

**A Bibliometric Study of KELPRO Bulletin: A Bi-annual journal in
LIS (2012-2022)**

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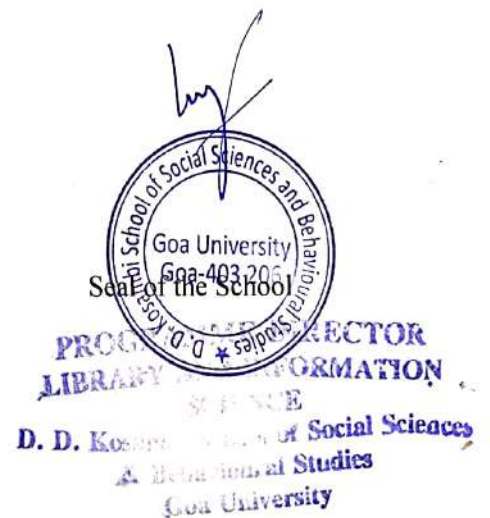
Studies Library and Information Science



Goa University

April 2024

Examined by: *Novelty Volvaikar*



DECLARATION BY STUDENT

I hereby declare that the data presented in this Dissertation report entitled, “**A Bibliometric Study of KELPRO Bulletin: A Bi-annual journal in LIS (2012-2022)**” is based on the results of investigations carried out by me in the Library and Information Science at the **D.D. Kosambi School of Social Sciences and Behavioural Studies, Goa University** under the Supervision of **Mrs. Novelty Volvaikar e Morjekar** and the same has not been submitted elsewhere for the award of a degree or diploma by me. Further, I understand that Goa University or its authorities will be not be responsible for the correctness of observations / experimental or other findings given the dissertation.

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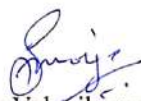
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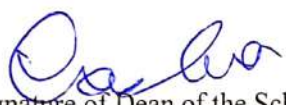
COMPLETION CERTIFICATE

This is to certify that the dissertation report “A Bibliometric Study of KELPRO Bulletin: A Bi-annual journal in LIS (2012-2022)” is a bonafide work carried out by **Ajeela Suresh Velip** under my supervision in partial fulfilment of the requirements for the award of the degree of **M.L.I.Sc.** in the Discipline Library and Information Science at the D.D. Kosambi School of Social Sciences and Behavioural Studies, Goa University.



Mrs. Novelty Volvaikar e Morjekar

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CHAPTER – I
INTRODUCTION

1.0 Introduction

With the significant development in technology and rising data creating individuals the growth of information is increasing at large scale over a period of time in terms of time , storage and cost. In this case bibliometric studies helps in selecting the appropriate resources by applying metrics in the study. Library and Information Science professionals increasingly rely on bibliometrics to analyze research. Bibliometrics is a technique for studying publication patterns, authorship trends, and how often research is cited within a specific timeframe. This information is vital for librarians when developing their collections.

1.1 Bibliometrics

Bibliometrics is a broad topic in which several facets of academic literature and information sources are analysed using statistical and quantitative techniques. Bibliometrics is an important tool in any field of research that examines the significance and status of scholarly works, journals, via publishing trends and citation patterns. Bibliometrics offers important insights into the spread of information, the development of study disciplines and the identification of significant works and authors through the use of data driven methodology.

The term “bibliometrics” is derived from the words “biblio” and “metric”. Biblio is derived from the Greek word “biblion”, which means book or scroll and metrics originates from the Greek word “metron” which means measurement .

Thus , the term “bibliometrics” is generated by combining these two words which refers to the quantitative measurement and study of books, academic publications and other sources of information. In other words a bibliometric study is a type of research that involves the quantitative analysis of scholarly publication - related bibliographic data by applying mathematical and statistical calculation.

1.1.1 Definitions of Bibliometrics

The term “Bibliometrics” was coined by Pritchard in 1969 in his article “Statistical Bibliography or Bibliometrics” in the “Journal of Documentation”. According to him, bibliometrics is defined as “the application of mathematics and statistical methods to books and other media of communication.” (Devarajan, 1997)

According to Fairthorne (1969) w“Bibliometrics is the quantitative treatment of the properties of recorded discourse and behaviour pertaining to it and Bibliometrics is also named as quantitative analysis of bibliographical features of a body of literature”.

The British Standard Institution (1976) described Bibliometrics as the “application of mathematical and statistical methods in the study of the use of documents and publication patterns.”

The British standard Glossary of Documentation of terms explains bibliometrics as “the study of the use of documents and patterns of publication in which mathematical and statistical methods have been applied.”

In 1981 Willian Gray Potter, editor of Library Trends gave the definition as “the study and measurement of the publication patterns of all forms of written communication and their authors”.

Sengupta in 1985 provided the definition of bibliometrics as “organization, classification and quantitative evaluation of publication patterns of all macro- and micro-communication along with their authorships by mathematical and statistical calculus.” (Sudhier, 2017)

Bibliometric study is often utilized in the field of Library and Information Science. This study will look into the bibliometric study of the KELPRO Bulletin.

1.1.2 KELPRO Bulletin

KELPRO Bulletin is a biannual UGC approved academic journal in Library and Information Science that is peer reviewed and listed under UGC CARE List. It is an official journal of Kerala Library Professionals' Organization (KELPRO) headquartered at Thiruvananthapuram, Kerala published since 1997 aiming towards assisting service to library professionals by publishing theoretical and

empirical studies covering different dimensions of Library and Information Science. It gives academicians, practicing librarians, teaching community and researchers a platform to publish their research at reasonable price.

Since its beginning from 1997, the journal has completed 26 volumes with the regular publication of two issues every year in June and December.

This study aims to conduct a bibliometric analysis of KELPRO Bulletin to understand its publication trends, length of the articles, major states publishing in the journal, etc.

By analyzing the data from 2012 to 2022 this study will contribute to a deeper understanding of the Library and information Science and inform the library community on the role of the KELPRO in supporting research and communication.

1.2 Objectives of the Study

1. To examine authorship productivity
2. To find the average length of articles in pages.
3. To analyse authorship pattern
5. To reveal the geographical distribution of articles in terms of states.

1.3 Hypotheses

1. The frequency of multi-authored papers has increased, suggesting a trend towards collaborative research in the journal.
2. The publication of the journal has remained steady over time.
3. The average article length has shown a steady increase over the years, indicating a trend towards longer articles in the journal.

1.4 Scope and limitations of the study

The study is limited to only one journal and publications are included published only in 11 volumes i.e volume 16 to 26 published from 2012-2022.

KELPRO is a UGC approved bi-annual journal in Library and Information Science. This study will help to observe the growth of literature and research trends and to know journal's performance.

1.5 Research Methodology

Research methodology is the specific procedure by which reader can get insight of what and how will be invested in the study. There is a qualitative and quantitative research method. This study is based on the quantitative research methodology i.e bibliometric study.

a) Focus group

Research was conducted by studying all the articles published in the KELPRO Bulletin during the period of 11 years from Vol. no: 16 to Vol.no: 26 containing 22 issues.

b) Tools used

MS-Excel was used to store, calculate and analyse the collected data. Data was represented in tabular form and using graphs.

c) Data collection

Data collection was done by downloading articles published in the journal from the website of “KELPRO Bulletin “and recording all the bibliographic details of articles such as length of the article, authorship pattern, geographical distribution of articles etc.

References

- Devarajan, G. (1997). *Bibliometric Studies*. New Delhi: Ess Ess Publications.
- Sudhier, K. G. (2017). *Informetric Studies*. Delhi: B.R. Publishing Corporation.

CHAPTER - 2

LITERATURE REVIEW

2.0 Introduction

An essential part of the study, the literature review offers review and analysis of previous research that is relevant to the goals and research questions of the investigation. The scholarly literature pertinent to the bibliometric analysis of journals is examined in this chapter in an organized manner, highlighting important themes and providing empirical findings that support the research question.

2.1 Purpose of Literature Review

- To gain a comprehensive understanding of the research topic.
- To identify trends, gaps, and areas of interest in the field of research.
- To articulate the methodologies and design of the research utilized by different researchers.
- To validate the sources of data used by other researchers.
- To understand how others structured their research.

2.2 Literature Review

Hasan, Tutar., Se. Kwang, Nam. (2023), created a bibliometric study of the articles published in the Journal of Ankara University Faculty of Communication between 2014 and 2021 to reveal the intellectual, social, and conceptual structure of the publications. It revealed trends, author productivity, and a shift towards empirical studies over theoretical ones in communication research.

José, M, Estrada-Lorenzo., Candelas, López-López. (2023), Analysed original articles in the journal *Enfermería Intensiva* from 2001 to 2020 and revealed characteristics such as collaboration, citations, and publication trends. They found that total of 438 papers were published during the study period out of which 259 were original making 59.1% with an average of 30.5 bibliographic references and 4.9 citations.

Vinayak, P., Hakkaraki. (2023), carried a research entitled “A Bibliometric Analysis of Journal of Scientometric Research Based on Dimensions Database” examined publication formats, author productivity citations, and most cited works from 2012 to 2022. Year 2022 saw a maximum of 226 citations. The paper identified Bidyarthi Dutta and Sujit Bhattacharya as the most productive authors with 15 and 8 articles respectively.

Alagarsamy, V. (2021) in his research found that there was spike in the number of contributions in 2017 but lowered in the later years. There were total 243 articles published by 431 authors during the study period. Out of those highest number of articles was published by double authors followed by single authors and only one article was published by four authors. He also found that papers were mostly published within the subject of scientometrics and bibliometrics with the total number of 79 papers.

The study conducted by Kumar, A., & Varma, R. (2021) found that total 89 articles were published from 2013-2020 and it had 1,863 citations. It can be seen that majority of the contributors are from Nigeria and highest number of articles were published by joint authors. Authors suggested that study may also be conducted on citations pattern of other journals and disciplines, informatic analysis, webometric analysis, scientometric analysis and chronological authorship pattern.

Das, B (2021) examined total 864 articles published in Journal of Informetrics from 2006-2020. Based on the objectives of the study, he found that contribution done by single authors was less i.e. only 83 articles and out of rest 779 articles highest number of articles were authored by four authors and more. Major number of articles during the study period was published in volume 12 in the year 2014 and least number of articles was published in the year 2019. It can be seen that there was continuous rise in the total number of publications from 2016-2018 and decreased in 2019 but again increased in 2020. He concluded that bibliometric techniques have greatly impacted literature growth which helps in journal selection, field evaluation and the identification of scientific indicators. Open access lowers financial barriers and makes scientific works accessible to everyone.

Patel, B. (2012) conducted study on the Journal of Management Research and Analysis considering 121 articles published in 2 volumes of the journal from 2014-2018. The study revealed that the highest number of articles were published in volume no.2 by 78 articles and volume no.1 had the least number of contribution that is 11 articles which is very less than vol. no.2. It was also found that contribution made by foreign authors was not as great.

Kumar, M. (2015) in his study revealed that majority of the articles were contributed by single authors and highest contribution is from India. The result also showed that contribution made by universities was more.

Das, S. (2017) conducted a study entitled 'A Bibliometric Study on World Digital Libraries - An International Journal (2004-2020)' and found that overall 66.77% of the journal's articles were published in 2004 and 2005, with volumes 1 and 2 having the largest percentage. India has made the largest contribution, with 64.17% of the papers published. With a maximum of 64 articles single authors provided the majority of the articles. Collaboration has been found at 3.17 level. The University of Delhi has the highest number of articles, followed by the Indian Institute of Technology Kharagpur. Institutional repositories and digital libraries are the most often used keywords.

Nayak, S., et al. (2021), performed a bibliometric analysis of 311 papers published in the ASLIB Journal of Information Management from 2014 to 2021. The findings of the study were that the highest number of publications and citations occurred in 2020 and 2015 respectively. On average, papers had 2.66 authors from 51 countries. Most of the contributions were multi-authored. The degree of collaboration varied from 0.74 to 0.84 with an average of 0.786.

Hassan, R., et al. (2021), conducted study on Journal of International Women's Studies (JIWS) between a period of 2002 to 2019 to understand its current status, development, and future research directions. Total of 907 publications were analysed and found increasing publications over time, with the United States and United Kingdom contributing the most.

Gaur, P., & Verma, N. (2022), examined 142 articles from 11 volumes of the journal Communicator from 2010-2020. The study found that the year 2019 had highest number of publications with most authors contributing individually. The average paper length was 11-15 pages, with the highest rate of references at 31-40 and citations at 25.93%. The highest articles came from New Delhi and the USA whereas the overall degree of collaboration was 0.43. It also revealed that most of the authors cited books and websites.

Yu, D., & Xu, Z. (2019) investigated papers from JCEM journal by applying bibliometric methods and knowledge map tools for the period of 2008-2018 and

revealed the journal's knowledge structure and development process. It found that 52.86% of papers were less than 10 pages, with an increase in average pages. The majority of papers had more 30 references.

Singh, K., et al. (2021), analysed DESIDOC Journal of Library and Information Technology (DJLIT) with the purpose of exploring its research productivity. The results of the study showed that although the number of publications varies over time, it increased once the journal was included in the Scopus index. Additionally the rate of combined authors' contribution was found to be high at 358 while single authorship had 173 contributions. The analysis also found that the writer, B.M. Gupta, was the most prolific and frequently referenced writer during the study period of 2010-2020 and university of Delhi was recognised as the top institution among the top 10 extremely successful organisations.

Garg, K.C., & Singh, R.K. (2023) in their study entitled "A Bibliometric study of Papers Published in the Indian Journal of Natural Products and Resources during 2010-2020" revealed that the journal published 587 publications during 11yrs of time span of which the greatest number of articles were submitted by 35 countries with highest number of contributors from Tamil Nadu and Maharashtra states of India.

(Kale, 2023) conducted a bibliometric analysis of the Journal of Web Librarianship from 2016 to 2022" focusing on research output, authorship patterns, collaboration, and geographical distribution of articles which revealed that out of 230 majority of the articles were from USA and highest number of articles were single authored. According to the category-wise examination of articles majority of them were in the form of book review.

(Paredes- Gallardo, 2023) evaluated the scientific production of Clinical Implant Dentistry and Related Research (CIDRR) and its evolution and trends and trends in authorship, affiliations, research topics, and study designs in the last 5 years from 2016-2020. It included the analysis of 599 articles which revealed that only research, systematic reviews, meta-analyses, narrative reviews, and case reports were published. No other study types published during the time of 5 years.

(Behera, 2022) carried out a on International Journal of Library Science with the objectives to determine the number of articles, authorship pattern, authorship collaboration and authors' gender. It was found that 7.94%of the articles were contributed by single authors and 84.87% contribution was done by joint authors. Out of the total number of contributors 343 were males and very few were females that is only 44.

(Hakkaraki, 2022) performed a bibliometric study of Asian Journal of Information Science and Technology (AJIST) for the period of 12 years of study period. The study resulted in showing record of 316 published articles from 2011 to 2021 out of which only 19.620% i.e 62 articles were written by single authors whereas maximum number of 199 articles were written by 2 authors marking 62.974%.

(Swain & Kohila, 2022) in their study explored contributions from IJSE journal from 2015 to 2020. It represented the degree of collaboration of the publications in IJSE had been 0.70 and the most prolific authors were Giri, Man, Ntayi and Sehrawat from countries like India, Switzerland and Uganda. On the other hand, Universities contributed highest were Ghana, Malaysia and Nigeria.

(Panda, 2021) presents a bibliometric analysis of the Indian Journal of Library Science and Information Technology (IJLSIT) from 2016 to 2020. The study examines various aspects of publication within the journal, including the number of articles published per year, authorship patterns, and collaboration rates. Interestingly, 2019 saw the highest publication volume with 25.74% of the total articles published during the five-year period. The analysis also revealed Hemantha Kumar G.H. as the most prolific author contributing to IJLSIT. Additionally, the study found that Indian contributors from Maharashtra (18.81%) were the most active, with College Librarians (20.79%) constituting the largest contributor group by designation.

2.3 Conclusion

The above literature discusses several research papers on Bibliometrics study. Most of the article focus on the citation patterns for the articles, authorship pattern, length of articles, author's productivity, geographical distribution and publication based on the subjects. Some authors, in their research have tried to study the inter- and intra-contributors to the various journals in India, whereas limited study was finding.

References

- Alagarsamy, V. (2021). A Bibliometric Analysis of Journal of Advances in Library and Information Science (JALIS) from 201-2020: An International Online Journal. *Library Philosophy and Practice (e-journal)* .
- Das, D. (2021). Journal of Informetrics: A Bibliometric Study. *Library Philosophy and Practice (e-journal)* .
- Das, I. (2021). A Bibliometric study on World Digital Libraries - An International Journal (2008-2020). *Library Philosophy and Practice (e-journal)* .
- Gaur, P., & Verma, N. (2022). Communicator Journal: A Bibliometric Study of Decade (2010-2020). *International Journal of Research in Library Science (IJRLS)* , 8 (3), 49-57.
- Hassan, R., Chhabra, M., Shahzad, A., Fox, D., & Hasan, S. (2021). A Bibliometric Analysis of Journal of International Women's Studies for Period of 2002-2019: Current Status, Development, and Future Research Directions. *Journal of International Women's Studies* .

Kumar, A., & Verma, S. (2021). Journal of Library and Information Science: A Bibliometric Study from 2013-2020. *Library Philosophy and Practice (e-journal)* .

Nayak, S., Parida, D. K., Verma, N., & Hari, P. K. (2021). Bibliometric Analysis of the ASLIB Journal of Information Management from 2014 to 2021. *Library philosophy and Practice (e-journal)* .

Singh, K., Singh, M., Patel, A. K., T K, G. K., Nayak, S., & Patel, A. K. (2021). Research Prouctivity of DESIDOC Journal of Linbrary and Information Technology: A Bibliometric Review. *Library Philosophy abd Practice* .

Yu, D., & Xu, Z. (2019). Bibliometric analysis of the Journal of Civil Engineering and Management between 2008 ad 2018. *Journal of Civill Engineering and Management* , 25 (5), 402-410.

Garg, K. C., & Singh, R. K. (2023, June). A Bibliometric study of Papers Published in the Indian Journal of Natural Products and Resources during 2010-2020. *Indian Journal of Natural Products and Resources*, 14(2), 313-323.

Hasan, Tutar., Se, Kwang, Nam. (2023). Bibliometric Analysis and Visual Mapping of the Articles Published in the ILEF Journal from the Beginning to the Present. *Kastamonu İletişim Araştırmaları Dergisi*, doi: 10.56676/kiad.1163603

José, M, Estrada-Lorenzo., Candelas, López-López. (2023). Bibliometric analysis of original articles of journal Enfermería Intensiva in the period 2001–2020. *Enfermería intensiva*, 34(2):100-108. doi: 10.1016/j.enfie.2022.02.003

Vinayak, P., Hakkaraki. (2023). A Bibliometric Analysis of Journal of Scientometric Research Based on Dimensions Database. *Indian journal of information sources and services*, 13(1):26-31. doi: 10.51983/ijiss-2023.13.1.3486

CHAPTER - 3
RELATED CONCEPT

3.0 Introduction

Bibliometrics is a branch of library and information science that deals with the quantitative analysis of bibliographic data, primarily focusing on scholarly publications. It employs statistical and mathematical methods to evaluate various aspects of the production, dissemination, and use of these publications.

3.1 Concepts in Bibliography

Some key concepts in bibliometrics:

Publication Counts: Bibliometric analysis often begins with simple counts of publications. Researchers may analyze the number of articles, books, or other scholarly works produced by individuals, institutions, or countries over a certain period.

Citation Analysis: Citation analysis examines the references cited within scholarly publications. It involves counting citations to a particular work and analyzing patterns of citation to understand scholarly influence and communication networks.

Impact Factor: Impact factor is a measure used to evaluate the importance of a scholarly journal. It's calculated based on the average number of citations received by articles published in the journal over a specific time period. Journals with higher impact factors are often considered more prestigious.

h-index: The h-index is a metric that attempts to measure both the productivity and impact of a researcher's work. It's defined as the number of publications (h) that have received at least h citations. For example, a researcher with an h-index of 10 has published 10 papers, each of which has been cited at least 10 times.

Co-citation Analysis: Co-citation analysis identifies pairs of works that are frequently cited together by other authors. It helps reveal connections between different ideas or research areas and can be used to identify emerging trends or influential works.

Bibliographic Coupling: Bibliographic coupling measures the degree of similarity between two documents based on the number of references they share. Documents that cite similar sources are considered to be more closely related.

Altmetrics: Altmetrics, or alternative metrics, complement traditional citation-based measures by taking into account the online attention a scholarly work receives, such as mentions in social media, downloads, and views on academic platforms.

Scientific Collaboration: Bibliometrics can also be used to analyze patterns of collaboration between researchers, institutions, or countries. This includes co-

authorship analysis, which examines the frequency and strength of collaborations between authors.

Visualization Techniques: Bibliometric data is often visualized using techniques such as network analysis, which represents relationships between entities (e.g., authors, journals) as nodes and connections between them as edges. Visualization tools help researchers identify patterns and trends more easily.

By applying these concepts, bibliometricians can gain insights into the structure and dynamics of scholarly communication, track research trends, evaluate the impact of research outputs, and inform strategic decision-making in academia and beyond.

3.2 Genesis of Bibliometric

The term 'Statistical Bibliography' was first used in 1823 by Hulme that was later followed by others in their work including Pritchard in 1968 and 1969. Later he introduced the term 'Bibliometrics' as the replacement for term 'Statistical Bibliography' in 1969. With the development of the term 'Statistical Analysis' and later Statistical Bibliography there have been many terms adding to word 'bibliometrics' such as 'Librametry', 'Scientometrics', 'Informetrics',

'Webometrics' and 'Cybermetrics' brought into usage concerned with the study field, type and application. (Devarajan, 1997)

3.2.1 Librametry

In 1948, Dr. S. R. Ranganathan introduced the term "Librametry" to study the various library operations by applying statistics. The Librametry mainly aims at the quantitative analysis of the management, organization and execution of libraries while bibliometrics is restricted to quantitative analysis of recorded knowledge. (Deshmukh, 2019)

3.2.2 Scientometrics

'Scientometrics' has been typically defined as the "quantitative study of science and technology". Bibliometrics applied to scientific articles is called scientometrics. Bibliometrics is intended to compact with more broad-spectrum information process while, scientometrics is used for the extent of science communication. (Mahapatra, 2013)

3.2.3 Informetrics

According to Sen bibliometrics deals with documents and its components while metric studies pertaining to information is informetrics. The word 'Informetrics' is generally used as a broad term comprising all metrics studies related to Information Science, including Bibliometrics, Scientometrics, Webometrics. (Sudhier, 2017)

Informetric studies signifies the new approach to the scientific study of information flow: along with the scientometric studies and research evaluations of science and technology the improved bibliometric methods are applied also to the analysis of their mutual, societal, industrial and other specific relations. It aims also to study the information materials like websites, internet lunks, voice, sounds, art works etc as explained by Wormel.

3.2.4 Webometrics and Cybermetrics

"The science of webometrics and cybermetrics tries to measure the web to knowledge about the number and types of hyperlinks of Worl-Wide Web and usage patterns. The term webometrics was first coined by Almind and Ingwersen (1997). They described the use of traditional informetric method as a starting point for analysis on the web as generally conceivable for any kind of statistical aspects (language, word, phrase frequencies), characteristics of authors, their productivity and the degree of their collaboration, as well as citation analysis for the distribution over authors, institutions, and for the measure of growth of a

subject or a database, and concomitant growth of new concepts, definition and measurement of information types and characteristics of retrieval performance measure.” (Mahapatra, 2013)

3.3 Classical Laws of Bibliometrics

Bibliometrics is often used in Library and Information Science. By examining the citation and usage trends of resources, bibliometrics helps librarians choose and maintain collections. Through the identification of relevant and highly cited sources, it improves information retrieval systems.

Bibliometrics has three classical laws that can be helpful in organising a lot of library activities as well as understanding certain information trends.

The classical laws of bibliometrics are: Lotka's law of author productivity; Bradford's law of scattering; and Zipf's law of frequency of occurrence of words in a text. These laws are fully scientific and are well established formulas with little possibility of change in concept with time.

3.3.1 Lotka's Law

Lotka's law: In 1926, Alfred J. Lotka proposed his inverse Square Law, which related the number of papers published by authors to the number of contributions made by authors. This law offered a formula for calculating or forecasting the

productivity of scientific researchers. In its broadest sense, Lotka's law appears to be applicable. However, when we take into account the authors' publications in one periodical and when we take into account all of the authors' publications in various journals, the observed values differ significantly from the law's predictions.

3.3.2 Bradford's Law

The law of scattering was developed by Samuel Clement Bradford in 1934 to explain how articles on a certain topic get distributed in various periodicals and this law has received the greatest attention in library literature. His article "sources of information on specific subject" was the first publication on observation or scattering. Much before the publication of the above treatise, Bradford described the pattern of scattering of literature in various periodicals. He chose the areas of applied Geophysics and lubrication for study because the bibliographies on these subjects were systematically available to him. In this study he found out that if a large collection of papers is ranked in order of decreasing productivity of papers relevant to a given topic three zones can be identified in such a way that each zone would produce one third of the total relevant papers. Thus Bradford concluded that in a given subject area, periodicals can be categorized into 3 separate groups;

1. Those producing more than four references in a year.
2. Those producing between two or four reference in a year and
3. Those carrying one or fewer reference in a year.

The first group thus becomes the nucleus of periodicals in a subject field and necessarily contains more articles on that subject than periodicals that include articles on related subjects. The second zone contains a large number of moderately productive journals and the third zone contains large number of low productivity articles. Therefore, the hypothesis of Bradford put forth in 1934 and again in 1948 is that if the scientific journals containing articles on a given subject are arranged in decreasing order of the number of articles on the subject form the simple geometric series $1 : n : n^2$.

3.3.3 Zipf's Law

This law states that in a long textual matter if the words are arranged in their decreasing order of frequency, then the rank of any given word of the text will be inversely proportional to the frequency of occurrence of the word. Mathematically Zip's law can be written as:

$$r \cdot f = c$$

where 'r' denotes rank word, 'f' stand for frequency of words and 'c' is a constant.

Zip's law suggests that the product of the number of occurrences of each word in the body the text and its rank is constant. Then it states that,

$$rf = c.$$

Through this law we can know the style of writing of an author.

1.4 Application of Bibliometrics

‘The sub-discipline of bibliometrics are statistics, operation research, bibliometric distribution and bibliometric laws, citation analysis, circulation theory, information theory and theoretical aspects of information retrieval.’ (Mishra, 2017)

‘The bibliometric study besides its theoretical content has various practical applications in library management and helps in deciding schemes and policy on resources.’ (Mishra, 2017). Further, some of the applications of bibliometrics are:

1. The bibliometric studies aim to improve the bibliographical control because bibliometric analysis helps to know the character of literature in different fields. The volume and growth of primary literature has a direct effect on structure of secondary literature.
2. A major aim of bibliometric study is to determine statistics of literature relating to the country of origin, subject, and form and language distribution of documents as well as their incidence of translation. These data will provide useful information determining the scope of work, and can suggest weakness in the coverage of areas of possible improvement of secondary services.
3. The bibliometric data also helps in taking some management decisions. For example, it is useful in selecting specific primary and secondary journals and helps in planning future staff, building needs and in improving library services.

4. Bibliometric study also provides information about the structure of knowledge and pattern of communication. Analysis of the size and growth of literature can identify the developing and declining areas of literature over a time and trend of literature growth. (Mahapatra, 2013).

3.5 KELPRO Organisation

The organisation was established in the year 1992. With the primary goal of enhancing knowledge in the theory and practice of Library and Information Science and advancing the welfare and professional standing of librarians, in 1993 it was registered under the provisions of Travancore Cochin Literacy, Scientific and Charitable Society Act 1995.

It was founded by Professionals, practioners and faculty interested in the advancement of basic and applied information science.

As part of its ongoing educational program, the organization has been collaborating with university departments to provide a variety of academic programs for the benefit of the library community. Through a variety of academic initiatives, the obstacles in adopting modern technology and offering high-quality services have been sufficiently addressed.

Robinson, S. & J. (2012). *Mathematics: Bridges, Chapter 1: Subtraction*

Robinson, S. & J. (2012). *Mathematics: Bridges, Chapter 2: Addition*

Robinson, S.

Robinson, S. (2012). *Mathematics: Bridges, Chapter 3: Multiplication*

Robinson, S. (2012). *Mathematics: Bridges, Chapter 4: Division*

Robinson, S. (2012). *Mathematics: Bridges, Chapter 5: Fractions*

Robinson, S.



CHAPTER 1

THEORY OF THE EARTH AND ITS HISTORY



4.0 Introduction

This chapter presents the results of the study of Knowledge development and its organization in Dewey Decimal Classification from 19th edition till 23rd edition.

An attempt was made provide the structure and revision process of DDC.

4.1 Distribution of articles

4.1.1 Year-wise and distribution of Articles

Table 1 and figure 1 illustrates the year-wise and distribution of articles published in 22 issues of the journal. Total of 220 articles have been published during the study period recording the highest number of articles published in 2017's Volume 21 with 25 i.e. 11.36% articles whereas least number of articles has been shared by 2012 and 2014 Volumes with 17 and 7.73% articles each.

Table 1: Year-wise distribution of articles

Year	Volume	No. of Issues	No of Articles	Percentage
2012	16	2	17	7.73%
2013	17	2	22	10.00%
2014	18	2	17	7.73%
2015	19	2	18	8.18%
2016	20	2	18	8.18%
2017	21	2	25	11.36%

2018	22	2	22	10.00%
2019	23	2	21	9.55%
2020	24	2	19	8.64%
2021	25	2	20	9.09%
2022	26	2	21	9.55%
Total		22	220	100%

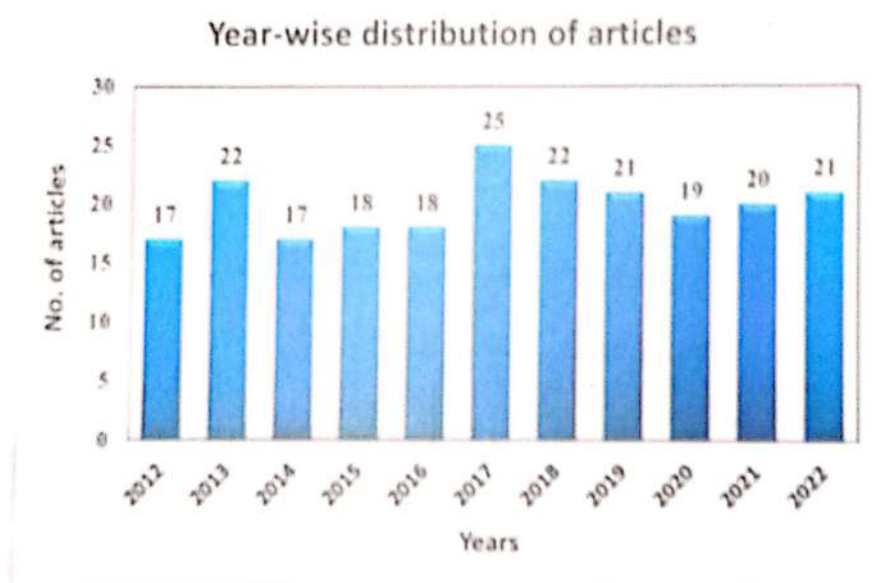


Figure 1: Year-wise distribution of articles

4.1.2 Issue-wise distribution of articles

Data displayed in table 2 discusses issue-wise distribution of articles. It is found that Issue I is leading with 113 articles published during the study period

however Issues II has 107 articles. Further it can be analysed that Volume 16 and 26 has lower article rate in Issue I than in Issue II whereas all the issues I in Volume 17 to 25 has more publications.

Table 2: Issue-wise distribution of articles

Year	Volume	Articles		Total Articles	Percentage
		Issue I	Issue II		
2012	16	7	10	17	7.73%
2013	17	12	10	22	10.00%
2014	18	9	8	17	7.73%
2015	19	9	9	18	8.18%
2016	20	9	9	18	8.18%
2017	21	13	12	25	11.36%
2018	22	12	10	22	10.00%
2019	23	11	10	21	9.55%
2020	24	11	8	19	8.64%
2021	25	10	10	20	9.09%
2022	26	10	11	21	9.55
Total		113	107	220	100%

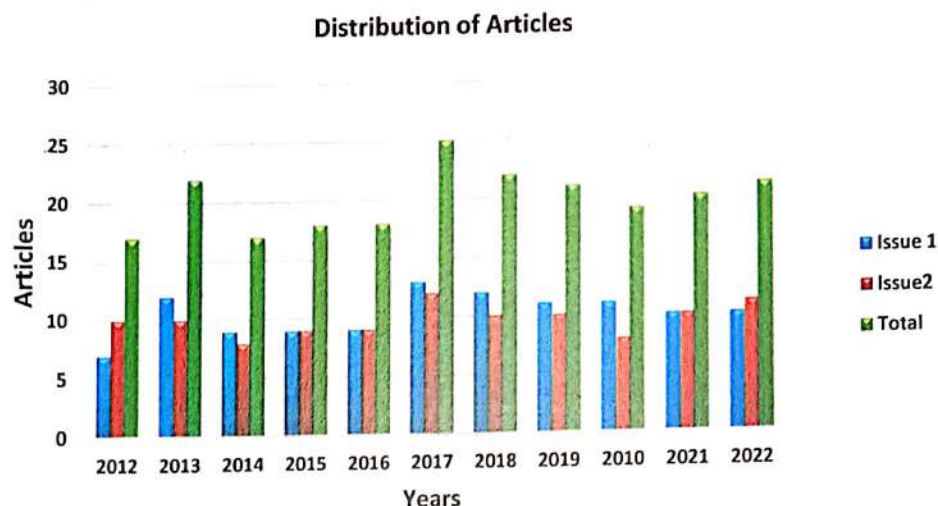


Figure 2: Issue-wise distribution of articles

4.1.2 Authorship pattern of articles (volume-wise)

To understand the authorship pattern of the articles the classification of articles is done as single author, two authors, three authors and four authors. Table 4 describes the volume-wise authorship pattern of articles. It can be known that out of 220 articles the majority of the contribution with 139 articles are double authored and minimum number with only 2 articles are authored by 4 authors. Single authored articles records the 2nd highest number with 60 articles followed by 19 articles with three authored. It also shows that Volume No. 21 published in the year 2017 has the highest number of 18 articles by two authors.

Table 3: Authorship Pattern of Articles (Volume – wise)

Year	Volume No.	Authorship Patttern				Total
		Single Author	Two Authors	Three Authors	Four Authors	
2012	16	6	9	2	0	17
2013	17	8	13	1	0	22
2014	18	5	12	0	0	17
2015	19	7	11	0	0	18
2016	20	1	14	3	0	18
2017	21	6	18	0	1	25
2018	22	6	14	2	0	22
2019	23	8	11	2	0	21
2020	24	3	13	3	0	19
2021	25	8	8	4	0	20
2022	26	2	16	2	1	21
Total		60	139	19	2	220

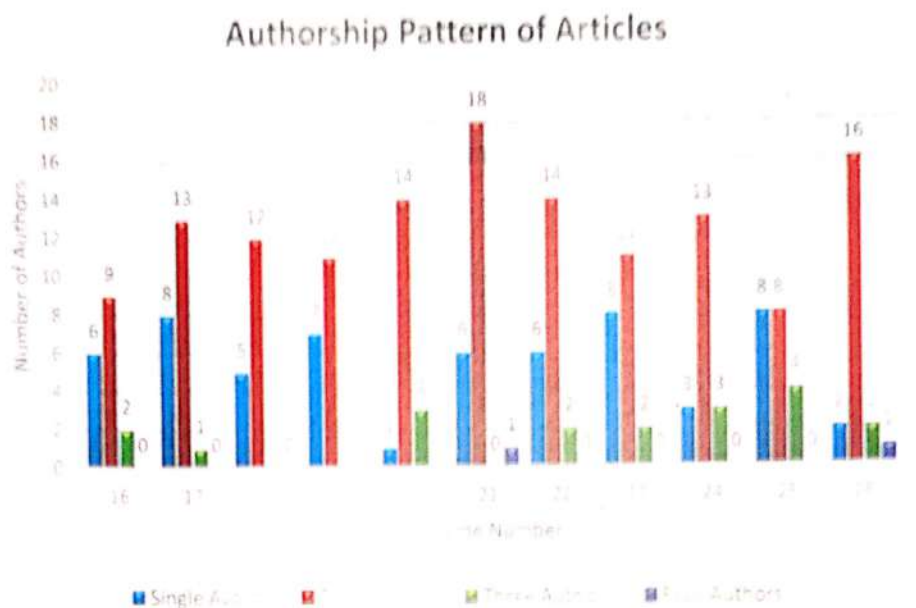


Figure 3: Authorship Pattern of Articles (Volume – wise)

4.1.3 Authorship Pattern Single/multiple

Table 4 and figure 3 shows the low percent of single authorship and high percent of multiple authorship. It can be seen that KELPRO Bulletin has only 60 single authored articles which are very less as compared to multiple authored articles that has 160 articles. This clearly reflects the trend of multiple authorship.

Table 4: Authorship pattern

Authorship	No. of Articles	Percentage
Single	60	27.27%
Multiple	160	72.73%
Total	220	100

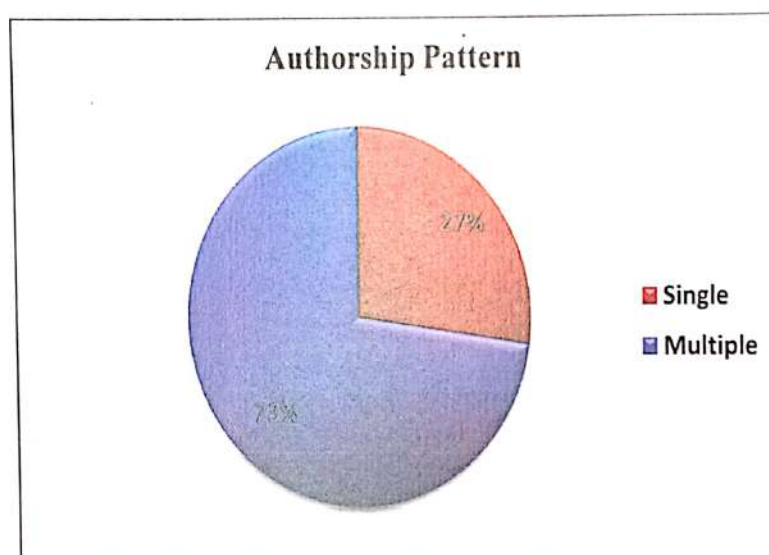


Figure 3: Authorship pattern single/multiple

4.2 Degree of collaboration

K Subramanyam's formula has been used to calculate the degree of collaboration.

$$C = \frac{NM}{NM + NS}$$

C= Degree of collaboration

Nm= Number of multi-authored articles

Ns= Number of single authored articles

The table indicates the fluctuation in the level of collaboration among authors.

Higher degree of collaboration can be seen in 2016 and 2022 and lower in 2015 and 2021. However the overall degree of collaboration is 0.73%.

Table 5: Degree of collaboration

Year	No. of Authors		Total	Degree of collaboration
	Single	Multiple		
2012	6	11	17	0.65
2013	8	14	22	0.64
2014	5	12	17	0.71
2015	7	11	18	0.61
2016	1	17	18	0.94
2017	6	19	25	0.76
2018	6	16	22	0.73
2019	8	13	21	0.62
2020	3	16	19	0.84
2021	8	12	20	0.60
2022	2	19	21	0.90
Total	60	160	220	0.73

4.3 Issue-wise distribution of references

Table 6 that presents the issue-wise distribution of references from Volume 16 to Volume 26 uncovering the total number of references cited by 220 articles published across 11 years in the study. It has total 4619 references out of which 2442 references in issues No.1 marked highest while the remaining 2177 references stood lowest in the issues No.2. Overall, it is observable that the issues published in volume 24 have more references in total.

Table 6: Issue-wise distribution of references

Year	Vol.	Issue 1 and 2		Total References	Percentage
2012	16	302	198	500	10.82%
2013	17	237	168	405	8.77%
2014	18	189	180	369	7.99%
2015	19	169	176	345	7.47%
2016	20	187	169	356	7.71%
2017	21	257	251	508	11.00%
2018	22	215	147	362	7.84%
2019	23	234	177	411	8.90%
2020	24	266	247	513	11.11%
2021	25	212	207	419	9.07%
2022	26	174	257	431	9.33%
Total		2442	2177	4619	100.00%

Table 7: Length of Articles

Year	Pages					Total
	1 to 5	6 to 10	11 to 15	16 to 20	more than 20	
2012	1	11	3	1	1	17
2013	0	12	7	2	1	22
2014	1	5	9	1	1	17
2015	1	7	7	3	0	18
2016	0	3	13	2	0	18
2017	0	7	15	1	2	25
2018	0	12	10	0	0	22
2019	0	5	14	2	0	21
2020	0	3	10	6	0	19
2021	1	3	13	2	1	20
2022	0	3	13	5	0	21
Total	4	71	114	25	6	220
Percentage	1.82%	32.27%	51.82%	11.36%	2.73%	100.00%

4.5 Geographical distribution of articles (Top 5 states)

The table shows the top 5 contributing states when it comes to the publication of articles in KELPRO. There are other states contributing but the percentage is very low. It can be interpreted that the maximum publication is being done by the library professionals or scholars from the state of Kerala.

Table 8: Top 5 contributing states

Sr. No.	States	Frequency of articles	Percentage
1	Kerala	98	57.99%
2	Karnataka	39	23.08%
3	Tamil Nadu	22	13.02%
4	Andra Pradesh	6	3.55%
5	Punjab	4	2.37%
Total		169	100.00%

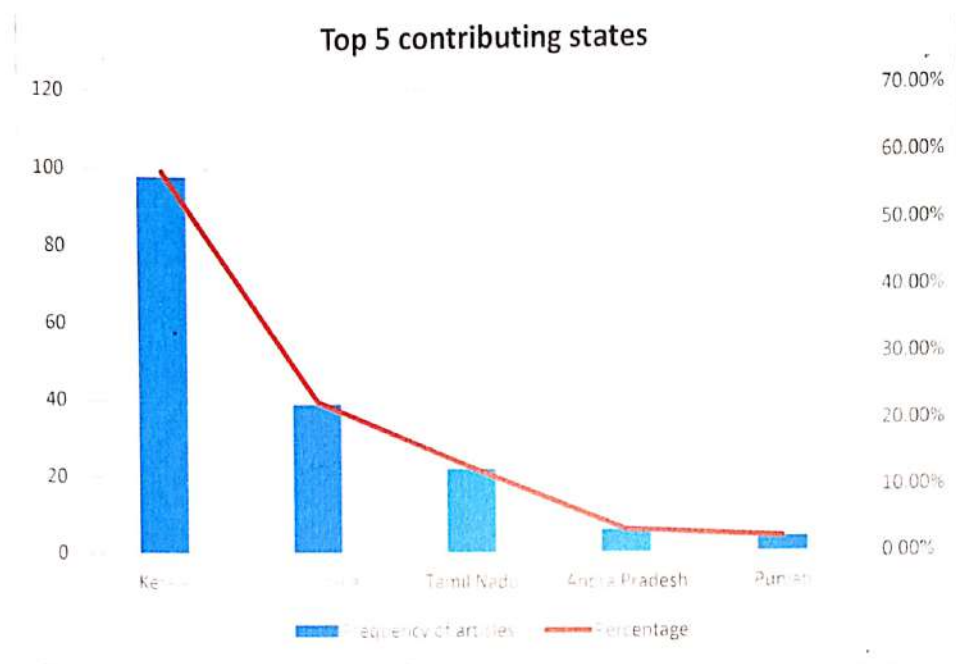


Figure 8: Top 5 contributing states

The above table indicates the contribution of top 5 states towards publication of articles. Kerala is the highest with 98 publications and Punjab is the lowest with only 4 publications.

4.6 Top ten productive authors

The following table and graph provide an insight on the top 10 productive authors based on the articles they have published.

Dr. Humayoon Kabir. S is ranked first with 10 articles being published by him.

Table 9: Top 10 productive authors

Sr No.	Authors	No. of Articles
1	Dr. Humayoon Kabir. S	10
2	Dr. Vijayakumar K. P.	7
3	Dr. Mohamed Hancefa K.	6
4	Dr. V.J. Suseela	5
5	Dr. A. Gopikuttan	5
6	Dr.Jalaja.V	4
7	Dr V.Uma	4
8	Dr.Vasudevan T.M.	4
9	Renjith V.R.	4
10	Arunkumar V. R.	4

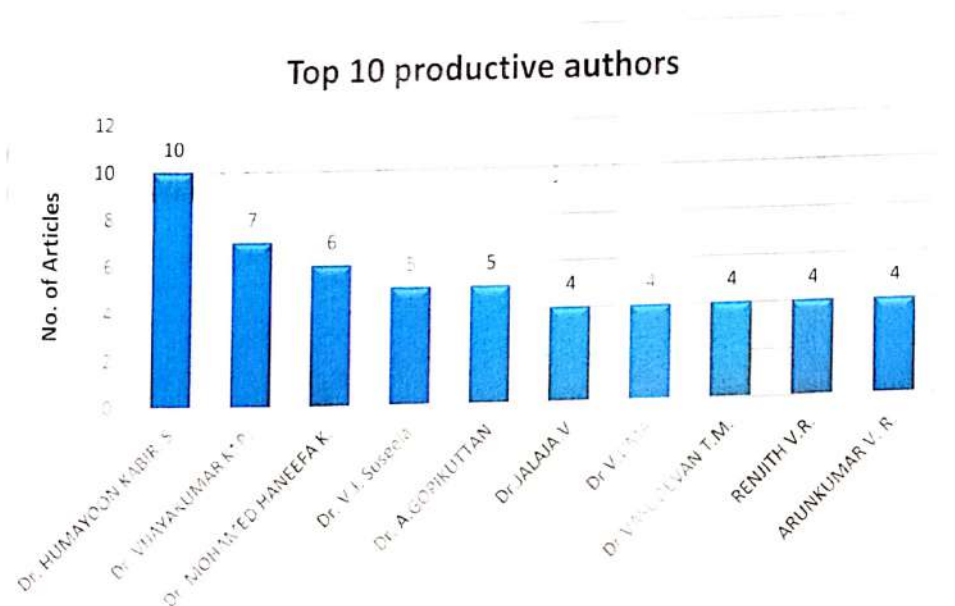


Figure 9: Top 10 productive authors

4.7 Conclusion

This bibliometric study presents a valuable information about the publication behavior of the KELPRO Bulletin, emphasizing patterns in the writing of articles, authorship, collaboration, citation practices, preferred article lengths, and regional contribution.

CHAPTER - 5

FINDINGS AND

SUGGESTIONS

5.0 Introduction

This chapter deals with the major findings, recommendations and suggestions of/ for the study.

5.1 Major findings

1. There is no steady increase or downfall in publication pattern of articles in the 11 years of study period.
2. Majority of the publications can be seen in first half of the years.
3. Volume 21 in 2017 had the greatest number of articles with 11.36% out of all publications.
4. Volumes 16 and 18 had the least number of contributions accounting for 7.73% to the total.
5. Multiple authorship is highly preferred by researchers over single authorship.
6. Double authored articles were the most common accounting for 63.18% of all publications.
7. Single authored articles made up 27.27% of the total publications.
8. The degree of collaboration differs, with higher levels seen in 2022 and 2016.
9. The overall coverage level of collaboration was 0.73%.
10. With the most reference overall, volume 24 had rich citations.
11. In all volumes, Issue I referenced a greater number of references than Issue II.

12. A large number of articles (51.82%) were between 11 and 15 pages in length and only 2.73% of the articles were longer than 20 pages, indicating a smaller number.
13. Researchers rarely write articles within 5 pages.
14. Articles are mostly written in 11-15 pages and coverage of articles between 1-5 pages is rare.
15. Kerala is leading state to publish in the "KELPRO Bulletin".

5.2 Suggestions

1. Comparative bibliometric study can be conducted between two journals to understand the distinct factors of the journals in a particular field.
2. Considering volumes from the commencement of the Journal would give better insights of trends and influence of journal.
3. Journal should also include papers exceeding four authors.
4. Mentioning the subject of the paper in the content page of the issues would help readers to quickly find paper of subject interest.

CHAPTER - 6

CONCLUSION

6.0 Conclusion

The analysis of the KELPRO Bulletin's articles between 2012 and 2022 identifies a number of significant trends and patterns. With the 11.36% of all articles published, Volume 21 of 2017 has the most articles published and the lowest percentage of articles (7.73% were found in volumes 2012 and 2014, demonstrating the variation in publication rates between years.

With 113 contributions, Issue I was in the lead, closely followed by Issue II with 107 items.

Volumes 16 and 26 revealed minor trends within volumes, with article rates flipping between Issue I and Issue II.

Double-authored articles were the most common, making up 63.18% of all articles.

Articles with only one author made up 27.27% of the total, suggesting significant coexistence with multi-authored article.

In 2017, Volume 21 had the most number of double-authored articles.

Collaboration levels peaked in 2016 and 2022, however they varied annually.

The average level of collaboration was 0.73% overall, indicating a moderate degree of shared authoring. With the most references overall, Volume 24 stood out for having a large number of citation sources. In all volumes, Issue I referenced a greater number of references than Issue II. The majority of articles,

1. The first step in the process of the scientific method is to ask a question. This question should be based on observation and should be something that can be tested. For example, "Does the amount of water affect the growth of plants?"

2. The next step is to do background research. This involves looking up information about the topic to see what is already known. This can be done by reading books, articles, or looking up information on the internet.

3. The third step is to form a hypothesis. A hypothesis is a statement that predicts the outcome of the experiment. It should be based on the background research and the question. For example, "If I give a plant more water, then it will grow taller."

4. The fourth step is to design an experiment. This involves deciding what to do, what to measure, and how to control the experiment. The experiment should be designed so that it can test the hypothesis.

5. The fifth step is to collect data. This involves doing the experiment and recording the results. The data should be collected in a way that is accurate and reliable.

6. The sixth step is to analyze the data. This involves looking at the data to see if it supports the hypothesis. This can be done by making a graph or by using statistical analysis.

7. The seventh step is to draw a conclusion. This involves stating whether the hypothesis was supported or not. It should also include a statement about the limitations of the experiment.

BIBLIOGRAPHY



Bibliography

- Alagarsamy, V. (2021). A Bibliometric Analysis of Journal of Advances in Library and Information Science (JALIS) from 201-2020: An International Online Journal. *Library Philosophy and Prattice (e-journal)*.
- Behera, P. (2022). Bibliometric study of International Journal of Library Science. *Indian Journal of Liibrary and Informaton Technology*, 7(2), 109-112. doi:10.18231/j.ijlsit.2022.019
- Das, D. (2021). Journal of Informetrics: A Bibliometric Study. *Library Philosophy and Practicce (e-journal)*.
- Das, I. (2021). A Bibliometric study on World Digital Libraries - An International Journal (2008-2020). *Library Philosophy and Practice (e-journal)*.
- Deshmukh, P. P. (2019). *Bibliometrics*. Kanpur: Garrima Prakashan.
- Devarajan, G. (1997). *Bibliometric Studies*. New Delhi: Ess Ess Publications.
- Devarajan, G. (1997). *Bibliometric Studies*.
- Gaur, P., & Verma, N. (2022). Communicator Journal: A Bibliometric Study of Decade (2010-2020). *International Journal of Research in Library Science (IJRLS)*, 8(3), 49-57. Retrieved August 27, 2023
- Hakkaraki, V. P. (2022). A Bibliometric Study of Asian Journal of Information Science And Technology (AJIST). *Asiaan Journal of Information science and technology*, 12(1), 34-38. doi:10.51983/ajist-2022.12.1.3090
- Hassan, R., Chhabra, M., Shahzad, A., Fox, D., & Hasan, S. (2021). A Bibliometric Analysis of Journal of International Women's Studies for

Period of 2002-2019: Current Status, Development, and Future Research Directions. *Journal of International Women's Studies*.

Kale, A. S. (2023). Bibliometric study of Journal of Web Librarianship from 2016 to 2022. *Internal Journal for Multidisciplinary Research*, 5(1). doi:10.36948/ijfmr.2023.

Kumar, A., & Verma, S. (2021). Journal of Library and Information Science: A Bibliometric Study from 2013-2020. *Library Philosophy and Practice (e-journal)*.

Mahapatra, G. (2013). *Bibliometric Studies in The Internet Era*. New Delhi: Indiana Publishing House.

Nayak, S., Parida, D. K., Verma, N., & Hari, P. K. (2021). Bibliometric Analysis of the ASLIB Journal of Information Management from 2014 to 2021. *Library philosophy and Practice (e-journal)*.

Panda, S. (2021). Analysis of published research in IP Indian Journal of Library Science and Information Technology: a bibliometric study during 2016-2020. *IP Indian Journal of Library Science and Information Technology*, 6(1), 20-29. doi:10.18231-J.IJLSIT.2021.006

Paredes- Gallardo, V. (2023). Scientific Production of an oral Implantology Journal: a 5-year bibliometric study. *Scientometrics*, 128(6).

Singh, K., Singh, M., Patel, A. K., T K, G. K., Nayak, S., & Patel, A. K. (2021). Research Prouctivity of DESIDOC Journal of Linbrary and Information Technology: A Bibliometric Review. *Library Philosophy abd Practice*.

Sudhier, K. (2017). *Informetric Studies*. Delhi: B.R. Publishing Corporation.

Sudhier, K. G. (2017). *Informetric Studies*. Delhi: B.R. Publishing Corporation.

Swain, C., & Kohila, G. (2022). Scholarly communication of International Journal of social economics: a bibliometric study. *KIIT journal of library and information management*, 9(2), 58-71. doi:10.5958/2455-8060.2022.00008.8

Yu, D., & Xu, Z. (2019). Bibliometric analysis of the Journal of Civil Engineering and Management between 2008 ad 2018. *Journal of Civill Engineering and Management*, 25(5), 402-410. Retrieved July 3, 2023

ANNEXURE



Annexures

Synopsis

WE'RE AHEAD PROPOSAL

Excluded

¹ A Bibliometric study of R&D PPTs Database from 2018 - 2022²

Submitted to

Osaka University

For

Fulfillment of the requirements for the award of Degree of Library and Information

Science (M.L.I.Sc.)

Library and Information Science Programme

Under

Dr. D. K. Kulkarni School of Social Sciences and Behavioural Studies

By

Miss Ajanta Suresh Vally

(B.A., B.L.I.Sc.)

Under the Guidance of

Miss Snehal Ramakrishna Vaidyanathan

M.Sc., B.Ed., M.L.I.Sc. (NET)

Assistant Professor,

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OSAKA UNIVERSITY

2023

“A bibliometric study of KELPRO Bulletin from 2018 – 2022”

1.Introduction

Bibliometrics is a broad topic in which several facets of academic literature and information sources are analysed using statistical and quantitative techniques. Bibliometrics is a important tool in any field of research. that examines the significance and status of scholarly works, journals, via publishing trends and citation patterns. Bibliometrics offers important insights into the spread of information, the development of study disciplines and the identification of significant works and authors through the use of data driven methodology.

The term “bibliometrics” is derived from the words “biblio” and “metric”. Biblio is derived from the Greek word “biblion”, which means book or scroll and mertrics originates from the Greek word “metron” which means measurement . Thus , the term “bibliometrics” is generated by combining these two words which refers to the quantitative measurement and study of books, academic publications and other sources of information. In other words a bibliometric study is a type of research that involves the quantitative analysis of scholarly publication - related bibliographic data by applying mathematical and statistical calculation.

Bibliometric study is often utilized in the field of Library And Information Science . My study will look into the bibliometric study of KELPRO Bulletin.

2.Literature Review

Alagarsamy, V. (2021) in his research found that there was spike in the number of contributions in 2017 but lowered in the later years. There were total 243 articles published by 431 authors during the study period. Out of those highest number of articles were published by double authors followed by single authors and only one article was published by four authors. He also found that papers were mostly published within the subject of scientometrics and bibliometrics with the total number of 79 papers.

The study conducted by Kumar, A., & Dr. Verma, S. (2021) found that total 89 articles were published from 2013-2020 and it had 1,865 citations. It can be seen that majority of the contributors are from Nigeria and highest number of articles were published by joint authors. Authors suggested that study may also be conducted on citations pattern of other journals and disciplines, informatic analysis, webometric analysis, scientometric analysis and chronological authorship pattern.

Patel, R. (2019) conducted study on the Journal Of Management Research And Analysis considering 183 articles published in 5 volumes of the journal from 2014-2018. The study revealed that the highest number of articles were published in volume no.5 by 78 articles and volume no.1 had the least number of contribution that is 11 articles which is very less than vol.no 5. It was also found that contribution made by foreign states was not so great.

Kumar, M. (2014) in his study revealed that majority of the articles were contributed by single authors and highest contribution is from India. The result also showed that contribution made by universities was more.

3. Objective of the study

1. To examine authorship productivity
2. To find the average length of articles in pages.
3. To analyse authorship pattern
4. To know the subject coverage of contribution
5. To reveal the geographical distribution of articles in terms of states.

4. Hypothesis

1. The frequency of multi-authored papers has increased, suggesting a trend towards collaborative research in the journal.
2. The publication of the journal has remained steady over time.
3. The average article length has shown a steady increase over the years, indicating a trend towards longer articles in the journal.

5. Scope and limitations of the study

The study is limited to only one journal and publications are included published only in 5 volumes i.e volume 22 to 26 published from 2018-2022.

KELPRO is a UGC approved bi-annual journal in Library and Information Science. This study will help to observe the growth of literature and research trends and to know journal's performance.

6. Research Methodology

Research methodology is the specific procedure by which reader can get insight of what and how will be invested in the study. There is a qualitative and quantitative research method. This study is based on the quantitative research methodology i.e bibliometric study.

a) Focus group

Research will be conducted by studying all the articles published in the KELPRO Bulletin during the period of 5 years from Vol. no: 22 to Vol.no: 26 containing 10 issues.

b) Tools used

MS-Excel will be used to store, calculate and analyse the collected data. Data will be represented in tabular form and using graphs.

c) Data collection will be done by downloading articles published in the journal from the website of "KELPRO Bulletin" and recording all the bibliographic details of articles such as length of the article, authorship pattern, geographical distribution of articles etc.

7. Organization of the study

Chapter 1 - Introduction

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- [1] D. G. Lax, *Mathematical physics*, 3rd ed., Wiley, New York, 1978.

international online journal. *Library Philosophy and Practice (e-journal)*, 5128. <https://digitalcommons.unl.edu/libphilprac/5128>

2. Kumar, A., & Verma, S. (2021). Journal of Library and Information Science: A Bibliometric Study from 2013-2020. *Library Philosophy and Practice (e-journal)*, 6145. <https://digitalcommons.unl.edu/libphilprac/6145>
3. Patel, R. (2019). A bibliometric study: Journal of management research and analysis. *Journal of Management Research and Analysis*, 6(2), 93-97. <http://doi.org/10.18231/j.jmra.2019.017>