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Subject Experts in Engineering and Technology in Deemed Universities with Special Reference to Vidwan Database: A Study

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Abstract

This paper aims to examine the Vidwan database and find the distribution of subject experts in engineering & technology of Deemed Universities in India. Vidwan is the expert database for national researchers network it helps the research community to maintain their academic profile and identify the experts from various subject domains in one place. We collected the data from Vidwan database manually and used Microsoft Excel for analysing the data. Frequency distribution, percentage analysis were used to rank for finding the highly performing the fields of expertise, the academic positions (designation of the researcher), organisations and states. There are about 4365 experts available from the Deemed Universities. Out of these, 1729 experts are available in engineering & technology domain . There are more experts in electrical and electronics engineering. Among the various designations, the experts in the range of Assistant Professors level followed by Professors are in more numbers. Koneru Lakshmaiah Education Foundation and Kalinga Institute of Industrial Technology have contributed more experts. Andhra Pradesh is leading in the number of experts in engineering and technology. Tamil Nadu is in third position.

Keywords: *Vidwan, Subject expert, INFLIBNET, Altmetric, Academic Identity*

1. Vidwan: An Overview

VIDWAN is a National Researcher's Network and premier database of profiles of faculty members/scientists/researchers/subject experts working at leading academic institutions and other R & D organization involved in teaching and research in India. It provides important information about expert's background, contact address, experience, scholarly publications, skills and accomplishments, researcher identity, etc provides a platform for finding potential experts with similar expertise (Panda & Kannan, 2016)¹. The database developed and maintained by Information and Library Network Centre (INFLIBNET) with financial support from the National

Mission on Education through ICT (NME-ICT). It provides co-author network, Altmetric and citations. It uses academic identities such as ORCID, Scopus ID, Researcher ID, Google Scholar ID and Microsoft Academic ID for importing publications and citation information (Kannan et al., 2017)². The database can be used by the faculty members, scientists, researchers and scholars for self-archiving and as tool for finding expert information. The database would be instrumental in selection of panels of experts for various committees, taskforce, established by the Ministries/Government establishments for monitoring and evaluation purposes. It establishes communication between the research scholars and the subject experts and also helpful for the selection of experts for Doctoral Research Committee for the scholars registered for Ph.D. programmes at the universities and R&D organizations.

2. Review of Literature

The development of the technology and cheap cost leads to the creation of many databases emerged but the practice of authority work is not visible. Debnath and Gala (2018)³ examined the Vidwan database to find the degree of authority work practiced in it. It provides important information about expert's background, contact address and has a total 24573 experts from various domains out of which 6555 are from engineering and technology and it has more experts (2973) from the institutes of national importance (Chaman Sab, Dharani Kumar and Biradar, 2018)⁴.

Jeyapragash, Muthuraj & Rajkumar (2017a)⁵ conducted a study to find the expertise sharing in Vidwan database based on organisations, subject, academic position, territory in India and Tamil Nadu. They reviewed the current situation of the VIDWAN database and national researcher network in India and recommended to populate the database not only in India but also worldwide and in all scientific areas. Universities, R & D organisations and other academia too have an important role in populating this database. In an another study of analyzing the expertise sharing of Vidwan database in the field of medical science in Tamil Nadu, Jeyapragash, Rajkumar & Muthuraj (2017b)⁶ found 3312 experts working in organisations belonging to the Medical and Health category and out of them more number of experts (84) working in state universities. In terms of subject subfield, microbiology followed by biochemistry and molecular biology are leading. Experts with the professor category has high productivity.

McIntosh et al. (2010)⁷ focused, in their study on VIVO database, the technical innovation related to biomedical research towards the sharing of data, ancillary information and collaboration among researchers across a variety of disciplines and found that database has been designed to address these needs.

3. Objectives of the Study

The study started with the following objectives to find the expertise sharing in Vidwan database in engineering and technology subject category in the institutions deemed to be university.

- To find out the experts strength in engineering and technology;
- To identify the distribution of experts based on their field of expertise and designations;
- To find out the leading organizations based on the experts strength;
- To find out the states/territory leading in engineering experts

4. Research Methods

The data for the study were extracted from the Vidwan database (<https://vidwan.inflibnet.ac.in/>)⁸ manually based on the membership available during first week of March 2020. The study considered subject experts only in the Engineering & Technology in the institutions deemed to be university in India. There are about 4365 subject experts available from the Deemed Universities. Out of them, the Engineering & Technology subject alone has 1729 experts. We proceeded with these extracted data of 1729 experts from engineering and technology and analyzed the same using MS-Excel. Frequency distribution and percentage analysis were used in this study for ranking the leading field of expertise, academic positions, organisations and states/territory.

5. Results and Discussions

The Table 1 provides the details about the total registered experts from deemed universities and engineering and technology institutions, the academic positions used in the database to categorise the experts, field of expertise in engineering and technology and the distribution of experts from various states.

In overall, 4365 experts, belong to various subject domains, from deemed universities have registered in the database and out of them 1729 experts are from engineering and technology in 10 different academic positions. These 1729 experts have spread over at 119 organizations in 26 states. The engineering and technology subject has 133 subfields of expertise.

Table 1
Overview of Vidwan Database

S. No.	Description	Nos.
1	Total Experts in Deemed Universities	4365
2	Designation/Academic positions	10
3	Experts in Engineering and Technology	1729
4	Field of Expertise in Engineering and Technology	133
5	Organizations offering Engineering and Technology	119
6	Sates/Territory	26

5.1. Leading Fields of Expertise

Out of the 133 fields of expertise identified in engineering and technology, the top 10 fields with 1302 experts collectively have 75.30 % share and the details are given in Table 2. Electrical and electronic engineering with 250 experts (14.16%) occupies first position followed by computer science and engineering (220, 12.72%) and mechanical engineering (209, 12.09%). Computer science field has more sub divisions and this may be the reason behind Computer science and inter disciplinary SCI, Computer Science Software Engineering, Computer Science Artificial Intelligence and Computer Science Information Systems in 10th, 9th, 7th and 6th places respectively.

Table 2
Leading Fields of Expertise

S. No.	Field of Expertise	Nos.	n=1302 (%)	N=1729 (%)	Rank
1	Chemical Engineering	46	3.53	2.66	8
2	Civil Engineering	127	9.75	7.35	5
3	Computer Science and Engineering	220	16.90	12.72	2
4	Computer Science and Inter Disciplinary SCI	29	2.23	1.68	10
5	Computer Science Artificial Intelligence	81	6.22	4.68	7
6	Computer Science Information Systems	123	9.45	7.11	6
7	Computer Science Software Engineering	38	2.92	2.20	9
8	Electrical and Communication Engineering	179	13.75	10.35	4
9	Electrical and Electronic Engineering	250	19.20	14.46	1
10	Mechanical Engineering	209	16.05	12.09	3
Total		1302	100	75.30	

5.2. Experts based on their Designation Category

The study further extended to find the top nomenclature based on the experts strength and the same is given in Table 3.

Table 3
Designation wise Experts

S. No.	Designation Category	Nos.	N=1729 (%)	Rank
1	Vice Chancellor	6	0.35	6
2	Visiting Professor	2	0.12	9
3	Director	9	0.52	5
4	Dean	5	0.29	7
5	Professor	422	24.41	2
6	Associate Professor	324	18.74	3
7	Assistant Professor	915	52.92	1
8	Scientist	13	0.75	4
9	Scientific Officer	4	0.23	8
10	Retired Professor	2	0.12	9
11	Unknown	27	1.55	
Total		1729	100	

The Table indicates that there are more experts (915) in the academic position of Assistant Professor category and placed in first rank. More than half of the experts (53.76%) belonging to this category. It is followed by Professor with 422 experts (24.79%) and Associate Professor with 324 experts (19.04%) which occupied second and third rank respectively. Visiting professors and retired professors both with 2 experts (0.12%) occupy the least position. It differs from the findings of Jeyapragash, Rajkumar and Muthuraj (2017b) in medical and health science expertise in Tamil Nadu in Vidwan.

5.3. Highly Performing Organizations

The study also analyzed the find the top highly performing organizations based on the experts strength and the same is given in Table 4.

Table 4
Highly Performing Organization

S. No.	Name of the Organization	Nos.	n=1424 (%)	N=1729 (%)	Rank
1	Koneru Lakshmaiah Education Foundation	621	43.60	35.92	1
2	Kalinga Institute of Industrial Technology	340	23.87	19.66	2
3	Christ University	130	9.12	7.52	3
4	Indian Institute of Science Bangalore	88	6.17	5.09	4
5	SRM University	57	4.00	3.30	5
6	Bharati Vidyapeeth University, Pune	51	3.58	2.95	6
7	Vignan's Foundation for Science Technology & Research	44	3.08	2.54	7
8	Karpagam Academy of Higher Education	37	2.59	2.14	8
9	Indian Institute of Space Science and Technology	30	2.10	1.74	9
10	Institute of Chemical Technology, Mumbai	26	1.82	1.50	10
Total		1424	100	82.36	

Table 4 shows the top 10 organisations which have together contributed 82.36% of the total experts in engineering and technology. Koneru Lakshmaiah Education Foundation has more number of experts (621, 43.60%) than other organizations in the database and occupies the first position. It is followed by Kalinga Institute of Industrial Technology has (340 experts (23.87%) and Christ University has contributed 130 experts (9.12%) placed in second and third ranks respectively.

5.4. Highly Contributed States

The study has also analyzed the top state wise experts in Vidwan database and the same is given in Table 5.

Table 5 shows the details about the top ten highly performing states/territory in contributing experts in engineering and technology. The deemed universities from these 10 states together contribute 95.90% of the total experts.

Table 5
Experts from Top Ten States

S. No.	Name of the State	Nos.	n=1658 (%)	N=1729 (%)	Rank
1	Andhra Pradesh	514	31.00	29.73	1
2	Odisha	363	21.89	20.99	2
3	Tamil Nadu	264	15.92	15.27	3
4	Karnataka	258	15.56	14.92	4
5	Maharashtra	110	6.63	6.36	5
6	Telangana	53	3.20	3.07	6
7	Kerala	33	1.99	1.91	7
8	Rajasthan	25	1.51	1.45	8
9	Jharkhand	22	1.33	1.27	9
10	Uttar Pradesh	16	0.97	0.93	10
Total		1658	100	95.90	

The deemed universities in Andhra Pradesh have contributed 514 experts (31.00%) and placed in first rank. It is followed by Odisha with 363 experts (21.89%) and Tamil Nadu with 264 experts (15.92%). They have occupied second and third rank respectively. It is also found that the “Karnataka” (258, 15.56%) and “Maharashtra” (110, 6.63%) experts. It is inferred that the remaining states have less than 5% of experts in the subject of Engineering & Technology in Vidwan database.

6. Conclusion

In India, there are xxxxx institutions in deemed to be university status. The study was conducted for finding the details of experts working in these institutions. In this study, it was found that only 1729 experts in engineering and technology subject are working in these institutions. Comparatively it is very low since the number of deemed universities offering technical courses are high. This may be due to the lack of awareness among the institutions and the faculty members about the availability of Widwan database and its role in providing a network of researchers. It would be highly helpful to the faculty members as well the institutions to showcase their academic and research profile. It is also helpful for the government organisations and institutions to find the experts for committees, panel boards, and also for research collaboration. The students who wish to register for pursuing research would be able to find the research supervisor fit to their area of interest. Hence, the institutions may arrange for mass registration in the database for its faculty members. Registering in the database updating the profile often would be helpful as data repository to the institutions during the data submission accreditation, approval process and ranking frameworks.

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