Cluster Analysis and Network Visualization of Social Work Research: A Scientometric Mapping

Bwsrang Basumatary,

Manoj Kumar Verma,

Bwsrang Basumatary

Dept. of Library and Information Science, Mizoram University, Aizawl, 796004, India

Email:
bwsrangbasumatary@gmail.com

Manoj Kumar Verma

Dept. of Library and Information Science, Mizoram University, Aizawl, 796004, India

Email: *manojdlis@mzu.edu.in*

(Corresponding author)

ABSTRACT-

Social work research is the application of research approaches to solve social issues in society. This study examines growth and trends in social work research reflected in two leading journals, the Indian Journal of Social Work (IJSW) and the British Journal of Social Work (BJSW). The purpose of this study was to analyze the research growth trends, performance of authors, organizations, and scientific mapping of the research publications in both journals. The study acquired 489 data from IJSW and 1617 data from BJSW from the Scopus database and employed performance measurement and science mapping techniques using scientometric tools. The study used MS Excel and OriginPro 9.0 to analyze the chronological growth trends of publications. VOSviewer and Biblioshiny (Bibliometrix R package) were used for network analysis and visualization. The findings indicate un-uniformity in the publication productivity of both journals, and BJSW published more collaborative research than IJSW. Researchers who communicated with IJSW are mainly from the Tata Institute of Social Sciences (India). Queen's University Belfast (UK) is the most prolific organization associated with BJSW. Articles related to Covid-19, Social work, Children, etc., appeared most frequently in the IJSW, whereas Child protection, Ethnicity, and social work education appeared most frequently in the BJSW. The relationships between research topics, countries, and affiliations of researchers are assessed. In conclusion, directions for further research are also suggested.

Keywords- Scientometrics, Cluster Analysis, Network Visualization, Social Work Research, IJSW, BJSW

INTRODUCTION

Journals are the primary channel for scholarly communication. As a result, it has become the primary medium of transmitting scholarly knowledge. Literature growth in any field of knowledge is measured by the number of publications and their impacts. An analysis of research publications in a particular journal is the most common method of measuring the characteristics and evolu-tion of scientific communicatio

particular field. Accordingly, Scientometric analysis is a popular technique that evaluates and quantifies research productivity, growth trends, impacts, social and intellectual structures of research publications. The term Scientometric was first used by Vassily V. Nalimov and Z.M. Mulchenko in 1969 (Nalimov & Mulchenko, 1969). Its primary purpose is to study every aspect of published science and technology literature. It measures published knowledge by analyzing growth, trends, productivity, citations, keywords, authorship patterns, collaboration, funding agencies, etc. The Scientometric study is explored by employing two main approaches-performance measurement and science mapping (Donthu et al., 2021; Basumatary et al., 2024).

Performance measurement focused on the number of publications and citation-based impact of the publications, such as the Journal Impact Factor (Garfield, 1972) and H-index (Hirsch, 2005). Science mapping mainly monitors a scientific field to determine its structure, evolution, and main actors (Noyons et al., 1999). It focused on the conceptual structure of the scientific production, for example, co-words or keywords analysis. Further, network analysis enriches the process visually presenting a network of connected entities or relationships in the form of links and nodes. This study intended to analyze the trends in social work research and the characteristics of the output by adopting these three approaches. The analysis is based on the two most renowned international social work journals, namely the "Indian Journal of Social Work (IJSW)" and the "British Journal of Social Work (BJSW)." The IJSW is a quarterly journal, and BJSW

publishes eight issues a year. Both the journals contribute immensely to social work and its relevant areas. The IJSW is a pioneering publication of India's social work profession by the Tata Institute of Social Sciences (TISS), Mumbai. It has entered its 82nd (1940-2021) year of uninterrupted publishing record (IJSW, 2022; TISS, 2022). British Journal of Social Work (UK) has been published since 1971 by Oxford Journals. A leading academic, social work journal internationally covers every aspect of social work, with papers reporting research, discussing, practicing, and examining principles and theories (BJSW, 2022). BJSW achieved its 52nd volume of publications in 2022.

Considering the publication productivity of both the journals, a period of 20 years of the publication record is sufficient to analyze the research trends in social work research reflected in both the journals. The result of this study will help in assessing the visibility and reach of the research published in these journals, providing a measure of their contribution to the field. This information can aid in identifying emerging areas of interest, highlighting gaps in existing literature, and facilitating collaborations between researchers. The two journals are selected for analysis, because both journals are highly respected and recognized within the field of social work, showcasing a strong research focus and attracting contributions from renowned scholars and practitioners. Their publications allow for a comprehensive examination of social work scholarship, encompassing research specific to the Indian context through the IJSW and research with an international perspective through the

BJSW. Additionally, selecting these journals facilitates comparisons and contrasts between research practices and trends in India and the international social work community.

Social work research is the application of research approaches to solve problems faced by social workers. Study on social work often creates new knowledge, policies and programmes. Conducting high-quality research in social work is essential for many reasons. Research can be done to experiment with some new schemes in society or evaluate the programs' effectiveness.

The comprehensive analysis using Scientometric indicators is essential to determine the growth and development of the contemporary scientific production on social work. Many previous researchers had evaluated the research progression and publication trends on different individual scholarly journals and literature on specific subject areas. However, no recent studies have been found covering the analysis of social work research's trends and contemporary development. In addition, no research was conducted earlier to measure the research trends based on performance management and science mapping techniques of these two journals. Hence, this study was carried out to bridge the research gap by analyzing the scientific production reflected in both journals. Due to its broad coverage of research in social work and related domains, the Scientometric analysis of these journals finds it most helpful in identifying the trusted areas of social work research by reviewing publication productivity and collaboration patterns and keywords and citations.

REVIEW OF LITERATURE

Analyzing the research publications in a scholarly journal is the best way to evaluate the particular field's research trends. As a result, a study was conducted to analyze the scholarly communication of the Indian Journal of Social Work from 2004 to 2013 based on the data sourced from the Indian Citation Index. The study reveals that the Journal published an average of 30 articles per year, and the Tata Institute of Social Sciences was the most productive institution in India. The highest numbers of articles were published in 2008 and 2009, with 32 (10.67%). B. Prasad was the most productive author, with 5 articles during the study period (Kolle & Gaddimani, 2016). Moreover, a study was conducted to analyze ten volumes of special issues of the Indian Journal of Social Work (2001-2012). The findings highlight that the Special Issues of IJSW covers articles, book reviews, field action projects, bibliography, conference reports, etc., in social work.

However, most of the special issues published articles contributed by a single author (Lihitkar & Patil, 2018). This analysis mainly focused on the published contents only. Thus, it gives us ample scope for further analysis using different Scientometric indicators and advanced tools. Moreover, a study was conducted to analyze the publication trends of two journals, the Indian Journal of Information Sources and Services and the Pakistan Journal of Library and Information Science, based on the articles published between 2011 and 2017 in two journals. The study found that most papers are multi-authored, and the host countries are the highest contributor to the respective journals.

However, the international collaboration of research conducted by authors from both countries during the study period is poor (Batcha & Ahmad, 2017). Similarly, So et al., 2021 analyzed the thematic evolution of the customer engagement research based on the ten promising M&S journals and seven leading H&T journals considering multiple criteria, including h-index, SCImago Journal & Country Rank, and Social Science Citation Index. Findings build a robust foundation to evaluate how this strand of literature has developed and evolved. Likewise, a study was conducted to analyze the trends of publication from India in three orthopaedic journals, i.e., Indian Journal of Orthopaedics (IJO), Journal of Clinical Orthopaedics and Trauma (JCOT), and Journal of Orthopaedics (JOO), based on the publication data between 2015 and 2020 in two renowned databases, Scopus and PubMed.

The study shows that all three journals have significant growth and have acted as torchbearers of knowledge shared by orthopaedic surgeons in India and Asia (Patralekh et al., 2021). Likewise, a study was conducted to examine the impacts of published research on the International Journal of Consumer Studies (IJCS) by applying network visualization techniques using VOSviewer. They examine the overall citations received, the most cited papers and authors, and their contributions to the field of consumer research (Paul & Bhukya, 2021).It is evident from the above reviews that there is a lack of systematic scientific analysis of the research productivity concerning the social work research. It is observed that there is no such study was found that analyses the comprehensive Scientometric aspects of

social work research based on selected two journals. However, a few studies were conducted to analyze the productivity and contents of IJSW, as highlighted in the above literature review. Hence, the present study intended to fill the research gaps by analyzing social work research reflected on the BJSW and IJSW using different scientometric indicators through cluster analysis and network visualization techniques. Both journals were scrutinized by visiting their website and found that they publish core social work papers in diverse field. Hence, these two journals are found appropriate to analyze the research contribution and trends in social work domain.

OBJECTIVES OF THE STUDY

To analyze year-wise scientific production and Geographical distribution of publications reflected in the Indian Journal of Social Work (IJSW) and British Journal of Social Work (BSW) during 2002-21.

- To visualize the social structure of research publications by analyzing co-authorship of authors and countries using clustering technique

- To identify the prolific authors and organizations that contributed to the IJSW and BJSW

- To analyze the most prominent keywords to identify the trending research themes

- To determine the intellectual structure of social work research by analyzing the co-citation of cited authors

- To identify the relationship between country, keywords, and organization through three-field-plot visualization

METHODOLOGY

The study employed standard Scientometric tools to analyze the productivity and trends of social work research published on "Indian Journal of Social Work (IJSW)" and the "British Journal of Social Work (BJSW)" for 20 years (2002-21). Scientometric is one of the methods that evolved from Bibliometric that provides a picture of research in science technology, thoroughly evaluating the scientific, scholarly communications at an anticipated status of specialization (Borgohain et al., 2021). Using performance measurement techniques based on the Scientometric indicators such as the number of publications and citations, the study analyses the chronological growth of literature, prolific authors, organizations, and countries. Keyword analysis has also been carried out using VOSviewer and Biblioshiny to identify the trending research themes. The study visualizes scientific production's social and intellectual structures by analyzing collaboration between authors and countries using the clustering technique. This study considers only the scholarly articles published in the English language between 2002 and 2021. Data was searched by journal-title in the source title section and limited to the year (2002 to 2021). As a result, 489 bibliographic data have been downloaded from IJSW, and 1617 bibliographic data have been downloaded from BJSW. The extracted data are analyzed using the statistical tool MS Excel and open-source analytics tools VOSviewer and Biblioshiny. VOSviwer is a software tool for creating and visualizing Bibliometric networks. It provides co-authorship networks, co-occurrence of keywords, citations, co-citations, and bibliographic coupling analysis (Eck & Waltman, 2019). In contrast, Biblioshiny is a web interface for comprehensive science mapping analysis (Aria & Cuccurullo, 2017). All the tabulations are done using MS Excel, and the network visualization analyses are performed using VOSviewer and Biblioshiny.

ANALYSIS AND INTERPRETATIONS OF DATA

Year wise scientific production

Figure 1 shows the year-wise distribution of publications in both journals. Four hundred eighty-nine (489) scholarly articles were published in IJSW during the study period (2002-21). The highest number of publications, 35 (7.16%), was published in 2007. The journal had less publication records in 2015 as 6 (1.23%). A total number of 1617 scholarly article publications from BJSW for twenty years have been recorded. The publications are rising with a 5.56% annual growth rate, and the highest number of publications were published in 2010 with 139(8.60%). It slightly goes down from 2011, and the publication is rising from 2014. Figure 1 shows that the publications of both journals are not constant.

Geographical distribution of publications

The geographical distribution of publications indicates the research productivity of individual countries. As a result, a total number of 31 countries have contributed to IJSW during the study period. Being the host country, India was involved in maximum research activities and contributed the highest number of contributions (611 articles), followed by the USA (35 articles) and Turkey (31 articles). In contrast, a total number of 54 counties contributed to BJSW during the study period. The UK contributed the highest number of publications (1719), followed by
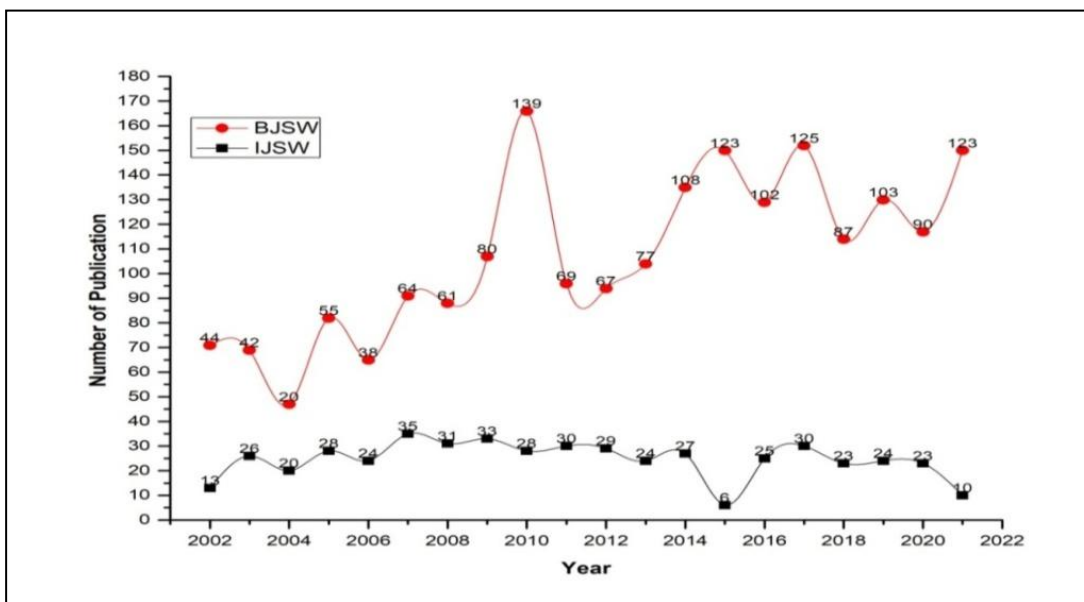
Figure-1: Year-wise distribution of publications

Table-1: Geographical distribution of publication (IJSW & BJSW)

Indian Journal of Social Work (IJSW)				Indian Journal of Social Work (BJSW)					
NP	Country	NP	Country	NP	Country	NP	Country	NP	Country
611	India	2	Netherlands	1719	UK	8	Switzerland	1	Bulgaria
35	USA	2	Saudi Arabia	374	Australia	7	Czech Republic	1	Equatorial
31	Turkey	2	Sweden	308	USA	6	Cambodia	1	Guinea
17	Iran	1	Belgium	252	Israel	6	Denmark	1	Estonia
16	Malaysia	1	China	213	Canada	5	Chile	1	Fiji
15	Bangladesh	1	Eritrea	91	Ireland	4	Romania	1	France
12	South Africa	1	Germany	90	Sweden	4	Singapore	1	Guam
10	UK	1	Ireland	79	Belgium	3	Cyprus	1	Guatemala
7	Australia	1	Italy	61	Netherlands	3	Greece	1	Guinea
6	Serbia	1	Japan	48	New Zealand	3	India	1	Kenya
6	Zimbabwe		Jordan	37	Spain	3	Japan	1	Malaysia
5	Canada	1	Portugal	36	Norway	3	Jordan	1	Moldova
5	Hungary	1	Sudan	35	China	2	Croatia	1	Nepal
3	Indonesia			33	Finland	2	Pakistan	1	Nigeria
3	Israel			19	Germany	2	Somalia		Oman
3	South Korea			19	South Africa	2	South Korea	1	Saudi Arabia
3	Spain			16	Italy	1	Austria	1	Slovakia
2	Nepal			8	Poland	1	Botswana	1	Slovenia

Australia (374), the USA (308), Etc., as depicted in Table 1. The total number of contributions may differ from the total data extracted from the database. Some articles had authors from more than one country, and each country is rewarded with a count. Similarly, countries are also numbered twice.
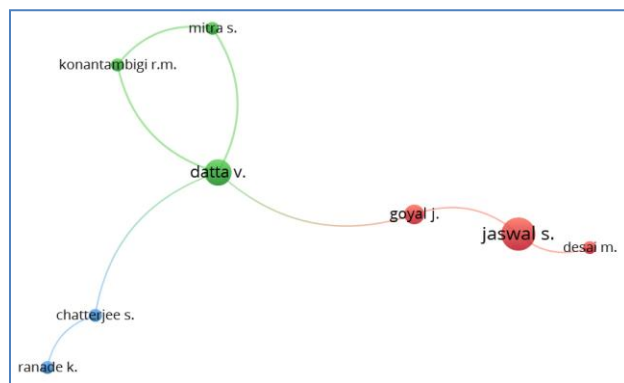
Authorship collaboration

Figure 2A & B shows the co-authorship of authors in social work research published in respective journals. To visualize the co-authorship networks in the VOSviewer, a minimum number of documents of an author have been set as 2 for both journals, and 83 authors are meeting the network out of 772 authors detected in IJSW data, and 553 authors are meeting the network out of 2607 authors as per the dataset of BJSW. The 8 authors of IJSW have a closed collaboration relationship. Further, they are divided into three separate-coloured clusters (Figure 2A).

In the VOSviewer, a cluster is a set of closely related nodes. Colours indicate clusters of researchers that are relatively related to each other. As a result, Cluster 1 (red) and Custer 2 (green) consists of 3 authors each, and Cluster 3 (blue) has 2 authors in the network. V. Dutta from Cluster 2 is the most collaborative author who published four articles, received four citations, and has six total collaboration link strengths. However, S. Parasuraman has the most publications (7 articles) alone. In the same way, 236 authors of BJSW have the strongest collaboration networks with each other.

They are divided into twenty different coloured clusters (Figure 2B). Cluster 1 (red) and Cluster 2 (green) have 21 authors each.
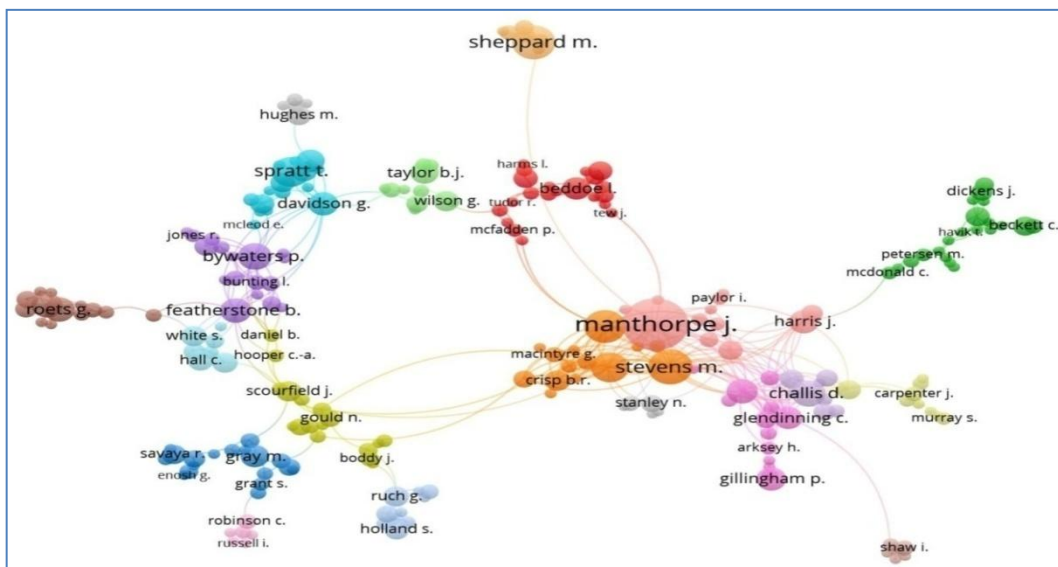
Cluster 3 (blue) consists of 18 authors, Cluster 4 (yellow) and Cluster 5 (purple) consists of 17 authors, Cluster 6 (sky blue) consists of 16 authors, Cluster 7 (orange) 14 authors, Cluster 8 (maroon) and Cluster 9 (violet) has 13 authors, Cluster 10 (pink) consists of 12 authors, Cluster 11 (light green) consists of 11 authors, Cluster 12 (light blue) consists of 10 authors, Cluster 13 (light yellow) consists of 9 authors, Cluster 14 (deep magenta) consists of 8 authors, Cluster 15 (light sky blue) consists of 7 authors, Cluster 16 (light orange) consists of 7 authors, Cluster 17 (light maroon) consists of 6 authors, Cluster 18 (light pink) consists of 6 authors, Cluster 19 (grey) and Cluster 20 (deep grey) consistsof 5 authors each. The analysis reveals that J Manthorpe from Cluster 10 has the highest collaboration networks with other authors, with 126 total collaboration link strengths, producing 36 articles.

The Total link strength attribute indicates the total strength of the co-authorship links of a

particular author with other authors.

Figure-2A: Networks of co-authorship of authors

Figure-2B: Networks of co-authorship of authors
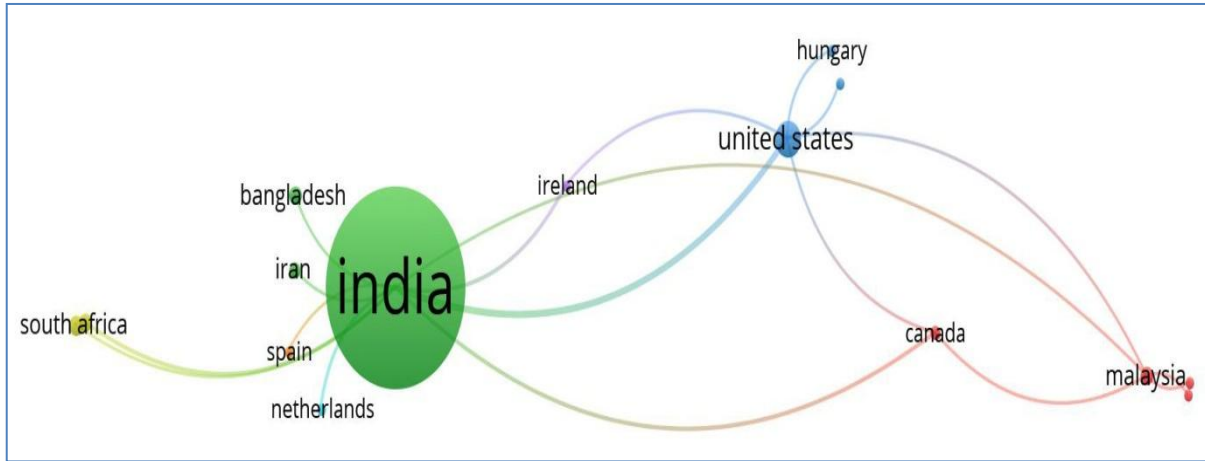
Co-authorship networks of countries

To identify the co-authorship networks among the countries, a network analysis technique is employed using VOSviewer. A total of 45 countries have been detected in the IJSW dataset. The analysis considered the countries which have at least 2 article publications. The strong collaborator countries are grouped into 8 different coloured clusters with circle nodes and connecting lines (Figure 3A). Cluster 1 (red) consists of 4 countries; Cluster 2 (green) and Cluster 3 (blue) consist of 3 collaborator countries each. Cluster 4 (yellow) has 2 countries, Cluster 5 (violet), Cluster 6 (sky blue), cluster 7 (orange) and Cluster 8 (maroon) has 1 country each. The circle nodes represent the country, and the size of each node represents the strength of the co-authorship network. Thus, being a host country, India co-authored with maximum countries during the study period by producing 381 articles and 24 co-authorship link strengths. Similarly, 58 counties

contributed their research to BJSW during the study period. The total number of 31 countries with at least 2 article publications and strong co-authorship networks is considered for analysis. Later, these countries are divided into ten different coloured clusters representing the different sizes of circle nodes and different coloured lines (Figure 3B). As a result, Cluster 1 (red) consists of six countries, Cluster 2 (green) and Cluster 3 (blue) consist of four countries each. Similarly, Cluster 4 (yellow), Cluster 5 (violet), and Cluster 6 (sky blue) consist of three countries each. Furthermore, Cluster 7 (orange), Cluster 8 (maroon), Cluster 9 (purple), and the last Cluster 10 (pink) consists of two countries each. The analysis reveals that the host country, United Kingdom's researchers co-authored with the maximum number of countries during the study period by producing 837 articles with 110 co-authorship link strengths. It is followed by Australia, the United States, Israel, Canada, New Zealand, etc., as shown
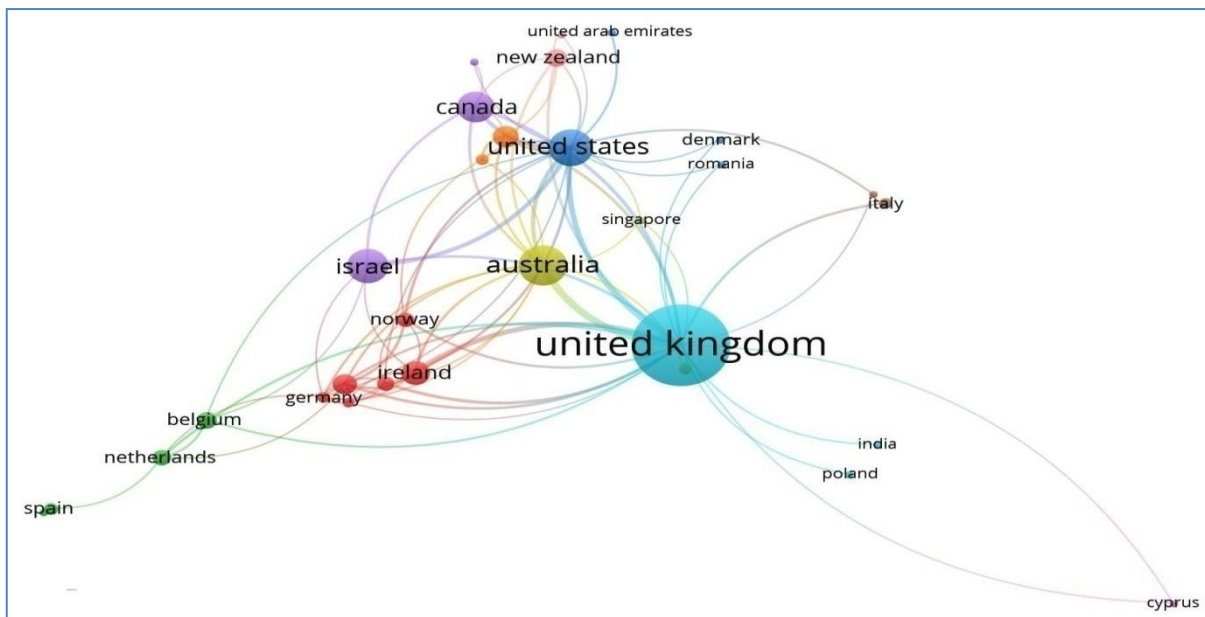
179

in Figure 3B. It can be identified by the size of coloured circle nodes and lines. The bigger node represents the greatest number of documents publications, and the connecting lines with nodes signify the networks.

Figure-3A: Network visualization of co-authorship of countries

Figure-3B: Network visualization of co-authorship of countries

Most prolific authors

The most prolific authors have been calculated based on their article publications and total citations received. The prolific authors in a particular field of knowledge signify that the concerned authors are actively researching and producing intellectual outputs. That helps other stakeholders identify and select their creation and provide the opportunity for further projects. Figure 4A shows the top ten most prolific authors in social work research as they contributed the most number of articles to the IJSW during the study period. The circle nodes on the straight line in the figure signify the number of publications, and the bigger nodes represent the more number of articles publications. As a result, S. Parasuraman published most publications (7 articles) during the study period. He was actively publishing between 2005 and 2014 and received 1 citation for an article published in 2014. Prof. S. Parasuraman is a teacher, trainer, activist, administrator, and development worker (tiss.edu, 2022) and served as director of the Tata Institute of Social Sciences (TISS), Mumbai. He is followed by L. Narayan (6 articles, 3 citations) and S. Jaswal (5 articles, 4 citations) and others, as depicted in Figure 4A. However, in terms of citation S. Jaswal is the most influential author as she received the highest number of citations during the study period. Interestingly, all authors are from India except S. Stanley from the University of the West of Scotland, Paisley, UK. Similarly, the top 10 most prolific authors according to the total article publications and total citations received against the articles contributed to BJSW are shown in Figure 4B.

As a result, J. Manthorpe is recorded as the highest contributor to BJSW during the study period by contributing 36 articles and receiving 717 citations, followed by M. Stevens with (18 articles, 431 citations), M. Sheppard (17 articles, 196 citations), J. Moriarty (16 articles, 372 citations), PM Garrett (14 articles, 321 citations), S Hussain (14 articles, 310 citations), T. Spratt (14 articles, 237 citations), P. Bywaters (11 articles, 160 citations), D. Challis (11 articles, 236 citations) and B. Featherstone (10 articles, 352 citations). J. Manthorpe is the most productive author regarding publications and total citations received against the publications. She is a Professor of Social Work and Director of the Social Care Workforce Research Unit at King's College London. She has many publications in social work, and her papers have been cited more than seventeen thousand times (Google Scholar, 2022).

Most prolific organizations

The author's affiliation enables us to understand better the scientific output produced by the organization to which the author belongs. Moreover, it throws a clear light on the research activities carried out by particular organizations in a particular subject area. However, due to the double affiliations and changes in the organizations over time, analyzing the author's affiliation is not easy. Figure 5A presents the ten most prolific organizations, based on the author's affiliation with their article publications. As a result, Tata Institute of Social Sciences has the highest number of article publications during the study period by publishing 119 articles, followed by Jawaharlal Nehru University and

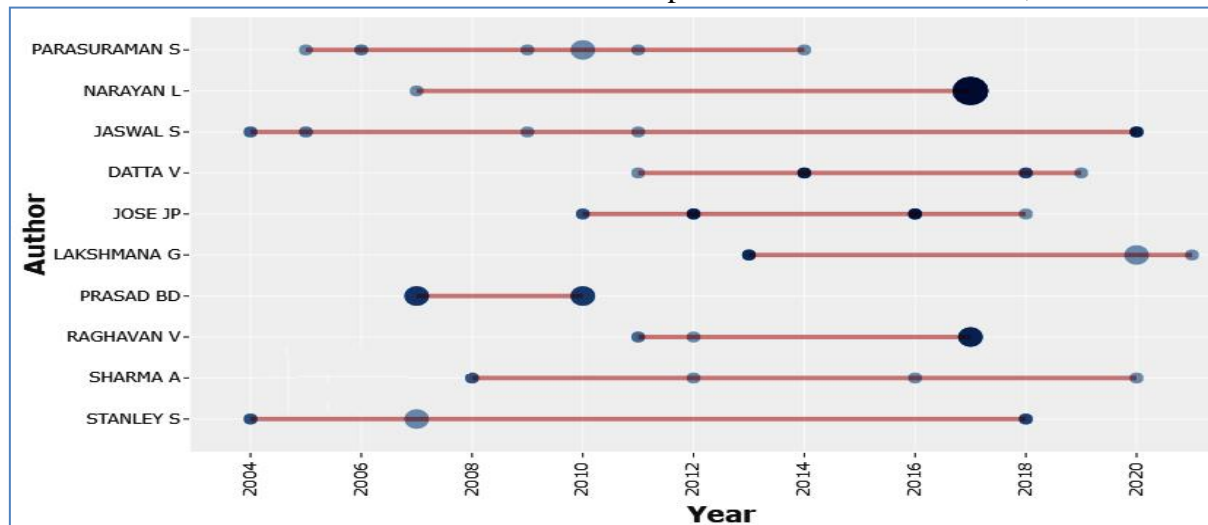Jamia Millia Islamia with 9 articles   publications each. Likewise, other

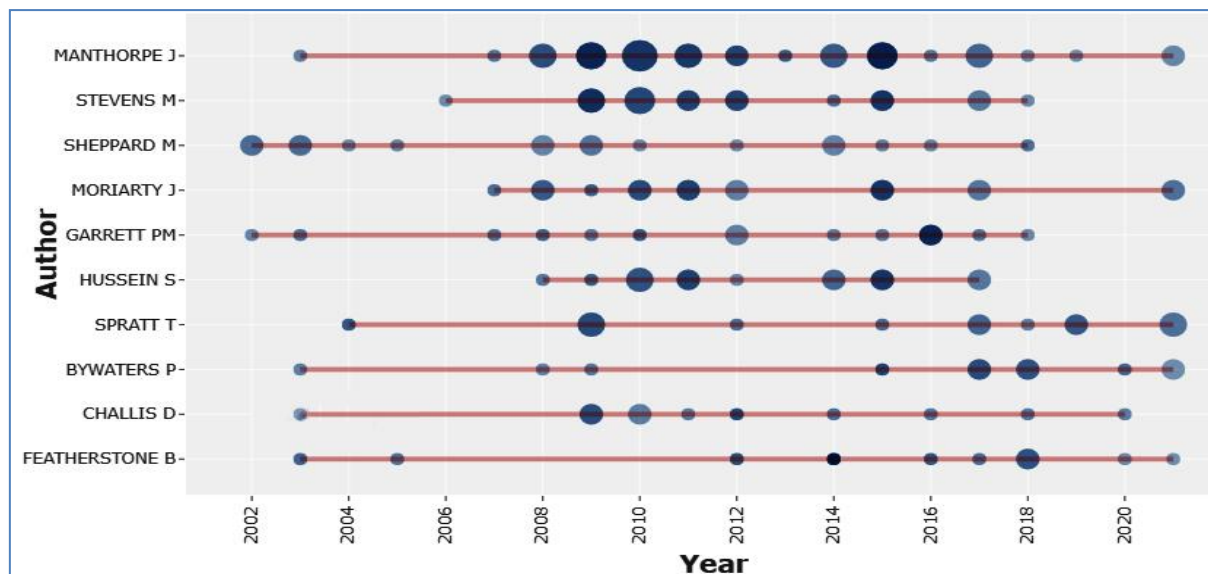**Figure-4A: Top 10 most prolific authors (IJSW)**

Figure-4B: Top 10 most prolific authors (BJSW)

organizations contribute their research articles on social work to IJSW, as depicted in Figure 5A. Similarly, organizations contributing to BJSW are also analyzed to identify the most prolific organizations. Queen's University Belfast is the most prolific organization by contributing the most articles (75 articles) during the study period.

King's College London follows it with (65 articles) and the University of Hull with (51 articles). In addition, other organizations in the top ten most prolific organizations are also contributing substantial research articles to BJSW, as shown in Figure 5B.
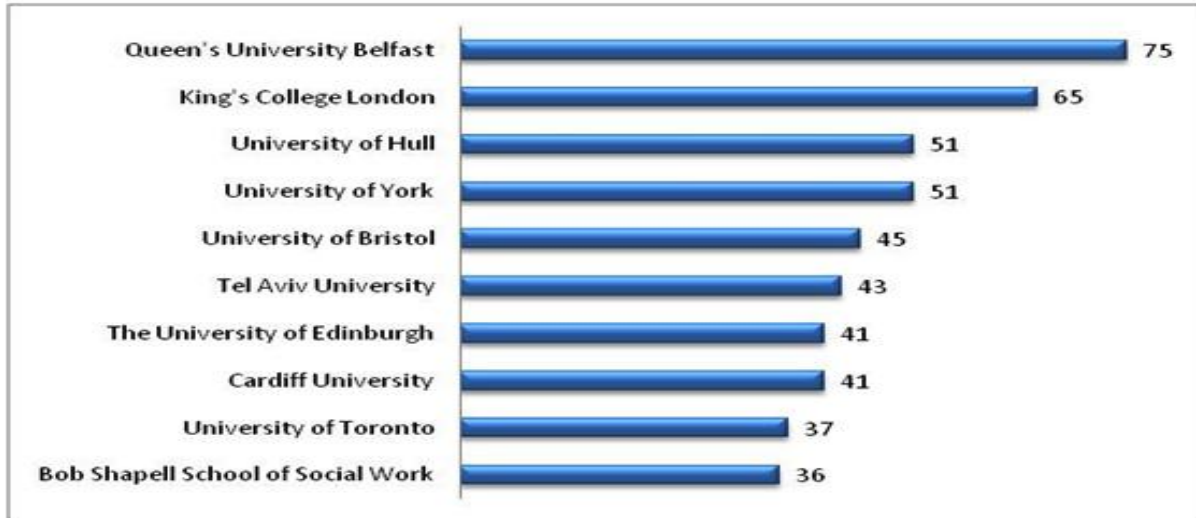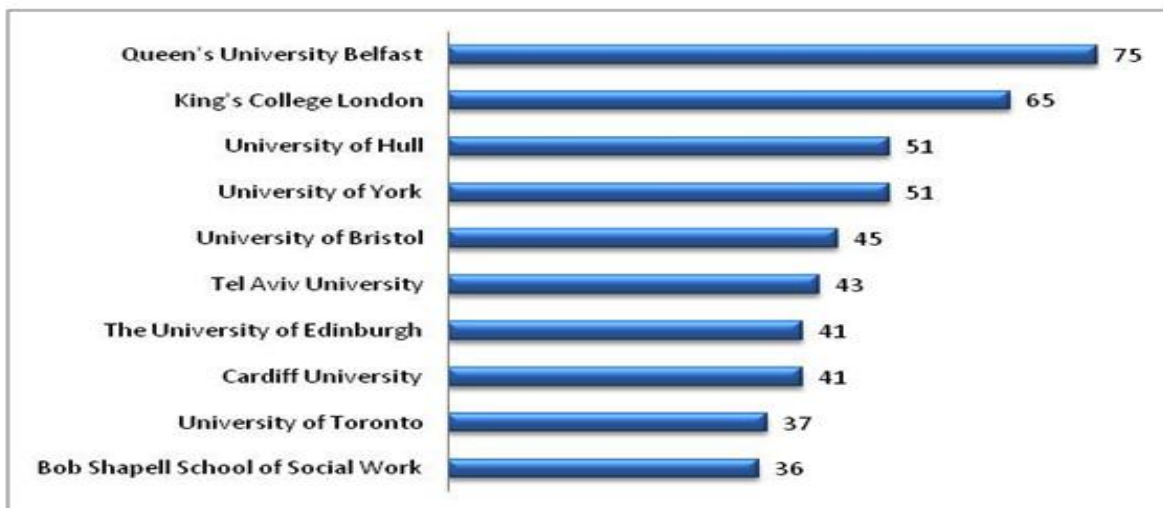
Figure- 5A: Top 10 most prolific organizations

Figure-5B: Top 10 most prolific organizations

Analysis of the most prominent keywords

The study considered authors' keywords for analysis of the most prominent keywords used by the researcher in social work research as reflected on IJSW and BJSW during 2002-21. The keywords used by the specific authors represent the research project they carried out. To identify the most prominent keywords in the social work research during the study period, Biblioshiny, a web interface Bibliometrix tool, has been utilized. The following Table 2 illustrates the top 20 most prominent keywords that appeared a maximum number of times in the social work research published in the IJSW and BJSW during the study period. As per the dataset, the keyword "Covid-19" is the most prominent keyword that appeared maximum times (6 times) in the social work research publications reflected in IJSW. Whereas the keyword "social work" is being used most times by the researchers as per the publication

Table-2: Most prominent keywords

IJSW		BJSW	
Keywords	Occurrences	Keywords	Occurrences
Covid-19	6	Social work	194
Children	2	Child protection	109
Ethnicity	2	Social work education	84
Lockdown	2	Child welfare	62
Northeast India	2	Social workers	51
Abdominal pain	1	Mental health	50
Adolescent girls	1	Risk	50
Adolescent mental health needs	1	Assessment	35
Adolescent mental health problems	1	Older people	35
Adolescents	1	Decision making	33

dataset of BJSW. The number of keywords may vary in terms of number since the IJSW is a quarterly journal. It has fewer publication data than BJSW, which has more frequency of publication (8 Issues per year).

Highly cited papers

The ten highly cited papers of both journals are displayed in Table 3A & B. Authors, publication year, total citations, and affiliated country of the first author are also provided for each paper. The most cited paper is written by Bodhi S.R. (2011), entitled "Professional social work education in India a critical view from the periphery," which received 11 citations. Bodhi S.R. is a faculty member of the Centre for Social Justice and Governance, School of Social Work, Tata Institute of Social Sciences (TISS), India.

Similarly, the most cited ten papers published by BJSW are presented in Table 3B. Ungar M. et al. (2008) wrote the most cited paper, entitled "Resilience across cultures," which received 786 citations. Moreover, most of the highly cited papers are contributed by Universities of United Kingdom.

Co-citation analysis of cited authors

When the same pairs of papers are co-cited by many authors, research clusters begin to form. The co-cited papers in these clusters share some common themes (Surwase et al., 2011). The Co-citation network of cited authors is presented in Figure 6A. The size of each node reflects the number of citations received by the articles, and the thickness of the connecting lines between nodes signifies the strength of co-citation. Total numbers of

Table-3A: 10 highly cited papers (IJSW)

Rank	Title	Author	Country	Year	TC
1	Professional social work education in India a critical view from the periphery	Bodhi S.R.	India	2011	11
2	Widowhood and psychological well-being among older Malayslans: Mediating effect of social network	Momtaz Y.A., Hamid T.A., Yahaya N., Ibrahim R.	United States	2009	9
3	Indian families adopting Indian children	Groza V., Kalyanvala R.	United States	2003	8
4	Social determinants of rural elderly women's healthcare access a systematic review of qualitative literature	Hamiduzzaman M., De Bellis A., Abigail W., Kalaitzidis E.	Australia	2018	7
5	Rural women carry the load of fetching water	Bimla, Gandhi S., Dilbaghi M., Raina K.	India	2003	7
6	The convergence of social work and human rights : Analysing the historical and ethical foundations of allied disciplines	Albrithen A., Androff D.K.	Saudi Arabia	2014	6
7	Towards a conceptualization of social action within social work	Denzil S.	India	2008	6
8	Empowerment-based social work practice: Issues and challenges	Hossen M.A.	Bangladesh	2005	6
9	Adoption and birth family issues: Adult adoptees in India placed through BSSK in Pune	Groza V., Park H., Oke M., Kalyanvala R., Shetty M.	United States	2014	5
10	Factors affecting family resiliency: Implications for social service responses to families in Hong Kong	Chan Y.C.	Hong Kong	2006	5

13997 cited authors have been detected in the dataset of IJSW, and 191 authors are considered who have at least five citations and strong connections to other authors. The co-citation network formed nine different colored clusters. Cluster 1 (red) consists of 78 authors, where A Sen is the most cited author with 26 citations and 103 total link strengths. Cluster 2 (green) and Cluster 3 (blue) consists of 21 authors each, where A Bandura (C=11, TLS=50) and S Bharat (C=17, TLC=105) respectively are leading cited authors. Cluster 4 (yellow) consists of 20 authors, where J.W. Creswell is leading with (C=17, TLS=95), Cluster 5 (violet) consists of 16 authors, where U. Bronfenbrenner and R.D. Conger

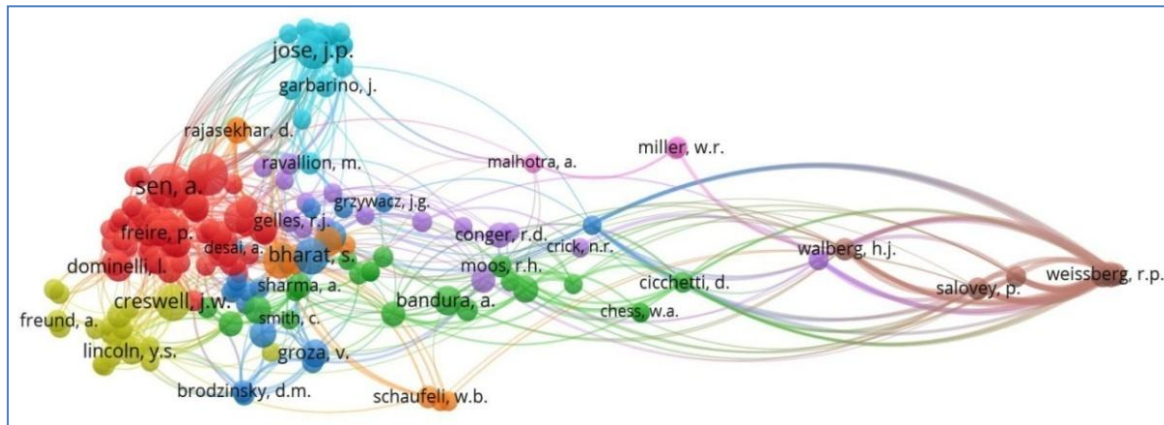**Table-3B: 10 highly cited papers (BJSW)**

Rank	Title	Author	Country	Year	TC
1	Resilience across cultures	Ungar M.	Canada	2008	786
2	Street-level bureaucracy, social work and the (exaggerated) death of discretion	Evans T., Harris J.	United Kingdom	2004	413
3	Bonding, bridging and linking: How social capital operated in New Orleans following Hurricane Katrina	Hawkins R.L., Maurer K.	United States	2010	310
4	Reflexivity, its meanings and relevance for social work: A critical review of the literature	D'Cruz H., Gillingham P., Melendez S.	Australia	2007	254
5	Increasing user choice or privatizing risk? The antinomies of personalization	Ferguson I.	United Kingdom	2007	249
6	Changes in the form of knowledge in social work: From the 'social' to the 'informational'?	Parton N.	United Kingdom	2008	242
7	What's in a name: 'client', 'patient', 'customer', 'consumer', 'expert by experience', 'service user' - What's next?	McLaughlin H.	United Kingdom	2009	216
8	Performing 'initial assessment': Identifying the latent conditions for error at the front-door of local authority children's services	Broadhurst K., Wastell D., White S., Hall C., Peckover S., Thompson K., Pithouse A., Davey D.	United Kingdom	2010	204
9	The impact of audit on social work practice	Munro E.	United Kingdom	2004	198
10	Professionals, managers and discretion: Critiquing street-level bureaucracy	Evans T.	United Kingdom	2011	189

are leading co-cited authors with (C=8, TLS=53 & TLC=66) respectively. Cluster 6 (sky blue) consists of 15 authors. Among them, J.P. Jose is leading with (C=19, TLS=244), Cluster 7 (orange) consists of 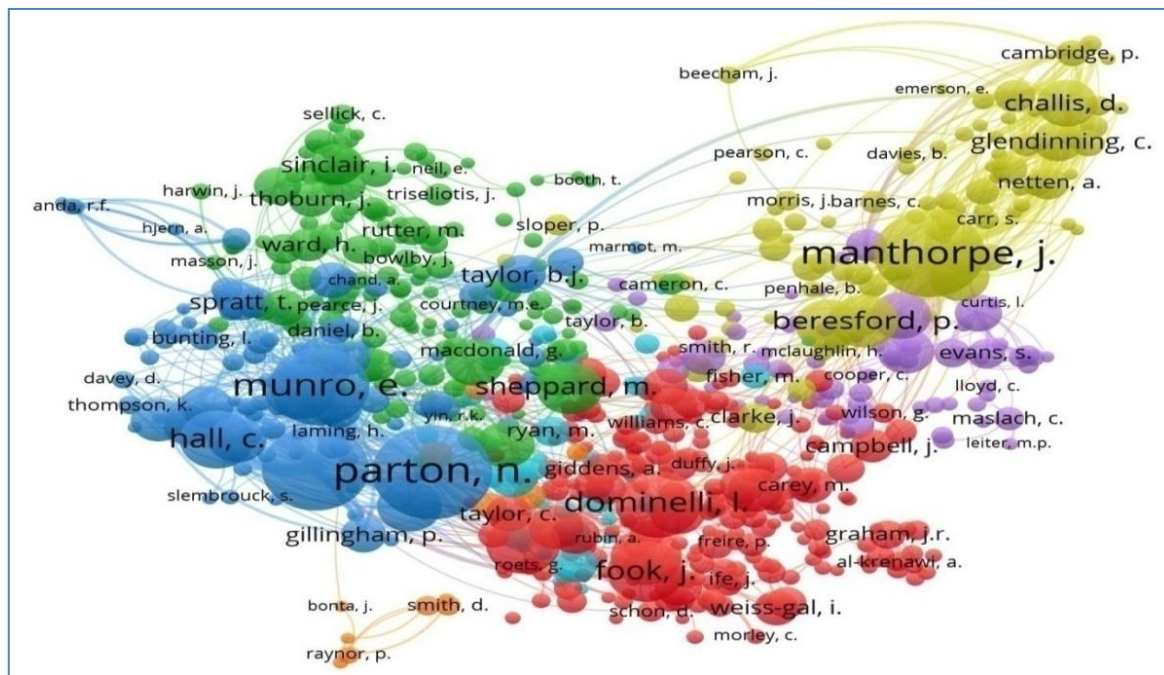9 authors where S. Singh has the most number of citations and total link strengths (C=17, TLS=87). Similarly, Cluster 8 (maroon) consists of 8 authors, among them R.P. Weissberg is the leading author with (C=8, TLS=328), and the last Cluster 9 (pink) is the smallest cluster which consists of 3 authors

where S. Rollnick is leading with (C=6, TLS=32).

Figure- 6A: Co-citation Networks of cited authors (IJSW)

Figure- 6B: Co-citation Networks of cited authors (BJSW)

Similarly, co-citation analyzes of cited authors are performed to examine the intellectual structure of social work research reflected on BJSW during the study period. Total numbers of 55120 cited authors are detected in the dataset of BJSW. Among them, 724 authors with a total of 20 citations are considered for analysis. The selection of cited authors for analysis and visualization may differ from IJSW because data and frequency of BJSW are more than IJSW; hence it has been selected as 20 cited authors for analysis and assessment of the conceptual and intellectual structure of BJSW. The co-citation network formed seven-colored clusters. Cluster 1 (red) consists of 321 cited

authors, where I. Dominelli has the most citations (C=279) with (TLS=6770), Cluster 2 (green) consists of 251 cited authors, where M. Sheppard received the most number of citations (C=194), with co-citation total link strengths (TLC=4760), Cluster 3 (blue) consists of 112 authors, where N. Parton has the most number of citations (C=463) with total link strengths (TLC=15695), Cluster 4 (yellow) consists of 96 authors, where J. Manthorpe leads with (C=406, TLS=13307), Cluster 5 (violet) consists of 75 authors. Moriarty leads receiving (C=165, TLC=5456), Cluster 6 (sky blue) consists of 45 authors. Shaw received the most number of citations (C=119) and (TLC=3209), and the last and smallest Cluster 7 (orange) has 14 authors, where D. Smith received the most number of citations with (C=44) and (TLC=1244). The analysis reveals that A Sen from Cluster 1 (red) is the most influential author among the other authors contributing to the IJSW, receiving total citations (C=26) with total co-citation link strengths (TLC=103). In comparison, N. Parton from Cluster 3 (blue) is the most influential author of BJSW during the study period by receiving (C=463) with (TLC=15695) total co-citation link strengths.

Three field plot of Keyword, Country, and affiliation

The three-field plot in Biblioshiny is employed to visually assess the relationship between keywords, Countries, and affiliation. The relationship between keywords, country, and affiliation indicates the research done by the respective countries and organizations. Figures 7A & B illustrate the top 30 keywords and their relationship with countries and organizations. The connecting lines indicate the relationship between topics, countries, and organizations. As shown in Figure 7A, India's primary interests in the research are "ethnicity," "children," "covid-19", etc. Including Tata Institute of Social Sciences, Ankara University, Andra University, etc., are the leading organization that conducted research on the topics and published in IJSW. Likewise, the UK's main interests in the research area are "children and families," "social care," "adoption," etc., as seen in Figure 7B. The University of Manchester, King's College London, University of York, etc., are the leading organization that researched the mentioned themes and published them on BJSW during the study period.

FINDINGS AND CONCLUSION

The study evaluated the research publication trends, social, intellectual and conceptual structure of the selected two journals using Scientometric tools. The analysis of the year-wise publications shows the growth trends of scientific production in both journals. It is seen that the publication productivity of both journals was inconsistent. The co-authorship network analysis found that the IJSW has no close collaboration between authors and countries. In contrast, the researchers published in BJSW have more collaboration networks as they have more co-authored publications. The international collaboration and shared authorship with other authors led to the Globalization and Internationalization of research activities in the particular field. In addition, it makes the research more quality and impactful. Collaborative research can help other researchers expand their field of study or join groups conducting related studies. The geographical distribution of
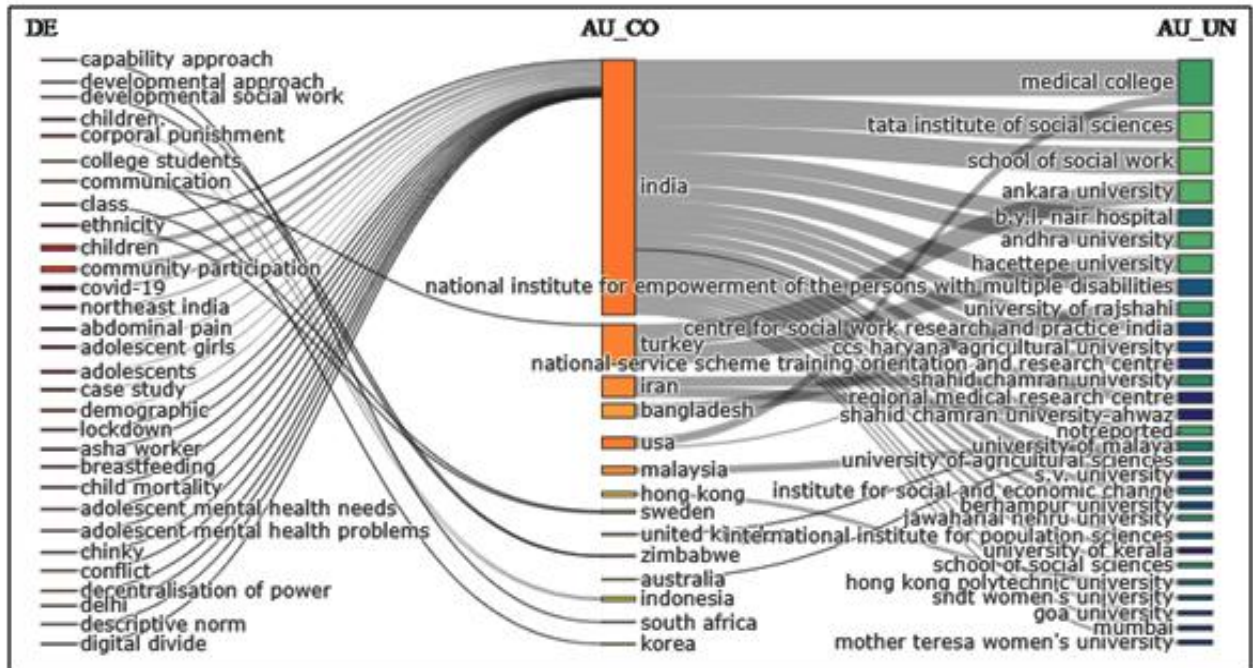
Figure-7A: Three field plot graph of country, keyword, and affiliation (IJSW)
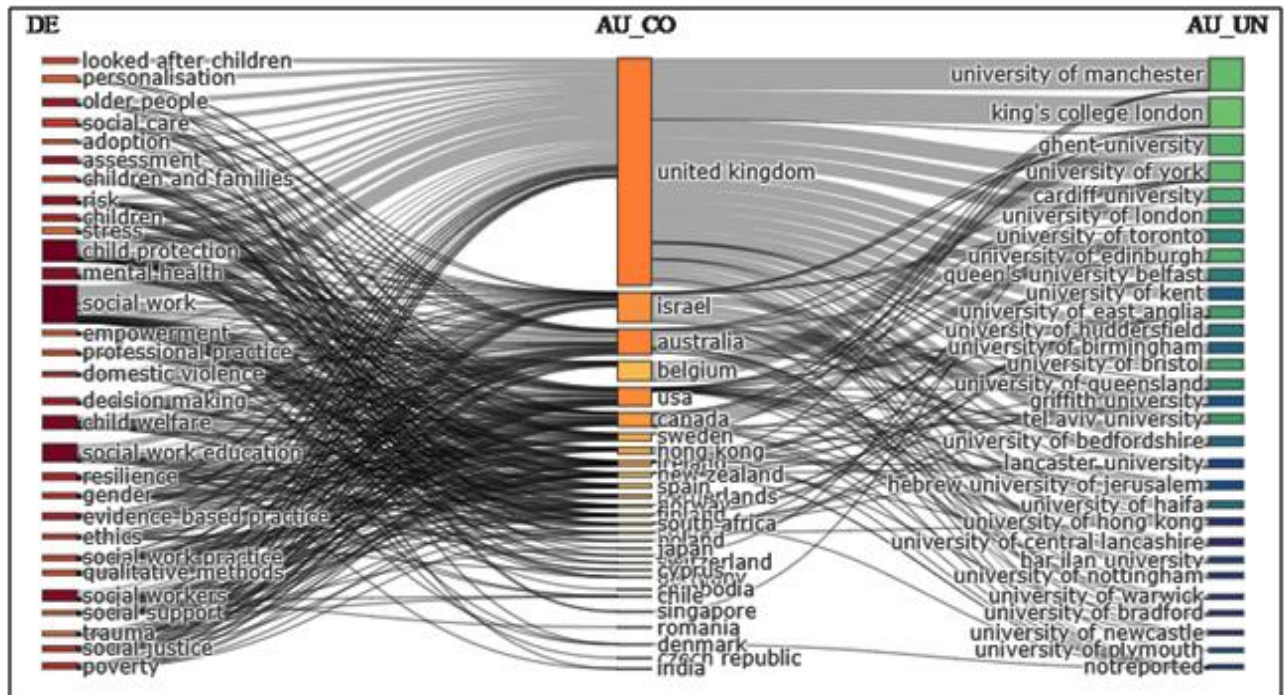

Figure-7B: Three field plot graph of country, keyword, and affiliation (BJSW)

publications has been assessed to measure the contribution of articles by individual countries. Both journals have a wide range of visibility. Being a developing country, India is involved in many research activities and contributed the highest number of publications (611 articles) to IJSW. The UK contributed most publications (1719) in diverse fields of social work. The most prolific author has been identified in both journals based on their publications. The prolific authors in a particular area of knowledge signify that the concerned authors are actively researching and producing scientific production. That helps other stakeholders identify and select their creations and collaborate with them in future. S. Parasuraman (India) and J. Manthorpe (London) are the most prolific authors who contributed the most articles to their respective journals. Likewise, the ten most prolific organizations have been identified based on the authors' affiliations to know the research productivity of social work research of particular organizations. The most prolific organization with the most productivity shared with IJSW is the Tata Institute of Social Sciences (119 publications). Over the years, TISS has been well known for its contributions to social work and social sciences. Similarly, the researchers who conducted social work research and communicated with IJSW are mainly from the TISS, as the previous researchers also found (Kolle & Gaddimani, 2016; Lihitkar & Patil, 2018). While Queen's University Belfast is identified as the most prolific organization (75 publications) that conducted research works and communicated with BJSW during the study period. Furthermore,

the analysis of the most prominent keywords is carried out using VOSviewer to identify the conceptual structures of the social work research. The most prominent keywords assigned by the authors in their scholarly papers are indicators of the theme of the research project. By analyzing the prominent keywords reflected in the particular research papers, we can understand the trends and evolution of the research topics over the year. Table 2 present the top ten most prominent keywords reflected in both journals, which signifies the most trending research themes globally as the researchers communicated. Further, the three-field plot in Biblioshiny is employed to visually assess the relationship between keywords, Countries, and affiliations. It helps researchers identify the area of the intellectual production of the respective country and organizations.

Time to time research evaluation in the field of social work is still in its infancy. In addition, there needs to be more concrete knowledge that can systematically present these two journals' current state-of-the-art work on social work research. The Scientometric is a suitable method to systematically review the research publications in various fields to measure the growth and development of the research. It is rapidly evolving in the modern era, which is worth mentioning. Multiple tools and databases are now available to conduct scientometric analyses. However, this study was limited to the Scopus database. Hence, there is ample scope to conduct more research using other databases that index the respective journals or choosing other journals in the domain.

Moreover, further studies can be conducted by extracting data from specific databases using appropriate keyword search strategies. The present study is restricted to scholarly articles published in the English language. Therefore, further research can be done to precisely assess the research publications in specific journals, including data from all sorts of publications, such as book chapters,conference proceedings, reviews, notes, etc.

REFERENCES

1. Aria, M., & Cuccurullo, C. (2017). Bibliomertrix: An R-tool for comprehensive science mapping analysis. Journal of Informetrics, 11(4), 959-975. *https://doi.org/10.1016/j.joi.2017.08.007*

2. Basumatary, B., Verma, A. K., Kushwaha, S., & Verma, M. K. (2024). Global research trends and performance measurement on biofloc technology (BFT): a systematic review based on computational techniques. Aquaculture International, 32(1), 215-240. *https://doi.org/10.1007/s10499-023-01162-z*

3. Batcha, M. S. & Ahmad, M. (2017). Publication Trend in an Indian Journal and a Pakistan Journal: A Comparative Analysis using Scientometric Approach. Journal of Advances in Library and Information Science, 6(4), 442-449.

   https://arxiv.org/ftp/arxiv/papers/2102/2102.12914.pdf

4. BJSW (2022). About the journal. The British Journal of Social Work. Retrieved from *https://academic.oup.com/bjsw*

5. Borgohain, D. J., Zakariab, S., & Verma, M. K. (2021). Cluster Analysis and Network Visualization of Global Research on Digital Libraries during 2016–2020: A Bibliometric Mapping. Science & Technology Libraries.
https://doi.org/10.1080/0194262X.2021.199342

6. Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. Journal of business research, 133, 285-296. *https://doi.org/10.1016/j.jbusres.2021.04.070*

7. Eck, N.J.V. & Waltman, L. (2019). VOSviewer Manual. Retrieved from *https://www.vosviewer.com/documentation/Manual_VOSviewer_1.6.11.pd*

8. Garfield, E. (1972). Citation analysis as a tool in journal evaluation: Journals can be ranked by frequency and impact of citations for science policy studies. Science, 178(4060), 471-479.
https://doi.org/10.1126/science.178.4060.471

9. Google Scholar (2022). Jill Manthorpe, Google Scholar Profile. Retrieved from *https://scholar.google.com/citations?user=e6eLeqwAAAAJ&hl=en&oi=ao*

10. Hirsch, J. (2005). An index to quantify an individual's scientific research output. Proceedings of the National Academy of Sciences, 102, 16569–16572. *https://doi.org/10.1073/pnas.0507655102*

11. IJSW (2022). The Indian Journal of Social Work. Retrieved from *https://journals.tiss.edu/ijsw/index.php/ijsw*

12. Kolle, S.R. & Gaddimani, P. (2016). Scholarly Communication in the Indian Journal of Social Work: A bibliometric study. International Journal of Information Dissemination and Technology, 6(3), 234-236.

13. Lihitkar, R. S., & Patil, V. B. (2018). Content Analysis of Special Issues of Indian Journal of Social Work (2001-2012). American International Journal of Research in Humanities. Arts and Social Sciences, 22(1),

226-232. http://iasir.net/AIJRHASSpapers/AIJRHASS18-244.pd

14. Nalimov, V.V., & Mulchenko, Z.M. (1969). Measurement of Science: Study of the Development of science as an information process. 1-191. https://apps.dtic.mil/sti/citations/AD0735634

15. Noyons, E.C.M., Moed, H.F., van Raan, A.F.J. (1999). Integrating research performance analysis and science mapping. Scientometrics, 46: 591–604. https://doi.org/10.1007/BF02459614

16. Patralekh, M. K., Vaish, A., Vaishya, R., Gulia, A., & Lal, H. (2021). Trends of publication in the orthopedic journals from India : A bibliometric analysis. Indian Journal of Medical Sciences, 73(1), 134–140. doi:10.25259/IJMS_39_2021

17. Paul, J., & Bhukya, R. (2021). Forty-five years of International Journal of Consumer Studies: A bibliometric review and directions for future research. International Journal of Consumer Studies, 45, 937–963. https://doi.org/10.1111/ijcs.12727

18. So, K. K. F., Kim, H., & King, C. (2021). The thematic evolution of customer engagement research: a comparative systematic review and bibliometric analysis. International Journal of Contemporary Hospitality Management, 33(10), 3585–3609. https://doi.org/10.1108/IJCHM-04-2021-0470

19. Surwase, G., Sagar, A., Kademani, B.S., & Bhanumurthy, K. (2011). Co-citation Analysis: An Overview. In Kademani, B.S., Bandi, A.N., Sirurmath, S., Bandi, I.C., Shah, T. & Rao, S. (Eds.), Beyond Librarianship: Creativity, Innovation and Discovery. Conference proceedings of the Bombay Science Librarian Association, Mumbai, India. Retrieved from http://eprints.rclis.org/17524/1/Cocitation.pdf

20. TISS (2022). The Indian Journal of Social Work: An Overview. Retrieved from https://tiss.edu/view/6/research/the-indian-journal-of-social-work/