patterns, freedom of information, and scholarly communication is necessary. This paper aims to provide a comprehensive overview of Google Scholar and its potential benefits for academics and researchers in various fields of research. The objectives of this research are to explore the ways in which Google Scholar can assist researchers in locating relevant scholarly works worldwide, to identify its limitations as a research tool, and to suggest potential areas for improvement of the Google Scholar platform.

This study breaks new ground in understanding the various versions of Google Scholar indexes, correlations between the number of Google Scholar versions and citation counts, and the value of Institutional Repositories for increasing scholarly impact. This paper investigates Google Scholar versions as an alternative source for a scholarly article. While other articles have looked at Google Scholar through various lenses, the authors believe this specific aspect of the topic has not been previously explored. This article provides information about conducting a literature search on the Google Scholar website. The article briefly describes how to narrow or expand a search and how to find non-journal literature. Although Google Scholar is not

without limitations, it offers a practical starting point for a literature search.

Keyword: Google Scholar, Academic Search Engine, Google Scholar Profile, Research Assistance, Research Finding, Information Alert, Digital Library

1. Introduction

In this age of internet-mediated information dissemination, a researcher requires a platform to showcase their work in an organized manner in order to boost visibility and reach among the academic community. In November 2004, soon after Google Scholar (<http://scholar.google.com>), a beta search service, was introduced (Ortega, 2014), it immediately attracted the attention of librarians and information professionals due to its potential as an open-access online searching tool for scholarly literature in different kinds of subject fields (Tenopir, 2005). Anurag Acharya, a Google engineer, was in charge of this project, which actually grew out of the CrossRef initiative (Jacsó, 2010). Acharya sought to provide a fundamental, cost-free, and unsurpassed entry point to scholarly literature on the web for anyone with an interest (Van Noorden, 2014).

Google Scholar is a bibliographic database that competes with Elsevier's Scopus and Thomson Reuters' Web of Science. It uses a variety of methodologies, including the Page Rank algorithm (Verzhbitskaia, 2021), to gather data on the citation impact of individual articles, researchers, or scientific-scholarly journals (Moed *et al.*, 2016). The most crucial variables in its ranking system are the number of pertinent citations, the names of the authors, and the title of the article (Beel *et al.*, 2010). Google Scholar is a major search engine that includes full-text journal articles, technical reports, and preprints theses in addition to indexing.

2. Review of Literature

A diverse range of research articles and online databases related to Google Scholar were consulted to write this paper. In addition, various online resources and the internet were also utilized. The literature reviewed includes research articles and papers, as well as journals of national and international significance. Through a rigorous examination of this literature, this paper aims to contribute to a deeper understanding of the uses, strengths, and limitations of Google Scholar in the context of scholarly research.

This literature review examined the strengths and weaknesses of Google Scholar (GS) as a research tool. Pomerantz (2006) and Neuhaus *et al.* (2006) both highlighted GS's potential for expanding access to information,

with Neuhaus *et al.* noting its coverage of science and medical databases, open access databases, and single publisher databases. However, Neuhaus *et al.* also identified GS's weaknesses, including a lack of coverage in social science and humanities databases and an English language bias. Robinson and Wusteman's (2007) study found that GS had high precision and recall for scientific queries but lower for non-scientific queries. Walters (2007) evaluated GS's content in later-life migration and found it indexed the most core articles but with incomplete citations. Schroeder (2007) compared GS's citation indexing features to Web of Science (WOS) and suggested that GS could complement WOS but with more need for analysis and evaluation. Lateef *et al.* (2016) found GSC to be a reliable tool to assess the visibility and productivity of African scholars. Halevi *et al.*'s (2017) review of 91 comparative articles found that while GS had limitations in coverage and accuracy, it could replace controlled databases in some subject areas. Kim and Grofman (2020) studied the characteristics of scholars with GS profiles and found that younger and early-career faculty, particularly in R1 institutions and methodologists, were more likely to have profiles. Zeynali Tazehkandi and Nowkarizi (2020) found that Google was more efficient than local Persian search engines in retrieving Persian resources. Goldenfein and Griffin (2022) argued that GS had become central to academic practice but undermined certain academic norms. Finally, Lohia and Prakash (2023) advocated for using GS profiles to assess research productivity and boost the visibility of faculty members' areas of interest.

3. Study Objectives

The objectives of this research can be stated as follows:

- a) To explore the potential benefits of Google Scholar for academics and researchers in various fields of research.
- b) To investigate the ways in which Google Scholar can assist researchers in locating relevant scholarly works worldwide.
- c) To identify the limitations of Google Scholar as a research tool and
- d) To suggest potential areas for improvement of Google Scholar platform

4. Research Methodology

This research paper is primarily a descriptive study that mainly aims to achieve a singular objective: to identify the ways in which information extracted from Google Scholar can benefit academicians and researchers in their respective research pursuits. In pursuit of this objective, a thorough

and exhaustive examination of all available information retrieved from Google Scholar has been conducted. This process involved analyzing each piece of information individually to identify its potential value and contribution to the academic and research community. Through this comprehensive examination, this paper seeks to provide a detailed account of the various ways in which Google Scholar can assist and support researchers in their academic accomplishments.

5. Google Scholar Profile

Google Scholar is an excellent virtual platform essential for every researcher to get more impact on their published works. Researchers can make their work available to millions of other researchers of the same field who utilize this platform worldwide by setting up an academic research profile on Google Scholar.



Figure 1: Steps to Create A Google Scholar

A researcher can quickly create a Google Scholar profile by adhering to a few simple steps, and it is completely free to do so (Google Scholar, n.d.-b).

- (i) At first, researcher needs to sign in to their personal Google account. Creating a Google Scholar profile through personal Google account always recommended because institutional e-mail id may change if the researcher or academician change his institution.
- (ii) Once the Google account is signed in, select “My Profile” to open the Scholar profile sign-up form. Enter the minimum credentials required,

such as Name, Affiliation, Interests, etc. On this page, Google recommended entering an institutional e-mail id and validating it through confirmation, because this would make the profile eligible for inclusion in Google Scholar search results.

- (iii) Some suggested articles authored by authors with names similar to the researcher will appear on the following page. A researcher can verify authorship and add his works to his profile. He can also look for them by searching the paper using the title, journal name, etc. It is significant to note that a researcher may need to conduct multiple searches in order to add all of his publications if they were published under different names.
- (iv) When the articles have been added to the page, a prompt will appear asking about what to do about Google Scholar article data updation. Researchers are free to decide whether to automatically include papers on their scholar pages or review them first. In any scenario, he always has access to his profile to make necessary manual modifications.
- (v) Finally, after some finishing touches, just like add a profile photo, the Scholar profile is now eligible to appear in Google Scholar page.

6. Why Use Google Scholar?

Google Scholar (GS) is a widely recognized academic search engine that offers access to a vast index of academic and grey literature, ranging from 2 to 100 million records, as reported by Jacsó (2010). It enables researchers to search for articles, theses, books, abstracts, and court judgments across a plethora of fields and sources, including academic publishers, professional associations, online repositories, universities, and other websites (Google Scholar, n.d.-a). By providing access to a wide range of scholarly works worldwide, Google Scholar offers a convenient and free-of-cost platform to researchers. It is worth noting that unlike JCR and Scopus, which rely exclusively on the publications indexed in their respective databases to calculate research metrics, Google Scholar uses internet-wide data to provide a more comprehensive view of research impact (UND Libraries, 2022).

7. Analysis of Google Scholar Assistance in Academic Accomplishment

7.1. Easy Access to Scholarly Literature:

With its user-friendly interface and powerful search capabilities, Google Scholar provides researchers with a convenient and efficient way

to access scholarly literature. Rather than having to visit multiple databases or search engines, researchers can use Google Scholar to search across a wide range of scholarly sources, including journal articles, books, theses, and conference papers. The platform is particularly useful for finding open access content, which can be accessed without the need for a subscription or paywall.

7.1.1. *How it helps to assist researchers?*

Easy access to scholarly literature through Google Scholar is beneficial for researchers as it provides a single platform for searching across a wide range of scholarly sources, making it easier and more efficient to find the information they need. The platform's focus on scholarly literature ensures that the information found is credible and of high quality, which is important for literature reviews and citing sources. This resource helps researchers to conduct more thorough and rigorous research, ultimately enhancing the quality and impact of their work.

7.2. Free and Open Access Platform to Academic Literature

Google scholar platform is absolutely free to use. Researcher can search and discover research papers on Google Scholar according to their needs. It acts as a web-search engine that freely helps users to reach scholarly works.

7.2.1. *How it helps to assist researchers?*

There are indexing databases like Scopus and Web of Science those required subscription to access its search interface. But Google Scholar freely provides access to millions of research article indexed in this platform. It helps researcher to aware of the research conducted around the world and help him/her to update with time. However, if the article is pay walled or subscription-based, researcher might have to follow their publishers' policy to access the research paper.

7.3. Availability of Powerful Search Filters (Advance Search Option)

Google Scholar provides a very sophisticated advanced search option which gives the researcher a lot of options and combinations to search for their required articles in many ways. It allows researchers to utilize a single, free-online resource to conduct searches within multiple databases, thus increasing researchers' ability to locate articles on a specific topic (Zientek et al., 2018).

Figure 2: Advanced Search Filters of Google Scholar

7.3.1. *How it helps to assist researchers?*

With the help of Advanced search option researcher can search for their required researches with the following options (Bangert, 2021),

- i) Find articles
 - a) with all of the words: find articles with all words implies that the search results shows articles in combination of all of the search words. This is how a regular Google Scholar search works.
 - b) with the exact phrase: find articles with exact phrase implies that the search result shows articles in which the search words are present and also in exact combination.
 - c) with at least one of the words: find articles with this field implies that the result shows all of the articles which contains at least one of the search words.
 - d) without the words: this search field helpful when any researchers want to find articles in a particular subject area but also want to restrict articles contains some of the words.
 - e) where my words occur: where my words occur specifies the effect of all of the above mention four search criteria. This field helps to imply the conditions of a criteria “anywhere in the article” or “in the title of the article”.

- ii) Return articles authored by: This search bar lets researcher search for articles by a certain author. Researcher can also do this in the regular search bar by putting “author:” before the author’s name. Ex. author: Subhajit
- iii) Return articles published in: This search bar lets researcher search for articles in a particular scholarly journal. Google Scholar understands many common ways of abbreviating journal titles. In Scopus or Web of Science this type of search generally denoted as ‘search by source title’.
- iv) Return articles dated between: The last search tool lets researcher search for results from within a range of publication dates. Researcher can also adjust this from the results page by selecting and limited the years of publication required in search results.

7.4. Platform to Create Own Profile and Share Researches

Google Scholar enables researchers to create their own profile and share their researches freely to the academic community.

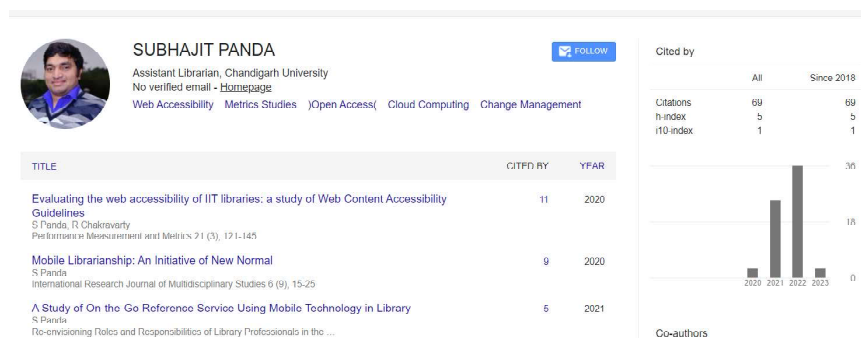


Figure 3: Google Scholar Researcher Profile

7.4.1. How it helps to assist researchers?

A popular tool for showcasing research outcomes is the Google Scholar Profile, which raises the work’s visibility and increases the likelihood that it will be cited in the future. A researcher can configure his Google Scholar profile to automatically gathers and compiles a list of all of the researcher’s publications. The publications listed on a researcher’s profile are available for review and manual updating if necessary.

7.5. Indexing of Wide Range of Sources

Google Scholar allows for the indexing of a wide range of sources, including academic journals, conference proceedings, books, theses, and

even preprints. This means that researchers can search for relevant literature from multiple disciplines and sources, all in one place.

7.5.1. *How it helps to assist researchers?*

Google Scholar's wide range of sources allows researchers to easily access relevant literature that may not be available through traditional library searches. This includes conference proceedings and preprints that have not yet been published in a journal. The platform's interdisciplinary approach facilitates collaboration and exploration across multiple fields, broadening the scope of research and encouraging new and innovative problem-solving approaches.

7.6. Platform for Accumulating Research Citations in One Place

The citation data in Google Scholar is extracted from the patents in the Google Patents database as well as from the scholarly journal articles in the Scholar database. A "Cited By" link will appear in the entry of a publication if these sources have cited it; clicking on that link will show the citing journal articles and patents (U.L.S. Librarian, 2021).

7.6.1. *How it helps to assist researchers?*

Researchers may easily keep track of citations to their articles using Google Scholar citations. A researcher can look up who is citing the works, plot their frequency over time, and calculate other citation metrics. But not all scholarly articles are indexed by Google Scholar, therefore, certain articles citing the subject of the study might not be taken into account. Once more, Google Scholar does not rank citations based on the variety and importance of the sources they cite.

7.7. Provide Year-wise Citation Metrics

Google Scholar provides year-wise citation metrics, which allow researchers to analyze the impact of a particular article or author over time. These metrics show the number of times an article has been cited in other publications, broken down by year (*see Figure 4*).



Figure 4: Year-wise Citation Metrics in Google Scholar

7.7.1. *How it helps to assist researchers?*

By providing year-wise citation metrics, Google Scholar enables researchers to track the impact of their work over time and see how it has been received and used by other researchers in their field. This information can be used to identify trends and hot topics within a particular field, as well as to gauge the influence of specific researchers or publications.

Year-wise citation metrics can also be used to track the impact of a particular publication on a specific field or subfield. For example, researchers can use these metrics to identify highly-cited papers that have had a significant impact on a particular research area.

7.8. Alerts System for Staying Up-to-Date

Google Scholar provides an alert system that allows researchers to stay up-to-date with the latest research in their field. This system sends email alerts to users when new articles or papers are published that match their specified search criteria (*see Figure 5*).

Google Scholar

Alerts

Alert email: suvapanda007@gmail.com [Change email](#)

Create an alert about...

☐ Include less relevant results

CREATE ALERT

Figure 5: Create Alert in Google Scholar

7.8.1. *How it helps to assist researchers?*

By setting up these alerts, researchers can stay informed about the latest developments in their field without constantly searching for new publications. This saves time and ensures that researchers are always aware of the most current and relevant research.

The alert system also allows researchers to stay on top of the work of colleagues or competitors. By setting up alerts for the names of specific authors or institutions, researchers can receive notifications when new publications are released, allowing them to stay informed about the work of others in their field.

7.9. Personal Database Creation with “My Library” Feature

Google Scholar offers several benefits to its users, and one of them is the ability to create a personal database with its “My Library” feature. This feature allows users to save articles, papers, and other publications that they find relevant or interesting directly to their Google Scholar account (see Figure 6).

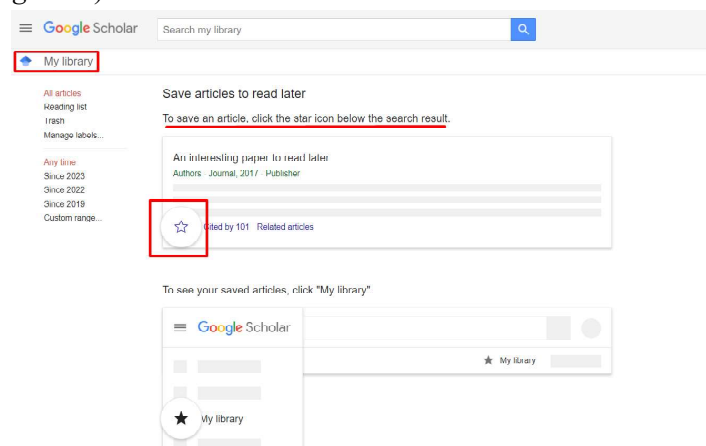


Figure 6: My Library in Google Scholar

7.9.1. *How it helps to assist researchers?*

By creating a personal database, users can organize their research materials and easily access them at any time. They can also use the “My Library” feature to keep track of their citations and references for future use.

Some benefits of the “My Library” feature include:

- *Quick access to saved articles and publications:* Users can

quickly access their saved materials from any device with an internet connection.

- **Easy organization:** Users can categorize their saved materials by topic, relevance, or any other criteria they choose.
- **Citation management:** The “My Library” feature allows users to easily track and manage their citations and references, making it easier to cite sources in their own work.
- **Collaboration:** Users can share their saved materials with others, making it easier to collaborate on research projects.

7.10. Related Articles Feature for Discovering New Sources

Google Scholar offers a number of features that make it an essential tool for researchers, and one of the most useful features is the “Related Articles” feature. This feature helps researchers to discover new sources related to their research topic, expanding their knowledge and understanding of the subject.

The screenshot displays the Google Scholar interface. At the top, the article "Implementing Conversational AI in Libraries: a practical approach" by Subhaji Panda is shown. Below the article details, a bar chart indicates "Total citations" and "Cited by 5". A red box highlights the "Related articles" link. An arrow points from this link to the "Related articles" section below, which lists several related papers, including "Chatbot as an intelligent personal assistant for mobile language learning" and "Challenges and Opportunities of Education in the COVID-19 Pandemic: Teacher Perception on Applying AI Chatbot for Online Language Learning".

Figure 7: Related Articles Feature of Google Scholar

7.10.1. *How it helps to assist researchers?*

The “Related Articles” feature of Google Scholar works by analyzing the content of the article that the user is currently viewing, and then recommending other articles that are closely related to the topic. These recommendations are based on the keywords and phrases used in the article, as well as the authors, journals, and other sources that are cited in the article.

Some benefits of the “Related Articles” feature include:

- *Discovering new sources:* The feature helps users to find new sources that they may not have discovered otherwise. This can be especially helpful for researchers who are looking for new perspectives on a topic.
- *Saving time:* The feature helps users to save time by eliminating the need to manually search for related articles. This can be especially helpful for students who are working on a deadline.
- *Broadening knowledge:* The feature can help users to broaden their knowledge and understanding of a topic by recommending articles that cover different aspects of the subject.
- *Easy access:* The feature is integrated into the Google Scholar interface, making it easy for users to access the recommendations with just a few clicks.

7.11. Integration with Library Catalogs and Interlibrary Loan Services

One of the major benefits of using Google Scholar is its integration with library catalogs and interlibrary loan services. This integration makes it easier for researchers to access the full text of articles and other publications that may not be freely available online.

7.11.1. *How it helps to assist researchers?*

The integration of Google Scholar with library catalogues and interlibrary loan services provides a number of benefits to researchers, making the research process more efficient, effective, and streamlined. First, this function expands researchers’ access to a wider range of high-quality research materials, including books, journals, and other publications not available online. Second, it saves researchers time and effort by allowing them to search for and access full-text articles from their library’s catalogue or through interlibrary loan services, streamlining the research process.

Third, this function improves research quality by providing access to reliable, peer-reviewed articles and other publications, allowing researchers to find more relevant information from a wider range of sources. Finally, it can facilitate collaboration between researchers by providing easy access to library resources, allowing them to share research materials and collaborate on projects.

7.12. Easy Export Options for Reference Management Software

Google Scholar provides easy export options for reference management software as a benefit to its users. This means that users can easily export references from Google Scholar into popular reference management software such as EndNote, Mendeley, and Zotero, among others.

7.12.1. How it helps to assist researchers?

Reference management software is used by researchers, academics, and students to organize and manage their research literature. With easy export options, users can quickly and easily transfer references from Google Scholar into their chosen reference management software. This can save users a significant amount of time and effort compared to manually entering each reference into their reference management software.

By using reference management software, users can keep their research organized and easily accessible. They can quickly search for specific references, cite sources in their papers, and create bibliographies in various citation styles. The easy export options provided by Google Scholar make it simple for users to integrate the platform into their existing research workflow, improving their productivity and efficiency.

7.13. Potential for Building Collaborative Networks

Google Scholar provides potential for building collaborative networks as a benefit to its users. This means that users can use Google Scholar to find and connect with other researchers who share similar research interests, and potentially collaborate on research projects.

7.13.1. How it helps to assist researchers?

Google Scholar allows users to see who has cited their work and who has been cited in their work. This information can be used to identify potential collaborators who have similar research interests and have published work in related fields. Users can also search for and follow other researchers on Google Scholar, which can help them stay up-to-date with their latest

research and potentially lead to collaboration opportunities.

Collaborative networks are essential for researchers, as they can help them expand their research scope, obtain funding, and increase the impact of their research. By using Google Scholar to build collaborative networks, users can tap into a vast community of researchers from around the world, share ideas, and potentially advance their research agendas.

7.14. Integration with Google Drive and Google Classroom for Sharing and Collaboration

Google Scholar provides integration with Google Drive and Google Classroom for sharing and collaboration as a benefit to its users. This means that users can easily share and collaborate on research papers, articles, and other materials with their colleagues and classmates using these tools.

7.14.1. *How it helps to assist researchers?*

Integration with Google Drive allows researchers to save and store their research papers and articles in the cloud, making them accessible from any device with an internet connection. Researchers can also share these documents with others, allowing for collaborative editing and commenting. This is particularly useful for group projects, where multiple people may be working on the same document.

Integration with Google Classroom allows educators to share research materials with their students and create assignments based on them. Students can then submit their work directly through Google Classroom, making it easy for educators to review and grade their submissions.

8. Limitations of Google Scholar

Despite of provide several assistance to the researchers, the Google Scholar does have some limitations, including:

1. **Limited Coverage:** Google Scholar's coverage is limited and varies by subject area, language, and region. It may not include all relevant scholarly literature, particularly in fields with lower publishing volumes or in non-English languages.
2. **Lack of Quality Control:** Google Scholar does not have a formal peer-review process, and the quality of the results may vary widely. Users must critically evaluate the sources they find and determine their credibility.
3. **Limited Search Features:** Google Scholar's search features are

less advanced than those of specialized databases. It lacks controlled vocabularies, advanced search fields, and filtering options, making it more difficult to refine searches and find specific types of literature.

4. **Incomplete Metadata:** Google Scholar's metadata is often incomplete or inaccurate, making it difficult to determine the scope and relevance of a particular source.
5. **No Full-Text Access:** Google Scholar may not provide full-text access to all sources it indexes. Users may need to access the full text through another database or pay for access.
6. **Limited Citation Analysis:** Google Scholar's citation analysis is less reliable than that of specialized citation databases. It may include self-citations, duplicates, and citations from non-scholarly sources, which can skew results.
7. **Inability to Customize:** Google Scholar does not allow users to customize their search experience or create alerts for new publications in specific fields or journals.
8. **Lack of Transparency:** Google Scholar's search algorithms are not transparent, making it difficult to understand how results are ranked and what factors influence their visibility.
9. **Biased Results:** Google Scholar's search algorithms may be biased towards sources that are more widely cited, well-known, or published by reputable publishers, which may not always be the most relevant or useful sources for a particular research question.
10. **Dependence on Technology:** Google Scholar's functionality is heavily reliant on technology and may be subject to technical errors or disruptions. Users may also encounter issues with access and compatibility with their devices or software.

9. Recommendations for Platform Improvements

Upon analyzing the potential benefits and limitations of the Google Scholar platform, several suggestions can be made to enhance its usefulness to researchers. These recommendations aim to improve the platform's efficiency and functionality, ultimately resulting in increased productivity and better access to scholarly resources.

1. **Expand Coverage:** Google Scholar should work on expanding its coverage to include more scholarly resources in other languages

and fields. This can be done by collaborating with publishers, academic institutions, and libraries to provide access to a wider range of scholarly resources.

2. **Quality Control:** Google Scholar should develop a system to differentiate between peer-reviewed and non-peer-reviewed sources to help researchers identify high-quality sources more easily.
3. **Improved Citations:** Google Scholar should work on improving its citation accuracy to ensure that all sources are correctly cited and to provide researchers with complete and accurate information.
4. **Transparent Algorithm:** Google Scholar should provide more transparency about its search algorithm so that researchers can understand how search results are ranked and how certain sources are included or excluded.
5. **Promote Open Access:** Google Scholar should work towards promoting open access to scholarly resources to ensure that all researchers have access to high-quality research materials.
6. **Customization Options:** Google Scholar should provide more customization options for researchers to help them tailor their searches to their specific needs and interests.
7. **Collaboration with Other Platforms:** Google Scholar should collaborate with other academic platforms, such as citation management tools or academic social networking sites, to provide a more integrated and comprehensive research experience for researchers.

By implementing these suggestions, Google Scholar can become a more efficient and helpful platform for researchers and help to further advance scholarly research.

10. Conclusion

In conclusion, this chapter provides an overview of the ways in which Google Scholar can benefit academicians and researchers in their respective research pursuits. Through a mixed-methods research design, the study analyzed the potential advantages and limitations of Google Scholar as a research tool. The study identified that Google Scholar offers researchers a free, comprehensive, and convenient platform to access a vast range of scholarly works worldwide. However, some limitations, such

as the lack of transparency in the search algorithm and the presence of low-quality publications, were also noted.

Furthermore, the study highlights that Google Scholar can be a valuable resource for scholars in various disciplines, especially those in fields where non-traditional publications, such as grey literature, are prevalent. Additionally, Google Scholar can provide a more comprehensive view of research impact by incorporating internet-wide data into research metrics.

Overall, this chapter emphasizes the importance of Google Scholar in supporting academics and researchers in their research pursuits. Further improvements and advancements to the platform, as suggested by the study, could enhance its efficiency and effectiveness as a research tool, and thus, better serve the academic and research community.

References

- Bangert, M. (2021, September 15). *Research Guides: Google Scholar: Google Scholar Basics*. <https://semo.libguides.com/google-scholar>
- Beel, J., Gipp, B., & Wilde, E. (2010). Academic Search Engine Optimization (ASEO). *Journal of Scholarly Publishing*, 41(2), 176–190. <https://doi.org/10.3138/jsp.41.2.176>
- Goldenfein, J., & Griffin, D. (2022). Google Scholar – Platforming the scholarly economy. *Internet Policy Review*, 11(3). <https://doi.org/10.14763/2022.3.1671>
- Google Scholar. (n.d.-a). *About Google Scholar | Stand on the shoulders of giants*. <https://scholar.google.com/intl/en/scholar/about.html#:~:text=Google%20Scholar%20provides%20a%20simple>
- Google Scholar. (n.d.-b). *Google Scholar Profiles*. Retrieved October 2, 2022, from <https://scholar.google.com/intl/en/scholar/citations.html#setup>
- Haddaway, N. R., Collins, A. M., Coughlin, D., & Kirk, S. (2015). The Role of Google Scholar in Evidence Reviews and Its Applicability to Grey Literature Searching. *PLOS ONE*, 10(9), e0138237. <https://doi.org/10.1371/journal.pone.0138237>
- Halevi, G., Moed, H., & Bar-Ilan, J. (2017). Suitability of Google Scholar as a source of scientific information and as a source of data for scientific evaluation—Review of the Literature. *Journal of Informetrics*, 11(3), 823–834. <https://doi.org/10.1016/j.joi.2017.06.005>
- Jacsó, P. (2010). Metadata mega mess in Google Scholar. *Online Information Review*, 34(1), 175–191. <https://doi.org/10.1108/14684521011024191>
- Kim, H. J., & Grofman, B. (2020). Who Creates a Google Scholar Profile? *PS: Political Science & Politics*, 53(3), 515–520. <https://doi.org/10.1017/s1049096520000189>
- Lateef, A., Ogunkunle, A. T. J., & Adigun, G. O. (2016). Google scholar citation in retrospect: Visibility and contributions of African scholars. *COLLNET Journal of Scientometrics*

and *Information Management*, 10(2), 219–236. <https://doi.org/10.1080/09737766.2016.1213966>

- Lohia, P., & Prakash, H. (2023). Research Online Visibility of LIS Faculties at Central Universities in North India. *DESIDOC Journal of Library & Information Technology*, 42(6), 414–419. <https://doi.org/10.14429/djlit.42.6.18467>
- Moed, H. F., Bar-Ilan, J., & Halevi, G. (2016). A new methodology for comparing Google Scholar and Scopus. *Journal of Informetrics*, 10(2), 533–551. <https://doi.org/10.1016/j.joi.2016.04.017>
- Neuhaus, C., Neuhaus, E., Asher, A., & Wrede, C. (2006). The Depth and Breadth of Google Scholar: An Empirical Study. *Portal: Libraries and the Academy*, 6(2), 127–141. <https://doi.org/10.1353/pla.2006.0026>
- Ortega, J. L. (2014). Google Scholar: on the shoulders of a giant. In *Academic Search Engines* (pp. 109–141). <https://doi.org/10.1533/9781780634722.109>
- Pomerantz, J. (2006). Google Scholar and 100 Percent Availability of Information. *Information Technology and Libraries*, 25(2), 52. <https://doi.org/10.6017/ital.v25i2.3331>
- Robinson, M. L., & Wusteman, J. (2007). Putting Google Scholar to the test: a preliminary study. *Program*, 41(1), 71–80. <https://doi.org/10.1108/00330330710724908>
- Schroeder, Robert. (2007). Pointing Users Toward Citation Searching: Using Google Scholar and Web of Science. *Portal: Libraries and the Academy*, 7(2), 243–248. <https://doi.org/10.1353/pla.2007.0022>
- Tenopir, C. (2005). Google in the academic library. *Library Journal*, 130(2), 32.
- U.L.S. Librarian. (2021, April 29). *Guides: Google Scholar: Understanding Scholar*. Pitt.libguides.com. <https://pitt.libguides.com/googlescholar>
- UND Libraries. (2022, August 5). *Research Guides: Researcher IDs: Google Scholar*. <https://libguides.und.edu/researcher-profiles/google-scholar>
- Van Noorden, R. (2014). Google Scholar pioneer on search engine's future. *Nature*. <https://doi.org/10.1038/nature.2014.16269>
- Verzhbitskaia, Z. (2021, October 20). *Google's PageRank Algorithm: Explained and Tested*. <https://www.link-assistant.com/news/google-pagerank-algorithm.html>
- Walters, W. H. (2007). Google Scholar coverage of a multidisciplinary field. *Information Processing & Management*, 43(4), 1121–1132. <https://doi.org/10.1016/j.ipm.2006.08.006>
- Zeynali Tazehkandi, M., & Nowkarizi, M. (2020). Evaluating the effectiveness of Google, Parsijoo, Rismoon, and Yooz to retrieve Persian documents. *Library Hi Tech*, 39(1), 166–189. <https://doi.org/10.1108/lht-11-2019-0229>
- Zientek, L. R., Werner, J. M., Campuzano, M. V., & Nimon, K. (2018). The Use of Google Scholar for Research and Research Dissemination. *New Horizons in Adult Education and Human Resource Development*, 30(1), 39–46. <https://doi.org/10.1002/nha3.20209>