MANONMANIAM SUNDARANAR UNIVERSITY VS. BHARATHIDASAN UNIVERSITY: A BIBLIOMETRIC COMPARISON

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ABSTRACT

This paper compares the research output of Manonmaniam Sundaranar University (MSU) and Bharathidasan University (BDU). The Web of Science (WOS) database was used to gather the data between 2017 and 2021. The author productivity of both Universities was calculated using the HitsCite and Bibexcel software tools. During the period of the research, 849 research papers were contributed by Manonmaniam Sundaranar University and 2015 papers were contributed by Bharathidasan University.

Keywords : *Research Output, Manonmaniam Sundaranar University, Bharathidasan University.*

Introduction

Bibliometric analysis is a method of measuring the impact of publications and authors. To evaluate the influence of scientific publications, it includes various quantitative metrics like citation counts, journal impact factors, and other indicators. It can be used to measure the output of academics, research groups, and institutions, as well as to evaluate the significance of research and compare various academic fields. The performance of various nations in terms of research output can also be compared using bibliometric analysis. To create new approaches to research and collaboration, bibliometric analysis is also utilized to find new trends and areas of study.

This paper analyzed and compared two universities' research performances. One was the Manonmaniam Sundaranar University (MSU), which was established in 1990. It has affiliated colleges in the districts of Tirunelveli, Tenkasi, Thoothukudi, and Kanyakumari. And the other one, Bharathidasan University (BDU) was established in 1982 in the city of Tiruchirappalli, Tamil Nadu. It has affiliated colleges in the districts of Ariyalur district, Karur, Nagapattinam, Perambalur, Pudukkottai, Thanjavur, Tiruvarur, and Tiruchirappalli.

Analyzing the Bibliometrics would provide valuable insights into the publications of the faculties of Manonmaniam Sundaranar and Bharathidasan University. The purpose of the present study is to analyze the research output of these two universities.

Review of Literature

Manthiramoorthi, Mani, Thirumagal, and Saravanakumar (2020) compared the author productivity of research papers from Alagappa University and Bharathidasan University using Lotka's law. The data for the study was gathered from the Web of Science (WOS) database between 2009 and 2018. Author productivity was measured using the simple counting method. 1726 research publications from Alagappa University and 2778 from Bharathidasan University were analyzed. Lotka's law was used to assess the majority of author productivity using the Kolmogorov-Smirnov (K-S) goodness-of-fit test. The outcome demonstrates that the greatest difference (D) values for Alagappa Univesity and Bharathidasan University were

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both less than the critical value, indicating that the author's productivity of Lotka's law was satisfactory.

Objectives

The objectives of the present study are:

1. To identify the top 10 most productive authors

2. To measure the degree of research collaboration

3. To analyze the year-wise distribution of authorship pattern of Manonmaniam Sundaranar University and Bharathidasan University publications.

Data Analysis & Interpretation
Most Productive authors in MSU & BDU

Methodology

The current study concentrated on the Manonmaniam Sundaranar and Bharathidasan Universities' research publications from the year 2017 to 2021. The Web of Science database was used to collect the data for this study (data downloaded on 10.12.2022). The researchers selected the address field to search for "Manonmaniam Sundaranar University" and "Bharathidasan University". The data were analyzed using the software - Bibexcel, HistCite, and MS Excel.

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Table 1
Top 10 Most productive authors in MSU & BDU

Manonmaniam Sundaranar University				Bharathidasan University			
Author	Publication	H-Index	Total Citation	Author	Publication	H-Index	Total Citation
Senthil-Nathan S	66	20	1110	Arumugam S	75	11	513
Mohanraj K	39	8	121	Lakshmanan M	71	14	593
Sivakumar G	35	8	152	Rajaram R	59	17	922
Karthi S	32	12	392	Girisun TCS	54	13	504
Vasantha-Srinivasan P	29	13	463	Pugazhendhi A	46	24	1933
Henry J	27	8	121	Babu RR	42	17	668
Gupta R	25	24	29161	Alharbi NS	39	15	525
Haj-Mirzaian A	25	25	30264	Archunan G	39	11	481
Baskar K	24	10	186	Ramamurthi K	35	14	575
Thanigaivel A	21	13	436	Akbarsha MA	33	11	333

Table 1 portrays the comparison between the universities, highlighting the most productive authors.

Manonmaniam Sundaranar University: Sentil-Nanthan S has contributed 66 publications in 5 years during the time period between 2017 – 2021; his h-index score was (20) with 1110 total citations. Secondly, Mohanraj K has contributed 39 publications; his h-index score was (8) with 121 total citations. Thirdly, Sivakumar G has contributed 35 publications; his h-index score was (8) with 152 total citations. In the top 10 list, Haj mirzaian A has got the highest citation 30264 for his 25 publications.

Bharathidasan University: Arumugam S has contributed 75 publications during the time period between 2017 – 2021; his h-index score was 11 with 513 total citations. Secondly, Lakshmanan M has contributed 71 publications; his h-index score was 14 with 593 total citations. Thirdly, Rajaram R has contributed 59 publications; his h-index score was 17 with 922 total citations. In the top 10 list, Pugazhendhi A has got the highest citation of 1933 for his 46 publications.

Degree of Collaboration

There have been many different ways developed to determine the level of research collaboration, The formula suggested by Subramanyam (1983) was used in this study.
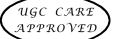
The degree of Collaboration $C = Nm / Nm + Ns$.

Authorship Pattern
Table 2
Year-wise distribution of Authorship pattern in MSU

Year	Total no. of Articles	Total no. of authors	1	2	3	4	>5	Total	DC	%
2017	118	716	2	19	22	23	52	118	0.98	13.9
2018	162	8258	2	27	32	23	78	162	0.99	19.08
2019	133	900	2	39	26	24	42	133	0.98	15.67
2020	160	4889	3	34	35	29	59	160	0.98	18.84
2021	276	3546	4	54	50	40	130	276	0.99	32.51
Total	**849**	**18309**	**13**	**173**	**165**	**139**	**361**	**849**	**4.92**	**100**

It is highlighted that 361 (42.52%) publications with more than five authors were rated first, followed by 173 (20.37%) publications with two authors, and 165 (19.43%) publications with three authors. Fourth author contributions were ranked fourth (139, 16.37%). The majority of the papers were co-authored by two or more people; one author style contributed to 1.53 % of total publications.

According to Table 2, during the year 2017, 118 articles were published with the contribution of 716 authors, and the degree of collaboration was 0.98. In 2018, 162 articles were published with the contribution of 8258 authors, and the degree of collaboration was 0.99. In 2019, a total number of 133 articles were published with the contribution of 900 authors, and the degree of collaboration was 0.98. In 2021, the highest articles of 276 with the contribution of 3546 authors were recorded.

Table 3
Year-wise distribution of Authorship pattern in BDU

Year	Total no. of Articles	Total no. of authors	1	2	3	4	>5	Total	DC	%
2017	296	1520	2	31	57	58	148	296	0.99	14.69
2018	330	1640	2	35	55	63	175	330	0.99	16.38
2019	339	1736	0	33	57	59	190	339	1	16.82
2020	433	2882	1	30	70	84	248	433	1	21.49
2021	617	3536	4	38	95	116	364	617	0.99	30.62
Total	**2015**	**11314**	**9**	**167**	**334**	**380**	**1125**	**2015**	**4.97**	**100**

It is highlighted that 1125 (55.83%) publications with more than five authors were rated first, followed by 380 (18.85%) publications with fourth authors, and 334 (16.57%) publications with three authors. Two author papers were ranked fourth (167, 8.29%). The majority of the papers were co-authored by two or more people; one author style contributed 0.45 % of total publications.

According to Table 3, during the year 2017, 296 articles were published with the contribution of 1520 authors, and the degree of collaboration was 0.99. In 2018, 330 articles were published with the contribution of 1640 authors, and the degree of collaboration was 0.99. In 2019, a total number of 339 articles were published with the contribution of 1736 authors, and the degree of collaboration was 1. In 2021, the highest articles of 614 with the contribution of 3536 authors were recorded.

Conclusion

The research outputs of Bharathidasan University and Manonmaniam Sundaranar University were compared in the present study. Between 2017 and 2021, a total of 849 research papers from Manonmaniam Sundaranar University and 2015 research articles from Bharathidasan University were published. The Bharathidasan University's authorship pattern reveals that (99.55%) of its papers are co-authored

by multiple authors, while (4.47%) are single-authored. The authorship pattern of the publications of Manonmaniam Sundaranar University shows that 1.53 % of them were written by single authors and 98.70 % had multiple authors. At Manonmaniam Sundaranar University, the number of publications is 849 but the number of authors who were involved in publishing these articles was much higher, and the total citations per author are higher than at Bharathidasan University. The Bharathidasan University has the highest degree of collaboration and publications during the period of study.

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