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TITLE PAGE

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“Mapping the Research output of Bundelkhand University: A Bibliometric Analysis of Publications from 2000-2019”

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Mapping the Research output of Bundelkhand University: A Bibliometric Analysis of Publications from 2000-2019

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ABSTRACT

Measuring the productivity and output is a common practice for the institutions, when we discuss about research and publications. Keeping this in mind, the bibliometric analysis of Bundelkhand University, Jhansi from the year 2000-2019 is performed in the given paper. This study shows the growth of Bundelkhand University in terms of Primary research output and publications in all disciplines. The total number of publications (579) indexed in SCOPUS were retrieved and analyzed to find out the year wise growth, authorship pattern, collaborative coefficient, prolific authors and popular journals for communicating the research work. MS-Excel is used for analyzing and sorting the retrieved data. Collaborative coefficient is calculated by using the formula defined by Price & Beaver. The results of the study show that the year 2019 was the year of maximum publications (57). The highest citations were received in the year 2005 (1091) and ACCP for total number of publications was 10.71. The maximum publications published as journal articles and three-authorship pattern is dominating other patterns. Dr. S.P. Singh from department of Pharmacy was found as the most prolific author.

Keywords: Author Productivity, Bibliometric Analysis, Bundelkhand University, Research Output, Research Productivity.

1. INTRODUCTION

The higher education institutions contribute a lot in total research output of the Nation. The universities have been established to promote the higher education and also for the exponential growth of the research. The promotion of research is essential to strengthen the education system because the findings of research at higher level can be implemented at learning stage to make it more effective. The universities and higher education institutions are provided different types of grants for conducting good quality research.

The faculty members of the universities are the academicians who are expected to be the good and active researchers. Nowadays although teachers have got many other responsibilities along with the teaching hence their competency is measured by the research work performed by them. Every year the research output of the institutions is published in annual reports of that particular institution. The teachers of higher education are given ample opportunities to conduct research. The present study has been conducted to trace the research output of Bundelkhand University during the year 2000-2019. In this study the research, data has been retrieved from SCOPUS database and then it has been analyzed to accomplish the objectives of the study.

2. LITERATURE REVIEW

Several studies have been done to measure the Productivity of institutions and journals and the individuals. Dwivedi, S.³ conducted the research to find out the publications of Banaras Hindu University. The time period selected for the study was 1989-2016. The data for the study was collected from Web of Science and Science Citation Index. After analyzing 16556 records, it was found that Chemistry is the most popular subject among the authors followed by Physics. In journal selection, the maximum number of publications were published in Current Science. It was also seen that main collaborator of BHU was CSIR with 443 publications. One more study was done on BHU by Gautam, V. K., & Mishra, R.⁴ In this study, data from 2004 to 2013 was collected from Indian Citation Index. The total number of articles retrieved was 1041. The researchers analyzed the co-authorship index and year-wise publication output and came with the results that the average increasing rate of research productivity in BHU was 104.1. Maximum number of publications were in joint authorship and out of 1041, 404 articles were published in indexed journals. Sevukan, R., & Sharma, J.¹³ analysed the research productivity of faculties of central universities in a specific discipline Biotechnology. The data was collected from Pubmed, (NCBI) and ISI (Web of Science) over a time period of ten years (1997-2006). The result of the study was there is a growth in literature of Biotechnology and two-authored publication pattern was popular among the authors. Shariatmadari, M. & Mahdi, S.¹⁴ conducted the research on Barriers of research productivity in Islamic Azad University and came with the result that faculty members of IAU were not having a keen interest in research activities. They were facing a lack of finances and also were lacking the skills required for research. The research recommended that the faculties should be given incentives and should be motivated to focus on research & should be provided well equipped departments. Mondal, D., & Maity, A.⁹ mapped the foreign authorship pattern in some selected LIS journals of India. For the study they decided to take three popular LIS journals: ALIS, DJLIT & SRELS. The researchers analysed these journals with different aspects like authorship pattern, collaboration and the interested area among authors, citations etc. After analysis they found that during the time period (2008-2017) of the study, 186 articles were written by foreign authors in these journals. Two-authorship pattern was most popular among these foreign authors and Nigerians were found most prolific authors followed by USA. Similar to this Bansal A.¹ analysed the authorship pattern and growth of research in Desidoc Journal of Library & Information Technology & selected two different periods (2001-2006) & (2007-2010) to analyse the period of growth and came with the result that maximum number of articles (65) were contributed in the year 2012, again the two-authorship pattern was the most popular pattern among authors. Mondal D. & Jana S.⁸ conducted a study for LIS Journals over a time period of 2012-2017 & wanted to trace the authorship pattern and trend of collaboration among authors of library science in India. After the analysis again the two-authored pattern was most popular and multi-authored publications were getting higher number of citations. The researchers also recommended that research productivity can be increased more by promoting the inter-departmental collaboration. One more study was conducted to trace the authorship pattern by Kumar, S.⁵ He took 556 papers published in Journal of Documentation during 2003-2015. For analysis he applied Lotka's Law to the collected data and came to know that approximately 50% papers were written in single authorship.

3. OBJECTIVES

- To quantify the year-wise research productivity of Bundelkhand University.
- To identify the popular journals and most popular subjects for writing among the authors of Bundelkhand University.
- To understand the authorship Pattern of Bundelkhand University.
- To identify the most popular publication type among the authors of Bundelkhand University.
- To highlight the most cited papers written by the authors of Bundelkhand University.

4. METHODOLOGY

The present study is limited to the publications output of Bundelkhand University. It is a public state university situated in Jhansi, Uttar Pradesh, India. It was founded in 1975 and since then it has been providing many professional, vocational, technical courses along with facility of research. In this bibliometric research, the data (during the time period of 2000-2018) was retrieved from SCOPUS database which is one of the largest abstracting & citation database. Then this retrieved data was exported into MS-Excel sheet & analysed with different aspects of research productivity, such as number of citations, prolific authors, popular journals for publications & popular way of communication for publishing etc. H-index is a measure to quantify the quality of a journal, institution and also an individual. In this paper h-index has been measured at different places such as for journals, subject categories & for authors. A list of highly cited paper has been given in Annexure 1. Collaborative Coefficient was also calculated in the study, which is based on counting of fractional productivity. It has been defined by Price & Beaver. The formula for CC is given below.

$$CC = 1 - \frac{\sum_{j=1}^k \left(\frac{1}{j}\right) f_j}{N}$$

Where, f_j denotes the “number of j authored research papers”

N is “total number of research paper published”

k is “greatest number of authors per paper”

5. DATA ANALYSIS

Table 1. Year wise publication of Bundelkhand University during 2000-2019

Year	TP	TC	ACPP
2000	2	2	1
2001	1	20	20
2002	2	22	11
2003	6	143	23.83
2004	14	648	46.28
2005	44	1091	24.8
2006	26	344	13.23

2007	40	546	13.65
2008	28	538	19.21
2009	39	438	11.23
2010	55	501	9.11
2011	47	622	13.23
2012	46	357	7.76
2013	51	532	10.43
2014	51	321	6.29
2015	28	230	8.21
2016	28	140	5
2017	28	62	2.21
2018	43	116	2.7
2019	57	143	2.5
Total	636	6816	10.71

TP= Total Publication

TC= Total Citation

ACPP= Average Citation Per Publication

5.1 Year-Wise Analysis

The table 1 depicts the year-wise distribution of publications of Bundelkhand University. The data in table shows that there is not any regular pattern in growth of publications. The highest number of publications were contributed in the year 2019 (57) followed by the year 2010 (55). The year 2005 claimed the maximum number of citations (1091) followed by the year 2004 (648). Out of total publications of university, 636 papers were indexed in SCOPUS database. The total Citations for these 636 papers were 6816. The average number of papers published in these 20 years was 31 (31.8) approximately. The highest ACPP is for the year 2004 (46.28), followed by the year 2004 (24.8).

Table 2. Subject Category wise distribution of Bundelkhand University Publication

Subject-Category	T P	T C	ACP P	H Index
Agriculture Biology & Crop Science	36	15 4	4.27	22
Pharmaceutics & Pharmacology	34	15 6	4.59	20
Medical & Medicine Public Health	32	21 6	6.75	12
Agronomy	26	96	3.69	10
Chemistry	16	32	2	13
Genetics	15	21	1.4	5
Biochemistry	15	21	1.4	7

Microbiology	15	11 6	773	6
Food Science	10	76	7.6	7
Molecular Biology	8	20	2.5	4

5.2 Subject Wise Distribution

The above table reflects the most popular subject categories among the authors of Bundelkhand University. The 'Agriculture Biology & Crop Science' has highest publications(36) and 'Medical & Medicine Public-Health' has the highest Citations (216) followed by 'Pharmaceutics & Pharmacology' in publications (34) & Citations (156) respectively. The third popular category of subject is 'Medical & Medicine Public Health' with 32 publications and in citations 'Agriculture Biology & Crop Science' stands with 154 citations. Subject Categories are identified by the title of the article, and the authors related to departments. Only those subject categories have been listed in the above table, which are popular among the authors. The table shows that Agriculture, Pharmacy, Medicine are the popular areas for research articles followed by Chemistry, Food Sciences and Life Sciences.

5.3 Preferred Journals for Publication

The articles written by the authors of Bundelkhand University were communicated to different journals for publishing. The given table shows the popular journals used for publication by the authors of Bundelkhand University and in the list total 74 articles were published, which is 12.7% of total publication. It means the authors have used a variety of journals for communicating their articles. The journal that was preferred the most is 'Asian Journal of Chemistry' in which 16 articles were published. If we notice subject category table (Table2), we find that a total of 16 papers have been published in Chemistry. It means all the papers of chemistry are published in the same journal 'Asian Journal of Chemistry'. With this analysis, it is clear that the journal is very popular among the authors of Chemistry. The ACP for the journal is 2 with h-index 9. The second most popular journal among the authors is 'Journal of Food Science & Technology' published by 'Springer India' in which 10 articles have been published. These articles received 76 citations. ACP for this journal is 7.6 with h-index 4. The third journal in the list is 'Current Science' with 9 publications and the citations for these 9 publications is maximum in the list (100) with ACP of 11.11 and h-index 7.

Table 3. Top Journals for Publication

Journal	Publisher	T P	TC	ACP P	H Index
Asian Journal of Chemistry	Chemic Publishing Co.	16	32	2	9
Journal of Food Science & Technology	Springer India	10	76	7.6	4
Current Science	Indian Academy of Sciences	9	100	11.11	7

International Journal of Pharmacy and Pharmaceutical Sciences	International Journal of Pharmacy and Pharmaceutical Sciences	9	36	4	3
Biosciences Biotechnology Research Asia	Oriental Scientific Pub.Co.	8	1	0.12	1
Journal Ecophysiology and of Occupational Health	Academy of Environmental Biology	8	19	2.38	5
Asian Pacific Journal of Tropical Disease	Elsevier BV	7	96	13.71	3
International Journal of Pharma and Bio Sciences	International Journal of Pharma and Bio Sciences	7	20	2.85	4

5.4 Most Prolific Authors

The table given below consists of 5 names who have contributed the most in the publication output of the university. Singh, S. P., Institute of Pharmacy and Dr. S.K. Chakraborty, Department of Biochemistry contributed maximum publications. The second highest contribution is also done by 2 authors, Singh, R. and Mishra, R.K. Each of them have contributed 7 papers. The citations for papers written by Singh, R. is highest (99) with h-index (6). Also the ACP is highest for the papers of Singh, R.(14.14) followed by Mishra, R.K. (12.28). Out of these 5, 3 authors are from Institute of Pharmacy.

Table 4. Prolific Authors of Bundelkhand University

Author	T P	T C	ACP P	h- index
Singh, S.P.	9	67	7.44	5
Chakraborty, S.K	9	83	9.22	5
Singh, R.	7	99	14.14	6
Mishra, R.K.	7	86	12.28	3
Singh, V.K.	6	55	9.16	3

5.5 Authorship Pattern and Collaborative Coefficient

The following table shows the authorship pattern of Bundelkhand University. We find that 2.35% of total publications are done in single authorship pattern and the rest of 97.65% publications are done by two or more than two authorship. The maximum publications are written in three authorship (23.27%) and 22.32% of the total publications are written by more than five authors. The collaborative coefficient (CC) was 0.699 for the total publications and highest CC was in the year 2003 (0.916) followed by the year 2008 (0.876).

Table 5. Authorship Pattern of Bundelkhand University

Year	1 Author	2 Author	3 Author	4 Author	5 Author	>5 Author	Total Pub.	CC
2000	0	0	1	1	0	0	2	0.708
2001	0	0	0	0	1	0	1	0.8
2002	0	0	0	1	1	0	2	0.775
2003	0	2	2	0	0	2	6	0.916
2004	0	5	4	1	0	4	14	0.661
2005	1	9	14	6	4	10	44	0.678
2006	1	5	7	6	4	3	26	0.687
2007	0	6	8	14	3	8	39	0.715
2008	2	2	8	6	7	3	28	0.876
2009	1	6	8	8	7	9	39	0.703
2010	1	9	6	12	13	14	55	0.719
2011	0	9	11	13	5	9	47	0.703
2012	3	7	14	5	14	4	47	0.662
2013	1	7	13	15	8	7	51	0.699
2014	2	4	17	15	6	7	51	0.691
2015	0	8	6	7	4	3	28	0.676
2016	0	6	5	2	7	8	28	0.717
2017	1	6	6	7	2	6	28	0.673
2018	0	4	9	7	3	20	43	0.752
2019	2	6	9	11	4	25	57	0.724
Total	15	101	148	137	93	142	636	0.699
	2.35	15.88	23.27	21.54	14.62	22.32	100	

CC= Collaborative Coefficient

5.6 Types of publications

The following table (Table 6) shows the variety in types of publications of Bundelkhand University. There are a total of 636 publications out of which 542 (85.22%) are articles, 45 are conference proceedings (7.07%), 28 reviews (4.4%) & 10 are book chapters (1.57%). It implies that the sequence of popular medium of communicating the research among authors is Journal article followed by conference proceeding then reviews and book chapters.

Table 6. Publication Types in Bundelkhand University

Publication Type	TP	TC	ACPP
Article	542	5662	10.44
Book Chapter	10	41	4.1
Conference Paper	45	171	3.8
Editorial	2	3	1.5
Erratum	3	2	0.6
Letter	3	6	2
Note	1	0	Not Defined
Review	28	899	32.10
Short Survey	2	32	16

6. SUMMARY AND CONCLUSIONS

The study enquires the pattern of publications, popular areas of research, prolific authors and popular journals for communicating the research among the authors of Bundelkhand University and as a result we found that from 2000 to 2019, total 636 papers (indexed in SCOPUS) received 6816 citations with 10.71 ACPP. While discussing the popular subject categories for research, we see that Agriculture and Pharmacy has maximum number of publications. Medical and Medicine Health received highest number of citations. The h-index is highest for Agriculture publications (22) followed by Pharmacy. It is also clear in the study that all the articles of chemistry have been published in the same journal, 'Asian journal of chemistry'. The popularity of this journal is followed by 'Journal of Food Science & Technology'. Dr. S.P. Singh, Institute of Pharmacy has given maximum contribution in terms of publications. In authorship pattern we find that the three-authorship pattern dominates other patterns and collaborative coefficient for the total publication is 0.699 and it is highest for the year 2003 (0.916). In publication types, we find that the authors of Bundelkhand University prefer journal articles most for communicating their research.

REFERENCES

1. Bansal, A. (2013). DESIDOC Journal of Library & Information Technology: A Bibliometric Analysis. *DESIDOC Journal of Library & Information Technology*, 33(5), 412–417. doi: 10.14429/djlit.33.5108.

2. Baskaran, C. (2013). Research growth trend and author collaboration of Alagappa University in India during 1999-2011, *International Journal Of Library And Information Studies*, 3(1), 57-64.
3. Dwivedi, S. (2017). Publications of Banaras Hindu University during 1989-2016: A Three-dimensional Bibliometric Study. *DESIDOC Journal of Library & Information Technology*, 37(6), 403-409. doi: 10.14429/djlit.37.11741.
4. Gautam, V. K., & Mishra, R. (2015). Scholarly Research Trend of Banaras Hindu University during 2004-2013: A Scientometric Study Based on Indian Citation Index and. *DESIDOC Journal of Library & Information Technology*, 35(2), 75–81. doi: 10.14429/djlit.35.2.8021.
5. Kumar, S. (2017). Author Productivity and the Application of Lotka's Law in LIS Publications. *Annals of Library and Information Studies*, 64, 234-241.
6. Marsh, H. W., & Hattie, J. (2002). The Relation Between Research Productivity and Teaching Effectiveness: Complementary, Antagonistic, or Independent Constructs? *The Journal of Higher Education*, 73(5), 603–641. doi: 10.1353/jhe.2002.0047.
7. Mondal, D., Chakrabarti, B., & Maity, A. (2019). Publications Output of the Indian Association for the Cultivation of Science during 2008 2017 a Scientometric Assessment. *DESIDOC Journal of Library & Information Technology*, 39(5), 244–250. doi:10.14429/djlit.39.5.14572.
8. Mondal, D., & Jana, S. (2018). Collaborative Authorship Trend in Leading Indian LIS Journals. *DESIDOC Journal of Library & Information Technology*, 38(5), 320-325. doi.org/10.14429/djlit.38.5.12917.

9. Mondal, D., &Maity, A. (2019). Foreign Authorship Pattern in Selected Library and Information Science Journals of India. *DESIDOC Journal of Library & Information Technology*, 39(1), 17–22. doi: 10.14429/djlit.39.1.13691.
10. Parmar, S., Siwach, A. K., & Kumar, A. (2020). *Fifty Years Research Output in Oral Submucous Fibrosis: A Bibliometric Analysis of Publications from 1967 to 2016*. *DESIDOC Journal of Library & Information Technology*, 40(2), 470-478. doi: 10.14429/djlit.40.2.14727.
11. Rajgoli, I. U., &Laxminarsaiah, A. (2015). Authorship pattern and collaborative research in the field of spacecraft technology. *The Electronic Library*, 33(4), 625–642. doi:10.1108/EL-12-2013-0210.
12. Roy, S. B. (2019). Research Output of Biological Science during 1901 1945: A Scientometric Analysis. *DESIDOC Journal of Library & Information Technology*, 39(3), 96–103. doi: 10.14429/djlit.39.3.14065.
13. Sevukan, R., & Sharma, J. (2008). Bibliometric Analysis of Research Output of Biotechnology Faculties in Some Indian Central Universities. *DESIDOC Journal of Library & Information Technology*, 28(6), 11–20. doi: 10.14429/djlit.28.6.218.
14. Shariatmadari, M. & Mahdi, S. (2012). Barriers to research productivity in Islamic Azad University: exploring faculty members perception. *Indian Journal Of Science And Technology*, 5(5), 2765-2769.
15. Siwach, A. K., &Parmar, S. (2018). Research Contributions of CCS Haryana Agricultural University, Hisar: A Bibliometric Analysis. *DESIDOC Journal of Library & Information Technology*, 38(5), 334-341. doi: 10.14429/djlit.38.5.13188.
16. Xie, Y., &Shauman, K. A. (1998). Sex Differences in Research Productivity: New Evidence about an Old Puzzle. *American Sociological Review*, 63(6), 847-870. doi: 10.2307/2657505.

Appendix 1

Highly Cited Papers				
Title	Citations	IF of Journal	Author	Source Journal
Nutritional and therapeutic potential of Spirulina	196	1.516	Khan Z., Bhadouria P., Bisen P.S.	Current Pharmaceutical Biotechnology
Fighting tuberculosis: An old disease new challenges	184	9.791	Tripathi R.P., Tewari N., Dwivedi N., Tiwari V.K.	Medicinal Research Reviews
Studies on anti-diarrheal activity of calotropis gigantea R. Br. in experimental animals	161	2.33	Chitme H.R., Chandra R., Kaushik S.	Journal of Pharmacy and Pharmaceutical Sciences
Effect of salt stress on proline metabolism in two high yielding genotypes of green gram	151	3.785	Misra N., Gupta A.K.	Plant Science
Synthesis of novel substituted tetrazoles having antifungal activity	144	4.833	Upadhayaya R.S., Jain S., Sinha N., Kishore N., Chandra R., Arora S.K.	European Journal of Medicinal Chemistry
Chamomile (<i>Matricaria chamomilla</i> L.): An overview	142	3.57	Singh O., Khanam Z., Misra N., Srivastava M.K.	Pharmacognosy Reviews
Optically active antifungal azoles: Synthesis and antifungal activity of (2R,3S)-2-(2,4-difluorophenyl)-3-(5-{2-[4-aryl-piperazin-1-yl]-ethyl}-tetrazol-2-yl/1-yl)-1-[1,2,4]-triazol-1-yl-butan-2-ol	129	2.793	Upadhayaya R.S., Sinha N., Jain S., Kishore N., Chandra R., Arora S.K.	Bioorganic and Medicinal Chemistry
Effect of salinity and different nitrogen sources on the activity of antioxidant enzymes and indole alkaloid content in	109	3.121	Misra N., Gupta A.K.	Journal of Plant Physiology

Catharanthus roseus seedlings				
Uncertainties in nuclear transition matrix elements for neutrinoless $\hat{P}^2\hat{P}^2$ decay within the projected-Hartree-Fock-Bogoliubov model	106	2.926	Rath P.K., Chandra R., Chaturvedi K., Raina P.K., Hirsch J.G.	Physical Review C - Nuclear Physics
Genotypic difference in salinity tolerance of green gram cultivars	96	3.785	Misra N., Dwivedi U.N.	Plant Science
Antimicrobial activity of some medicinal plants	95	0.553	Dabur R., Gupta A., Mandal T.K., Singh D.D., Bajpai V., Gurav A.M., Lavekar G.S.	African Journal of Traditional, Complementary and Alternative Medicines
Synthesis and characterization of pectin/pvp hydrogel membranes for drug delivery system	83	2.451	Mishra R.K., Datt M., Banthia A.K.	AAPS PharmSciTech
Biomedical solid waste management in an Indian hospital: A case study	83	2.015	Patil G.V., Pokhrel K.	Waste Management
Lactobacillus casei reduces the inflammatory joint damage associated with collagen-induced arthritis (CIA) by reducing the pro-inflammatory cytokines - Lactobacillus casei: COX-2 inhibitor	70	3.846	Amdekar S., Singh V., Singh R., Sharma P., Keshav P., Kumar A.	Journal of Clinical Immunology
A review on current status of municipal solid waste management in India	67	2.037	Gupta N., Yadav K.K., Kumar V.	Journal of Environmental Sciences (China)
Nuclear deformation and neutrinoless double- \hat{P}^2 decay of Zr94,96, Mo98,100, Ru104, Pd110, Te128,130, and Nd150 nuclei within a mechanism involving neutrino mass	62	2.926	Chaturvedi K., Chandra R., Rath P.K., Raina P.K., Hirsch J.G.	Physical Review C - Nuclear Physics

The atmospheric global electric circuit: An overview	62	3.778	Singh D., Gopalakrishnan V., Singh R.P., Kamra A.K., Singh S., Pant V., Singh R., Singh A.K.	Atmospheric Research
Effect of vinblastine sulfate on $\hat{\text{I}}^3$ -radiation-induced DNA single-strand breaks in murine tissues	61	3.68	Rajagopalan R., Ranjan S.K., Nair C.K.K.	Mutation Research - Genetic Toxicology and Environmental Mutagenesis
Synthesis and antibacterial activity of substituted 1,2,3,4-tetrahydropyrazino [1,2-a] indoles	56	2.802	Tiwari R.K., Singh D., Singh J., Yadav V., Pathak A.K., Dabur R., Chhillar A.K., Singh R., Sharma G.L., Chandra R., Verma A.K.	Bioorganic and Medicinal Chemistry
Synthesis and cytotoxic activity of heterocyclic ring-substituted betulonic acid derivatives	55	2.802	Kumar V., Rani N., Aggarwal P., Sanna V.K., Singh A.T., Jaggi M., Joshi N., Sharma P.K., Irchhaiya R., Burman A.C.	Bioorganic and Medicinal Chemistry