Towards Mapping Scholarly Communication Pattern among the LIS Faculty Members of West Bengal: an exploratory study

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Abstract

This study investigates the scholarly publication patterns of Library and Information Science (LIS) faculty members in West Bengal. Its primary aim is to analyse and visualise the publication trends across various universities in the LIS domain. Bibliographical data were gathered from Google Scholar and Google Scholar Profile Databases, and analysed using Pop software to compute bibliometric indicators and conduct statistical analyses for hypothesis testing. The findings reveal that faculty members from Kalyani University have the highest average number of publications, specifically 79. Additionally, Associate Professors contribute more significantly to scholarly output compared to other academic positions. A positive and robust correlation coefficient of 0.6441668 between publications and citations indicates a strong correlation. This study contributes uniquely to the field as no previous research has exclusively explored the publication patterns of LIS faculty members in West Bengal. Its insights are valuable for understanding and bench marking scholarly productivity in this academic discipline within the region.

Keywords: Average publication, Chi-square testing, Gender wise publications, Google scholar, LIS faculty members, Publish-or-Perish scholarly communication

1. Introduction

Scholarly publication is generally interpreted as the dissemination of research findings. To clarify, it represents the documented outcomes of scholars who have expanded their knowledge within their field through the application of scientific theories and methodologies. The various forms of publications typically include scholarly articles, research papers, conference proceedings, and monographs, along with literature reviews. An additional crucial element is that the authors of such publications consistently cite the references upon which their arguments are based, allowing potential readers to verify the accuracy of the information presented and to develop their own informed opinions.

2. Background study

The Bengal Library Association (BLA) initiated the first regular certificate course in Library and Information Science in 1937, marking a significant milestone in the field. Established on 28th December 1925 as the All-Bengal Library Association and renamed on 14th September 1933, BLA aimed to cultivate a skilled workforce for the profession.

Focusing on Library and Information Science (LIS) courses offered by universities in West Bengal, only 11 out of 34 State

Universities have LIS departments. The University of Calcutta (CU) started its Diploma in Library Science programme in January 1945, with a separate training department established in 1959. In the 1969-70 academic session, CU replaced the Diploma program with the Bachelor of Library and Information Science (B. Lib. I. Sc.) postgraduate degree, later adding M. Lib. I. Sc., Ph.D., and M. Phil courses (Biswas, 2021). A 5-year integrated MLIS programme was introduced and later modified in 2017 into a 3-year honors LIS and a 2-year MLIS course to comply with UGC regulations.

Jadavpur University's Department of Library and Information Science was incorporated into the Arts Faculty in 1964. It offered a one-year B. Lib. and Inf. Science course until 1984, after which it introduced a full-time M. Lib and Inf. Science course in 1985. In 2005, the university launched a 2-year evening course for a Post Graduate Diploma in Digital Library Management (PGDDLM) and currently offers a 2-year evening M. Lib. I. Sc (Digital Library) course.

Other universities in West Bengal that began offering LIS courses include Burdwan University in 1965, Vidyasagar University in 1985, Rabindra Bharati University in 1986, the University of North Bengal in 1990, the University of Kalyani in 1991, Cooch Behar Panchanan Barma University in 2017, and West Bengal State University in 2022.

3. Scope

The scope of the study is confined to different perspectives:

- Subject scope: Library and Information Science
- Documentary scope: Published research paper (journal article, conference paper, book chapter, book)

- Language scope: English language document
- Geographical scope: West Bengal
- Personnel scope: LIS faculties

4. Objectives

The main objective of the present study is to understand the scholarly communication of the LIS faculties of West Bengal. The sub-objectives are enumerated below:

I. To analyse the publication trends among LIS faculty members in West Bengal

ii. To investigate the publication patterns of university faculty members in three distinct categories within the field of LIS

iii. To identify universities having maximum number of publications

iv. To draw the publication patterns of LIS faculty members based on gender

v. To explore the publication trends of LIS faculty members across different academic positions.

5. Literature review

Review of literature is a significant activity in research work. Through this researcher has found relevant areas and matching documents for the present study.

In March 2020 Biswas analysed communications of Indian LIS professionals in LIS-Forum from January 2014 to December 2018, highlighting positive aspects like events, training, job vacancies, and professional discussions that aid development. Das and Parabhoi (2020) carried out the research contribution of LIS women faculty of India between 1988 to 2018. This study emphasised the type of publications, most productive work and most

top cited paper published by the LIS women faculty of India. Panneerselvam (2018) conducted a case study about influencing factors for scholarly publications. This study investigated the faculty who are involved in scholarly publications and understand the positive and negative factors which influence scholarly publication. Bhui and Sahu (2018) evaluated the citation count of article publications in journals by faculty members in the Humanities and Social Science (HSS) Departments of Indian Institute of Technology (IIT) Kharagpur. Dabas and Kumar (2017) focused on authorship patterns, and research interest of women faculty in the discipline of physics.

Radhakrishnan and Velmurugan (2015) studied publishing trends, authorship patterns and types of documents among the academic and research community of Periyar University during the period 1998 - 2014.Adkins and Budd (2006) published a corrigendum to scholarly productivity of U.S. LIS faculty. They can be measured through research productivity publication and citation rates. On the otherhand, Pettigrew and Nicholls (1994) examined the publication patterns of Library and information science (LIS) school faculty. This study has especially focused on the publication productivity of the Ph.D. programme.

6. Methodology

Initially, data was gathered from the websites of 14 universities and discussed with a senior instructor. Subsequently, the publication information of Library and Information Science (LIS) faculty members was obtained in September 2023 from the Google Scholar Profile database through the utilisation of the 'Publish or Perish' software. In instances where certain LIS faculty members had not established a Google Scholar Profile, the Google Scholar Database was utilised. The organisation and analysis of the collected data were conducted using MS-Excel for tabulation purposes.

7 Data analysis and interpretation

7.1 *University wise average publication of LIS faculties in West Bengal*

The average number of publications i.e., the number of publications per LIS faculty of different universities of West Bengal is shown in following table1.

Table 1: Average number of publications of LIS faculty members of different universities of W.B.

Name of the Universities	Number of publications per faculty member (Average number of publications of LIS faculty member)
University of Kalyani	79
Jadavpur University	57
Vidyasagar University	32.8
University of Gour Banga	31.5
Burdwan University	31
Calcutta University	26
Rabindra Bharati University	24.34
University of North Bengal	19.67
Netaji Subhas Open University	10.25
CoochBehar Panchanan Barma University	02
Bankura University	00
Sadhu Ram Chand Murmu University	00
Sidho-Kanho-Birsha University	00
West Bengal State University	00

This graphical representation illustrates the maximum number of publications per faculty originating from University of Kalyani, score of 79. Conversely, the minimum number, which is zero, for four universities namely Bankura University, Sidho Kanu University, Sadhu Ram Chad University, and West Bengal State University, is omitted from the visual display. This is probably because of no/insufficient permanent faculty member.

7.2 Designation wise distribution number of university faculties and average number of publications of LIS in West Bengal

Table 2 shows the number of university faculties and the average number of publications by designation.

Table 2: Designation wise distribution number of university faculties and average number of publications of LIS in West Bengal

Designation	Number of faculties	Average number of Publications
Professor	17	38.42
Associate Professor	08	45
Assistant Professor	13	10.307

Table 2 shows the distribution of 38 faculty members by rank and their average number of publications. There are 17 Professors, 8 Associate Professors, and 13 Assistant Professors. Associate Professors have the highest average publication count with 45, while Assistant Professors average 10.31 publications. These insights are crucial for enhancing research productivity and making informed decisions to support institutional growth and faculty advancement.

7.3 Gender wise division of university faculties and average number of Publications LIS in West Bengal

Gender wise division of university faculties and average publications LIS in West Bengal is shown in following table 3.

Table 3: Gender wise division of university faculties and average publications LIS in West Bengal

Gender	Numbers of faculties	Average number of publications
Male	30	34.66
Female	08	13.38

It is apparent from table 3 that, on average, males have a higher number of publications (34.77) in comparison to females (13.38).

7.4 Experience wise publication pattern of LIS faculties

Table 4 shows the experience wise publication pattern of LIS faculties.

Table 4: Experience wise publication pattern of LIS faculties

Year	Number of faculties	Publications	Average number of publications
>20	11	531	48.28
10-20	14	408	29.15
0-10	13	222	17.07

Table 4 illustrates the publication patterns among 38 Library and Information Science faculty members, categorised by experience: 0-10, 10-20, and over 20 years. The 0-10 years group, with 13 faculty members, contributed 223 publications, averaging 17.16 each. The 10-20 years group, with 14 members, produced 408 publications, while the over 20 years group, with 11 members, authored 531 publications, averaging 48.28 each. This data shows that faculty with over 20 years of experience have the highest average publication rate, whereas those with 0-10 years have the lowest. The table effectively highlights the correlation between research productivity and years of experience, establishing a clear relationship between experience level and average publication output.

7.5 *Association between different variables*

7.5.1 *Association between gender and number of publications*

For this association testing, we have done Chi-square test. The Chi-square test statistic was calculated using following formula:

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

Here O denotes the observed frequency and E denotes the expected frequency for a particular cell. The calculated value of chi-square exceeds the tabulated value for the given degree of freedom and at a specified level the null hypothesis is rejected. Here Degree of freedom (d. f) = (Number of rows - 1) X (Number of Columns -1) = (4-1) x (2-1) = 3.

Table 5: Association between gender and number of publications

Gender	Number of Publications				Total
	Small (0-50)	**Medium (50 – 100)**	**Large (100 – 150)**	**Extra Large (150 – 200)**	
Male	25	02	02	01	30
Female	08	00	00	00	08
Total	33	02	02	01	38

Calculation of Expected Frequencies

Table 6: Calculation of expected frequencies

Gender	Small (0-50)	Medium (50 – 100)	Large (100 – 150)	Extra Large (150 – 200)	Total
Male	26.06	1.57	1.57	0.78	30
Female	6.95	0.43	0.43	0.23	08
Total	33.01	2	2	1.01	38

Table 5 categorises 38 faculty members by gender (Male and Female) and publication count (small, medium, large, extra-large). A Chi-square test was conducted to assess the association between gender and publication count. The computed Chi-square value of 1.58, using R software, is lower than the tabulated value of 7.815 at a 5% significance level with 3 degrees of freedom. Since the observed value is lower, the null hypothesis is accepted, indicating that gender and the number of publications are independent variables with no significant association between them.

7.5.2 *Association between designation and number of publications*

Table 7: Association between designation and number of publications

Designation	Number of Publications				Total
	Small (0-50)	Medium (50 – 100)	Large (100 – 150)	Extra Large (150 – 200)	
Professor	15	00	01	01	17
Associate Professor	05	02	01	00	08
Assistant Professor	13	00	00	00	13
Total	33	02	02	01	38

Table 7 illustrates the distribution of the 38 faculties based on their designation (Professor, Associate Professor, and Assistant Professor) and the categorisation of their publications into four distinct groups. It aims to examine the potential association between the two variables - designation and number of publications. With 6 degrees of freedom, the critical value of the Chi-square test at a significance level of 5% is determined to be 12.59. Given that the observed value (10.47) falls below the critical value of 5%, we can infer that the null hypothesis is accepted. Thus, we conclude that the designation and publication categories are independent, indicating no association between them.

7.5.3 *Association between experience and number of publications*

Table 8: Association between experience and number of publications

Year	Number of Publications				Total
	Small (0-50)	Medium (50 – 100)	Large (100 – 150)	Extra Large (150 – 200)	
>20	09	00	01	01	11
10 – 20	12	01	01	00	14
0 – 10	12	01	00	00	13
Total	33	02	02	01	38

Table 8 illustrates the categorisation of the 38 faculties based on their levels of experience (>20, 10-20, 0-10) and the distribution of their publications into four distinct groups. It aims to examine the potential association between the two factors: experience and number of publications. With 6 degrees of freedom, the critical value for the chi-square test at a significance level of 5% is determined to be 12.59. Given that the observed value (4.55) falls below the 5% critical value, the conclusion is made to accept the null hypothesis. This leads to the inference that experience and publication outputs are independent of each other, indicating a lack of association between them.

Table 9: Co-relation between number of publications and citations of the individual faculties

Sl. No.	1	2	3	4	5	6	7	8	9	10	11
Publications (x)	42	36	31	16	19	40	19	54	3	9	175
Citations (y)	94	291	57	45	68	138	22	398	0	8	112

Sl. No.	12	13	14	15	16	17	18	19	20	21	22	23
Publications (x)	8	36	49	2	8	40	23	140	81	16	10	24
Citations (y)	16	41	68	0	8	17	24	752	103	28	3	175

Sl. No.	24	25	26	27	28	39	30	31	32	33	34	35
Publication (x)	19	7	104	13	3	23	2	31	4	26	10	37
Citations (y)	29	12	242	38	10	6	0	59	4	54	2	30

The correlation matrix illustrates the correlation coefficients, representing the extent of the linear association between the quantity of publications and citations. In cases where the two variables exhibit simultaneous increments or decrements, the correlation coefficient is positive. Specifically, the correlation coefficient value stands at 0.6441668, denoting a positive linear correlation between publications and citations, indicative of a moderately positive relationship between the variables.

Table 10 : Top 10 authors as per the publication and citations

Sl. No.	Authors	Publications
1	Dr. Subarna Kumar Das	175
2	Dr. Parthasarathi Mukhopadhyay	140
3	Dr. Bidyarthi Dutta	104
4	Dr. Sibsankar Jana	81
5	Dr. Bijan Kumar Roy	54
6	Dr. Saptarshi Ghosh	49
7	Dr. Pijush Kanti Panigrahi	42
8	Dr. Sabuj Kumar Chaudhuri	40
	Dr. Prabin Karkee	
9	Dr. Ziar Rahman	37
10	Dr. Udayan Bhattacharya	36

Sl. No.	Authors	Citations
1	Dr. Parthasarathi Mukhopadhyay	752
2	Dr. Bijan Kumar Roy	398
3	Dr. Biplab Chakrabarti	291
4	Dr. Bidyarthi Dutta	242
5	Dr. Durga Sankar Rath	175
6	Dr. Sabuj Kumar Chaudhuri	138
7	Dr. Subarna Kumar Das	112
8	Dr. Sibsankar Jana	103
9	Dr. Pijush Kanti Panigrahi	94
10	Dr. Saptarshi Ghosh	68
	Dr. Susmita Chakraborty	

The top 10 authors as per the number of publication and citations in LIS faculty in West Bengal are listed in table 10. According to this table, Dr. Subarna Kumar Das has the most publications with 175 and the most citations with 752, followed by Dr. Parthasarathi Mukhopadhyay with 140 publications and Dr. Bijan Kumar Roy with 398 citations. This could mean that they are more engaged than other writers in the LIS field. Articles are often contributed to journals.

Table 11:Top 10 authors as per the H-index and G-index

Sl. No.	Authors	H-index
1	Dr.Parthasarathi Mukhopadhyay	15
2	Dr. Bijan Kumar Roy	12
3	Dr. Bidyarthi Dutta	8
4	Dr. Biplab Chakrabarti	7
5	Dr. Sibsankar Jana Dr. Sabuj Kumar Chaudhuri Dr. Subarna Kumar Das	6
6	Dr. Pijush Kanti Panigrahi Dr. Durga Sankar Rath Dr. Rajesh Das Dr. Saptarshi Ghosh Dr. Udayan Bhattacharya Dr. Sudip Ranjan Hatua	5
7	Dr. Arabinda Maity Dr. Nivedita Bhattacharyya Dr. Susmita Chakraborty Dr. Swapna Banerjee Dr. Ziar Rahman Mr. Sabuj Dasgupta	4
8	Dr. Prabin Karkee Dr. Tridib Tripathi	3
9	Dr. Arun Kumar Chakraborty Dr. Santanu Das Dr. Tapan Barui Dr. Sunil Kumar Chatterjee Dr. Parikshit Mondal	2
10	Dr. Barnali Roy Choudhuri Dr. Snigdha Naskar Dr. Pijush Kanti Jana Dr. Soumen Mallik	1

Sl. No.	Authors	G-index
1	Dr.Parthasarathi Mukhopadhyay	22
2	Dr. Bijan Kumar Roy	18
3	Dr. Biplab Chakrabarti	16
4	Dr. Durga Sankar Rath	13
5	Dr. Bidyarthi Dutta	12
6	Dr. Sabuj Kumar Chaudhuri	11
7	Dr. Sibsankar Jana	9
8	Dr. Pijush Kanti Panigrahi Dr. Subarna Kumar Das Dr. Susmita Chakraborty	8
9	Dr. Arabinda Maity Dr. Udayan Bhattacharya Dr. Sudip Ranjan Hatua	7
10	Dr. Rajesh Das Dr. Tridib Tripathi	6

Table 11 lists the top 10 authors among the LIS faculty in West Bengal based on the H-index and G-index. This table demonstrates that Dr. Bijan Kumar Roy has the second-highest H-index (12) and G-index (18) after Dr. Parthasarathi Mukhopadhyay.

8.   Conclusion

Through its persistent efforts, the field of LIS education has significantly advanced the information society. This investigation details the academic publications of LIS faculties in West Bengal, providing an overview of research output based on university-wise averages, designation, gender, and experience. By analysing these factors, the study offers insights into scholarly communication trends among LIS faculty members in the region. It examines the research efficacy of 38 faculty members across 14 universities, noting that three have not produced any publications in the Google Scholar database. This comprehensive analysis enables comparisons of publication status and explores Chi-square and correlation values to identify areas for improvement, strengths, and performance indicators. The research highlights the contributions of LIS faculties to both academic performance and the broader societal context, facilitating valuable research initiatives and offering crucial insights into the academic domain.

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