

An Analysis Of Research Information Management System Of Bharathidasan University

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Abstract

This paper examines the analysis of the research information management system of Bharathidasan University. The Research Information Management System is collect and stores metadata on research activities and outputs such as the researcher's personal information, publications, projects, awards, etc. The present faculty member's data were collected from the Bharathidasan University website and publication data were collected from the Web of Science and Scopus database. This study also aims to analyze department-wise faculty members, publications, projects, awards, and funding-wise research projects. It is found that Bharathidasan University has 36 departments and 177 faculty members presently working and 3098 research papers published on the Web of Science and 3787 research papers published in the Scopus database. A total of 516 research projects and 276 research awards were received by the present faculty members of Bharathidasan University. It is further found that the Department of Chemistry has contributed the highest number of 561 (18.11%) publications from the Web of Science and Department of Physics has contributed 858 (22.96%) publications from Scopus and also found that Department of Chemistry has received 58 (11.24 %) funding projects. The University Grants Commission (UGC) has provided 129 (25%) research projects to Bharathidasan University.

Keywords: Research Information Management System, Bharathidasan University, Faculty Publications, Projects and Awards.

1. Introduction

Research information management systems collect and store metadata on research activities and outputs such as researchers and their affiliations; publications, datasets, and patents; grants and projects; academic service and honors; media reports; and statements of impact. Broadly defined,

research information system (RIS) is the aggregation, curation, and utilization of metadata about research activities. Science Europe, an association of European research councils and institutes, defines RIM as “data about research activities rather than research data generated by researchers.”⁽¹⁾

2. Review of Literature

Jeyshankar, R, and Chithiravel, S. (2019)⁽²⁾ analyzed the Eosinophilia research output carried out during the year 1998 – 2017 the different parameters including authorship pattern, growth, Time Series Analysis Degree of Collaboration, Institutions’ contribution, most productivity journals were analyzed. The overall growth rate of literature output is found to be positive with an increasing trend in Eosinophilia research throughout the study period. Two and more authored papers constitute majority of the contribution and degree of collaboration had a maximum value of 7.14. The result showed that research development activities are increasing in Eosinophilia research in India. Jeyapragash, B, Muthuraj, A, and Rajkumar, T. (2019)⁽³⁾ discussed about Implementation of Research Information System at Bharathidasan University. The outcome of the study shows that it has 170 Existing Faculty Profiles and 2554 Publications from Web of Science, 516 Research Projects and 266 Awards and also department publications, citations and research impacts. Jeyapragash, B., Muthuraj, A, and Rajkumar, T. (2018)⁽⁴⁾ discussed about Research Support Service by profile management system called VIVO. Jeyapragash, B., Muthuraj, A. and Rajkumar, T. (2018)⁽⁵⁾ explained about the profile management System of VIVO and its features, benefits and also the implemented institutions at National and International level. Jeyapragash, B., Muthuraj, A. and Rajkumar, T. (2018)⁽⁶⁾ examined the Vidwan expert’s database of scientists / researchers and other faculty members of Indian Institutions. INFLIBNET Centre has taken an initiative to develop the Indian Experts Database called Vidwan and now it is available for the public in free of cost to identify the subject experts for the respective fields. The Indian experts database Vidwan has 23278 experts in an Organizations category and 23143 experts in subject’s category. The study focused on Organizations category wise experts, subject wise experts, experts of state universities of top ten states, experts of top ten Tamil Nadu State Universities, experts of top ten subjects of Tamil Nadu State Universities and experts by top ten designations of Tamil Nadu State Universities in Vidwan database. Batcha, M. Sadik (2018)⁽⁷⁾ analyzed the various Scientometric components of the articles published by top six universities of Tamil Nadu from 2000- 2017. The study identified research trend, characteristics growth and collaboration pattern of published literature. The analysis of data revealed that the average growth rate increases at the rate of 9.76%. Further, the average citation per paper observed is 12.18%. High degree of international collaboration is notified and USA and South Korea are found to be the most preferred collaborative countries. The CAGR calculated for six universities are 9.76. The major research publications outputs are from the field of Chemistry, Crystallography and Pharmacy. Kolle, S.R. (2016)⁽⁸⁾ discussed the publication trends in the Indian Journal of Traditional Knowledge using bibliometric tools. The bibliographic data was collected from the Web of Science database. A total of 990 articles were published in the journal during 2007–2015. Further, researcher analyzed

articles by year-wise distribution, authorship pattern, prolific authors, citation counts, country-wise contribution, most cited references, sources and keyword analysis. Thavamani, Kotti (2015)⁽⁹⁾ presented a bibliometric study of Collaborative Librarianship (CL) during the period of 2009-2014. A total of 223 research contributions and 343 authors were examined by growth of contributions by year and volume, authorship patterns by year and volume, growth of authors by year, authorship patterns, author productivity, authorship patterns by global, most prolific contributors and degree of collaboration. Average number of authors per paper is 1.538. The highest number of author productivity i.e., 0.650. The average degree of author collaboration in the Collaborative Librarianship is 0.354, which clearly indicates its dominance upon single authored contributions.

3. Research Methodology

The faculty member's data were collected from Bharathidasan University (<https://www.bdu.ac.in/>)⁽¹⁰⁾ website. It is found that Bharathidasan University has 36 departments' and 177 faculty members presently working and 3098 research papers published the Web of Science and 3787 research papers published in the Scopus database. The publication data were collected from Web of Science (<https://webofknowledge.com/>)⁽¹¹⁾ and Scopus (<https://www.scopus.com/>)⁽¹²⁾. A total of 516 research projects and 276 research awards were received by the present faculty members. This study also aims to analyze department-wise faculty members, research projects, research awards, research publications, and top ten faculty members and their departments in a web of science and Scopus and also used simple calculations and percentages.

4. Objectives of the study

These are the major objectives of the study

1. To find out the department wise faculty members of Bharathidasan university.
2. To identify the department wise research projects.
3. To identify the funding wise research projects.
4. To analyze the department wise research awards.
5. To find out the department wise publications.
6. To identify the Top ten faculty members and their department in Web of Science and Scopus.

5. Data analysis and Interpretation

5.1 Department wise Faculty Members of Bharathidasan University

The study has further ascertained the Department wise faculty members of Bharathidasan University. The Bharathidasan University has 36 departments. The 177 faculty members are currently working at Bharathidasan University. The percentage were calculated, and ranks were assigned. The same is shown in Table 1.

Table 1 Department wise Faculty Members of Bharathidasan University

S. No	Department	Nos.	%	Rank
1	Animal Science	6	3.39	10
2	Bharathidasan School of Management	8	4.52	4
3	Biochemistry	5	2.82	17
4	Bioinformatics	4	2.26	21
5	Biomedical Science	7	3.95	5
6	Biotechnology	3	1.69	24
7	Botany	7	3.95	5
8	Centre for Nonlinear Dynamics	3	1.69	24
9	Centre for Remote Sensing	5	2.82	17
10	Chemistry	10	5.65	1
11	Commerce and Financial Studies	3	1.69	24
12	Economics	5	2.82	17
13	Education	6	3.39	10
14	Educational Technology	7	3.95	5
15	English	5	2.82	17
16	Environmental Biotechnology	9	5.08	3
17	Environmental Management	4	2.26	21
18	Geography	4	2.26	21
19	Geology	1	0.56	34
20	History	2	1.13	32
21	Industrial Biotechnology	1	0.56	34
22	Library and Information Science	6	3.39	10

23	Lifelong Learning	3	1.69	24
24	Marine Biotechnology	6	3.39	10
25	Marine Science	7	3.95	5
26	Mathematics	6	3.39	10
27	Medical Physics	3	1.69	24
28	Microbiology	7	3.95	5
29	Performing Arts	1	0.56	34
30	Physical Education	3	1.69	24
31	Physics	6	3.39	10
32	School of Engineering and Technology	10	5.65	1
33	Social Work	6	3.39	10
34	Sociology	2	1.13	32
35	Tamil Studies	3	1.69	24
36	Women's Studies	3	1.69	24
Total		177	100	

Table 1 indicates that the Department of Chemistry and School of Engineering and Technology has currently working the highest number of 10 (5.65%) faculty members have placed the first rank and followed by the Department of Environmental Biotechnology has currently working 9 (5.08%) faculty members have placed the third rank. It is found that the Department of Animal Science, Department of Education, Department of Library and Information Science, Department of Marine Biotechnology, Department of Mathematics, Department of Physics, and Department of Social Work has currently working 6 (3.39%) faculty members have placed the tenth rank. It is further found that the Department of Geology, Department of Industrial Biotechnology, and Department of Performing Arts have currently working less number of 1 (0.45%) faculty members have placed thirty-eighth rank.

5.2. Department wise Research Projects

The study has ascertained the Department wise research projects of Bharathidasan University. The 32 departments have received the research projects from various funding agencies. The percentages were calculated, and ranks were assigned. The same is shown in Table 2.

Table 2 Department wise Research Projects

S. No	Department	No. of Projects	%	Rank
1	Animal Science	28	5.42	7
2	Bharathidasan School of Management	9	1.74	18
3	Biochemistry	22	4.26	10
4	Bioinformatics	15	2.9	12
5	Biomedical Science	12	2.32	16
6	Biotechnology	3	0.58	24
7	Botany	42	8.13	3
8	Chemistry	58	11.24	1
9	Commerce and Financial Studies	11	2.13	17
10	Computer Science	3	0.58	24
11	Economics	3	0.58	24
12	Education Technology	4	0.77	23
13	Education	15	2.9	12
14	English	1	0.19	30
15	Environmental Biotechnology	36	6.97	6
16	Environmental Management	15	2.9	12
17	Geography	5	0.96	21
18	Geology	2	0.38	28
19	History	1	0.19	30

20	Industrial Biotechnology	3	0.58	24
21	Library and Information Science	5	0.96	21
22	Lifelong Learning	13	2.51	15
23	Marine Biotechnology	37	7.17	5
24	Marine Science	25	4.84	9
25	Mathematics	2	0.38	28
26	Medical Physics	6	1.16	20
27	Microbiology	45	8.72	2
28	Physics	40	7.75	4
29	Physical Education	1	0.19	30
30	Remote Sensing	26	5.03	8
31	Social Work	8	1.55	19
32	Women Studies	20	3.87	11
Total		516	100	

Table 2 demonstrates that Department-wise research projects and it is found that the Department of Chemistry has the highest 58 (11.24 %) funding projects and placed the first rank and followed by the Department of Microbiology 45 (8.72%) have placed the second rank. A good number of research projects were received by the Department of Bioinformatics, Department of Education, and Department of Environmental Management with 15 (2.90%) have placed Twelfth rank. It is further found that the Department of English, Department of History, and Department of Physical Education get less number of 1(0.19%) research projects have placed the thirtieth rank.

5.3. Funding wise research projects

The study has further ascertained the Funding wise research projects of Bharathidasan University. The 76 funding agency provides the funding projects to Bharathidasan University. The percentage were calculated, and the ranks were assigned. This is displayed in Table 3.

Table 3 Funding Agencies

S. No	Funding Agency	No. of Sponsored Projects	%	Rank
1	Atomic Energy	11	2.13	9
2	Bharathidasan University	5	0.96	14
3	Biotechnology	53	10.27	3
4	Coir Board	3	0.58	16
5	Council of Scientific and Industrial Research	28	5.42	4
6	Defense Research and Development Organization	14	2.71	5
7	Directorate of Teacher Education Research & Training	3	0.58	16
8	Forest Tamil Nadu	3	0.58	16
9	Foundation for Revitalization of Local Health Traditions	2	0.38	21
10	Higher Education Department	2	0.38	21
11	Indian Council of Agricultural Research	2	0.38	21
12	Indian Council of Medical Research	10	1.93	11
13	Indian Council of Social Science Research	11	2.13	9
14	Indo- French	2	0.38	21
15	Ministry of Environment, Forest & Climate Change	13	2.51	6
16	Ministry of Human Resource Development	3	0.58	16
17	RUSA	2	0.38	21
18	Science and Technology	83	16.08	2
19	SERB	13	2.51	6
20	Space	6	1.16	12

21	SSA Project of Tamil Nadu Govt	6	1.16	12
22	State Planning Commission, Govt. of Tamil Nadu	4	0.77	15
23	Tamil Nadu State Council for Science and Technology	12	2.32	8
24	United Nations University	3	0.58	16
25	University Grants Commission	129	25	1
26	Others (51 Funding agencies)	1	0.19	26
27	Unknown	42	8.13	
Total		516	100	

Table 3 shows getting Funding Agency details of Bharathidasan University and it is found that University Grants Commission has provided 129 (25%) research projects that have placed the first rank and followed by the Department of Science and Technology provide 83 (16.08%) research projects have placed the second rank. A good number of 13 (2.25%) research projects sanctioned by SERB and the Ministry of Environment, Forest & Climate Change have placed the eighth rank. It is further found that RUSA, Indo-French, Indian Council of Agricultural Research, Higher Education Department, and Foundation for Revitalization of Local Health Traditions have provided less number 2 (0.38%) of research projects have placed twenty-third position.

5.4. Department wise faculty awards of Bharathidasan University

The study has ascertained the Department wise faculty awards of Bharathidasan University. The 31 departments have received the awards from various research associations. The percentage were calculated, and ranks were assigned. This is displayed in Table 4.

Table 4 Department wise faculty awards of Bharathidasan University

S. No	Department	No. of Awards	%	Rank
1	Animal Science	26	9.42	2
2	Bharathidasan School of Management	3	1.09	22
3	Biochemistry	5	1.81	16

4	Bioinformatics	12	4.35	9
5	Biomedical Science	15	5.43	6
6	Biotechnology	2	0.72	25
7	Botany	14	5.07	7
8	Chemistry	42	15.22	1
9	Commerce and Financial Studies	10	3.62	12
10	Economics	1	0.36	27
11	Education	11	3.99	10
12	Educational Technology	8	2.9	13
13	Environmental Biotechnology	19	6.88	3
14	Environmental Management	4	1.45	21
15	Geography	3	1.09	22
16	Geology	1	0.36	27
17	History	1	0.36	27
18	Library and Information Science	5	1.81	16
19	Life Long Learning	3	1.09	22
20	Marine Biotechnology	13	4.71	8
21	Marine Science	16	5.8	5
22	Medical Physics	5	1.81	16
23	Microbiology	17	6.16	4
24	Physical Education	8	2.9	13
25	Physics	11	3.99	10
26	Remote Sensing	5	1.81	16

27	School of Computer Science and Engineering	1	0.36	27
28	Social work	5	1.81	16
29	Sociology	1	0.36	27
30	Tamil Studies	2	0.72	25
31	Women's Studies	7	2.54	15
Total		276	100	

Table 4 demonstrate that the Department of Nuclear Physics has received the highest number of 42 (15.22%) awards have placed in the first rank and followed by the Department of Animal Science has received 26 (9.42%) awards and placed in the second rank. It is found that the Department of Biomedical Science has received 15 (5.43%) awards have placed the sixth rank. It is further found that the Department of Education, Department of History, Department of Geology, Department of Sociology, and School of Computer Science and Engineering get less number 1(0.36%) awards have placed twenty-seventh rank.

5. 5. Department wise Research Publications

The study has ascertained the Department wise research publications of Bharathidasan University. The Bharathidasan University has 36 departments and around 25 departments have contributed research publications in Web of Science and 32 departments have contributed research publications in Scopus. The percentage were calculated, and ranks were assigned. The results are shown in Table 5.

Table 5 Department wise Research Publications

S. No	Department	NOP Web of Science	%	Rank	NOP Scopus	%	Rank
1	Bharathidasan School of Management	1	0.03	23	0	0	33
2	Centre for Remote Sensing	0	0	26	51	1.36	18
3	Animal Science	303	9.78	4	348	9.31	3
4	Biochemistry	104	3.36	10	53	1.42	17

5	Bioinformatics	123	3.97	7	75	2.01	15
6	Biomedical Science	88	2.84	12	90	2.41	12
7	Biotechnology	114	3.68	9	111	2.97	9
8	Botany	90	2.91	11	139	3.72	8
9	Chemistry	561	18.11	1	473	12.66	2
10	Commerce and Financial Studies	9	0.29	19	59	1.58	16
11	Computer Science and Applications	11	0.36	18	20	0.54	23
12	School of Engineering and Technology	0	0	26	78	2.09	14
13	Economics	0	0	26	1	0.03	30
14	Education	0	0	26	1	0.03	30
15	Educational Technology	1	0.03	23	13	0.35	25
16	English	0	0	26	6	0.16	26
17	Environmental Biotechnology	116	3.74	8	179	4.79	6
18	Environmental Management	15	0.48	17	33	0.88	21
19	Geography	6	0.19	20	34	0.91	20
20	Geology	0	0	26	2	0.05	29
21	History	0	0	26	0	0	33
22	Library and Information Science	1	0.03	23	47	1.26	19
23	Lifelong Learning	0	0	26	0	0	33
24	Marine Biotechnology	86	2.78	13	204	5.46	5
25	Marine Science	176	5.68	6	174	4.66	7
26	Mathematics	57	1.84	15	108	2.89	11
27	Medical Physics	75	2.42	14	16	0.43	24

28	Microbiology	218	7.04	5	340	9.1	4
29	Centre for Nonlinear Dynamics	451	14.56	2	110	2.94	10
30	Performing Arts	0	0	26	0	0	33
31	Physical Education	0	0	26	1	0.03	30
32	Physics	443	14.3	3	858	22.96	1
33	Industrial Biotechnology	0	0	26	80	2.14	13
34	Remote Sensing	44	1.42	16	24	0.64	22
35	Social Work	3	0.1	21	5	0.13	27
36	Sociology	0	0	26	0	0	33
37	Women Studies	2	0.06	22	4	0.11	28
	Total	3098	100		3737	100	

Table: 5 shows that the Department of Chemistry has contributed the highest number of 561 (18.11%) publications from the Web of Science and the Department of Physics has contributed 858 (22.96%) publications from Scopus and placed in the first rank, followed by Department of Non-Linear Dynamics 451 (14.56%) publications from Web of Science and Department of Chemistry has contributed 473 (12.66%) from Scopus and placed in the second rank. It is further found that the Centre for Bharathidasan Studies, Centre for Differently Abled Persons, Department of French, Department of History, Department of Lifelong Learning, National Facility for Marine Cyanobacteria, Department of Performing Arts, and Department of Sociology have contributed very less number of publications in Web of Science and Scopus.

5.6. Top ten faculty members and their department in Web of Science

Table 6 Top ten faculty members of Web of Science

S. No	Faculty Name	No. of Research Publications	%	Rank
1	Lakshmanan M (Non Linear Dynamics)	293	9.46	1
2	Thomas Muthiah P (Chemistry)	172	5.55	2

3	Arumugam S (Physics)	149	4.81	3
4	Palaniandavar M (Chemistry)	144	4.65	4
5	Archunan G (Animal Science)	122	3.94	5
6	Senthilvelan M (Non Linear Dynamics)	105	3.39	6
7	Ramesh Babu R (Physics)	101	3.26	7
8	Ramesh R (Chemistry)	93	3.00	8
9	Geraldine Veronica Vimala Rani P (Animal Science)	89	2.87	9
10	Thajuddin N (Microbiology)	89	2.87	9
Total		2671	100	

Table: 6 shows the top ten faculty members of Bharathidasan University. The data have been analyzed in terms of their publications. It is found that the Lakshmanan, M. (Department of Non-Linear Dynamics) has contributed the highest number of 293 (9.46%) publications and placed in the first rank, followed by Thomas Muthiah, P. (Department of Chemistry) 172 (5.55%) publications and placed in the second rank. It is also found that the Palaniandavar, M. (Department of Chemistry) 144 (4.65%) publications and placed in the fourth rank. It is further found that the Geraldine Veronica Vimala Rani, P (Department of Animal Science) and Thajuddin, N. (Department of Microbiology) have contributed very less number of 89 (2.87%) publications and placed in the ninth rank.

5. 7. Top ten faculty members and their department in Scopus

Table 7 Top ten faculty members of Scopus

S. No	Faculty	No. of Pub	%	Rank
1	Muthusamy Lakshmanan (Physics)	300	7.98	1
2	S Arumugam (Physics)	161	4.28	2
3	Govindaraju Archunan (Animal Science)	147	3.91	3
4	Thajuddin Nooruddin (Microbiology)	146	3.88	4
5	D Prabakaran (Marine Biotechnology)	145	3.86	5

6	P Thomas Muthiah (Chemistry)	135	3.59	6
7	R Ramesh Babu (Physics)	131	3.48	7
8	P Santhanam (Marine Science)	120	3.19	8
9	Murugaian Senthilvelan (Nonlinear Dynamics)	110	2.93	9
10	R Renganathan (Chemistry)	109	2.90	10
	Total	3759		

Table 7 shows the top ten faculty members of Bharathidasan University. The data have been analyzed in terms of their publications. It is found that the Lakshmanan, M. (Department of Physics) has contributed the highest number of 300 (7.98%) publications and placed in the first rank, followed by Arumugam, P (Department of Physics) 161 (4.28%) publications and placed in the second rank. It is also found that the Govindaraju Archunan (Department of Animal Science) 147 (3.91%) publications and placed in the third rank. It is further found that the Renganathan, R (Department of Chemistry) has contributed very less number of 109 (2.90%) publications and placed in the tenth rank.

6. Conclusion

In present situation library has the major role to support the research activities of any institution and also to provide the research details for the Institutional Accreditation and Ranking systems. Hence it is very much important to setup and maintain the Research Information Management System by libraries in all academic and research institutions. This will serve for our students, research scholars, faculty members and administrators in providing current information on faculty details and research activities. In turn this will help institution to have more visibility, collaboration and funding.

References

1. Rebecca, Bryant. "Convenience and Compliance: Case Studies on Persistent Identifiers in European Research Information Management." OCLC, www.oclc.org/content/dam/research/publications/2017/oclcresearch-convenience-compliance-rim-europe.a4.pdf.
2. Jeyshankar, R, and S Chithiraive. "Mapping of Research Output on Eosinophilia in India: A Scientometric Analysis." *Library Philosophy and Practice*, 2019, pp. 1–23.
3. Jeyapragash, B, Muthuraj, A, & Rajkumar, T. (2019). Implementation of Research Information System at Bharathidasan University. *Asian Journal of Information Science and Technology*, 9,

- 37-40. Retrieved from <http://www.trp.org.in/wp-content/uploads/2019/05/MANLIBNET-AJIST-Vol.9-No.S1-February-2019-pp.-37-40.pdf>
4. Jeyapragash, B, Muthuraj, A, & Rajkumar, T. (2018). Research Support Service by using Profile Management System with Special Reference to VIVO. Retrieved from https://www.researchgate.net/publication/327836403_Research_Support_Service_by_using_Profile_Management_System_with_Special_Reference_to_VIVO
 5. Jeyapragash, B, Muthuraj, A, & Rajkumar, T. (2018). Profile Management System: With Special Reference To VIVO. Retrieved from https://www.researchgate.net/publication/323933946_Profile_Management_System_With_Special_Reference_To_VIVO
 6. Jeyapragash, B, Muthuraj, A, & Rajkumar, T. (2018). An Analysis of Profile Management System with Special Reference to VIDWAN Database. Retrieved from https://www.researchgate.net/publication/323933831_An_Analysis_of_Profile_Management_System_with_Special_Reference_to_VIDWAN_Database
 7. Batcha, M Sadik (2018). Research Output Analysis of Top Six Universities of Tamil Nadu, India : A Scientometric View. Library Philosophy and Practice. Retrieved from <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=5187&context=libphilprac>
 8. Kolle, S.R. (2016). Publication Trends in Indian Journal of Traditional Knowledge: A Bibliometric Analysis. Journal of Advancements in Library Sciences, 25-34. Retrieved from <http://sciencejournals.stmjournals.in/index.php/JoALS/article/download/345/173>
 9. Thavamani, Kotti (2015) "A Study of Authorship Patterns and Collaborative Research in Collaborative Librarianship, 2009-2014," Collaborative Librarianship: Vol. 7 : Iss. 2 , Article 6. Available at: <https://digitalcommons.du.edu/collaborativelibrarianship/vol7/iss2/6>
 10. Bharathidasan University, Tiruchirappalli, Tamil Nadu, India. www.bdu.ac.in.
 11. Web of Science. www.webofknowledge.com/.
 12. Scopus. www.scopus.com, www.scopus.com/.