

Bibliometric Analysis of Financial Inclusion research in socially oppressed segments of Indian Society : A Review of Research Trends and Contributions

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ABSTRACT :

Financial inclusion is an important concept necessary for upliftment of every member of the society. It is the process of ensuring that all members of the economy can easily access and use the official financial system. In India, financial inclusion is influenced by the demographic factors including residential location, academic qualifications, nature of occupation, gender, marital status, caste & category family size and income. Further, certain studies have observed that financial inclusion among women is lower as compared to the male population in India on account of various micro-level factors that impact financial inclusion of women in India such as house-hold level factors such as wealth, rural-urban location, mobility of women, etc (Govindapuram et al., 2023). The Government of India had launched various schemes for socially oppressed communities for financial inclusion and growth. This paper intends to study the research trends on financial inclusion of these socially oppressed segments and to identify the research gaps. The study has identified that while research on financial inclusion in India had gained momentum in recent past, however there is a gap in respect of focused study on financial inclusion socially oppressed communities in India.

Keywords : Bibliometric Analysis, Financial Inclusion, Jan Dhan Yojana, Gender, LGBTQ, Caste

1. Introduction:

The past few decades have witnessed a remarkable expansion in the global financial markets especially “in terms of market intermediary efficiency, quality of institutions and depth of markets, there has been a major change in the role and functioning of the financial sector” (Krishnan 2011). For instance, in the least developed countries (as per UN classification), the average credit-GDP ratios have more than tripled since the 1990s, increasing from an average of 10 per cent in 1990 to about 33 per cent in 2021. The active participation of the banking sector in the economy is identified by a higher credit-to-GDP ratio, while a lower ratio indicates the requirement of a more formal credit system in the economy. Emerging economies like China and India show a positive participation of the banking sector, it has been experienced by the figures averaged at approximately 84 per cent and 25 per cent respectively in 1990 and rose to 185 per cent and 50 per cent respectively in 2021.

As per previous studies conducted, it has been observed that “financial development has a well-documented favourable impact on the economic growth, and an inclusive financial system is pivotal to financial development” (Park and Mercado, 2015; OECD, 2018). While the economy's financial expansion has fuelled investment and growth, lopsided pattern of financial development is a concern.

Most vulnerable segments of the economy are yet to receive the benefits of financial development which has transformed economies. This has resulted in a “discernible gap between the availability of finance and its accessibility and use” (Ghosh and Vinod 2017: 60). These vulnerable segments include, amongst others, the rural poor, women, elderly, minority groups, labourers, farmers, less educated people, people from lower caste / category and different communities like LGBTQ community. Weaker sections of the economy require financial inclusion as it is the most important tool for reduction in poverty and income inequality in the economy.

The process of financial inclusion is focused on providing easy access and enables usage of formal financial system for all members of the economy. As per previous studies conducted, the financial inclusion is influenced by the demographic variables such as residential area, marital status, gender, family size, age, educational qualification, occupation and income (Mala and Vijayarangan, 2019). Further, certain studies have observed that the financial inclusion among women is lower as compared to the male population in India on account of various micro-level factors that impact financial inclusion of women in India such as house-hold level factors such as wealth, rural-urban location, mobility of women, etc (Govindapuram et al., 2023)

While discussing financial inclusion, we need to understand that financial exclusion can be either voluntary or non-voluntary. The policymakers while planning for financial inclusion need to focus on segments facing involuntary exclusion. Involuntary exclusion is caused due to insufficient income, market failures, imperfections, legal issues etc. It can be addressed by the government by initiating appropriate economic reforms, launching various programs and framing policies which can improve financial inclusion in the economy. Sustainable economic development requires financial inclusion as a key driver. Financial inclusion has been featured as a separate target in eight of the 17 Sustainable Development Goals of 2030.

It is in this context that financial inclusion has been a key highlight in the recent policies introduced by the Indian Government. In recent times, the Government of India launched programmes with a view to spread financial inclusion, flagship scheme is “Pradhan Mantri Jan Dhan Yojana (PMJDY) and the Mudra Bank Yojana”. PMJDY was launched to provide access of banking facilities to all, and it also provide ease of access to credit facilities and other financial services including insurance and pension facilities to every adult individual.

Similarly, with a focus to develop a micro enterprise sector, the Indian Government launched a flagship programme called “MUDRA” which will provide various support, including finance. Further, the JAM (short for Jan Dhan-Aadhaar-Mobile) trinity initiative was undertaken by the Government of India to link the Jan Dhan accounts, Aadhaar cards and mobile numbers of Indian citizens. This initiative aims to plug the leakages of the subsidies provided by the Government. The Aadhar card helps in identification of the direct beneficiary based on the biometric data, whereas the Jan Dhan accounts and the mobile phones enable the government to the transfer cash directly into the bank accounts of the identified beneficiaries.

Researchers carry out bibliometric analysis to have an insight of research work that have been undertaken by other researchers to study financial inclusion in India including the macro and micro factors having an impact on financial inclusion.

Need for Bibliometric Analysis

Bibliometric analysis is used to analyse large volume of scientific data and is a popular and rigorous method of analysis. It has gained an importance on account of its utility for handling large volumes of data, and for being able to produce high research impact.

Financial Inclusion of oppressed segments of society is key to inclusive development of India. Financial inclusion is a fascinating topic and many researchers have contributed on this topic. Digital Public Infrastructure of India is driving financial inclusion at a lightning speed; however it is necessary to study whether financial inclusion is reaching to these communities and researchers are paying attention on this important facet of financial inclusion as research ultimately transforms into policy decisions.

2 Research Methodology and Data Collection

Researchers should have awareness of the status of research in their field of interest since everything changes through time. Researchers need to keep track of changes in technology, methods, concepts, etc that happens in the field of their interest. Therefore, it is essential and required to stay updated on the subjects of interest by gaining access to as much information as you can or talking to professionals, even though it takes time this process makes sure the researcher doesn't overlook any new breakthroughs.

Financial inclusion of socially oppressed communities is a priority for financial elevation of the society. Bibliometric analysis is necessary to identify the research landscape of this topic. Bibliometric analysis is necessary to determine identifying the research impact, research trends and drawing research profile of this topic.

Objectives of the Study

1. To identify publication patterns in research of financial inclusion for socially oppressed segments in India.
2. To identify demographic regions and major institutions contributing to the topic.
3. To identify most prolific source of publication for this topic.
4. To identify research article with maximum impact.
5. To identify most experienced researcher contributing to the topic.
6. To identify gaps for further research.

Bibliometric Analysis Methods used for the study.

The authors attempt to make a bibliometric analysis in respect of study and developments that have been carried out in the area of financial inclusion with specific focus on socially oppressed communities in India. The bibliometric techniques applied by the authors in this paper are as follows.

- Geographical or Regional Analysis
- Keyword Analysis
- Affiliation Statistics
- Author Statistics
- Citation Analysis
- Publication Source Statistics
- Network Analysis including Co-authorship analysis, Co-occurrence Analysis, Citation Analysis and Bibliographic Coupling.

Database and Software used for the study

There are several databases available to retrieve required information such as Google Scholar, Scopus, Web of Science, Research Gate etc. However, the greatest database of peer reviewed research articles from various fields is Scopus. Each and every database has its own limitations, however considering the sheer volume of literature available, this paper is based on the Scopus database. The researchers

have used the Scopus analyser and VOS viewer for analysing and mapping the retrieved information.

2.1 Defining appropriate search terms.

Researcher used different levels of keywords to retrieve research articles from database for the study. The classification of levels of keywords are classified into three categories i.e master key words, primary key words and secondary keywords. Table 1 appended below describes these keywords.

Rationale for keywords used.

The keywords used for the study should be able to retrieve the appropriate publications from the database. Considering this, the major focus is on 'Financial Inclusion' and hence it is considered as the Master Keyword. This is to be studied with specific geographical limitation i.e. India. Hence, the Primary Keyword was selected as 'India' or 'Bharat'. The study further focused on the research contributions in financial inclusion of socially oppressed communities in India. In the Indian context, the socially oppressed communities could be classified on the basis of Gender or Caste system and hence, the optional keywords used are 'Caste', 'Category', 'Gender', 'Women', 'Female' and 'LGBTQ'.

Table 1 Combination of Keywords used

Master Keyword	Financial Inclusion
Primary Keyword	India OR Bharat
Optional Keyword	Caste OR Gender OR Women OR Female OR Category OR LGBTQ

2.1 Initial Search Result :

For the keywords selected above in **Table 1**, we used the Scopus database to search for relevant publications for the period upto 8 July 2023. An initial search with these keywords, resulted in 94 publications which consisted of 93 publications written in the English language and one in the Spanish language. The authors have limited the analysis to the papers written in English language and hence, the analysis conducted in this paper is based on these 93 publications.

Further, these 93 publications from the Scopus database include articles, book chapters, among others. **Table 2** below presents an analysis of the type of publications where it is observed that majority of these publications are Articles i.e. 81 per cent which is followed by 7.5 per cent which are Book Chapters.

Table 2 : Publication Type for Financial Inclusion research for socially oppressed segments in India

Publication Type	No. of Publications	Per cent
Article	76	81.7%
Book Chapter	7	7.5%
Review	5	5.4%
Conference Paper	4	4.3%
Conference Review	1	1.1%
Total	93	100%

Source : scopus.com (Accessed on : 8 July 2023)

It is observed that research on Financial Inclusion in relation to the socially oppressed segments in India has been done in various disciplines spanning from economics, business management,

engineering, computer science among others. **Table 3** presented below shows the top five disciplines in which studies have been conducted.

Table 3 : Key Five Subject areas for research in Financial Inclusion for socially oppressed segments in India

Subject Area	No of Papers
Economics, Econometrics and Finance	59
Business Management and Accounting	40
Social Sciences	27
Engineering	12
Computer Science	11

Source : scopus.com (Accessed on : 8 July 2023)

2.2 Initial Data Statistics

Based on an analysis of the publications, it was observed that research publications in the area of financial inclusion for socially oppressed segments in India started from the year 2008. Further, it was observed that there was an increased momentum in the research work from the year 2016 onwards. The year-wise trends for research publication for financial inclusion for socially oppressed segments in India for the retrieved data from the Scopus database is presented in **Table 4** and **Figure 1** below.

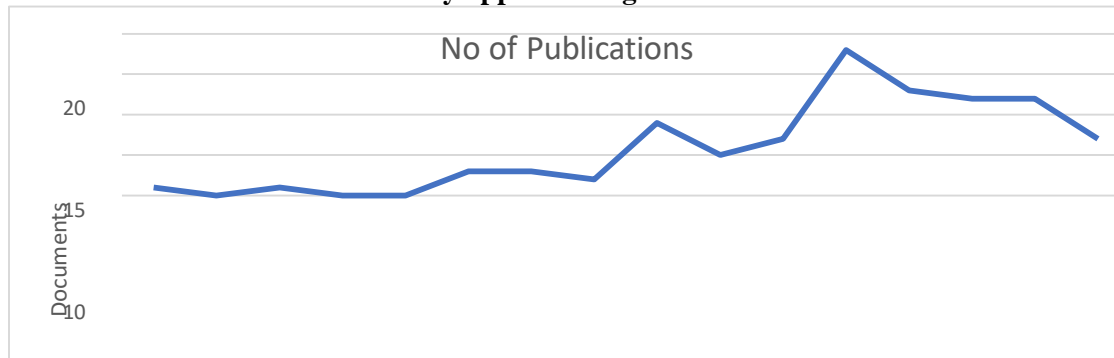
Table 4 : Year-wise publications for Financial Inclusion for socially oppressed segments in India

Year of Publication	Number of Publications	Year of Publication	Number of Publications	Year of Publication	Number of Publications
2008	1	2014	3	2020	13
2009	0	2015	2	2021	12
2010	1	2016	9	2022	12
2011	0	2017	5	2023	7
2012	0	2018	7		
2013	3	2019	18		

Source : scopus.com (Accessed on : 8 July 2023)

Figure 1 shown below clearly indicates that the study on this topic has started recently. It is also observed that there has been a rise in the publications on this topic since the last 5 years. Based on an analysis of the publications, it is further observed that 62 publications out of 93 selected for this study, have been carried out in the last 5 years i.e. from 2019 onwards.

Figure 1 : Year-wise publications for Financial Inclusion for socially oppressed segments in India



2.3 Data Analysis

An in-depth bibliometric analysis was carried out to identify the major research characteristics, literature, and researchers in the field of financial inclusion for socially oppressed segments in India. To aid and facilitate data analysis, the authors have used Scopus Analyser and VOS Viewer version 1.16.19. It includes study of geographical concentration of the study and researchers. Further, it includes analysis of author affiliation, author contributions, statistics for publication, journal analysis and also includes network and citation analysis of the study carried out.

3 Bibliometric Analysis

Bibliometric analysis of research in the area of financial inclusion for socially oppressed segments in India is carried out under different parameters as appended below:

- Geographical or Regional Analysis
- Keyword Analysis
- Affiliation Statistics
- Author Statistics
- Citation Analysis
- Publication Source Statistics
- Network Analysis

3.1 Geographical Regional Analysis

The following **Table 5** depicts the geographical locations of published papers in the field of financial inclusion for socially oppressed segments in India. It clearly indicates that the majority number of papers have originated from India which is followed by United Kingdom.

Table 5 : Top 4 countries publishing papers on Financial Inclusion for socially oppressed segments in India

Country	Number of Publications
India	82
United Kingdom	5
Quatar	3
Saudi Arabia	2

Source : scopus.com (Accessed on : 8 July 2023)

3.2 Keyword Analysis

Keywords are important for a researcher for retrieving information from any database. The use of correct keywords is essential for research to be more visible and accessible. **Table 6** shows maximum recurring keywords used in published research papers in the area of financial inclusion for socially oppressed segments in India.

Table 6 : Top 5 keywords for Financial Inclusion for socially oppressed segments in India

Country	Number of Publications
Financial Inclusion	61
India	28
Financial Literacy	09
Banking	06
Microfinance, Financial Services, Economic Development	05

Source : scopus.com (Accessed on : 8 July 2023)

3.3 Affiliation Statistics

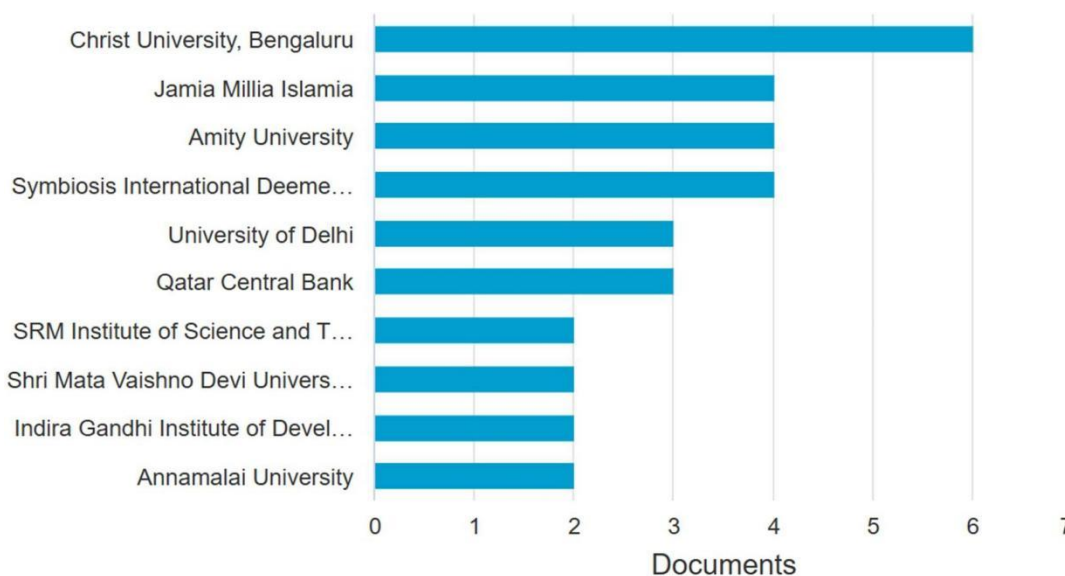
Table 7 and Figure 2 presented below shows the details of affiliation of the authors of published research studies. Based on the analysis, it is observed that the authors affiliated to Indian Universities and organisation contributed to maximum research studies in this area.

Table 7 : Top 7 Affiliation in Financial Inclusion for socially oppressed segments in India

University/ Organisation	Number of Publications	Country of Publication
Christ University, Bangalore	06	India
Jamia Milia Islamia	04	India
Amity University	04	India
Symbiosis International Deemed University	04	India
University of Delhi	03	India
Qatar Central Bank	03	Qatar
SRM Institute of Science & Technology	03	India

Source : scopus.com (Accessed on : 8 July 2023)

Figure 2 : Affiliation trend in Financial Inclusion for socially oppressed segments in India



3.4 Author Statistics

The study attempts to find the influence of authors/ researchers in this area of study. An analysis of the selected 93 publications shows that 84 authors have mainly contributed towards the study on Financial Inclusion for socially oppressed segments in India. **Table 8** provided below shows the top contributing authors in the field of financial inclusion for socially oppressed segments in India.

Table 8 : Key contributing authors in the field of Financial Inclusion for socially oppressed segments in India

Authors	No. of Publications
Ghosh S	04

Siddqui T.A.	04
Ravikumar T	03
Siddqui K.I	03
Barik R & others	02

Source : scopus.com (Accessed on : 8 July 2023)

3.5 Citation Analysis

Citation analysis is one of the most important aspect of this research study. Citations are measures of influence and productivity of the research publications. The citation analysis indicates the number of times a publication is cited by another publication. **Table 9** indicates the year-wise citations of the study on financial inclusion for socially oppressed segments in India. Further analysis shows that out of 93 publications, 59 publications are cited at least once by other publications and the total citation count is 859 till date.

Table 9 : Citation count of publications in the area of Financial Inclusion for socially oppressed segments in India

Year	No. of Citations
2023	03
2022	09
2021	37
2020	260
2019	135
2018	23
2017	52
2016	75
2015	86
2014	17
2013	145
2010	16
2008	01

Source : scopus.com (Accessed on : 8 July 2023) and author compilation

Table 10 indicates the top 10 publications which have the maximum citations in the field of financial inclusion for socially oppressed segments in India.

Table 10 : Top 10 cited publications

Title of Research Publication	Year of Publication	Citation Count
“Blockchain, adoption, and financial inclusion in India: Research opportunities”	2020	176
“Financial inclusion in India: An axiomatic approach”	2013	133
“Financial inclusion: Policies and practices”	2015	86
“Role of banks in financial inclusion in India; [Papel de los bancos en la inclusión financiera en la India]”	2017	49
“Financial inclusion: The role of fintech and digital financial services in India”	2019	47
“Linkage between Financial Inclusion and Economic Growth: An Empirical Study of the Emerging Indian Economy”	2020	27

“Financial inclusion in India: an application of TOPSIS”	2016	27
“Analyzing the progress and prospects of financial inclusion in India”	2019	21
“FinTech in India: An analysis on impact of telecommunication on financial inclusion”	2020	21
“Financial inclusion determinants and impediments in India: insights from the global financial inclusion index”	2020	20

Source : scopus.com (Accessed on : 8 July 2023) and author compilation.

3.6 Publication Source Statistics

The authors have analysed the sources of publications to identify most popular source of publication in the field of financial inclusion for socially oppressed segments in India. It is observed that majority of the publications are in research journals. The following **Table 11** provides the details of the analysis.

Table 11 : Types of sources for publication in the area of financial inclusion for socially oppressed segments in India

Type of Publication Source	Number of Publications	Percent
Conference Proceeding	5	5.38
Book	6	6.45
Journal	82	88.17

Source : scopus.com (Accessed on : 8 July 2023) and author compilation

An attempt was made by the authors to analyse the publication sources to determine the key source of publishing articles in the subject. **Table 12** provides the year wise details of the top 5 publishing sources publishing maximum research articles in the area of financial inclusion for socially oppressed segments in India.

Table 12 : Top 5 publication sources in the area of financial inclusion for socially oppressed segments in India

Source of Publication	Before 2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Economic and Political Weekly	1	0	1	1	0	1	1	2	0	0	7
Indian Journal of Finance	0	0	3	0	0	1	0	0	0	1	5
International Journal of Applied Business and Economic Research	1	0	2	2	0	0	0	0	0	0	5
Indian Journal of Economics and Business	0	0	0	0	0	2	0	1	0	0	3
Marketing Techniques for Financial Inclusion and Development	0	0	0	0	3	0	0	0	0	0	3

Source : scopus.com (Accessed on : 8 July 2023) and author compilation

The above table shows that the maximum number of publications in this area were published through 'Economic and Political Weekly'. However, the 'International Journal of Information Management' had attracted maximum attention of the researchers and the articles published in this journal and were cited for maximum number of times. **Table 13** presents an analysis of the journals having maximum citations.

Table 13 : Top 5 Publication Sources having maximum citations for publications in the area of financial inclusion for socially oppressed segments in India

Publication Source	Number of Citations
International Journal of Information Management	176
Journal of Policy Modelling	133
IIMB Management Review	86
Contaduria y Administracion	49
Indian Journal of Economics and Business	48

Source : www.scopus.com (Accessed on : 8 July 2023) and author compilation

3.7 Network Analysis

The authors have extensively used VOS Viewer for Network Analysis. Network Analysis reveals patterns and interrelation of research publications. The following points are considered under this section.

- Co-authorship : Authors, Organisation, Country
- Co-occurrence : All Keyword, Author Keyword, Index Keyword

- Citation Analysis : Sources, authors, organisations, country
- Bibliographic coupling : Documents, Authors

3.7.1 Network Analysis of Co-authorship

In this analysis, relationship is analysed between three different parameters being authors, organisation and country.

A. Co-authorship of authors :

For the purpose of this analysis, publications written by some authors are ignored since the limit is set to 25 authors and the minimum documents required by an author is set at 2. The analysis shows that out of 84 authors, 5 authors satisfy this criteria. It is observed that authors do not have any link between them. The following **Figure 3** presents the network analysis of the 5 authors selected basis the analysis.

Fig 3 Co-authorship Network Analysis of Authors

Selected	Author	Documents	Citations	Total link strength ▼
<input checked="" type="checkbox"/>	ghosh s.	4	10	0
<input checked="" type="checkbox"/>	mukhopadhyay j.p.	2	15	0
<input checked="" type="checkbox"/>	ravikumar t.	2	8	0
<input checked="" type="checkbox"/>	siddiqui t.a.; siddiqui k.i.	3	23	0
<input checked="" type="checkbox"/>	yadav p.; sharma a.k.	2	27	0

Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

Fig 4 Network Mapping of Authors



Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

B. Network Analysis of Co-authorship in terms of organisations :

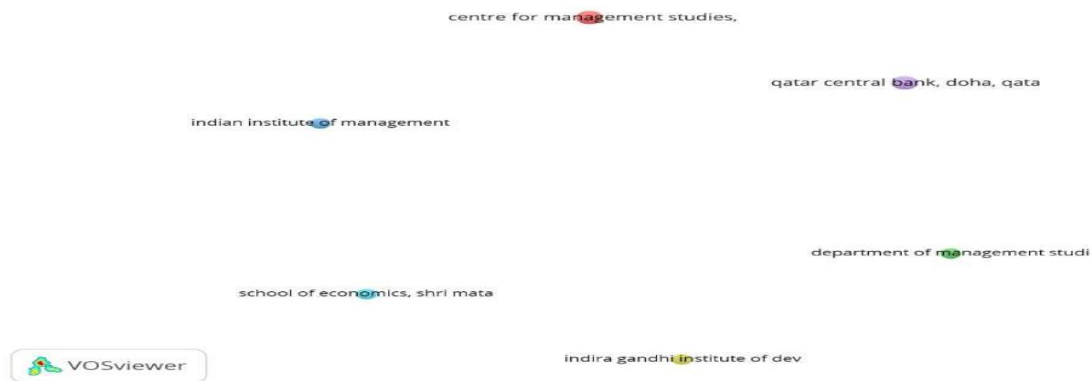
For this section of the analysis, the parameter is set to minimum 2 publications from a single University/ Organisation. The analysis shows that 6 out of 129 Universities/ Organisations satisfied the criterion. However, the link strength for this analysis is Nil. **Figure 5** shows the details of the same and **Figure 6** also shows the Network Mapping of the University/ Organisation.

Figure 5. Network Analysis of Co-Authorship in terms of University/ Organisation

Selected	Organization	Documents	Citations	Total link strength ▼
<input checked="" type="checkbox"/>	centre for management studies, jami...	3	22	0
<input checked="" type="checkbox"/>	department of management studies, ...	2	27	0
<input checked="" type="checkbox"/>	indian institute of management, ahm...	2	4	0
<input checked="" type="checkbox"/>	indira gandhi institute of developme...	2	144	0
<input checked="" type="checkbox"/>	qatar central bank, doha, qatar	3	7	0
<input checked="" type="checkbox"/>	school of economics, shri mata vaish...	2	20	0

Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

Figure 6 : Network Mapping of University/ Organisation



Source : www.scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

C. Network Analysis of Co-authorship in terms of Country

Co-authorship of the publications in the area of financial inclusion for socially oppressed segments in India can also be mapped based the country of the publication. For the purpose of this analysis, the parameter is set to minimum 2 documents for the country. Out of 11 countries, 4 countries meet the threshold. India has the highest link strength of 4. **Figure 7** below shows the link strength and **Figure 8** shows the network mapping for the same.

Figure 7. Network Analysis of Co-Authorship in terms of country.

Selected	Country	Documents	Citations	Total link strength ✓
<input checked="" type="checkbox"/>	india	82	663	5
<input checked="" type="checkbox"/>	united kingdom	5	163	3
<input checked="" type="checkbox"/>	saudi arabia	2	1	2
<input checked="" type="checkbox"/>	qatar	3	7	0

Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

Figure 8 : Network Mapping of organisation



Source : www.scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

3.7.2 Network Analysis of Co-occurrences

This section analyses the co-occurrences for which it considers the keywords. It includes all keywords used such as author keywords, index keywords.

A. Co-Occurrences in terms of all keywords

For analysing the keywords, the minimum number of keywords considered are 5. Out of the 282

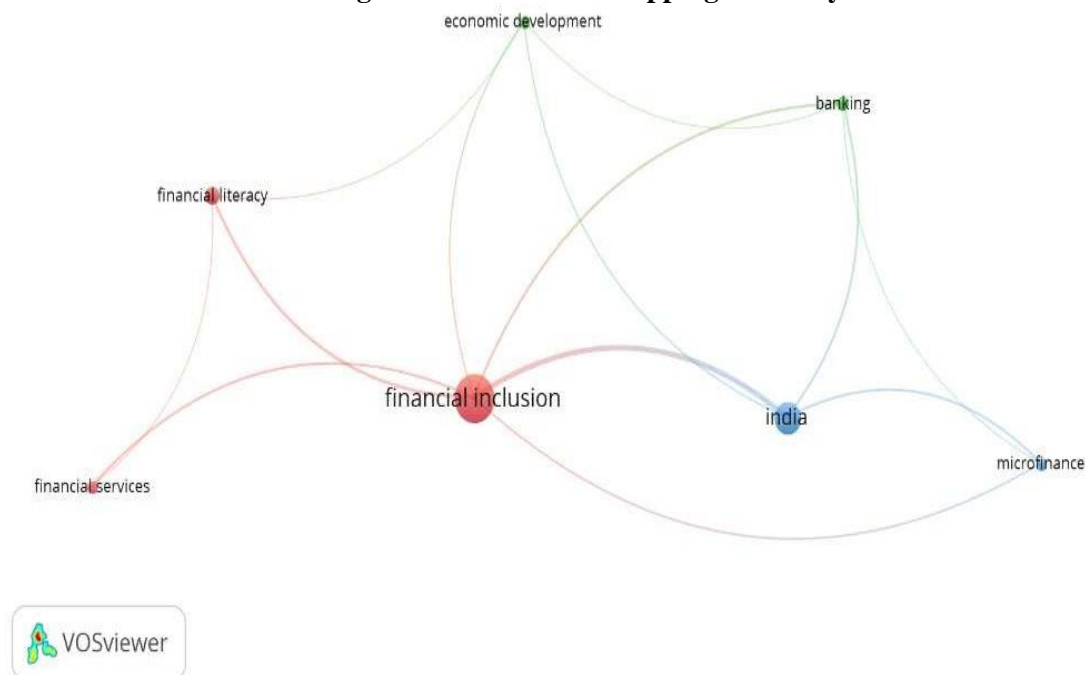
keywords used, 7 keywords met the criterion. **Figure 9** shows the link strengths of the keywords and **Figure 10** shows Network Map for the same.

Figure 9. Co-Occurrences Network Analysis for all keywords

Selected	Keyword	Occurrences	Total link strength
<input checked="" type="checkbox"/>	financial inclusion	61	45
<input checked="" type="checkbox"/>	india	28	33
<input checked="" type="checkbox"/>	banking	6	11
<input checked="" type="checkbox"/>	financial literacy	9	9
<input checked="" type="checkbox"/>	microfinance	5	8
<input checked="" type="checkbox"/>	economic development	5	6
<input checked="" type="checkbox"/>	financial services	5	6

Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

Figure 10 : Network Mapping of all key words



Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

B. Co-Occurrences in terms of author keywords

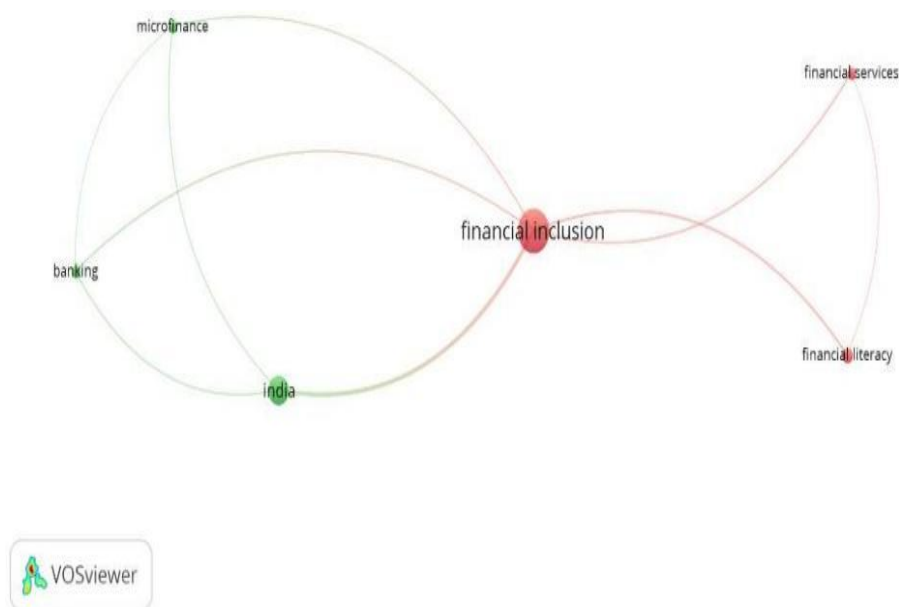
For analysing keywords, the minimum number of keywords considered are 5. Out of 223 keywords used, 6 keywords met the criterion. **Figure 11** shows link strengths of keyword and **Figure 12** shows Network Map for the same.

Figure 11. Co-Occurrences Network Analysis of author keywords

Selected	Keyword	Occurrences	Total link strength ✓
<input checked="" type="checkbox"/>	financial inclusion	61	40
<input checked="" type="checkbox"/>	india	26	26
<input checked="" type="checkbox"/>	banking	5	8
<input checked="" type="checkbox"/>	financial literacy	8	8
<input checked="" type="checkbox"/>	financial services	5	6
<input checked="" type="checkbox"/>	microfinance	5	6

Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

Figure 12 : Network Mapping of author key words



Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

C. Co-Occurrences in terms of author keywords

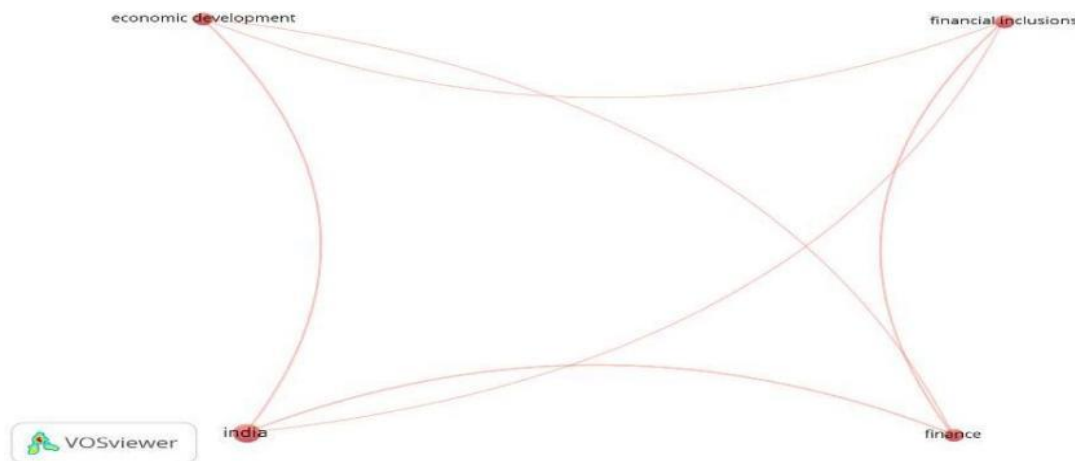
For analysing the keywords, minimum number of keywords considered are 3. Out of 73 keywords used, 4 keywords met the criterion. **Figure 13** shows link strengths of index keyword and **Figure 14** shows Network Map for the same.

Figure 13. Co-Occurrences Network Analysis for index keywords.

Selected	Keyword	Occurrences	Total link strength
<input checked="" type="checkbox"/>	finance	3	5
<input checked="" type="checkbox"/>	india	6	5
<input checked="" type="checkbox"/>	economic development	3	4
<input checked="" type="checkbox"/>	financial inclusions	3	4

Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

Figure 14 : Network Mapping of author key words



Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

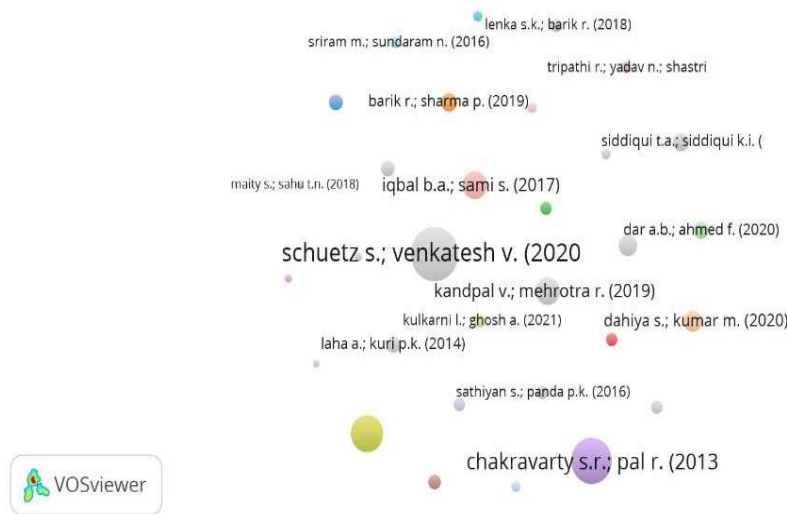
3.7.3 Network Analysis of Citations

The analysis of citations is done in respect of documents, sources, authors, organisations and countries.

A. Citation Analysis of documents

For the purpose of this analysis, minimum 5 citations are considered as basic requirement. 31 publications out of the total 93 met the requirement. The analysis does not show any link strength. The network map is presented below in **Figure 15**.

Figure 15 Network Map for the documents



Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

B. Citation Analysis of Sources

The citation analysis of sources is done with a minimum criterion of 5. Out of 60 sources, 3 sources met the criterion. The analysis does not show any link strength. **Figure 16** shows the link strength of the sources and **Figure 17** show network map for the analysis.

Figure 16 Link strength of citations for sources.

Selected	Source	Documents	Citations	Total link strength
<input checked="" type="checkbox"/>	economic and political weekly	8	33	0
<input checked="" type="checkbox"/>	indian journal of finance	5	31	0
<input checked="" type="checkbox"/>	international journal of applied busin...	5	4	0

Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

Figure 17 Network analysis of sources.



Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

C. Citation Analysis by Authors

For this analysis, the minimum criterion is set at 2 citations per author. 5 authors out of 84 authors met this requirement. The analysis show that it does not have any link. **Figure 18** presents the link

strength and **Figure 19** shows the network map for the same.

Figure 18 : Link strength of citations for authors

Selected	Author	Documents	Citations	Total link strength ▼
<input checked="" type="checkbox"/>	ghosh s.	4	10	0
<input checked="" type="checkbox"/>	mukhopadhyay j.p.	2	15	0
<input checked="" type="checkbox"/>	ravikumar t.	2	8	0
<input checked="" type="checkbox"/>	siddiqui t.a.; siddiqui k.i.	3	23	0
<input checked="" type="checkbox"/>	yadav p.; sharma a.k.	2	27	0

..... Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

Figure 19 Network analysis of authors.



Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

D. Citation Analysis by University/ Organisation

For this analysis, the minimum criterion set is minimum 2 citations per University/ Organisation. 6 out of the 129 Universities/ Organisation met this threshold. The analysis shows that it does not have any link which is shown in **Figure 20** and **Figure 21** which shows the network map for the same.

Figure 20 : Link strength of organisations

Selected	Organization	Documents	Citations	Total link strength ▼
<input checked="" type="checkbox"/>	centre for management studies, jami...	3	22	0
<input checked="" type="checkbox"/>	department of management studies, ...	2	27	0
<input checked="" type="checkbox"/>	indian institute of management, ahm...	2	4	0
<input checked="" type="checkbox"/>	indira gandhi institute of developme...	2	144	0
<input checked="" type="checkbox"/>	qatar central bank, doha, qatar	3	7	0
<input checked="" type="checkbox"/>	school of economics, shri mata vaish...	2	20	0

Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

Figure 21 Network analysis of organisation.



Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

E. Citation Analysis by Country

For analysis, the minimum criterion set is 2 citations per country. 6 countries out of 11 countries met this threshold. The analysis shows that it does not have any link. **Figure 22** and **Figure 23** show the network map for the same.

Figure 22 : Network analysis of countries

Selected	Country	Documents	Citations	Total link strength ▼
<input checked="" type="checkbox"/>	india	82	663	0
<input checked="" type="checkbox"/>	qatar	3	7	0
<input checked="" type="checkbox"/>	united kingdom	5	163	0

Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

Figure 23 Network analysis of countries

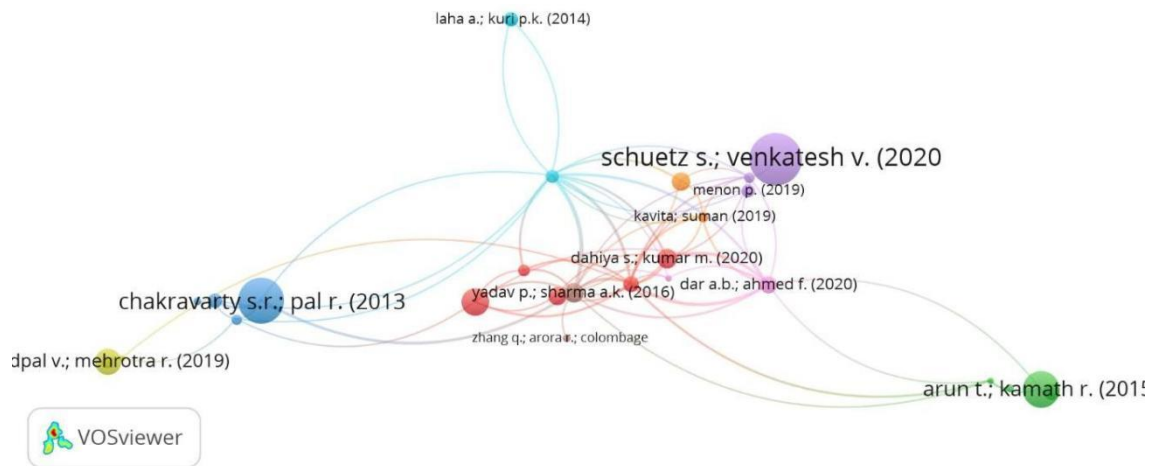
Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

3.7.4 Network Analysis of Bibliometric Coupling

A. Bibliographic coupling of Documents

This section is analysed with the minimum threshold of 3 citations of a publication. The analysis shows 35 out of 93 publications which met with the criterion. **Figure 24** shows the link for the same.

Figure 24 : Bibliographic couplings of documents.



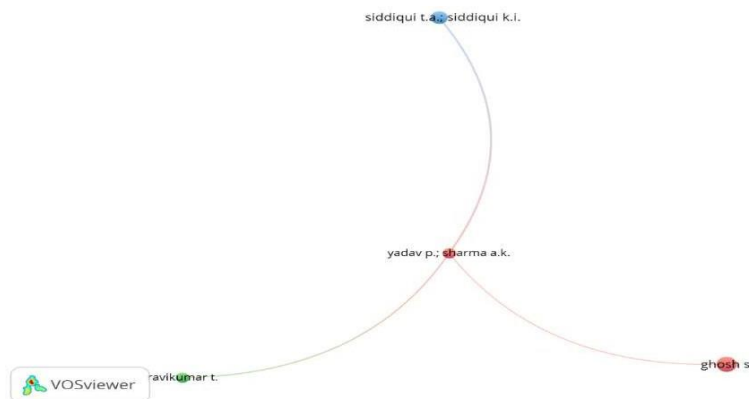
Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

B. Bibliographic Coupling of Authors :

The analysis for this requires minimum 2 citations where 5 authors fulfilled the needed criterion.

Figure 25 shows the bibliographic coupling of authors.

Figure 25 : Bibliographic coupling of authors.



Source : scopus.com (Accessed on : 8 July 2023) and compilation with VOS viewer

Findings and Conclusion:

The authors have conducted the bibliometric analysis by applying different methods and present the following findings:

Findings in respect of publication trends and subject area

1. It was found that financial inclusion in India has fascinated researchers and research publications can be found from the year 2008. However, it has gained momentum since 2019 and the number of publications from 2019 had moved to upward trajectory since then. It shows that the interest and the popularity in the area of financial inclusion in India is rising among the researchers.

2. The study shows that majority of the research publications are in the form of research articles which is followed by book chapters. This indicate that the preferred form of publication by the researchers in this area is through research journals.
3. Financial inclusion is a core subject area research in Business Management, Finance, Social Sciences and Economics. However, considering the interdisciplinary nature of the topic and the digital public infrastructure adopted by India Government, it has been observed that researchers from area of Engineering, Computer Sciences have also undertaken studies in this area.

Research Trends in Demographic Regions and Institutions

4. Our analysis shows that studies on financial inclusion in India is mostly carried out in India. 82 publications were published in India which is followed by the countries of UK, Qatar and Saudi Arabia. This shows that international researchers and publications may not very keen on publishing research articles on this topic.
5. The affiliation statistics shows that researchers from Christ University Bangalore, Jamia Milia Islamia, Amity University, Symbiosis Deemed University are the top contributors in this subject. This also provides a guidance for new researchers in the respect of co- authorship and co-research in this subject.

Most Prolific Sources of Publications

6. The study shows that research journals are the most preferred platform for publications on this topic. Further analysis shows that the journal titled 'Economic and Political Weekly' has published the maximum articles in this area which is followed by the 'Indian Journal of Finance', 'International Journal of Applied Business' and 'Economic Research and Indian Journal of Economics and Research'.
However, citation analysis indicates most commonly cited articles are published in International Journal of Information Management and Journal of Policy Modelling. This will help researcher to identify journals to publish his research article on this topic.

Article with maximum Impact and Most Experienced Researcher.

7. The impact of a publication is measured by the number of times that the publication is cited by other researchers in their study. **Table No 10** of our analysis shows the most impactful publication related to the topic which also provides direction of the research carried out. After going through the most cited articles, it is clear that researchers are fascinated with new technologies and systems that are used for financial inclusion in India. The most experienced researchers in this area are the ones who have the maximum publications in this field. **Table 8** of this paper provides the list of most experienced authors on this topic. This provides a guideline for new researchers for the literature review as well as they may look for possible linkages with the experienced researcher.

Findings of Network Analysis

8. The authors conducted a network analysis to study the linkages in the research of financial inclusion in socially oppressed segments of Indian society. However, the study clearly indicates a poor linkage in terms of co-authorship, co-occurrence, citations as well as bibliographic couplings. This clearly opens an opportunity for researchers to collaborate their contribution in this field.

Conclusion

Financial inclusion is a major toll for empowerment of society. The financial inclusion has 3 major

indicators – a) access to financial services, b) usage of services, c) quality of the financial services provided. The growth story of India is never complete without financial inclusion of each segment of the society. India is a socio-culturally diverse country having several socio-economic barriers based on individuals place of residence (urban / rural), religion, caste, gender, community, gender preferences etc.

The authors observed that successful implementation of Digital Public Infrastructure by the Government of India has resulted in a massive growth in financial inclusion of the Indian society. It had started with Jan Dhan Yojana and linking of AADHAR card with bank account and mobile phones and various schemes launched for development of underdevelopment sections of society such as MUDRA yojana.

Research Gap for further study : in socially oppressed segments of Indian Society

The analysis indicates that the number of publications on financial inclusion of India is limited. Further, when it comes to financial inclusion of oppressed segments of the Indian society, the number of publications is very low. For instance, only 8 publications were found which related to the financial inclusion for women in India. Further, no publications relating to financial inclusion considering caste system and LGBTQ community were found.

The authors firmly believe that more research/ studies with specific focus on socio- economically weaker sections of the Indian society needs to be carried. This will open up various opportunities to the industries whereby they can tap into the sections of the Indian society which were otherwise under-served and have a vast growth potential. A further study in this area will also help policymakers to draw progressive policies which will help in the overall development of this great nation.

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