

Academic Social Networking (ASN) tools to enhance research out-puts of LIS fraternity in India: A Comparative Analysis between ResearchGate, Academia.edu and Google

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ABSTRACT

Academic Social Networking tools like Google Scholar, Academia.edu and ResearchGate are getting wider acceptance amongst library and information science professionals. These tools are assisting them in improving their research and development activities, and they are providing platforms for collaborations and showcasing their academic works to their stakeholders. ASNs' tools help create individuals' profiles, enabling researchers to find their collaborators and measure their research impact and citation metrics. This study aims to understand usability, awareness and acceptance of Academic Social Networking (ASN) tools amongst the library and information science fraternity in India. For this purpose, an online survey was conducted and responses were collected from various stakeholders of the LIS communities, those involved in facilitating research and development. The scholar has reached out to 500 community members via emails and a total 172 numbers of responses were collected and this survey has recorded a 34.4 % response rate. A sample random sampling procedure was used to gather feedback from respondents.

KEYWORDS: Google Scholar, ResearchGate, Academia.edu, Academic Social Networking, Scholarly Communication, Scholar's Profile.

1. INTRODUCTION

Academic Social Networking (ASN) tools are facilitating scholarly communication and are considered professional development tools for librarians are bridging the gap between within the community. These tools are helping them to showcase their intellectual outputs moreover they are creating opportunities for better coordination and collaborations within their networks and finding people of similar subject interest. Google Scholar, ResearchGate and academia.edu are very much acceptable in the LIS communities. These tools allow scholars to create their profile that indicates individuals' expertise and publication, allowing them to upload their articles, helping other researchers to get updates about new publications automatically, find and read others publications and also, they can

monitor their citation analytics or understand the reach of their publications worldwide. Such tools are gaining popularity since they allow researchers to share their scholarly works over the internet and help them maximize their engagements within their communities and also enhance their popularity. Librarians play a vital role in research and development work actively working towards enhancing scholarly communications and orienting scholars and scientists to use these platforms. According to (Megwalu 2015)¹ use of ASNs has various advantages: they help in establishing connections with fellow scholars, facilitate feedback mechanism, discussions, expert advice, collaboration and also help scholars to find jobs are main motivation factors for scholars to join ASNs.

ResearchGate, a social networking and collaborative site fosters communication among academic community by allowing scholars to upload, discuss and notify their grey and published papers. It encourages subject experts to participate in discussions on latest research areas

Academia.edu on the other hand, is another social networking site of academic community, with a mission to “accelerate the world's research” having over 22 million academic accounts.

Further, according to (Hoseth 2011)² Google scholar is a web-based discovery platform for locating scholarly information, theses, books, unpublished literature, abstract articles are contributed by faculty, students, scholars, scientists and scientific communities. Google scholar ensures authors to analyse citation metrics of the scholarly created contents. Authors could create public profiles and list their publications and are continuously Google Scholar. Profiles are strictly managed by authors themselves and could be logged in via Google account. Google Scholar automatically measures and displays the scholar's total number of citations, h-index and i10-index.

The study has revealed that social networking tools have significantly gathered attention of library and information science professional are effective in building up individuals portfolios, improving academic collaborations, sharing ideas and facilitates communications.

2. LITERATURE REVIEW

(Kjellberg, Haider, and Sundin 2016)³ stated that due to the services provided by Academic Social Networking (ASN) tools, it has gathered huge amounts of attention from the academic community and such services have seen huge amount of contributions from the academic fraternity and research and development works have been positively impacted and enabled researchers to showcase their academic creations online moreover are assisting them getting real-time feedback in the web-based environment.

Study conducted by (Mason 2020)⁴ claimed that ASN are vital tools for showcasing academic systems of institutions and its reputation and are helping to enhance international visibility, therefore they are beneficial for both researchers and their parent institutions. Academic Social Networks (ASNs) are fostering better engagements in the internationally acclaimed academic system and are very much accepted by experts to build globally recognized profiles to interact with their counterparts across the globe.

According to (Wiechetek and Pastuszak 2022)⁵ QS World University Rankings, Times Higher Education World University Rankings, and Academic Ranking of World Universities (ARWU) consider Academic Social Networking

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(ASN) like Academia.edu, ResearchGate, Google Scholar, Scopus, Web of Science, Researcher ID or ORCID as vital parameter to for determining performance of the academic institution. ResearchGate (RG) is one of the widely accepted ASN which has more than 16 million users worldwide. It has several metrics useful for researcher level evaluation: RG Score, Total Research Interest, citations, h-index, recommendations, reads, research items, projects, questions, answers, following, followers. Moreover, these metrics are used for recruitment, promotion and a broad researcher evaluation. RG Score represents the number of publications and the number of researchers which are used to compare the research units, faculties, or the universities as a whole, and assist with the process of organizational level evaluation. RG metrics is also considered as an important altimetric indicator for active researchers and is also used to calculate the scientific outputs of the research sections.

According to (Pollard, Hains-Wesson, and Young 2018)⁶ scholars are recognized by the quality and quantities of their publications; they are using ASNs such as Academia.edu, ResearchGate, Google Scholar to showcase their scholarly achievements and preserve them online using these platforms. Number of publications is an integral part of promotion in the universities; sometimes it surpasses the teaching process.

According to (Orduna-Malea and Delgado López-Cózar 2017)⁷ significance of scientific works is analysed through various factors like authors' productivity, popularity, perceived quality of the product, topic, institutional affiliation, and marketing campaigns. The study has found that users' inclination towards use of Web 2.0, or the Social Web tools are shifting interest of user from personalized websites to user's profile and such resources are facilitating interactions, such tools are build-up on the feature of feedback mechanism, enable users to download, tag, share, vote, link, or disseminate a resource, as well as interact directly with other users.

(Madhusudhan 2012)⁸ has conducted a study about the use of social networking sites by research scholars of the University of Delhi, this study revealed that majority of the scholars are using ResearchGate (53.75%) and followed by Academia.edu (51.25%) for networking purpose and to promote their research works.

A study conducted by (Meishar-Tal and Pieterse 2017)⁹ found that researchers used ASNs primarily for the purpose of searching information, they prefer less for sharing information, and to a lesser extent for communicating with them. There are few reasons people use ASNS are to promote themselves and recognition, to gain professional knowledge, to show belongingness within the community, and to interact with others. ResearchGate and Academia.edu, have similar features. They show information researchers association with academic institutes and expertise in their academic subject areas and allow them to share studies, articles, and publications.

According to (Majumdar 2022)¹⁰ the one of key reasons for joining ASNs by academics and researchers is professional visibility and reasons includes seeking scholarly answers, gaining citations, finding experts, sharing research through self-archiving, exploring collaborative research opportunities, and job seeking. The review also notes that alternative metrics are becoming important for measuring research impact. Concerns identified include age and gender discrimination, snooping, academic cyberbullying, and flooding of ASN sites with low-quality literature. The review suggests more research on these issues and recommends modifying ASN interfaces to better meet users' needs.

3. RESEARCH OBJECTIVES

The specific objectives of the study are as follows:

1. To investigate the level of use of Google Scholar by LIS fraternity in India compared to ResearchGate and Academia.edu, specifically for finding literature for their interest.
2. To assess the levels of awareness, accessibility, and user-friendliness of Google Scholar in comparison to ResearchGate and Academia.edu among Library and Information Science (LIS) professionals in India.
3. To understand the perception about ResearchGate which provides higher visibility for research works compared to Academia.edu and Google Scholar among the LIS fraternity.
4. To identify the challenges and limitations experienced by Library and Information Science (LIS) professionals while using Google Scholar, ResearchGate, and Academia.edu, and to evaluate how these factors contribute to the predominant usage of Google Scholar.

4. RESEARCH METHODOLOGY

Quantitative research approaches have been adopted to understand and evaluate usage statistics of three major academic social networking platforms: ResearchGate, Academia.edu, and Google Scholar by library and Information science professionals in India. A structured questionnaire was designed using Google forms to conduct an online survey. The scholar has targeted 500 library and information science professionals engaged in teaching and scholarly activities India and he has reached them via emails and collected online responses. In order to collect data, the survey was opened for April 01-30, 2025 giving ample opportunity for participants to fill the questions. The questionnaire was designed in a way the respondent cannot put their response for one time only. An online questionnaire was sent to 500 respondents via email and a total of 172 responses were collected, which shows a response rate of 34.4%. The study has conducted the calculations of could see in the table 8 Mean, Median, Mode, Variance and SD.

5. SCOPE AND LIMITATIONS OF THE STUDY

This study focused on examining the usage of ResearchGate, Academia.edu, and Google Scholar by library science professionals in India, those are famous Academic Social Networking tools. The online survey was developed in such a way that one person could respond for one time only. Purposive sampling technique was used targeting library and Information science students, faculty, Scholars and librarians. The study followed ethical guidelines, ensuring the anonymity and confidentiality of respondents. No personal identification information was collected, and data was stored securely to prevent unauthorized access.

6. RESULTS

a. Respondents Analysis

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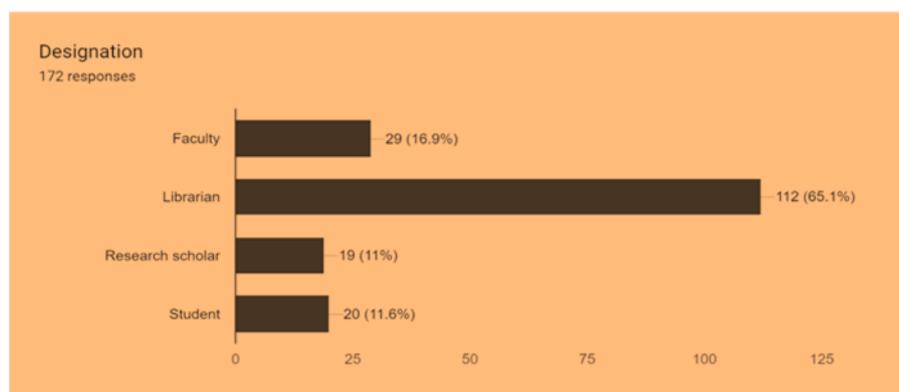


Figure 1: Respondents Analysis

Above Figure 1 has shown designation wise distribution of the respondents has shown maximum of librarian participations is 112 followed by faculty, student and research scholar.

b. Demographic Analysis

In this section, researchers have presented the distribution of respondents categorized by gender, and different age groups that participated in this survey.

Table 1: Demographic profile of the respondents (n=172)

| Gender | Frequency | % |
|------------------|-----------|-------|
| Male | 133 | 77.32 |
| Female | 39 | 22.67 |
| Age group male | Frequency | % |
| 20-29 | 21 | 12.2 |
| 30-39 | 45 | 26.16 |
| 40-49 | 45 | 26.16 |
| 50-59 | 15 | 8.72 |
| 60 and above | 7 | 4.06 |
| Age group female | Frequency | % |
| 20-29 | 14 | 8.13 |
| 30-39 | 14 | 8.13 |
| 40-49 | 8 | 4.65 |
| 50-59 | 3 | 1.74 |

Table 1 demonstrates that out of 172 respondents, 133 (77.32 %) of the respondents were male, and 39 (22.67 %) were female. The data shows that male participants are more dominant than female respondents. For age groups 20-29 and 30-39 both males and females have maximum participation is reported.

Table 2: Level of usage of ASNs (Google Scholar, Academia.edu and ResearchGate) by LIS professionals (n=172)

| ASNs | Frequency | % |
|---|-----------|-------|
| Google Scholar | 72 | 41 |
| Academia.edu | 9 | 5.23 |
| ResearchGate | 22 | 12.79 |
| Academia.edu, Google Scholar | 3 | 1.74 |
| ResearchGate, Academia.edu | 6 | 3.48 |
| ResearchGate, Google Scholar | 31 | 18 |
| None of the above | 4 | 2.32 |
| ResearchGate, Academia.edu, Google Scholar | 22 | 12.79 |
| ResearchGate, Academia.edu, Google Scholar, None of the above | 3 | 1.74 |

Table 2 shows that most popular ASNs amongst LIS fraternity is Google Scholar out of 172 people 72 (41%) have preferred to use it, followed by ResearchGate 22 (12.79%) and Academia.edu 9 (5.23%) is at the bottom of usage by the community. This study has revealed that ASNs have higher awareness amongst the LIS community and only 1.74% people have not experienced using these tools. This study also revealed that 22 (12.79%) people use all three tools. In the combination of any of the tools ResearchGate, Google Scholar have been rated higher and use 18% followed by ResearchGate, Academia.edu.

Table 3: User Preferences for Comprehensive Research Paper Access

| ASN tool | Frequency | % |
|-------------------|-----------|------|
| ResearchGate | 99 | 57.6 |
| Academia.edu | 49 | 28.5 |
| Google Scholar | 113 | 65.7 |
| None of the above | 5 | 2.9 |

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Table 3 shows that LIS fraternity are more inclined towards using Google Scholar (65.7%) for searching research articles for their research works followed by ResearchGate (57.6%) and Academia.edu (28.5%) but at the same time some of them are not using any of these platforms.

c. Statistical analysis about platforms best suiting for with academic and professional needs for LIS people

Table 4 shows that ASNs are used for various purposes but they are highly used for searching articles and the LIS community heavily relying on them for their academic and professional needs. 86.6 % preferred for finding research articles and 86.6%, such tools are also used for community engagement and also for collaboration and for coordination, understanding quality and impact of the research outputs. These tools are facilitating feedback mechanisms to enhance participation for research and development works.

Table 4: Purpose of using ASNs

| Type of works | Frequency | % |
|--|------------------|----------|
| Accessing research articles | 149 | 86.6 |
| Engagement within community | 68 | 39.5 |
| Analysing quality and impact of research outputs | 85 | 49.4 |
| Q&A forums | 52 | 30.2 |
| Collaboration and coordination | 68 | 39.5 |
| Other | 12 | 7 |

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d. Analysis LIS Professionals' Awareness and Perception about Google Scholar, ResearchGate, and Academia.edu

Table 5 evaluates which platform is user friendly for the LIS professionals for their scholarly works.

Table 5: Most user-friendly ASN

| ASNs | Frequency | % |
|-------------------|------------------|----------|
| ResearchGate | 84 | 48.8 |
| Academia.edu | 43 | 25 |
| Google Scholar | 131 | 76.2 |
| None of the above | 7 | 7 |

Table 5 shows that Google Scholar has been considered as most user-friendly platform, is having greater awareness and accessibility amount all cited ASNs tools was highly rated at 76.2% followed by ResearchGate (48.8%) and Academia.edu but there few people those are using other platforms as well.

a. Understanding LIS community perspective about tools giving higher visibility of their research works.

Table 6: Tools gives enhanced visibility of research works

| ASNs | Frequency | % |
|-------------------|-----------|------|
| ResearchGate | 101 | 58.7 |
| Academia.edu | 54 | 31.4 |
| Google Scholar | 117 | 68 |
| None of the above | 8 | 4.7 |

Table 6 evaluates the perspective of the community about tools giving better visibility of their research works on Google Scholar, ResearchGate, and Academia.edu. The above table shows that 68% of fraternity have preferred to opt Google Scholar which gives much enhanced visibility of their scholarly works on followed by ResearchGate, this survey also concluded that community is inclined towards all three mentioned platform and only 4.7% of community is using other platform than Google Scholar, ResearchGate, and Academia.edu.

b. Analysis about frequency of use of ResearchGate, Academia.edu and Google Scholar (Daily, Weekly, Monthly, Rarely, Never)

Table 7: Platform Usage Frequency Distribution (n=172)

| ASN | Daily | Weekly | Monthly | Rarely | Never |
|----------------|-------|--------|---------|--------|-------|
| ResearchGate | 29 | 62 | 42 | 28 | 11 |
| Academia.edu | 13 | 48 | 52 | 45 | 14 |
| Google Scholar | 44 | 66 | 36 | 23 | 3 |
| Other | 20 | 32 | 44 | 47 | 29 |

Table 7 shows a comprehensive analysis of the frequency of uses of three popular ASNs platforms: ResearchGate, Academia.edu, and Google Scholar. The data is categorized into five distinct usage frequencies: Daily, Weekly, Monthly, Rarely, and Never. This table aims to understand patterns of engagement with these platforms among the LIS community in India.

Table 8: Calculation (Mean, Median, Mode, Variance and SD)

| ASN | Mean | Median | Mode | Variance | Standard Deviation |
|----------------|------|--------|------|----------|--------------------|
| ResearchGate | 34.4 | 42 | 62 | 530.8 | 23.04 |
| Academia.edu | 34.4 | 45 | 48 | 351.3 | 18.74 |
| Google Scholar | 34.4 | 36 | 66 | 530.8 | 23.04 |
| Other | 34.4 | 32 | 20 | 72.56 | 8.52 |

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Table 8 provides overview of usage statistics across the platforms. Mean values indicates that all platforms have the same average usage frequency of 34.4 across (Daily, Weekly, Monthly, Rarely, Never), Median and Mode provide insights into the central tendency and the most frequently used responses, while Variance and Standard Deviation denotes the spread of data points around the mean, highlighting that ResearchGate and Google Scholar have a higher variance compared to Other.

The study has revealed following results below:

- i. Mean usage frequency across all categories for Google Scholar is the same as ResearchGate and Academia.edu at 34.4.*
- ii. Google Scholar has higher values (44 in Daily usage and 66 in Weekly usage) and it has been considered as a primary tool for literature searches and citation tracking among users.*
- iii. ResearchGate and Academia.edu show substantial usage in the rarely and never categories, indicating a trend toward using these platforms more for networking and showcasing scholarly works rather than for frequent literature searches.*

Table 9: Evaluating networking capabilities of Google Scholar, Academia.edu, and ResearchGate

| ASN | Frequency | % |
|-------------------|------------------|----------|
| ResearchGate | 100 | 58.1 |
| Academia.edu | 56 | 32.6 |
| Google Scholar | 95 | 55.2 |
| Other | 8 | 4.7 |
| None of the above | 4 | 2.3 |

The table 9 shows that ResearchGate is most preferred due to better networking capabilities, it helps researchers to find people of their same interest and acknowledge each other through their field of their interest and 58.1 % people are using ResearchGate for establishing connections.

The study has framed two hypotheses to determine usability and acceptance for ASNs for the purpose of networking the peered group.

7. CHALLENGES OR LIMITATIONS USING RESEARCHGATE, ACADEMIA.EDU AND GOOGLE SCHOLAR

(Husain, Sani, and Salim 2022)¹¹ have raised their concerns in regards to personal identifiable information breach as an individual post some of their sensitive information in public domain while using Academic Social Networking tools and suggested that libraries should have policies to deter cyber threats and create awareness about their misuse. According to (American Library Association 2018)¹² librarians must be well aquatinted with basis cyber security practices and the same time community should deter to user individual information for other purposes.

DISCUSSIONS

This study has noticed that use of Google Scholar is higher than ResearchGate and Academia.edu due to extensive literature search capabilities and it has greater acceptability with the Library science community. Library science professionals are preferring Google Scholar for literature reviews and citation tracking and they are using ResearchGate and Academia.edu for networking and promoting their own research works. Within the community ResearchGate is a highly used tool for community engagements. Google Scholar has higher awareness among the LIS community, has higher acceptability and because it has a better user-friendly interface than ResearchGate and Academia.edu.

Inference drawn from the table 6 shows that LIS professionals choose ResearchGate that gives higher visibility of their scholarly works than Academia.edu and Google Scholar.

Study also concluded that while using Google Scholar, professionals are experiencing fewer challenges and limitations compared to ResearchGate and Academia.edu, which are resulting in its higher uses.

CONCLUSION

Academic Social Networking (ASN) is helping the LIS community to explore the research and development works and to promote scientific achievements of individuals and the community.

This study reflects that the Library and Information Science (LIS) community in India is oriented towards collaborative research, knowledge sharing, and professional networking. Hence the community is using ResearchGate, Academia.edu, and Google Scholar are using these tools for their academic ambitions. Each tool offers unique features and networking capabilities conducive to research and academic pursuits. The choice of platform depends on specific research needs, desired levels of engagement, and the nature of academic collaboration sought. The combined strengths of these platforms suggest that utilizing multiple ASNs could be most beneficial for academic and research pursuits within the LIS community.

Using Google Scholar can be highly beneficial, but its limited full text access sometimes only accompanied links to abstracts or citations. Access to the full text may require institutional subscriptions or individual purchases. Google Scholar's citations should be counted by national and international agencies like NIRF, NAAC, QS and THE. Google Scholar does not provide comprehensive details for bibliographic data and no robust advanced search facility.

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Acknowledging these challenges, it is crucial for researchers to use these platforms thoughtfully and supplement their efforts with alternative tools like institutional repositories and subject-specific databases. Researchers can

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effectively enhance their academic and professional pursuits by leveraging the strengths of multiple ASNs while addressing its use and familiarity.

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