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RESEARCH ARTICLE

Scholarly communication behavior in forestry research: A bibliometric analysis of global publications

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Abstract

Scientific advancements and developments could be ensured by the environment where the free flow of libraries and information centers always has a pivotal and pioneer role in science communication and knowledge dissemination as the existing literature forms new literature. Quantification of information measuring a set of established parameters evolves policy decisions. Bibliometrics and scientometrics contributed to a great extent towards organizing the research outcome, scientific and knowledge outcome for timely retrieval and use. Forest plays an important role in ecosystem management. It is very difficult without enhanced forest cover to live in this world as forest plays a significant role in the healthy lifestyle of human beings and other species in this world. Considering the importance of forestry, the researcher wanted to find out the research trends in forestry. It is found from the analysis that there are 16203 research publications for the last 10 years. The time period for the data is from January 2012 to December 2021, which spans a period of 10 years. The articles which are published during the period are indexed in the database being considered for research analysis. About 45720 authors contributed 16203 publications which are published in 2298 international journals. It has 232465 citations which means 232465 scholarly information resources cite 16203 articles. The h-index for the total outcome of the time span is 136 for forest research across the globe. The indexed records consist of 404497 references. There are 27409 university and research departments affiliated with various organizations from where the researchers have contributed the total research outcome on the forestry and allied subject research for the study period. More than 163 countries collaboratively and individually contributed research in forestry.

Keywords: Scientometrics, Forestry, Research, Citation Studies, VoS Viewer, Relative Growth Rate.

Introduction

A forest is an area with a high density of trees and may vary significantly in size and have different classifications according to how and of what the forest is composed. Forests are considered as very important for our planet's healthy. There are more organisms in a handful of soil than there are people on the planet. The forest is considered as a home for about 80% of life on earth and all sizes of living organisms, including animals and plants, depend on forests, which provide them with food and shelter to live their life happily. It acts as a barrier against erosion, landslides, and avalanches. The roots of the trees give the soil the structure it needs to absorb and retain water when it rains, avoiding floods that would otherwise wash away perfectly fertile soil, which human beings need in order to grow food. Considering the importance of forestry, the researcher wanted to find out the scholarly communication pattern and research trends in forestry in terms of analyzing the publication output, Ajitha, A., &Vasudevan, T.M. (2018), Taylor, J. W., & Mai, B. (2022).

Scope of the Study

The present research aimed at identifying the growth of research literature in forest and allied science across the world with a focus on the status of India. The publications indexed in Web of Science, the premier indexing database was used for the study. The publications are subjected to the study found between 2012 to 2021. The analysis covers authorship pattern, relative growth rate, contributions of countries, funding patterns, institutional relevance, the impact of the research publications, and so on, Bojović, S., Matić, R., Popović, Z., Smiljanić, M., Stefanović, M.,

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&Vidaković, V. (2014), Hasan, M., Abedin, M. Z., Amin, M. B., Nekmahmud, M., & Oláh, J. (2023).

Review of Literature:

The present digitized environment has enormous sources that enable the researcher to find out the citation of articles like which article has received more citations. While knowing this, the researcher can find out the experts who have published more articles and who have got more citations. This will help the researcher to contact the expert who has more citations and will enable the researcher to consult on the current research to be undertaken and how to proceed further. Earlier studies will also help the researcher to find out the types of previous studies and what approaches they have followed (UNF, Thomas G. Carpenter Library, 2022). Hence, a review of literature is considered as important phenomenon in the course of any research. As with the present study, previous studies that are reviewed used a range of scientometric tools and techniques such as Hiscite, Bibexcel, SciMAT, VOSviewer, Biblioshiny, CiteSpace, h-Index, and m-index along with the conventional approach of analyzing the scholarly communication behavior in terms of author contribution, institutional contribution, geographical contribution, the proliferation of journals and subject mapping. The scientometrics studies that were carried out earlier, both in India and from abroad, were reviewed. Some of them are related to forestry and allied subjects like forest ecology, forest health, and the Hyrcanian Forest. The outcome of the research output spreads into food science, sericulture, forestry, fisheries, wildlife and human health, ecosystems, Himalayan research, agriculture, horticulture, and so on. The research publications were mainly indexed in Web of Science and Scopus databases, Pawar, K. V., & Rothkar, R. V. (2015), Fathima, A. S., & Sheriff, L. A. K. (2012), Bojović, S., Matić, R., Popović, Z., Smiljanić, M., Stefanović, M., & Vidaković, V. (2014), Moraes, H. M. F., Furtado Júnior, M. R., Vitória, E. L. D., & Martins, R. N. (2023), Ma, Z., Hu, C., Huang, J., Li, T., & Lei, J. (2022).

Objectives of the study

The main aim of the present research focused on the quantitative analysis of forestry research outcomes published in peer reviewed journals indexed in Web of Science, a premier database of ISI.

- To identify the quantum of publications output on forestry for the period of 2012-2021 (both years inclusive).
- Identify and assess the collaborative research patterns on forestry and the contributions of the most prolific authors.
- To map the subject proliferation of forestry research.
- Aimed at identifying the preference of researchers to communicate their research outcome in the source journals
- To reveal the scientific publishing pattern of forestry research in various geographical regions across the globe.
- To map the subject headings on the forestry research outcomes.
- To test the relevance of bibliometric laws to reveal the publication behavior during the study period

Methodology of the study

This study is conducted based on the publication of research documents on forestry and its allied subjects available in Web of Science, and the literature for the study has been extracted from the Web of Science – a multidisciplinary indexing research database for the period of 2012-2021. The keyword used for the search query is 'forestry' using the keyword option. There were 16203 documents have been retrieved for the above said study period. Besides the articles, there were other types of documents included in the database are book reviews, letters to the editor, notes, conference papers, and so on. The researcher has organized the data in Excel and Histcite to enable the analysis using frequency, percentage, and other relevant statistical techniques. The researcher used statistical formulas to measure scientometric tools like TSA, RGR, DT and the application of standard bibliometric laws. The researcher also used visual Rstudio and Vosviewer for mapping the research output.

Data Analysis and Interpretations:

Relative Growth Rate and Doubling Time of Overall Output

It could be noted that in 2012, 1190 research articles were published on 'Forestry', and the number went up to 2398 by the end of the year 2021. However, its relative growth rate has shown a declining trend. It is seen that its relative

Table 1: Relative growth rate and doubling time of overall output

Year	*No. of output*	*Cum. no. of output*	*$Log_e 1^p$*	*$Log_e 2^p$*	*R(a)*	*Dt=0.693 R(a)*
2012	1190	1190		7.08		
2013	1252	2442	7.08	7.80	0.72	0.96
2014	1346	3788	7.80	8.24	0.44	1.58
2015	1408	5196	8.24	8.56	0.32	2.17
2016	1436	6632	8.56	8.80	0.24	2.89
2017	1522	8154	8.80	9.01	0.21	3.30
2018	1677	9831	9.01	9.19	0.18	3.85
2019	1819	11650	9.19	9.36	0.17	4.08
2020	2155	13805	9.36	9.53	0.17	4.08
2021	2398	16203	9.53	9.69	0.16	4.33
					2.63 (0.24)	61.89 (5.62)

growth rates have decreased gradually from 0.72 in 2012 to 0.16 in 2021. The whole study period recorded a mean relative growth rate of 0.24. Contrastingly, the doubling time for publication of all sources on Forestry research output has increased from 0.96 in 2012 to 34.65 in 2022. The mean doubling time for the period is 5.62.

Most Productive Authors

It is interpreted that 45722 authors totally contributed to the forestry research and allied subjects in Wingfield MJ, which has got the highest number of contributions as 71 followed by Spinelli R with 58 and Pukkala T with 42 publications, respectively. The top author, Wingfield MJ scored 1456 global citations, followed by the second author, Spinelli R 870 GCS, and the third highly contributed author, Pukkala T, with 744 global citations, respectively. It is also inferred that the authors with less number of publications have more citations. Accordingly, Smith P scored 1793 (highest) global citations with 26 publications, and Gustafsson L scored 1382 GCS with 622 local citations for just 20 publications. Contribution is not significant in terms of number of publications. The research is proliferated in different subject areas. Hence, the core contributors to forest research are minimal.

Journal wise Distributions

It is found from the analysis that there are 2298 journals published the total research outcome of forestry research for the study period. The top 20 journals are tabulated, which reveals that 'Forest Ecology and Management Journal' and 'Journal of Forests' have got higher contributions by 690 publications and 590 publications for the study period. The top 50 journals got 11562 citations, followed by 5319 global citations, respectively. The third rank journal is 'Forest

Table 2: Most productive authors (45720)

S.No	*Author*	*Institution & Country*	*Records*	*TLCS*	*TGCS*
1	Wingfield, Michael J	University of Pretoria, FABI, Dept Biochemistry Genet & Microbiology, South Africa	71	264	1456
2	Spinelli, Raffaele	CNR IVALSA, Sesto Fiorentino (Florence), Italy	58	213	870
3	Pukkala, Timo	University of Eastern Finland, School Forest Science, Finland	42	130	744
4	Zhang, Yang	Beijing Forestry University, School Econ & Management, Beijing Peoples R China	38	8	360
5	Giessen L	University of Gottingen, Chair Group Forest & National Conservation Policy, Gottingen, Germany	35	400	964
6	Hyyppa, Juha	Finnish Geodetic Institute, Centre Excellence Laser Scanning Research, Masala, Finland	33	244	1429
7	Magagnotti, Natascia	CNR IVALSA, Florence, Italy	32	129	440
8	Li J	Fujian Agriculture & Forestry University, Forestry College, Key Lab Forest Ecosystem & Management, Fujian, Peoples R China	31	21	298
9	Li, Yu	N China Elect Power University, Res Academy Energy & Environmental Studies, Beijing, Peoples R China	30	11	514
10	Maryudi, Ahmad	University of Gadjah Mada, Faculty Forestry, Indonesia	28	474	1034
11	Aust, W. Michael	Virginia Tech, Dept Forest Resources & Environmental Conservation FREC, Blacksburg, USA	27	183	435
12	Roux, Jolanda	University of Pretoria, Department of Plant Science, Forestry & Agriculture Biotechnology Institute, Pretoria, South Africa	27	81	425
13	Toppinen, Anne	University of Helsinki, Department of Forest Science, Helsinki, Finland	27	87	392
14	Bolding, M. Chad	Virginia Tech, Dept Forest Resources & Environment Conservation, Blacksburg, USA	26	177	415
15	Smith, Pete	University of Aberdeen, Scottish Food Secure Alliance Crops, Scotland	26	106	1793
16	Wang, Yong	State Forestry and Grassland Administration, Beijing Forestry Machinery Research Institute, Beijing, Peoples R China	26	2	241
17	Zhang, Lei	Zhejiang University Finance & Econ, College Business Administration, Hangzhou, Zhejiang, Peoples R China	26	6	187
18	Herbohn, John	University of Sunshine Coast, Trop Forests & People Res Centre, Australia	25	128	477
19	Laudon, Hjalmar	SLU, Dept Forest Ecology & Management, Umea, Sweden	25	141	770
20	Li, Hua	Northwest Agriculture & Forestry University, College Econ & Management, Yangling, Peoples R China	24	20	347

TLCS - Total Local Citation Score TGCS -Total Global Citation Score

Table 3: Journal wise distributions (2298)

S. No	*Journal*	*Impact Factor*	*Records*	*TLCS*	*TGCS*
1	Forest Ecology and Management	3.126	690	1973	11562
2	Forests	3.23	590	451	5319
3	Forest Policy and Economics	3.673	528	2386	7724
4	Sustainability	3.251	268	25	1937
5	Land Use Policy	6.40	238	762	4269
6	Urban Forestry & Urban Greening	4.537	208	522	3990
7	Remote Sensing	4.509	197	117	3881
8	Journal of Forestry	2.675	169	458	1500
9	International Forestry Review	1.90	167	411	1197
10	Scandinavian Journal of Forest Research	1.88	165	646	1955
11	Sumarski List	0.39	163	38	137
12	PLOS One	3.24	158	0	2515
13	Science of the Total Environment	7.963	152	150	2694
14	Forestry Chronicle	0.75	145	106	362
15	Journal of Cleaner Production	9.297	143	134	3135
16	Canadian Journal of Forest Research	1.991	138	260	1201
17	Sylwan	0.691	136	100	345
18	Small-Scale Forestry	1.64	134	426	1124
19	Journal of Environmental Management	4.624	126	287	1888
20	Biomass & Bioenergy	5.061	110	233	2320

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Table 4: Institution with Subdivision wise distribution of Publications (27409)

S.No	*Institution with Subdivision*	*Records*	*TLCS*	*TGCS*
1	University of Helsinki, Department Forest Science, Finland	175	788	3361
2	US Forest Service – USDA, United States	171	772	4824
3	University of Eastern Finland, School of Forest Sciences, Finland	127	359	1664
4	Swedish University of Agricultural Sciences, Dept Ecology, Sweden	90	624	2108
5	Swedish University of Agricultural Sciences, Dept Forest Resource Management, Sweden	87	465	1874
6	University of British Columbia, Faculty Forestry, Canada	86	152	951
7	National Resources Canada, Canadian Forest Service, Canada	83	271	1599
8	Czech University of Life Sciences Prague, Faculty Forestry & Wood Science, Czechia	82	157	1084
9	Australian National University, Fenner School of Environment & Society, Australia	71	692	3268
10	Swedish University of Agricultural Science, Department of Forest Ecology & Management, Sweden	71	245	1219
11	University of the Chinese Academy of Sciences, China	70	36	658
12	University of Georgia, Warnell School of Forestry and Natural Resources, United States	64	69	404
13	Swedish University of Agricultural Sciences, Southern Swedish Forest Research Centre, Sweden	57	239	985
14	University of Tartu, Institute of Ecology and Earth Sciences, Estonia, Estonia	55	208	889
15	Estonian University of Life Sciences, Institute of Forestry and Rural Engineering, Estonia	54	324	1094
16	Technical University in Zvolen, Faculty of Forestry, Slovakia	54	126	625
17	University of Alberta, Department of Renewable Resources, Canada	54	228	1349
18	Swedish University of Agricultural Sciences, Department of Wildlife, Fish, and Environmental Studies, Sweden	51	70	542
19	University of Washington, School of Environmental and Forest Science, California	51	334	1208
20	Beijing Forestry University, School of Economy & Management, China	49	60	357

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Policy and Economics' with 528 records having 7724 global citations. The top 50 journals contributed nearly around 50% of publication output. It is noteworthy to mention that journals that publish less number of articles have gone more citations. The third journal, Forest Policy and Economics, got higher citations of 7724 global citation scores and 2386 local citation scores higher than that of a second-ranked journal, Forests. Accordingly, the journal 'Renewable and Sustainable Energy' Reviews got 4442 global citations for 71 publications.

Institution with Subdivision wise distribution of Publications

The researcher also analyzed the records output according to the department contributions which are the Universities Organizations as it is categorized in the source database as institutions with subdivisions. The analyzed data reveals that the University of Helsinki Department of Forest Science, US Forest Service Department, School of Forestry Science of the university of Eastern Finland hold top three positions with a contribution of 175, 171, 127 publications, respectively in forestry research for the study period. The US Department of Forest Services has got highest global citations with 4924 which is followed by the top contributors Department of Forestry Science, University of Helsinki, and Department of Forest Science with 3361 global citations scores. Nearly around one fifth of the research output contributed by the top 50 Universities departments and the sub division of research organizations and governments departments. Of the top 50 departments and contributors of universities and sub divisions of the research organizations and government departments in terms of the number of publications, eight university departments and sub divisions of the institutions have got more than 1500 global citation scores.

Most Productive Countries:

Geographical distribution of research outcome carried out by the different organizations also is one of the aspect of the Scientometric and bibliometric research. In this context, the researcher has tabulated the origin of the country of the publications as to the source data base. It is found that there are more than 163 countries that represent all the five continents contributed the research in Forestry and related studies. Out of these, nations contributed research are being

Table 5: Most Productive Countries (163)

S.No	*Country*	*Records*	*TLCS*	*TGCS*	*Country*	*Records*	*TLCS*	*TGCS*
1	USA	2996	5383	64143	Chile	283	274	2922
2	Peoples R China	1886	1076	21583	Mexico	279	168	2744
3	Canada	1269	2416	23676	Indonesia	268	1023	5357
4	Germany	1173	2941	26769	Denmark	246	762	6821
5	UK	1115	2126	23815	Belgium	197	343	6004
6	Australia	1067	2928	23676	Lithuania	186	214	1465
7	Sweden	1063	3640	20525	South Korea	171	97	2298
8	Finland	957	2994	17437	Argentina	168	244	1982
9	Brazil	947	832	14533	Slovakia	164	306	2273
10	Italy	831	1573	19714	Romania	161	267	2351
11	Spain	763	718	14727	Russia	157	123	1579
12	France	560	1054	11828	Ireland	138	306	2220
13	Poland	499	484	5632	Nepal	131	561	1923
14	Japan	492	568	5113	Estonia	121	818	3025
15	Netherlands	435	936	14196	Malaysia	117	59	1954
16	South Africa	429	606	5482	Croatia	116	151	825
17	India	372	228	5060	Hungary	116	161	1549
18	Austria	353	825	7658	Slovenia	110	257	1370
19	Norway	321	1157	7252	Serbia	107	139	892
20	Turkey	319	189	1962	Greece	87	105	1891
21	Switzerland	307	835	8533	Colombia	84	60	1398
22	New Zealand	305	579	4593	Kenya	83	207	2150
23	Czech Republic	300	424	4610	Thailand	81	104	1322
24	Portugal	290	304	5656	Pakistan	74	30	720

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analyzed, USA stands first position with 2996 publications having 64143 global citations as significant contributor, which is double than the second contribution from the People Republic of China, Canada, Germany and United Kingdom are the other top 5 nations followed by USA and China with 1269, 1173 and 1115 publications respectively. It is quite surprising to know that India is in 17th position having 372 publications in forestry research area which is covered by the international reputed indexing source. It reflects that though India has large collection coverage of the forest and the research organizations where the contribution of publications is not optimal. The quality of indexed publication in terms of quantity is the concern of the top ten nations. Only China from the Asian continent followed by the Japan and India contributed more number of publications in forestry research, which are indexed in International reputed impact source data of the top 50 nations in terms of forestry research contribution. Though the forest coverage from Asia is large with himalayas and rain forests of Indonesia, Thailand. Only a few countries from Asian countries take place. It is quite interesting to note that Nepal is dominant than Malaysia, Thailand, Pakistan in terms of forestry research publications indexed with 131 research articles with 193 global citation score.

Institution with Subdivision wise distribution of Publications

The researcher also analyzed the records output according to the department contributions which are the Universities Organizations as it is categorized in the source database as institution with sub–divisions. The analyzed data reveals that University of Helsinki Department of Forest Science, US Forest Service department, School of Forestry Science of University of Eastern Finland holding top three positions with contribution of 175, 171, 127 publications respectively. The US Department of forest services has got highest global citations with 4924 which is followed by the top contributor Department of Forestry Science, University of Helsinki, Department Forest Science with 3361 global citations scores. Nearly around one fifth of the research output contributed

Table 6: Institution with Subdivision wise distribution of Publications (27409)

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4	Swedish University of Agricultural Sciences, Dept Ecology, Sweden	90	624	2108
5	Swedish University of Agricultural Sciences, Dept Forest Resource Management, Sweden	87	465	1874
6	University of British Columbia, Faculty Forestry, Canada	86	152	951
7	National Resources Canada, Canadian Forest Service, Canada	83	271	1599
8	Czech University of Life Sciences Prague, Faculty Forestry & Wood Science, Czechia	82	157	1084
9	Australian National University, Fenner School of Environment & Society, Australia	71	692	3268
10	Swedish University of Agricultural Science, Department of Forest Ecology & Management, Sweden	71	245	1219
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13	Swedish University of Agricultural Sciences, Southern Swedish Forest Research Centre, Sweden	57	239	985
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17	University of Alberta, Department of Renewable Resources, Canada	54	228	1349
18	Swedish University of Agricultural Sciences, Department of Wildlife, Fish, and Environmental Studies, Sweden	51	70	542
19	University of Washington, School of Environmental and Forest Science, California	51	334	1208
20	Beijing Forestry University, School of Economy & Management, China	49	60	357
21	University of Jyväskylä, Department of Biological and Environmental Science, Finland	48	173	634
22	University of Ljubljana, Biotechnical Faculty, Slovenia	47	148	678
23	Umea University, Department of Ecology and Environmental Science, Sweden	44	157	1658
24	University of Edinburgh, School of GeoSciences, Scotland	44	109	825
26	Centre Institute Forestry Reseaech CIFOR, Indonesia	43	227	1136

TLCS - Total Local Citation Score TGCS -Total Global Citation Score

by the top 50 Universities' departments and the sub division of research organizations and governments departments. Of the top 50, eight university departments and sub divisions of the institutions have got more than 1500 global citation scores.

Analysis of Keywords occurrence network map

To gain a better understanding of scholary communication pattern, the researcher used the term' map visualization' as shown in Fig. 1. To create this visualization, the terms found in the title and abstract of each publication were identified. The 100 most relevant terms were chosen algorithmically from all terms found in at least 50 publications. These terms are depicted in Fig. 8 term map visualization. Each term is represented by a circle, and some of them are also labeled. The size of a term reflects the number of occurrences in which the term was discovered, and the distance between two terms provides an approximation of their relatedness. The relatedness of terms was determined using co-occurrence weights. In other words, the stronger the relationship between two terms, the greater the number of publications in which both terms were found. Colors represent groups of terms that are closely related to one another. Curved lines are used in the visualization to indicate the strongest relationships between terms.

VOSviewer is Software for creating and visualizing bibliometric networks. These networks can be built using citation, bibliographic coupling, co-citation, or co-authorship relationships, and can include journals, researchers, or individual publications. VOSviewer also includes text mining functionality for creating and visualizing co-occurrence networks of key terms extracted from scientific literature.

The analysis of the VOSviewer visualization about the "Occurrence of keyword in spite of the title is "Forestry" the frequency of the keyword is 2291 with Total Link Strength of 9210 and followed by "Management" found that 1821 occurrences with 9174 total link strength and the word "Conservation" had 1158 occurrences with 6012 total link strength.

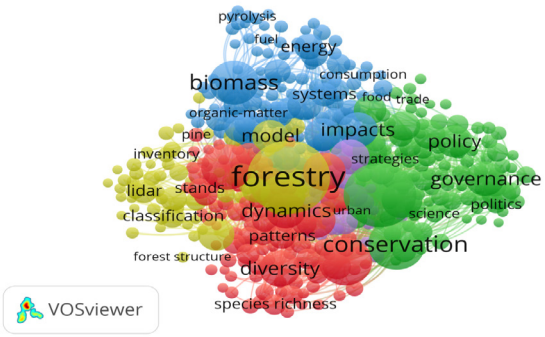

Figure 1: Co-occurrence of keywords
Source: VOSviewer

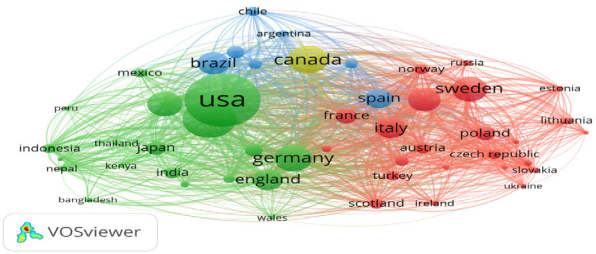

Figure 2: Citation Analysis of Country
Source: VOSviewer

Citation Analysis of Countries:

It shows the top 20 country-wise scattering of documents along with its citations and their relative total link strength. The figure 2 highlights the country with topping documents and their respective citations with relative strength. It is inferred that USA tops the list with 64252 citations and 16016 link strength for 3012 documents. The country that ranked second for the strongest link strength 11761 is Germany with 26736 citations for 1174 documents. It is interesting to note that the certain countries with minimum documents has gained highest citations and a good number of link strength. For example, the country Finland with 958 documents has received 17424 citations and 8781 total link strength, France with 559 documents has received 11768 citations and 4585 total link strength. It is predicted that the findings reveal unevenly count between the documents, its citations and total link strength.

Bibliographic Coupling between Documents:

Co-citation is the polar opposite of bibliographic coupling. If a third publication is cited by both publications, they are considered bibliographically connected (Kessler, 1963). In other terms, bibliographic coupling refers to the overlap of publications' reference lists. fig.14 shows the visualization of Bibliographic Coupling between a documents which is Alvares (2013) got 4112 citations with total link strength of 73336 and followed by the document Van Dijk (2013) has

Figure 3: Bibliographic Coupling between Documents
Source: VOSviewer

711 citations with total link strength of 2573 and Ram (2014) document only has 176 citations but it have highest link strength of 132715, it shows the document highly connected with more documents.

Suggestions

Based on the findings of the present study, the researcher proposed the following suggestions.

- Universities and Research organisations in India, particularly having the Life Sciences, Geography, Remote Sensing and environmental studies subjects need to emphasize the research students and faculty members to carry out research on Forestry and publish the research outcome in indexed databases like Web of Science and Scopus.
- The professional and learned societies and scientific publishers, particularly in India should have more number of exclusive journals on Forest Research.
- As the funding pattern is also not at optimal the funding agencies and government organizations need to provide more research grants.

Conclusion

The year 2021 has got highest stake of forestry research outcome for the past 10 years having 2398 publications with 3956 global citation scores. It is reverse chronological as the year 2020 and the year 2019 got publications of 2155 and 1819 respectively with the citation score of 11574 and 17490. It is also found that the citation score got increased as to the age of the publications. The year 2013 has got highest global citation score of 39157 followed by the year 2012 with global citation score of 32184 for 1190 publications.

Forest cover and Tree cover in India is of 80.73 million hectares which forms 24.56 % of the total geographical area of the country. It needs to be get enhanced since 10% of the total forest area on earth is lost for the past thirty years, which need to be redeemed through afforestation and prevention of deforestation due to urbanization. A minimum of 50% of forest cover is very much required for the sustenance of environment, particularly to have clean oxygen, fresh water, timely rain, and prevention of global warming. The present forest cover across the world is of only 30%. This factor very much emphasizes the research initiatives from the higher education institutions and other organizations on Forestry and Allied Subjects as of the present research.

The publication output analyses revealed that the core authors, prolific journals, research funding in Forestry and Allied Subjects are not significant. Particularly, the output from India is of negligible in terms of indexed literature. The citation pattern is at moderate level when compared to other subject areas. The source data reveal that only 163 countries were collaboratively contributed on Forestry Research. Institutions from Sweden, German and China are dominating in terms of publication productivity, though USA has got highest stake. Indian Agricultural Research Institute (ICAR) is the major stakeholder, the University Grants Commission is the top-funder of Forestry Research in India. The study also could find that the core journal and core authors are not significant. A good number of authors, sources have bibliographical coupling and co-citations as the outcome of the citation behavior pattern.

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