



***PRAJÑĀ* (Journal of Banaras Hindu University) : exploring through bibliometric analysis**

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Abstract

This article delves into a comprehensive bibliometric analysis of the *Prajñā* journal, meticulously scrutinising 505 articles published between 2014-2015 and 2019-2020, spanning six years. The study meticulously evaluates various parameters including the total count of authors, authorship patterns, year-wise article distribution, reference allocation, language utilisation, and the extent of collaborative efforts, alongside author productivity. Employing bibliometric analysis as the methodological framework underscores the rigor of this investigation. The findings elucidate that the *Prajñā* journal maintained a biannual publication frequency from 2014 to 2020, encompassing 505 articles authored by 810 individuals. Remarkably, single-authored contributions constituted 240 articles (47.52%), while collaborative endeavours yielded 265 articles (52.48%). The degree of collaboration within the *Prajñā* journal was quantified utilising Subramanyam's formula, revealing a consistent output of 505 articles over the six years. Moreover, the cumulative citations of published articles amounted to 7,588 references, with a notable emphasis on contributions from multiple authors.

Keywords: Authorship pattern, Banaras Hindu University, Bibliometric analysis, Citation analysis, Collaboration in research, *Prajñā* journal, Scholarly publications

1. Introduction

The term "bibliometric" is derived from two Greek words, '*biblion*' meaning 'book' and '*metrikos*' meaning 'measure'. In 1969, Alan Pritchard introduced the English version of bibliometric in his paper titled "Statistical Bibliography or Bibliometric," defining it as the "mathematical and statistical applications of methods to magazines, books, and other communication media." (Bibliometrics - Wikipedia, n.d.). Bibliometric analysis entails the application of statistical and mathematical techniques to analyse various forms of publications such as books and

articles. This method involves evaluating the quality of journals, guiding publication development through quantitative assessments, and serving as a means to authenticate articles.

Prajñā

The *Prajñā* journal stands as a distinguished research publication affiliated with Banaras Hindu University, maintaining a biannual publication frequency since its inception in 1958 (*Banaras Hindu University, Varanasi, 1958*). It serves as a platform for disseminating scholarly articles across



various domains of Prachi (प्राची) and Pratichi (प्रतिची) knowledge, spanning Hindi, English, and Sanskrit languages. Moreover, it remains steadfast in its mission to perpetuate the visionary ideals of the university's founder through the enrichment of scholarly discourse. With an ISSN of 0554-9884, this journal holds a coveted position within Group B of the UGC CARE list (Banaras Hindu University, 1958).

2. Literature review

Several notable bibliometric analyses have been conducted recently across diverse journals. Selvam and Amudha (2020) explored 176 Library and Information Science journals from the Directory of Open Access Journals, identifying 53,959 articles. Chawla and Goyal (2021) analysed 234 articles from the Web of Science, examining citations and keywords across operational processes, social aspects, applied applications, and organizational impact. Farooq (2021) utilised systematic mapping to assess 669 studies in Knowledge Management from 1997 to 2021, offering insights into theoretical advancements. Aulianto, Annisa and Taufiqi (2021) reviewed 75 articles from Jurnal Lingkungan Dan Bencana Geologi, focusing on authorship patterns and collaborative research. Naheem and Shibu (2015) studied knowledge and communication management, noting publication trends and authorship patterns from 2011 to 2014. Singh (2010) evaluated Banaras Hindu University's chemical literature from 2000 to 2006, emphasising biochemistry's dominance. Bapte (2017) analysed 295 articles in the DESIDOC Journal of Library & Information Technology from 2011 to 2015, highlighting authorship and citation patterns. Garg, Lamba and Singh (2020) scrutinised 1,698 papers in DESIDOC Journal of Library & Information Technology from 1992 to 2019, revealing publication

peaks and international authorship distributions. Partap (2018) reviewed the Indian Journal of Agricultural Library and Information Services from 2008 to 2016, focusing on authorship and collaboration trends. These studies provide comprehensive insights into evolving research landscapes across various disciplines, offering valuable perspectives for scholars and practitioners alike.

3. Objectives

- i) To observe the article distribution pattern during the study period of *Prajñā* Journal from 2014-15 to 2019-20
- ii) To identify the authorship patterns of published articles
- iii) To identify the pattern of language in published articles
- iv) Volume and issue-wise determination of the average number of published articles
- v) To probe the distribution of reference patterns and the average of references per article.

4. Limitations and scope of the study

The scope of this review is delimited to an analysis of distribution patterns within the 6 volumes (12 issues) of the multidisciplinary journal *Prajñā*, published from 2014 to 2020. This study encompasses a comprehensive examination of all 505 articles published within this time frame.

5. Methodology

The requisite data for this analysis was sourced from the online edition of the *Prajñā* journal, accessible at https://bhu.ac.in/research_pub/pragya.php. Extracted from the 6 volumes (12 issues) of this multidisciplinary journal spanning 2014 to 2020, the data was aggregated in alignment with the study's



objectives. Notably, *Prajñā* being a semi-annual publication necessitated the collection of data from all available volumes during the specified period for statistical inference. Subsequently, the encoded data was organised in an MS Excel sheet for result interpretation.

6. Data analysis

6.1 Volume and issue-wise article distribution

Table 1 presents a comprehensive overview of the article distribution within the

Prajñā journal from 2014-15 to 2019-20, focusing on contributions by prolific authors. Notably, a total of 505 articles were published during this period. Analysis reveals intriguing trends: in 2014-15, volume 60 witnessed a peak with 113 articles, while volume 62 in 2016-17 saw the lowest count of 41 articles due to the concurrent release of two issues. Moreover, volumes 64 and 65 of 2018-19 and 2019-20 showcased 84 articles each, whereas volumes 61 and 63 of 2015-16 and 2017-18 boasted 96 and 87 articles respectively, delineating the evolving landscape of scholarly contributions.

Table 1: Article distribution (volume and issue-wise)

Articles distribution						
Publication year	Vol. No.	Issues	Issue 1	Issue 2	Total publications (%)	μ articles/issue
2014-15	60	2	40	73	113 (22.38)	56.50
2015-16	61	2	42	54	96 (19.01)	48.00
2016-17	62	2	41	-	41 (8.12)	20.50
2017-18	63	2	40	47	87 (17.23)	43.50
2018-19	64	2	49	35	84 (16.63)	42.00
2019-20	65	2	47	37	84 (16.63)	42.00
Total		12	259	246	505	

Figure 1: Total Publications (%)

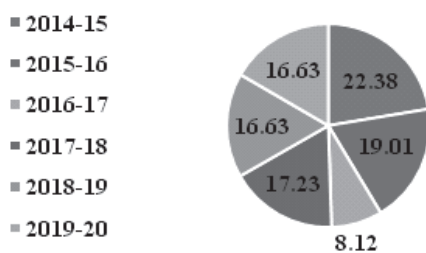
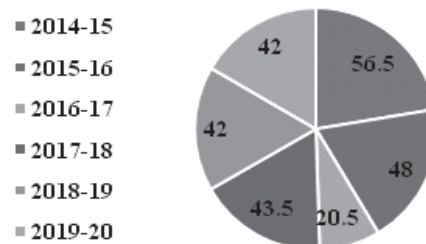


Figure 2: μ articles per issue





6.2 Authorship pattern (volume-wise):

Table 2: Volume-wise authorship pattern

Publication Year	Volume number	1 Author (issue 1 st +2 nd)	2 authors (issue 1 st +2 nd)	3 authors (issue 1 st +2 nd)	4 authors (issue 1 st +2 nd)	5 authors (issue 1 st +2 nd)	6 authors (issue 1 st +2 nd)	Total
2014-15	60	16+35	24+26	0+8	0+3	0+0	0+1	113
2015-16	61	16+37	26+10	0+6	0+1	0+0	0+0	96
2016-17	62	11	29	0	1	0+0	0+0	41
2017-18	63	20+20	17+26	3+1	0+0	0+0	0+0	87
2018-19	64	22+17	26+18	0+0	0+0	1+0	0+0	84
2019-20	65	23+23	20+13	4+1	0+0	0+0	0+0	84
Total		240	235	23	5	1	1	505

Table 2 presents the authorship pattern across volumes of this journal, revealing that among the 505 articles published, 240 were authored by individuals, 235 by two co-authors, 23 by three authors, and 7 by more than four authors. This analysis underscores the significant influence of single and two-

author articles on the publications within the *Prajñā* journal.

6.3 Authorship pattern(issue-wise):

Table 3 provides a detailed and accurate depiction of the distribution patterns of authorship across individual issues.

Table 3: Authorship pattern (issue-wise)

Sl. no.	Authors types	Distribution		Total articles (%)	Cumulative articles (%)
		Issue 1 st	Issue 2 nd		
1	1 author	108	132	240 (47.52)	240 (47.52)
2	2 authors	142	93	235 (46.53)	475 (94.05)
3	3 authors	7	16	23 (4.55)	498 (98.60)
4	4 authors	1	4	5 (1.00)	503 (99.60)
5	5 authors	1	0	1 (0.20)	504 (99.80)
6	6 authors	0	1	1 (0.20)	505 (100)
Total		259	246	505	

6.4 Author productivity of the articles

Table 4: Author productivity

Publication year	Total publications	Total authors	μ publication per author
2014-15	113	193	0.59
2015-16	96	147	0.65
2016-17	41	73	0.56
2017-18	87	138	0.63
2018-19	84	132	0.64
2019-20	84	127	0.66
Total	505	810	0.62



The data presented in table 4 offers insight into the published article productivity of authors within the *Prajñā* journal spanning 2014-15 to 2019-20. Notably, the average publication per author stands at 0.62, derived from a pool of 810 authors contributing to

505 articles. Interestingly, the average author productivity within this journal exhibits fluctuations over time, showcasing both a decrease and an increase across the observed period.

6.5 Language pattern of articles

Table 5 : Language pattern of articles

Vol. No.	Articles Language			Total (%)
	Hindi (%)	English (%)	Sanskrit (%)	
60	48 (9.50)	57 (11.29)	8 (1.58)	113 (22.37)
61	56 (11.09)	38 (7.52)	2 (0.40)	96 (19.01)
62	33 (6.53)	7 (1.39)	1 (0.20)	41 (8.12)
63	64 (12.67)	17 (3.37)	6 (1.19)	87 (17.23)
64	62 (12.28)	16 (3.17)	6 (1.19)	84 (16.64)
65	53 (10.50)	23 (4.55)	8 (1.58)	84 (16.63)
	316 (62.57)	158 (31.29)	31 (6.14)	505 (100)

Table 5 presents an insight into the language preferences observed in the articles. *Prajñā*, being a multidisciplinary journal, showcases a diverse linguistic landscape with articles predominantly published in three languages: Hindi, English, and Sanskrit. Analysis of the journal revealed that Hindi

(62.57%) emerged as the predominant language choice, trailed by English (31.29%) and Sanskrit (6.14%) respectively, underscoring the linguistic richness of its content. The graphical presentation has been given in figure 3.

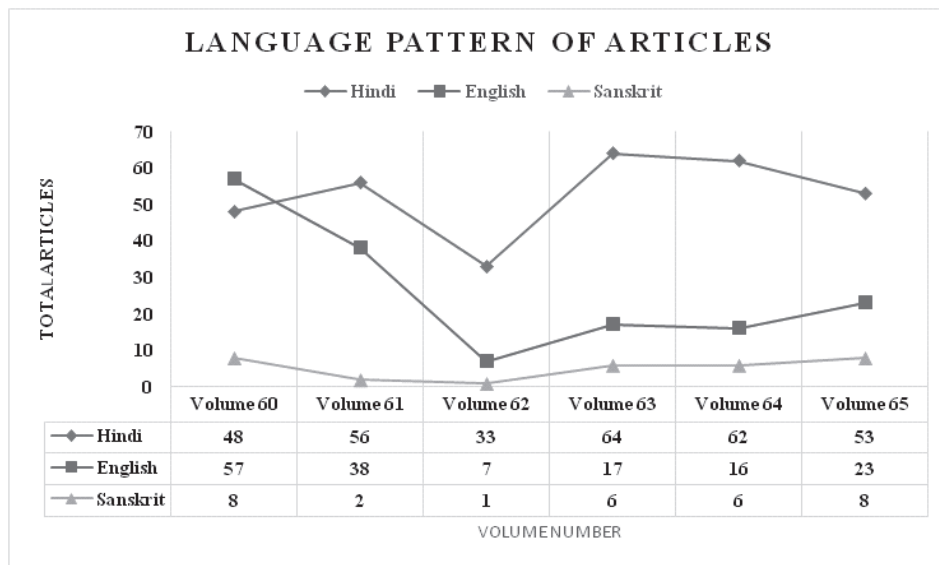


Figure 3: Language pattern



6.6 Degree of collaboration

In this study, the formula provided by Subramaniam in 1983 is used to measure the degree of collaboration (Subramanyam, 1983), and the formula is:

$$DC = \frac{Nm}{Nm + Ns}$$

Where,

DC = Degree of collaboration,

Nm = Number of multi-author research papers,

Ns = Number of single-author research paper

Table 6 : Degree of collaboration

Sl. No.	Publication Year	Publications by Single Author (ns)	Publications by Multiple Authors (nm)	Nm + ns	$DC = \frac{Nm}{Nm + Ns}$
1	2014-15	51	62	113	0.55
2	2015-16	53	43	96	0.45
3	2016-17	11	30	41	0.73
4	2017-18	40	47	87	0.54
5	2018-19	39	45	84	0.53
6	2019-20	46	38	84	0.45
Total		240	265	505	0.52

Table 6 shows the degree of collaboration of articles in source journals during 2014-15 to 2019-20 and concludes that 0.52 is the absolute degree of collaboration,

where 240 (47.52%) articles are single-authored and 265 (52.48%) articles are multi-authored.

6.7 Articles reference distribution pattern

Table 7 : Reference distribution

Publication year	Total articles	Total references		Total references (%)	Cumulative references (%)	μ References per article	
		Issue 1	Issue 2				
2014-15	60	113	714	912	1626 (21.43%)	1626 (21.43%)	14.39
2015-16	61	96	784	475	1259 (16.59%)	2885 (38.02%)	13.11
2016-17	62	41	529	-	529 (6.97%)	3414 (44.99%)	12.90
2017-18	63	87	588	718	1306 (17.21%)	4720 (62.20%)	15.01
2018-19	64	84	867	625	1492 (19.66%)	6212 (81.86%)	17.76
2019-20	65	84	955	421	1376 (18.14%)	7588 (100%)	16.38
Total	505	4437	3151	7588 (100%)			

Table 7 demonstrates the distribution pattern of references to articles published in the journal *Prajñā* from 2014-15 to 2019-20, citing 7588 references in 505 published

papers during the study. A maximum of 1626 references are recorded in volume 60, and the fewest 529 references are recorded in volume 62. The data is depicted in figure 4.

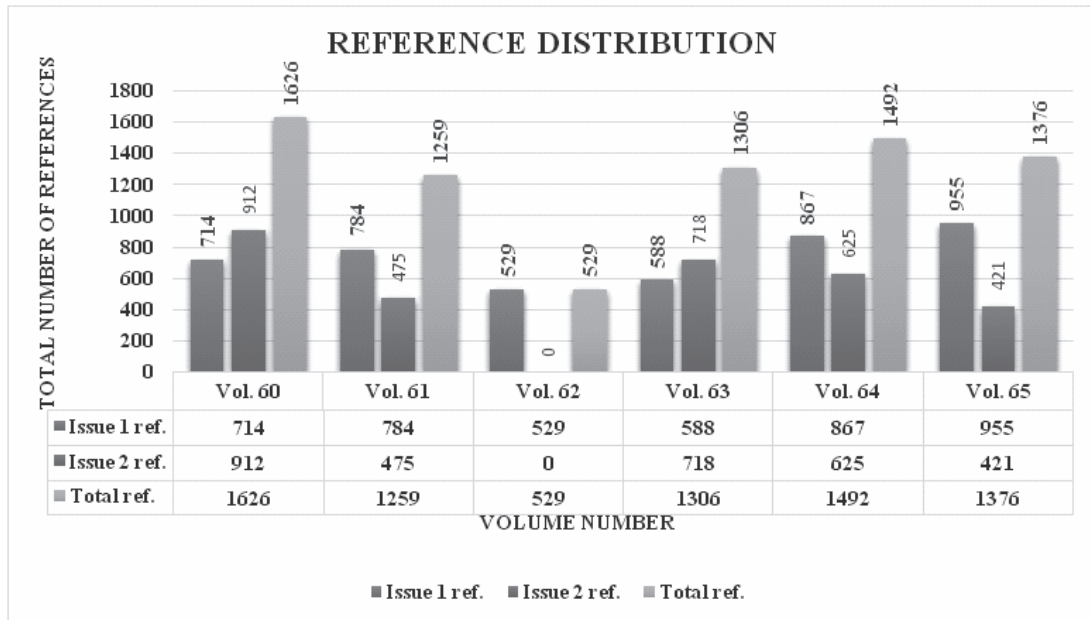


Figure 4: Reference distributionc

7. Discussion

The bibliometric analysis of *Prajñā* journal from 2014-2020 reveals consistent biannual publication with 505 articles authored by 810 individuals. Single-authored works constitute 47.52%, highlighting independent research contributions, while collaborative efforts make up 52.48%. Analysis using Subramanyam's formula indicates sustained collaborative output. Cumulative citations amount to 7,588 references, emphasising scholarly impact. This study underscores *Prajñā* as a platform for diverse scholarly engagement, suggesting further exploration into specific impact metrics for deeper insights into its academic influence.

8. Conclusion

An attempt has been made to depict the bibliometric properties of articles in the bibliometric study of the *Prajñā* journal, revealing insights such as the total number of

articles published (505) from 2014-15 to 2019-20, with volume 60 having the highest publication count (113) and volume 62 the lowest (41); authorship patterns indicating 240 single-author articles, 235 articles with two authors, 23 with three authors, and 7 with more than four authors; an overall author productivity average of 0.62 across 810 authors; dominant language usage with Hindi (62.57%) leading, followed by English (31.29%) and Sanskrit (6.14%); an overall degree of collaboration of 0.52, with 240 (47.52%) articles being single-authored and 265 (52.48%) having multiple authors; and 7588 references cited in the published papers, with volume 60 recording the highest (1626) and volume 62 the lowest (529) citations, underlining the journal's biannual publication by Banaras Hindu University, featuring articles in Hindi, English, and Sanskrit, listed under Group B of the UGC CARE list, welcoming contributions from university faculty, students, and research scholars.



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