



**Digital Transformation Strategies
and Trends in E-Learning: Privacy,
Preservation and Policy**

EDITED BY
Dr. Priya Rai
Dr. Akash Singh



SEGMENT BOOKS

A Study of ResearchGate profiles of the Medical Science Department of University of Delhi: An Altmetric Perspective

Sapna Verma¹ and Margam Madhusudhan²

Abstract

Web has introduced many new ways to communicate and to create networking among the members of community. ResearchGate is one of the result of new technologies which helps the researchers to make network and to accelerate the research work at the global level. The present study is conducted to understand the metrics provided by the ResearchGate and the correlation of each of the metric with the RGScore. The six departments of medical sciences are considered in the University of Delhi and the data were collected manually from the ResearchGate profiles of the faculty members of the medical department. The metrics provided by the ResearchGate are collected such as publications, reads, citations, networking, and RGScore. Findings of the study reveals that 8 percent members do not have ResearchGate profiles whereas 10 percent members are having more than 100 publications on their profiles. The findings reveals that ResearchGate is helpful in providing metrics data by mentioning RGScore of individual researcher, which helps the researcher to highlight their research work at the global village.

Keywords: ResearchGate, RGScore, Altmetrics, Social Networking.

1. Introduction

ResearchGate is a social networking site launched in 2008 by Dr. Ijad Madisch and Dr. Sören Hofmayer, and computer scientist “Horst Fickenscher with an aim to help the researchers to find out collaborators, share research papers, and to ask questions and answers in an academic community. It is a forum which is join by any researcher free of cost, its just required to create an account over the platform and it is joined by the more than 15 million users till date. Its features are to share

¹ Research Scholar, *Department of Library and Information Science, University of Delhi-110007*, Email: sapnaverma.du@gmail.com.

² Associate Professor, *Department of Library and Information Science, University of Delhi-110007*, Email: madhumargam@gmail.com.

the publications, connect and collaborate with colleagues, stats for the reads and citation of the publication of researcher, ask questions and answers to solve the research problems, and last but not least to find the right job using the research focussed board” (ResearchGate, 2018). “The advent of web 2.0 introduce many new ways to communicate by beating the distance problem” (Kousha & Thelwal, 2015) and “opens the possibilities to remain in contact with the community members to share the research activities, not to end up with the closing of conference, workshop, and seminar” (Tattersall, 2016). ResearchGate (RG) is the result of web 2.0 which helps in maintains the scholarly communication and to make the visibility of research to a wider area. “RG also provides the citations for the articles as soon as it published whereas traditional way of citing such as H-index, G-index took a lots of time to receive the citation” (Ravenscroft, 2017). Therefore, RG is one of platform to provide the citation for the publication of the researchers and help them to gain the visibility in an academic community.

The main purpose of the paper is to study the metrics provided by the ResearchGate and their role in the altmetrics. The study includes the systematic observation of the following metrics provided by the ResearchGate:

- *Publications*: The publications are added by the authors to their profiles in the ResearchGate. These Publications include chapters, books, conference papers, articles, poster, data, etc.
- *Reads*: The ResearchGate provide the total number of reads to the publications added by the researchers.
- *Citations*: Citations in ResearchGate are provided by the ResearchGate itself independently for the researchers publications.
- *Networking*: Networking in the ResearchGate includes the following and followers of the researchers.
- *Percentiles*: Percentile provided by the ResearchGate shows the higher percentage of the member as compared to the other members in the ResearchGate.
- *H-Index*: H index is the index used to measure the impact of an individual researcher rather than a journal. It is also provided on the ResearchGate profile of the researcher.
- *RGScore*: RGScore are the scores provided by the ResearchGate to evaluate the research quality of the researchers by following certain algorithm which is not disclosed by the ResearchGate.

2. Background of the Study

During literature survey, it was found that many studies are conducted on the Mendeley for the altmetrics but very less are conducted on the ResearchGate. ResearchGate is an academic social networking site and this academic networking

sites plays a pivotal role to create collaboration and to enhance the research performance of Pakistani LIS Scholars (Ali, Richardson, 2017) and the study conducted by Asmi and Madhusudhan reveals that ResearchGate and Academia are the most used ASNSs among research scholars (Asmi and Margam, 2018). Among academicians ResearchGate provides a great impact in collaborating (Thelwall and Kausha, 2015). It has concluded by the study that ResearchGate plays a significant role in creating collaboration at an international level and makes the networking more stronger (Asnafi et al., 2015). According to Bhardwaj (2017), ResearchGate scored the highest 61.1 per cent and was ranked 'Above Average', followed by Academia.edu 48.0 per cent and Mendeley 43.9 percent.

Srivastava and Mahajan (2015) investigated the relationship between the altmetric indicators from ResearchGate (RG) and the bibliometric indicators from the Scopus database and concluded that RG metrics showed moderate to strong positive correlation among each other. Ali et al. (2017) shows that there was a positive correlation between publications, reads, and citations for researchers who had added a single publication on their ResearchGate profile.

Ortega study suggested that now a days virtual spaces are gaining more popularity and stability as the technology advances (Ortega, 2017). The virtual spaces popularity is can be seen in the Shrivastava and Mahajan study which reveals that there is a highest correlation of RGScore with the publications added by researchers to their profiles as well as with reads and citation of the physics researchers in the physics and astrophysics department of University of Delhi (Shrivastava and Mahajan, 2017). The present study is similar to that of Shrivastava and Mahajan (2017) with major changes, explores the altmetric analysis of the ResearchGate metrics as it has been found during literature survey that very limited studies were carried out on this area.

3. Objectives and Methodology

The main objectives of the study is to explore ResearchGate altmetric indicators in the research.

The *Observation method* was used for the study from the ResearchGate (academic social networking site). The data were collected manually from the ResearchGate profile page of the faculty members (as per the list on the websites of the department during last week of June, 2018) of Obstetrics & Gynaecology, Ophthalmology, Otolaryngology, Paediatrics, Medicine, Orthopaedics departments in the University of Delhi, during the last week of June, 2018. The medical departments are selected for the study as the research is a backbone of these departments to discover, study or to resolve the problems. The author finds 50 faculty members profiles presence on ResearchGate out of 183 members from the selected departments on the ResearchGate academic social networking site. To study the correlation among the metrics provided by the ResearchGate, the

data were collected for the publications, reads, citations, networking which include followers and following, percentiles, RGScores, h-index, and percentiles provided by the ResearchGate on the profile of the studied members.

4. Data Analysis

4.1. Demographic Characteristics

Data were collected from the faculty members of the Obstetrics & Gynaecology, Ophthalmology, Otolaryngology, Paediatrics, Medicine, Orthopaedics departments in the University of Delhi which includes Professors, Associate Professors (including Readers), and Assistant Professors (including Lecturers) (Table I and Figure I).

Table I: Demographic Characteristics of Faculty Members

Designation	Members	Percentage
Professors	123	67.21
Associate Professors	20	8.74
Assistant Professors	40	18.03
Total	183	100

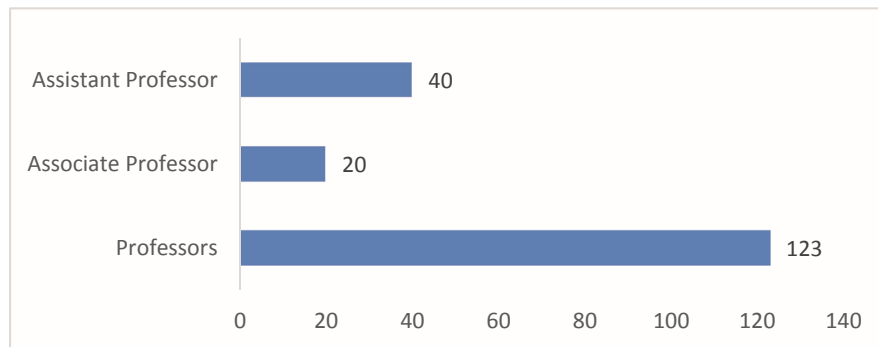


Figure I: Demographic Characteristics of Faculty Members

4.2. Publication Analysis

ResearchGate provides the publication details of the members under the Research Item tag which includes publications of researchers from Article, Book, Chapter, Conference Paper, Thesis, Presentation, and full-texts. Table II and Figure 2 shows the publication details of the members. Table reveals that 4 members

(8 percent) do not have any research item/publications posted on their profile whereas 5 members(10 percent) have more than 100 research items posted in their profiles.

Table II: Publications Analysis of the Members

S. No.	Publications	Members
1	00	04
2	01-10	02
3	11-20	05
4	21-30	06
5	31-40	05
6	41-50	06
7	51-60	01
8	61-70	04
9	71-80	03
10	81-90	04
11	91-100	05
12	>100	05
	Total	50

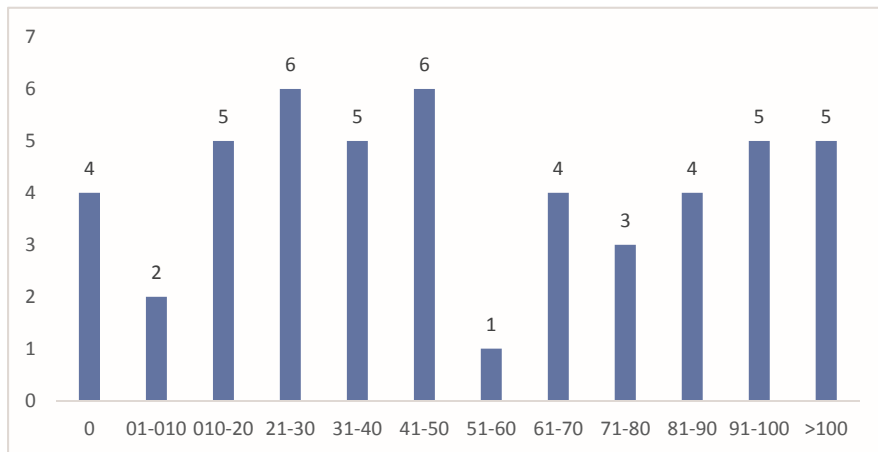


Figure II: Publications Analysis of the Members

4.3. Reads of Publication

ResearchGate provides the read metrics for a publication by the other researchers. This reads helps the researchers to find out the level of attention the publication received over the academic social networking platform. Table and figure III reveals the reads of the publications of the analysis profiles of the members. Information provided by the table shows that 4 members(8 percent) do not have any reads and the reason for this is that they did not add any publications in their profile of RG whereas 9 members (18 percent) have more than 5000 reads on their publications which shows the number of times the attention received by their research items.

Table III: Reads of the Publications

S. No.	Reads	Members
1	00	04
2	001-500	05
3	501-1000	07
4	1001-1500	04
5	1501-2000	06
6	2001-2500	02
7	2501-3000	03
8	3001-3500	01
9	3501-4000	04
10	4001-4500	03
11	4501-5000	02
12	>5000	09
	Total	50

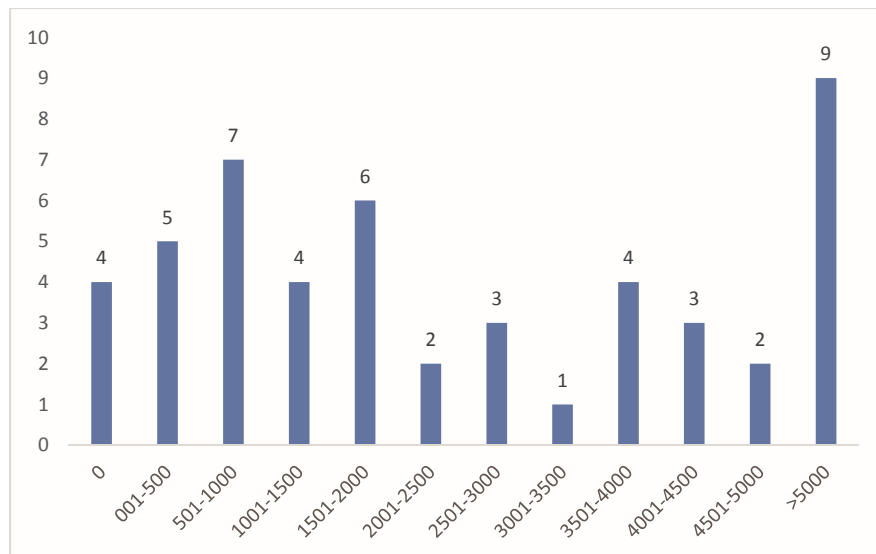


Figure 3: Reads of the Publications

4.4. Citations of Publication

Citation are the metrics used for assessing the impact of an individual researcher, an article, or a journal. It helps to highlight the researchers in a particular area, and helps to support the discussions by the citation mechanism (Mavodza, 2016). Table and figure IV provides the detail distribution of members based on the citation received in their publications. The table shows that 15 members (30 percent) have more than 500 citations.

Table IV: Citations of Publications

S. No.	Citations	Members
1	00	04
2	01-50	06
3	51-100	05
4	101-150	05
5	151-200	03
6	201-250	02
7	251-300	02

S. No.	Citations	Members
8	301-350	03
9	351-400	02
10	401-450	01
11	451-500	02
12	>500	15
	Total	50

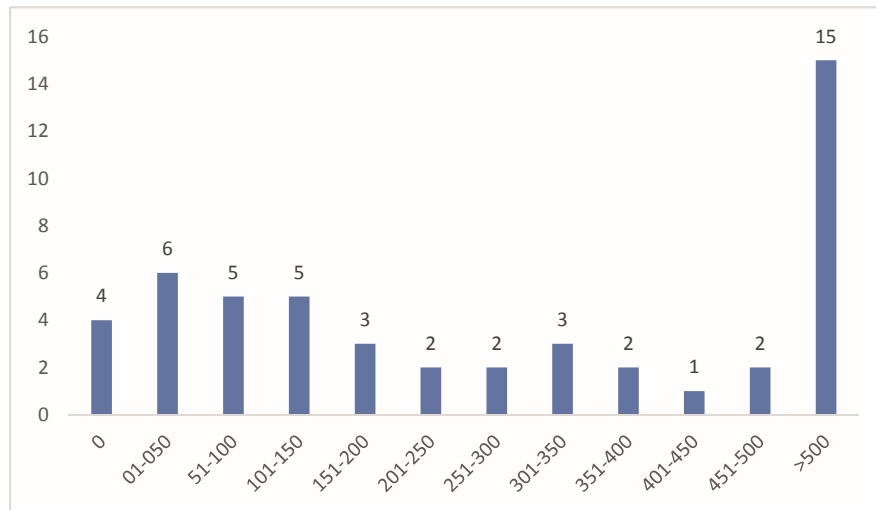


Figure IV: Citations of Publications

4.5. Networking via ResearchGate

Networking plays a prime role in academia, which can be done through conferences, seminars, meetings, workshops, webinars, and teleconferences. Due to advancement in technology and the advent of Web 2.0, this networking is not only limited to conferences or till the end of project, as now the academicians are in contact via various social networking academic platform (Tattersall, 2016). Table V and VI as well as figure 5 shows the networking by the following and the followers over the ResearchGate academic platform. Table V shows that only 1 member(2 percent) has more than 100 following whereas maximum members i.e. 18 members(36 percent) are following within 1 to 10 members.

Table V: Following of the Members

S. No.	Following	Members
1	00	06
2	01-10	18
3	11-20	07
4	21-30	06
5	31-40	06
6	41-50	05
7	51-60	00
8	61-70	00
9	71-80	01
10	81-90	00
11	91-100	00
12	>100	01
	Total	50

Table VI shows the number of followers of the analysed profiles of the members. It shows that 3 members(6 percent) have more than 100 followers whereas 10 members(20 percent) have within 11 to 20 followers in their ResearchGate profiles. It also shows that no member has zero follower on the ResearchGate.

Table VI: Followers of the Members

S. No.	Followers	Members
1	00	00
2	01-10	09
3	11-20	10
4	21-30	06
5	31-40	07
6	41-50	03
7	51-60	04

S. No.	Followers	Members
8	61-70	03
9	71-80	04
10	81-90	01
11	91-100	00
12	>100	03
	Total	50

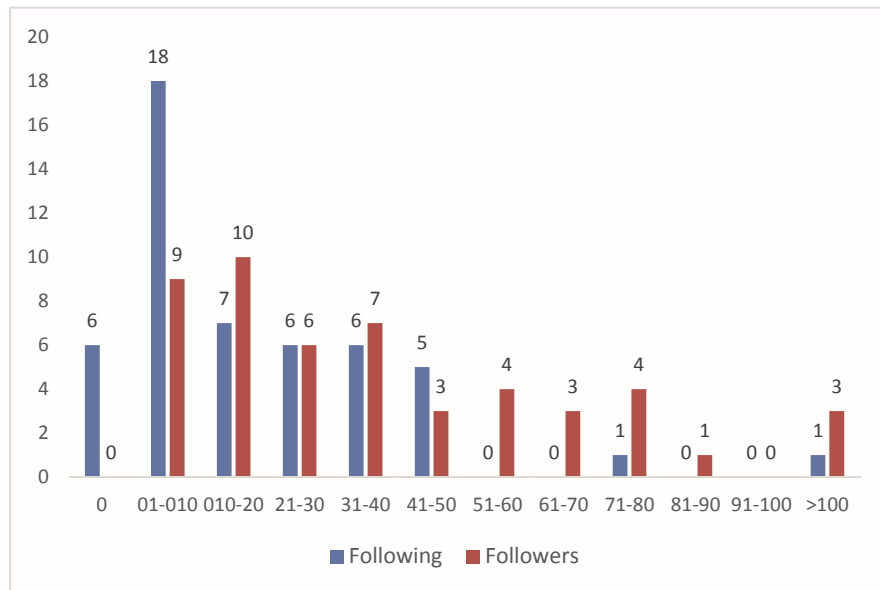


Figure V: ResearchGate Networking

4.6. RGScore

RG Score is provided by the ResearchGate which is closely related to the quality of the research (Ali. Et.al., 2017). It is one of the prime indicator given by RG to analyse or to assess the research work. Table VII and figure VI provides the distribution of members based on the RGScore. Table shows that 14 members(28 percent) have RGScore within 25 to 30 followed by 9 members(18 percent) have RGScore within 15 to 20.

Table VII: RGScore of the Members

S. No.	RG Scores	Members
1	00	04
2	0-05	02
3	05-10	02
4	10-15	03
5	15-20	09
6	20-25	08
7	25-30	14
8	30-35	06
9	35-40	02
10	>40	00
	Total	50

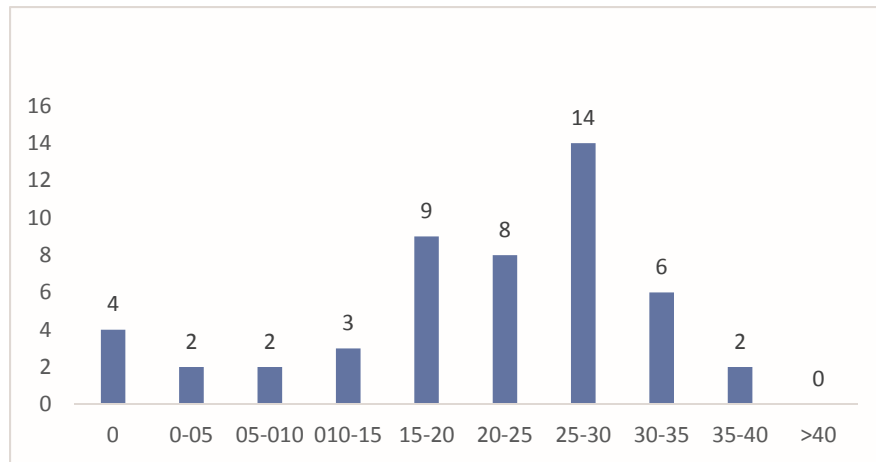


Figure 5: RGScore of the Members

4.7. Percentile of ResearchGate

Percentile provided by the ResearchGate shows the higher percentage of the member as compared to the other members in the ResearchGate. Table VIII and Figure 6 provides the percentile status of the analysed profiles of the members. It is depicted from the table that 16 members (32 percent) have percentiles within

the range of 81-90 whereas 8 members (16 percent) have percentiles within the range of 61-70 as well as in 71-80 range.

Table VIII: Percentile of ResearchGate

S. No.	Percentiles	Members
1	00	04
2	01-10	01
3	11-20	01
4	21-30	00
5	31-40	02
6	41-50	03
7	51-60	03
8	61-70	08
9	71-80	08
10	81-90	16
11	91-100	04
12	>100	00
	Total	50

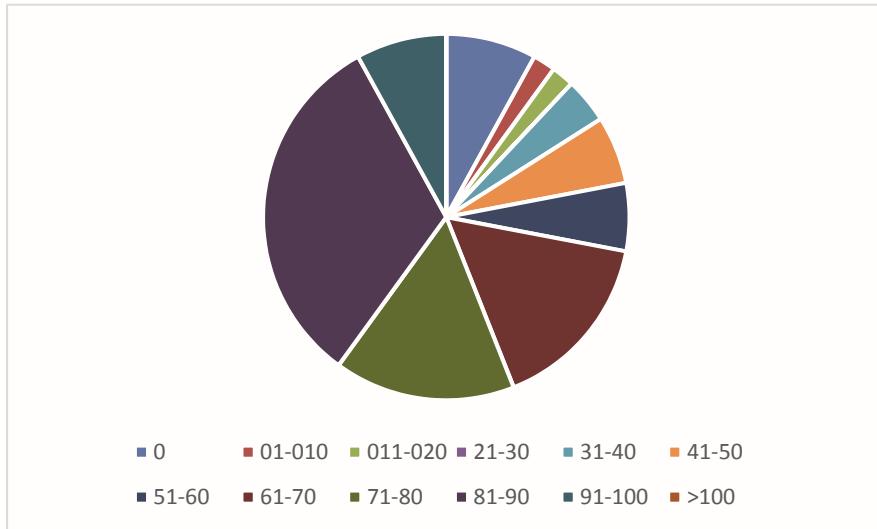


Figure VI: Percentiles of RG Members

4.8. H-Index

H-index or Hirsch index, measures the impact of an individual researcher than a journal. “It is defined as the highest number of publications of a scientist that received h or more citations each while the other publications have not more than h citations each” (Schreiber, 2008). Table IX and Figure 7 provides the details of h-index received by the analysed profiles of members on the ResearchGate. Table shows that 18 members (36 percent) have h-index within 6-10 whereas 4 members (8 percent) have more than 15 h-index.

Table IX: h-Index of Researchers

S. No.	h-Index	Members
1	00	04
2	01-05	08
3	06-10	18
4	11-15	16
5	>15	04
	Total	50

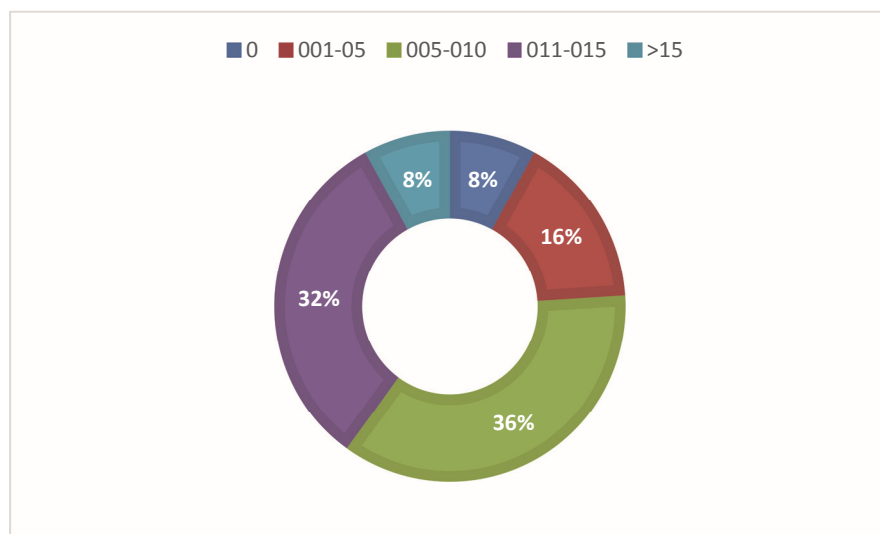


Figure VII: h-Index of Researchers

5. Discussion and Conclusion

The study conducted to carry out altmetric analysis of the ResearchGate profiles for faculty members (as per the list on the websites of the department during last week of June, 2018) of Obstetrics & Gynaecology, Ophthalmology, Otolaryngology, Paediatrics, Medicine, Orthopaedics departments in the University of Delhi. The analysis of the study shows that the 8 percent of members do not have any research item/publications posted on their profile whereas 10 percent of members have more than 100 research items posted in their profiles. The reason for not posting any publication in the profile may be busy schedule and not able to update the profile but created account in the ResearchGate. Mostly members who added full text are articles whereas ResearchGate provides the options for the chapters, stats, conference papers, projects, etc.

The full text publications added by the members provides the total reads per publications as well as the total citations received per article and it is revealed from the analysis that 8 percent of members do not have any reads and the reason for this is that they did not add any publications in their profile of RG whereas 18 percent have more than 5000 reads on their publications which shows the number of times the attention received by their research items. At the same time 30 percent of members have more than 500 citations whereas 10 percent of members received citations between 51-100 and 100-150 range. The citations received by the articles tells about the quality of the research work and also helps the researcher to make their research more highlighted.

As the ResearchGate is an academic social networking platform where researchers of a community remains in contact with each other and create their networking by following the members of their research interest at the global level. The study shows that 2 percent members have more than 100 following whereas 36 percent of members are following within 1 to 10 members in their academic community. It also shows that 6 percent of members have more than 100 followers whereas 20 percent of members have within 11 to 20 followers in their ResearchGate profiles. It also shows that no member has zero follower on the ResearchGate.

ResearchGate also provides novel indicator i.e. RGScore which is calculated by the standard algorithm and shows that 28 percent of members have RGScore within 25 to 30 followed by 18 percent of members have RGScore within 15 to 20. The RGScore depends upon the metrics of reads, citations and the activation of the profile, it is generated by the certain standards of ResearchGate and not revealed by the company.

Percentile indicator is also given in the ResearchGate which shows the higher percentage of the member as compared to the other members in the ResearchGate.

It's a way to assess the research performance as compared to other members in the community. The study reveals that 32 percent of members have percentiles within the range of 81-90 whereas 16 percent of members have percentiles within the range of 61-70 as well as in 71-80 range. Besides this H index is also given in the ResearchGate profile of the members and the data reveals that 36 percent of members have h index within 06-10 whereas 8 percent of members have more than 15 h-index. The study shows that there is a strong correlation between the RGScore and the reads, RGScore and citations, RGScore and the networking and the RGScore publications.

The present study is significant because it highlights the importance of ResearchGate in the scholarly communication and plays a vital role in the research activity of the researcher as well as helps in creating networking at the global level.

6. References

- Ali, Muhammad Yousuf, and Joanna Richardson. "Pakistani LIS scholars' altmetrics in ResearchGate." *Program* 51.2 (2017): 152-169.
- Ali, Muhammad Yousuf, Malcolm Wolski, and Joanna Richardson. "Strategies for using ResearchGate to improve institutional research outcomes." *Library Review* 66.8/9 (2017): 726-739.
- Asmi, Nowsheeba Ashraf, and Madhusudhan Margam. "Academic social networking sites for researchers in Central Universities of Delhi: A study of ResearchGate and Academia." *Global Knowledge, Memory and Communication* 67.1/2 (2018): 91-108.
- Asnafi, Amir Reza, et al. "Study on Activities of Payame Noor University (IR Iran) Faculty Members in Research Gate." *International Conference on Webometrics, Informetrics and Scientometrics and 16th COLLNET Meeting. Delhi, India*. 2015.
- Bhardwaj, Raj Kumar. "Academic social networking sites: comparative analysis of ResearchGate, Academia. edu, Mendeley and Zotero." *Information and Learning Science* 118.5/6 (2017): 298-316.
- Ortega, José Luis. "Toward a homogenization of academic social sites: A longitudinal study of profiles in Academia. edu, Google Scholar Citations and ResearchGate." *Online Information Review* 41.6 (2017): 812-825.
- Ravenscroft, James, et al. "Measuring scientific impact beyond academia: An assessment of existing impact metrics and proposed improvements." *PloS one* 12.3 (2017): e0173152.
- Schreiber, Michael, "An empirical investigation of the g-index for 26 physicists in comparison with the h-index, the A-index, and the R-index." *Journal of the American Society for Information Science and Technology* 59.9 (2008): 1513-1522.

- Shrivastava, Rishabh, and Preeti Mahajan. "An altmetric analysis of ResearchGate profiles of physics researchers: a study of University of Delhi (India)." *Performance Measurement and Metrics* 18.1 (2017): 52-66.
- Shrivastava, Rishabh, and Preeti Mahajan. "Relationship amongst ResearchGate altmetric indicators and Scopus bibliometric indicators: The case of Panjab University Chandigarh (India)." *New Library World* 116.9/10 (2015): 564-577.
- Tattersall, Andy, ed. *Altmetrics: a practical guide for librarians, researchers and academics*. Facet Publishing, 2016.
- Thelwall, Mike, and Kayvan Kousha. "Research Gate: Disseminating, communicating, and measuring Scholarship?." *Journal of the Association for Information Science and Technology* 66.5 (2015): 876-889.