23. Scholarly Research Trend of Assam Agricultural University, Jorhat indexed in Scopus: A Bibliometric Study

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Abstract:

The present study is based on a bibliometric analysis of research publications of Assam Agricultural University, Jorhat, from 1974 to 2018, as accessed through the Scopus database. A total of 1945 documents were published during the period of 44 years. All publications have been carefully scrutinized to investigate the data like types of publications, year-wise publications, the most preferred journal for publication etc. MS Excel and VOSViewer were used to analyze data. The study shows that there was a gradual increase in publications during the study period. Journals are found to be the primary source of references used to write research papers. Indian Veterinary Journal was found to be the most preferred journal of AAU researchers.

Keywords:

Bibliometrics, Assam Agricultural University, Assam, India, VOSviewer.

23.1 Introduction:

Bibliometrics has become a standard tool for analyzing the research output of any university, institution, organization, country, journal, etc. Numerous research fields utilize bibliometrics techniques to assess the impact of a particular field, the influence of a researcher, or a specific paper. Several bibliometric studies have been conducted to evaluate the research output of universities and institutions (Aswathy and Gopikuttan, 2013; Kumbar et al., 2008; Kolle, 2016; Bid, 2016). Considering the above, an attempt has been made to analyze the research performance of Assam Agricultural University, Jorhat, Assam, India, over forty-four years between 1974-2018.

23.2 Review of Literature:

Kasa et al., 2014 investigated the research output of the Agriculture and Veterinary Complex faculty members of Ahmadu Bello University, Zaria, between 2002-2012. The examination uncovered that a total of 1134 articles were published in different formats, and journals dominated them. Another study by Leiser et al., 2009 attempted quantitative and qualitative investigation research contributions from the French National Institute for Agricultural Research (INRA) in the fruit and vegetable field (2000- 2006). The study obtained data from the Web of Science and used Sphinx data processing software. Using

keywords, the database showed 1463 articles, representing 8% of the total contributions of INRA over seven years. Exponential growth in nutrition and consumer sciences was noted, and emphasis on the development of a multidisciplinary and integrated approach was also suggested. Maharana, 2013 analyzed 168 journal articles produced by the Orissa University of Agricultural Technology, Bhubaneswar, India, during 2008- 2012 and indexed by Scopus and found 642 authors have contributed 168 articles. Most of the articles have four authors.

The degree of collaboration was calculated as 0.96 using the formula given by Subramanyam, 1982. Parabhoi et al., 2017 analyzed Dr. Yashwant Singh Parmar University of Horticulture and Forestry's research contribution from 2006 to 2015. 560 documents indexed in the Scopus database were downloaded in CSV file format and analyzed using MS-Excel. Results revealed that the researcher preferred journals to publish their research results with 494 articles. A maximum of 83 papers were published in the year 2014.

It was seen that multi authors' collaboration dominates this university research. Agrahari et al., 2020 examine Indian publications on Bamboo as covered in the Web of Science over three decades, during 1989-2018, experiencing a growth rate of 8.5 and a doubling time of 8.34. A positive growth rate was observed. Research articles have the most significant share, 92.82% of total articles. Current Science scores the leading position representing Fig.s 57 records. Sun and Yuan, 2020 assessed the 1224 top rice-related research papers produced globally between 2008- 18, and data for the study was acquired from the Essential Science Indicators database. MS-Excel 2010 was utilized for analysis, and VOS viewer, data visualization software was likewise utilized, and these papers were dissipated across 277 core journals. 156 maximum articles were published in 2017. The plant science research area was found to be the most active. Results showed that 10 papers had received more than 1000 citations. China topped the list, and the Chinese Academy of Sciences was recognized as the most active organization. Balasubramani and Parameswaran, 2014 analyzed 6943 publications contributed by the scientists of Banaras Hindu University (BHU) from 2000-2011 and downloaded the Web of Science database published by the Institute for Scientific Information (ISI). The gradual growth of publications was witnessed. The majority of the paper was published in 2011 with 1052 records. It was identified that "Current Science" was the most preferred among the journals. Two authored papers (1961, 28.24%) dominate the authorship patterns of BHU.

23.3 Objectives of The Study:

(i) To examine the chronological distribution of the research output of AAU Jorhat during 1974-2018;
(ii) To explore the distribution of research output by type of documents;
(iii) To analyze the most preferred journals during the study period results

23.4 Methodology:

For the present study, data were obtained from Scopus Database for 44 years between 1974-2018. The extracted data were entered into the MS Excel sheet and analyzed to obtain relevant findings. VOSViewer was also used to find the relation between the different aspects of research output.

23.5 Results and Discussion:

23.5.1 Chronological Growth of Research Output:

Table 23.1 shows the total articles published by AAU, Jorhat over 44 years from 1974 to 2018. It published only one paper in 1974. By 2018, 1945 papers were published, maximum of 154 papers were published in 2016. It is evident from the following table that the research output publication pattern was erratic.

Table 23.1: Year-Wise Distribution of Research Output

Years	Records	Percentage
1974	1	0.05
1975	1	0.05
1976	3	0.15
1977	1	0.05
1978	3	0.15
1979	2	0.10
1980	2	0.10
1981	2	0.10
1982	2	0.10
1983	3	0.15
1984	2	0.10
1985	2	0.10
1986	2	0.10
1987	2	0.10
1988	5	0.26
1989	2	0.10
1990	4	0.21
1991	4	0.21
1992	3	0.15
1993	4	0.21
1994	20	1.03
1995	12	0.62
1996	52	2.67
1997	56	2.88
1998	65	3.34
1999	60	3.08
2000	61	3.14

Years	Records	Percentage
2001	56	2.88
2002	56	2.88
2003	86	4.42
2004	78	4.01
2005	66	3.39
2006	54	2.78
2007	62	3.19
2008	61	3.14
2009	59	3.03
2010	62	3.19
2011	73	3.75
2012	118	6.07
2013	84	4.32
2014	118	6.07
2015	134	6.89
2016	154	7.92
2017	126	6.48
2018	122	6.27
	1945	100

23.5.2 Document-Wise Distribution of Research Output:

It is evident from Table 23.2 that a maximum number of documents were published in the form of an article with 1841 papers, followed by a review with 38 papers; in contrast, the least number of papers were published in the form of a letter with only 5 (0.26 %) records.

Table 23.2: Document-Wise distribution of Research Output

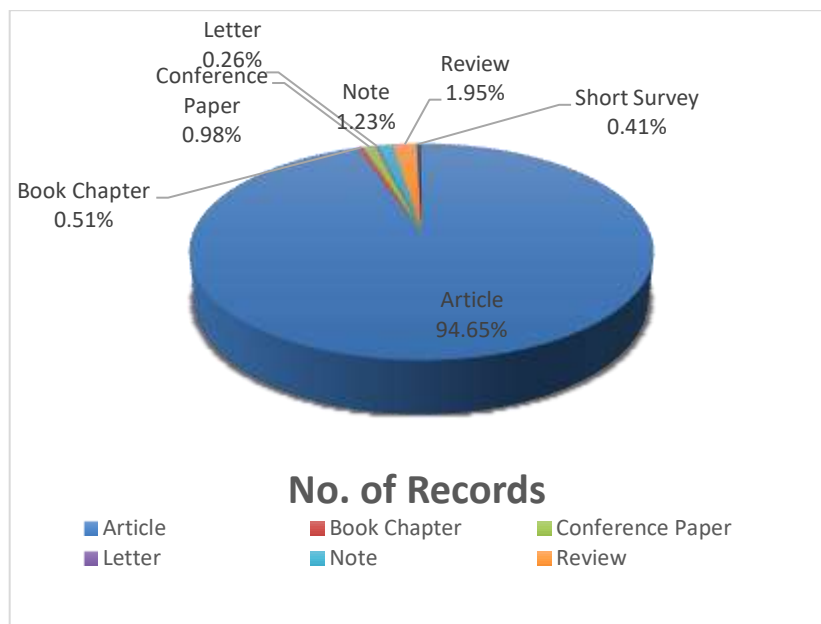| Document Type	No. of Records	%
Article	1841	94.65
Book Chapter	10	0.51
Conference Paper	19	0.98
Letter	5	0.26
Note	24	1.23
Review	38	1.95
Short Survey	8	0.41
Grand Total	**1945**	**100**

Figure 23.1: Document-Wise distribution of Research Output

23.6 Journal Wise Distribution of Publications:

Table 23.3 lists the top 14 journals that publish 20 or more than 20 records each, contributing 60.31% of total publications with 1173 records. It is clear from the table that the Indian Veterinary Journal ranked first with 490 (25.19%) publications, which is the official journal of the Indian Veterinary Association, followed by the Indian Journal of Animal Sciences with 268 (13.78 %) publications, Indian Journal of Animal Research with 58 (2.98 %) publications and so on.

Table 23.3: Most contributed Journals

Journal Name and Publisher	No. of Records	Percentage
Indian Veterinary Journal Indian Veterinary Association	490	25.19
Indian Journal of Animal Sciences Indian Council of Agricultural Research	268	13.78
Indian Journal of Animal Research Agricultural Research Communication Centre	58	2.98
Indian Journal of Agricultural Sciences Indian Council of Agricultural Research	53	2.72
Indian Journal of Agronomy Indian Society of Agronomy	50	2.57
Pestology	47	2.42

Journal Name and Publisher	No. of Records	Percentage
Scientia Publications		
Veterinary World Veterinary World	39	2.01
Journal of Veterinary Parasitology Indian Association for the Advancement of Veterinary Parasitology	30	1.54
Veterinary Practitioner Veterinary Practitioner	26	1.34
Journal of Food Science and Technology Springer Nature	26	1.34
Research on Crops Gaurav Society of Agricultural Research Information Centre	24	1.23
Indian Journal of Agricultural Research Agricultural Research Communication Centre	22	1.13
Journal of the Indian Society of Soil Science Indian Society of Soil Science	20	1.03
Indian Journal of Nematology Nematological Society of India	20	1.03
Grand Total	**1173**	**60.31**

23.7 Co-authorship Analysis:

Of 2,203 authors, 378 met the threshold of a minimum of 5 publications (Figure 23.2). These authors are grouped into 15 clusters. K.K Baruah was found to be the most prolific author, topped with 95 contributions, followed by B.C. Sarmah with 82 contributions, followed by B.C. Deka contributed 81 papers etc.
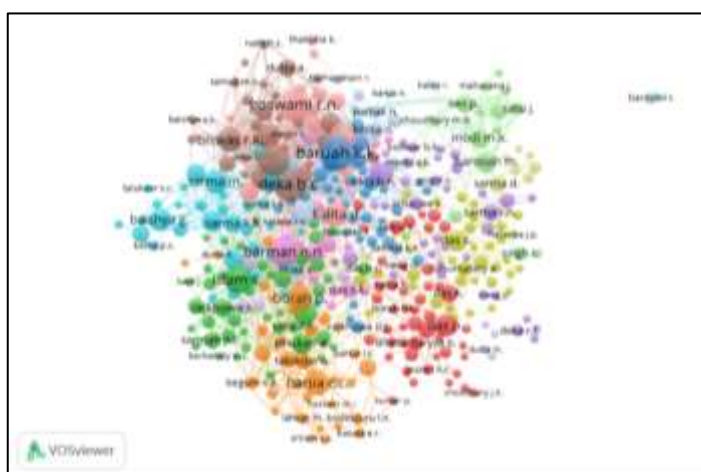

Figure 23.2: Co-authorship Analysis

23.8 Co-occurrence of All Keywords (Authors Keywords + Index Keywords):

Figure 23.3 represents the occurrences of all keywords, including authors' keywords as well as index keywords. A total of 8707 keywords were found, of which only 759 meet the threshold with a minimum number of keyword occurrences, i.e., 5 times each. These keywords were grouped into 7 clusters. Table 23.4 lists the top 25 keywords.
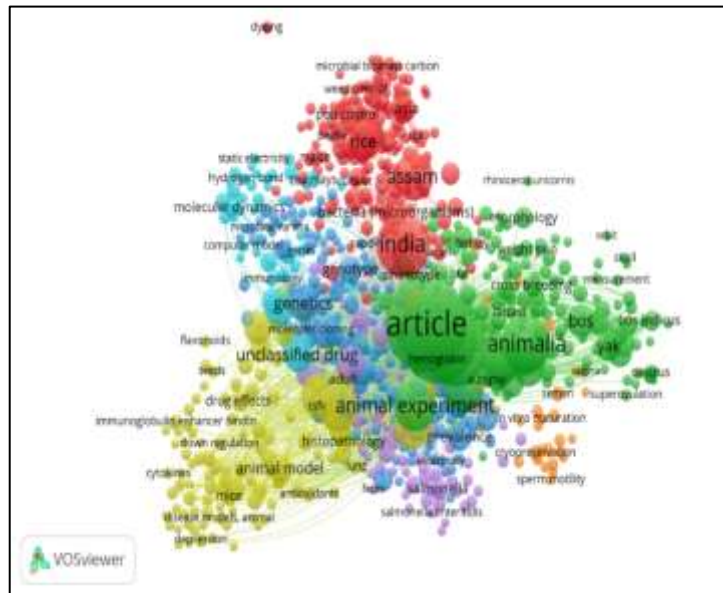

Figure 23.3: Co-occurrence of All Keywords

Table 23.4: Top 25 keywords

Sr. No.	Keyword	Occurrences
1	Article	439
2	Nonhuman	395
3	Controlled Study	249
4	India	187
5	Animalia	161
6	Animal Experiment	119
7	Animal	106
8	Male	102
9	Animals	101
10	Female	101
11	Animal Tissue	99
12	Swine	67
13	Genetics	64

Sr. No.	Keyword	Occurrences
14	Cattle	60
15	Unclassified Drug	60
16	Human	57
17	Priority Journal	57
18	Metabolism	55
19	Body Weight	43
20	Phylogeny	41
21	Polymerase Chain Reaction	41
22	Animal Model	39
23	Chemistry	35
24	Humans	33
25	Mouse	30

23.9 Conclusion:

The publication profile of an author or an institution has become an essential aspect of bibliometric research, through which we can assess their research performance over time. The current study pertains to Assam Agricultural University, Jorhat's research performance from 1974 to 2018. A gradual development was observed in the case of publications. The maximum number of papers were published as journal articles, i.e., 1841 records. Co-authorship analysis and all keywords analysis were performed using VOSviewer. The top twenty-five keywords were listed in Table 23.4, and the keyword "article" occurred a maximum of 439 times. It is suggested that similar studies on research outputs from different agricultural universities and other universities can be done using various databases and other bibliometric software.

23.10 References:

1. Agrahari, A., Chaudhary, C. P., Singh, S. N., & Acharjee, M. (2020). Assessment of Research output on Bamboo in India: A Bibliometric Study. *Library Philosophy & Practice*.
2. Assam Agricultural University. (2022). Retrieved from http://www.aau.ac.in/
3. Aswathy, S., & Gopikuttan, A. (2013). Productivity pattern of universities in Kerala: A scientometric analysis. *Annals of Library and Information Studies (ALIS)*, *60*(3), 176-185.
4. Balasubramani, R., & Parameswaran, R. (2014). Mapping the research productivity of Banaras Hindu University: A scientometric study. *Journal of Theoretical and Applied Information Technology*, *59*(2), 367-371.
5. Bid, S. (2016). Indian Institute of Technology, Kharagpur: A scientometric study of research output. *SSARSC International Journal of Library Information Network and Knowledge*, *1*(1), 1-15.

6. Kasa, M. G., Ibrahim, U., & Momoh, K. A. (2014). Bibliometric analysis of publication output patterns of Faculty members of agriculture and Veterinary Complex of a Nigerian university. *Information Manager (The)*, *14*(1-2), 21-28.

7. Kolle, S. R., Parameshwar, S., & Shankarappa, T. H. (2016). Profile of Research Output by Indian Agricultural Research Institute (2005–2014): A Bibliometric Analysis. *Journal of Global Communication*, *9*(2), 93-99.

8. Bala, A., & Gupta, B. M. (2009). Growth and impact of research output of Government Medical College & Hospital, Chandigarh: A case study.

9. Leiser, H., Aventurier, P., Fournier, D., Dosba, F., & Jeannequin, B. (2009). Tools for producing indicators from a bibliometric study of scientific production: the case of fruit and vegetable publications by the French National Institute for Agricultural Research (INRA). *Fruits*, *64*(5), 305-312.

10. Parabhoi, L., Sahu, R. R., & Kumari, N. (2017). Scholarly Research Trend of Dr. Yashwant Singh Parmar University of Horticulture and Forestry, Solan, Nauni During the Year 2006-2015: A Bibliometric Analysis. *International Journal of Library and Information Studies*, *7*(4), 421-430.

11. Scopus. 2021. "Affiliation Details - Assam Agricultural University India." https://www.scopus.com/affil/profile.uri?afid=60021252.

12. Sun, J., & Yuan, B. Z. (2020). Mapping of the world rice research: A bibliometric analysis of top papers during 2008–2018. *Annals of Library and Information Studies (ALIS)*, *67*(1), 55-66.

13. VOSviewer. (2022). Retrieved from https://www.vosviewer.com/