

Guru Gobind Singh University, Delhi : A Scientometric Study of its Publications Output during 2006-15

Satyendra Sharma* and Ritu Gupta**

*Delhi Technical Campus, 28/1 Knowledge Park III, Greater Noida 201 306, Uttar Pradesh
sharmasatyendra@gmail.com

**Sri Venkateshwara University, Tirupati 517 502
ritu7648@gmail.com

Abstract

The paper examines 668 publications of Guru Gobind Singh University, as covered in Scopus database during 2006-15, using various quantitative and qualitative parameters with a focus on its growth, citation quality, share of national international collaborative papers, subject-wise distribution, contribution and impact of its leading scholars, contribution to most productive journals, etc. Guru Gobind Singh Indraprastha University, Delhi output witnesses an annual average growth rate of 37.53% and citation per paper of 4.92 during 2006-15, which decreased from 9.41 during 2006-10 to 3.15 during 2011-15. Its share of national and international collaborative publications in the total output was 52.69% and 8.53% during 2006-15. Only 61.08% share of the university publications registered 1 or more citations during 2006-15. Computer science contributed the largest share of publications (22.60%), followed by engineering (19.61%), materials science (15.27%), biochemistry, genetics & molecular biology (14.52%), physics & astronomy (13.17%), chemistry (12.11%), medicine (11.38%), agricultural & biological sciences (9.58%), mathematics (7.78%), environment science (6.59%), chemical engineering (5.69%), etc. during 2006-15. The university top authors contributed 375 publications, which constituted 56.14% and 72.67% share to its total publication and citation output during 2006-15. The university contribution in 20 most productive journals together account for 16.17% share of its total output during 2006-15, which decreased from 21.69% to 13.99% from 2006-10 to 2011-15. Suggest the need for university to enlarge its research output and also raise its quality and impact of its research publications in order to compete with other universities in Delhi.

0 Introduction

The Govt. of NCT of Delhi established its first University with the name Guru Gobind Singh Indraprastha University in 1998. It is a teaching and affiliating University with the explicit objective of facilitating and promoting “studies, research and extension work in emerging areas of higher education with focus on professional education, for example engineering, technology, management studies, medicine, pharmacy, nursing, education, law, etc. and also to achieve excellence in these and connected fields and other matters connected therewith or incidental

thereto. In a short span of 17 years, the University has not only been able to earn the best of national accreditations, educational awards and acquire stringent certifications – UGC's recognition under Section 2 (f) and 12 (b); Graded as 'A' by the National Assessment and Accreditation Council, Bangalore; ISO 9001 : 2000 first in 2008 and upgraded later to ISO 9001 : 2008 in 2009; and Recertified again in February, 2011 up to February, 2014. The University is recognized by University Grants Commission (UGC), India. Guru Gobind Singh Indraprastha University awards various degrees such as: B.Tech, B.Arch., M.Tech, MCA, M.Sc., BCA, BBA, MBA, BMC, B.Pharma, BPT, MPT, BHMCT, B.Ed., LLB, LLM, BHMS, MBBS and Ph.D. The admission to these programmes is done yearly through a Common Entrance Test. Within a short span, Guru Gobind Singh Indraprastha University has been able to make its presence felt the world over. It is running more than 60 programmes in 11 University Schools of Studies and 80 Institutes, imparting professional education to more than 38,000 students with an annual intake of about 12,000. Believing in the philosophy of continuing education, the University has started a number of Post Graduate level Weekend Programmes in Management, Technology and Mass Communication for working professionals, which have become very popular. The University's state-of-the-art Main Campus, spread over on an area of more than 60 acres, is located at Sector 16-C, Dwarka, New Delhi and 11 University Schools of Studies, namely, (i) University School of Basic and Applied Sciences; (ii) University School of Biotechnology; (iii) University School of Chemical Technology; (iv) University School of Education; v) University School of Environment Management; (vi) University School of Humanities and Social Sciences; (vii) University School of Information Technology; (viii) University School of Law & Legal Studies; and, (ix) University School of Management Studies ; (x) School of Architecture & Planning; and (xii) School of Mass Communication. The university's state of the art campus with ultra-modern facilities in an area measuring 60 acres is being build at West Delhi (Dwarka). With an aim to provide Research and Development facilities of international standards, Guru Gobind Singh Indraprastha University has decided to set up an Institute of Information Technology in East Delhi (Surajmal Vihar) [1].

1 Literature Review

A number of studies [2-11] have been published in India focusing on the performance of individual Indian universities using publications, citations and collaborative publications data and using quantitative and qualitative indices. There are also studies [12-19] which deal with performance of individual university in broad and narrow subject area. On a similar line, the present study makes an evaluation of research output of Guru Gobind Singh Indraprastha University, Delhi during 2005-14

2 Objectives

The main objectives of this study are to study the performance of Guru Gobind Singh University, based on publications output, as indexed in Scopus database during 2006-15. In particular, the study focuses on the following objectives: (i) To study the growth of its research output and its distribution by type of publication and citation impact per paper (ii) To study the distribution of citations received by university publications (iii) To study the share of its national and international collaboration publications and share of leading collaborative countries (iv) To study the distribution of Indian research output by broad and narrow subject areas; (v) To study the publication productivity and citation impact of its leading Indian authors (vi) To study the leading media of communication

3 Methodology

For downloading publication data, we have used “Guru Gobind Singh Indraprastha University” and “Delhi” as the keywords used in affiliation tag and “2006” to “2016” selected as the time span of the study, which resulted in 668 records of the university. The search strategy used is shown below. These records were further analyzed using different tags in the Scopus database such as “author names”, “subject area”, “document type”, “source Title”, “Affiliation” and “Country/Territory” to get information on different aspects of research output as specified in the objectives of the study.

(AFFILORG(Guru Gobind Singh Indraprastha University) AND AFFILCITY(Delhi)) AND PUBYEAR > 2005 AND PUBYEAR < 2016

4 Analysis

The total publication output of Guru Gobind Singh Indraprastha University, Delhi consisted of 668 publications during 2006-15, which increased from 13 to 121 publications from year 2006 to 2015, registering an annual average growth rate of 37.53%. The cumulative growth of Guru Gobind Singh Indraprastha University publications increased from 189 to 479 from 2006-10 to 2011-15, registering growth of 153.44%. The average citation per paper registered by all publications of Guru Gobind Singh Indraprastha University was 4.92 during 2006-15, which decreased from 9.41 during 2006-10 to 3.15 during 2011-15 (Table 1). Of the total publications of Guru Gobind Singh Indraprastha University, 72.01% (481) appeared as articles, 17.96% (120) as conference papers, 4.94% (33) as reviews, 2.10% (14) as book chapters, 1.20% (8) as articles in press, and others less than 1%: letters (0.90%), books and erratum (0.30%), editorial and short survey (0.15% each) during 2006-15.

Table 1. Growth of Publications, Citations and Collaborative papers of Guru Gobind Singh Indraprastha University during 2006-15

Publication Year	TP	TC	ACPP	NCP	%NCP	ICP	%ICP
2006	13	135	10.38	8	61.54	1	7.69
2007	37	579	15.65	15	40.54	3	8.11
2008	32	300	9.38	16	50.00	2	6.25
2009	45	329	7.31	24	53.33	2	4.44
2010	62	435	7.02	38	61.29	5	8.06
2011	63	402	6.38	36	57.14	6	9.52
2012	93	485	5.22	57	61.29	10	10.75
2013	79	297	3.76	38	48.10	10	12.66
2014	123	266	2.16	67	54.47	12	9.76
2015	121	58	0.48	53	43.80	6	4.96
2006-10	189	1778	9.41	101	53.44	13	6.88
2011-15	479	1508	3.15	251	52.40	44	9.19
2006-15	668	3286	4.92	352	52.69	57	8.53
TP=Total Papers; TC=Total Citations; ACPP=Average Citation Per Paper; NCP=National Collaborative Publications; ICP=International Collaborative Publications							

4.1 Comparison of Guru Gobind Singh Indraprastha University with other Delhi Universities

In comparison with other Delhi universities, Guru Gobind Singh Indraprastha University is ranked at 6th place in publication output, 7th rank in average citation per paper, 6th rank in terms of h-index and 7th rank in terms of share of high cited papers during 2005-14 (Table 2).

Table 2. Scientometric Profile of Indian Universities in terms of Overall Output during 2006-15

S.No	Name of the University	TP	TC	ACPP	HI	HCP	%HCP
1	University of Delhi	11885	101523	8.54	79	93	0.78
2	Jawaharlal Nehru University, New Delhi	5424	27583	5.09	65	18	0.33
3	Jamia Hamdard University, Delhi	3301	32092	9.72	68	21	0.64
4	Delhi Technological University	2350	13479	5.74	46	8	0.34
5	Jamia Millia Islamia, Delhi	1147	7452	6.50	33	11	0.96
6	G G S Indraprastha University, Delhi	668	3286	4.92	24	2	0.30
7	Indira Gandhi National Open University, Delhi	535	1832	3.42	20	1	0.19
8	South Asia University, Delhi	298	6823	22.90	18	7	2.35
TP=Total Papers; TC=Total Citations; ACPP=Average Citation Per Paper; HI-h-index; HCP=High Cited Papers							

4.2 National Collaboration

The share of national collaborative publications in the total output of Guru Gobind Singh Indraprastha University was 52.69% during 2006-15, which decreased from 53.44% during 2006-10 to 52.40% during 2011-15 (Table 1). The 352 national collaborative publications of Guru Gobind Singh Indraprastha University received 1894 citations, leading to average citations per paper of 5.38. The largest share of national collaborative papers (157 publications with 20 universities) was with universities: University of Delhi (45 publications), followed by Inter-University Accelerator Centre, Delhi (23), Delhi Technological University (18), Aligarh Muslim University (15), Amity University, Noida (13), Jamia Millia Islamia, Delhi (7), G.N.D.University, Amritsar, University of Calcutta and Jaypee Institute of Information Technology (5 each). The second largest collaborating group was research institutes (115 publications with 17 research institutes): National Physical Laboratory, New Delhi (26

publications), Defence Research & Development Organization (14), Institute of Genomics & Integrated Biology, Delhi (13), Indian Agricultural Research Institute, New Delhi (11), Meteorological Department, New Delhi (9), Saha Institute of Nuclear Physics, Kolkata (8), Defence Institute of Bio-Energy Research (7), Indian Association for Cultivation of Science, Kolkata (6), Indira Gandhi Centre of Atomic Research, Kalpakkam (5), etc. The third largest group of collaborative organizations was institute of national importance (58 papers from 3 INI): iit-Delhi (37 papers), AIIMS-Delhi (21), etc. The largest number of collaborative papers among engineering colleges was with Netaji Subhash Institute of Technology and Orissa College of Engineering (12 each), etc.

4.3 International Collaboration

The share of international collaborative papers (57) of Guru Gobind Singh Indraprastha University was 8.53% during 2006-15, which increased from 6.88% to 9.19% from 2006-10 to 2011-15 (Table 1). The 57 international collaborative papers of the university together got 427 citations, leading to average citation per paper of 7.49. Among 23 collaborative countries in research output of Guru Gobind Singh Indraprastha University, the largest share (29.82%, 17 publications) was contributed by United States, followed by Japan (14.04%, 8 publications), Canada and Germany (10.53%, 6 publications each), Australia and Taiwan (7.02%, 4 publications each), U.K. (5.26%, 3 publications), Iraq and Mauritius (3.51%, 3 publications each), etc during 2006-15.

4.4 Distribution of Citations in Publications

Only 61.08% of total publications registered 1 or more citations during 2006-15. Of the cited publications, 0.30% share (2 publications) (received 100 or more citations) registered 8.58% of university's citation share (282 citations), 0.60% share (4 publications) of university's publications (received 51 to 100 citations) registered 9.10% citation share (299 citations), 2.10% share (14 publications) of university's publications (received 31 to 50 citations) registered 15.55% citation share (511 citations), 10.18% share (68 publications) of university (received 11 to 30 citations) registered 10.18% citation share (1076 citations), and 47.90% share (320 publications) of university (received 1-10 citations) registered 34.02% India's citations share (1118 citations) during 2005-14 (Table 3)

Table 3. Distribution of Citations in Publications of Guru Gobind Singh Indraprastha University during 2006-15

Citation Range	Number of publications	Number of Citations	Share of publications	Share of citations
0	260	0	38.92	0
1-10	320	1118	47.90	34.02
11-20	59	856	8.83	26.05
21-30	9	220	1.35	6.70
31-40	10	334	1.50	10.16
41-50	4	177	0.60	5.39
51-100	4	299	0.60	9.10
>100	2	282	0.30	8.58
Total	668	3286		

4.5 Subject-Wise Distribution of Publications

4.5.1 Broad Subject-Wise Distribution

Engineering sciences contributed the largest share of publications (48.35%) to the output of Guru Gobind Singh Indraprastha University, followed by physical sciences (38.47%), life sciences (24.25%), medical sciences (11.53%) and social sciences (8.53%) during 2006-15. Life sciences registered the highest citation impact per paper (8.73), followed by medical sciences (5.17), physical sciences (4.54), engineering sciences (3.47) and social sciences (2.47) (Table 4).

Table 4. Broad Subject-Wise Distribution of Publications of Guru Gobind Singh Indraprastha University during 2006-15

S.No	Broad Subject	TP	TC	ACPP	HI	%TP
1	Engineering sciences	323	1121	3.47	15	48.35
2	Physical sciences	257	1167	4.54	16	38.47
3	Life sciences	162	1414	8.73	18	24.25
4	Medical sciences	77	398	5.17	10	11.53
5	Social sciences	57	141	2.47	7	8.53
	Total of the university	668				
TP=Total Papers; TC=Total Citations; ACPP=Average Citation Per Paper; HI-h-index						

4.5.2 Narrow Subject-Wise Distribution of Publications

The publications output of Guru Gobind Singh Indraprastha University was classified according to Scopus bibliographical database classification. The largest share of publications (22.60%) was classified under computer science, followed by engineering (19.61%), materials science (15.27%), biochemistry, genetics & molecular biology (14.52%), physics & astronomy (13.17%), chemistry (12.11%), medicine (11.38%), agricultural & biological sciences (9.58%), mathematics (7.78%), environment science (6.59%), chemical engineering (5.69%), etc. during 2006-15. The publication share has increased in computer science, engineering, physics & astronomy, medicine, environment science, chemical engineering, earth & planetary science and pharmacology, toxicology and pharmaceuticals, as against decrease in materials science, biochemistry, genetics & molecular biology, chemistry, agricultural & biological sciences, mathematics, environment science, business, management & accounting and social sciences-general from 2006-10 to 2011-15. Biochemistry, genetics & molecular biology registered the highest citation impact per paper (12.03), followed by environment science (6.07), chemistry (5.89), pharmacology, toxicology and pharmaceuticals (5.80), chemical engineering (5.79), agricultural & biological science (5.55%), medicine (5.20), materials science (4.74), physics & astronomy (4.14), earth & planetary science (3.48), engineering (3.24), business, management & accounting (2.71), social sciences-general (1.88), computer science (1.84) and mathematics (1.81) during 2006-15 (Table 5).

Table 5. Subject-Wise Distribution of Publications on of Guru Gobind Singh Indraprastha University during 2006-15

S.No	Narrow Subject	TP			%TP			TC	ACP P	HI	IC P	%I CP
		2006-10	2011-15	2006-15	2006-10	2011-15	2006-15					
1	Computer science	39	112	151	20.63	23.38	22.60	278	1.84	10	7	4.64
2	Engineering	33	98	131	17.46	20.46	19.61	424	3.24	12	11	8.40
3	Materials science	31	71	102	16.40	14.82	15.27	483	4.74	12	11	10.78
4	Biochemistry, genetics & molecular biology	34	63	97	17.99	13.15	14.52	1167	12.03	18	14	14.43

5	Physics & astronomy	21	67	88	11.11	13.99	13.17	364	4.14	11	10	11.36
6	Chemistry	23	58	81	12.17	12.11	12.13	477	5.89	11	7	8.64
7	Medicine	15	61	76	7.94	12.73	11.38	395	5.20	10	11	14.47
8	Agricultural & biological sciences	21	43	64	11.11	8.98	9.58	355	5.55	11	8	12.50
9	Mathematics	15	37	52	7.94	7.72	7.78	94	1.81	6	1	1.92
10	Environment science	7	37	44	3.70	7.72	6.59	267	6.07	9	2	4.55
11	Chemical engineering	10	28	38	5.29	5.85	5.69	220	5.79	6	2	5.26
12	Business, management & accounting	9	22	31	4.76	4.59	4.64	84	2.71	5	1	3.23
13	Earth & planetary science	4	21	25	2.12	4.38	3.74	87	3.48	6	3	12.00
14	Social sciences-general	10	15	25	5.29	3.13	3.74	47	1.88	3	2	8.00
15	Pharmacology, toxicology & pharmaceuticals	5	15	20	2.65	3.13	2.99	116	5.80	5	3	15.00
	Total of the university	189	479	668								
TP=Total Papers; TC=Total Citations; ACP=Average Citation Per Paper; HI=h-index; ICP=International Collaborative Publications												

4.6 Contribution and Citation Impact of Top 20 Authors

The contribution of 20 top authors varied from 9 to 44 publications and together they contributed 375 publications (56.14% publication share) and accounted for 2388 citations (72.67% citation share) during 2006-15. A scientometric profile of top 20 most productive authors is shown in Table 6. Eight authors published more than the average productivity per paper (18.75) of all

authors: A.K.Narula (44 papers), R.K.Gupta (39 papers), R. Kumar (31 papers), S.Mohapatra (29 papers), P.C.Sharma (25 papers), A.Gosain (24 papers), P.Singh (20 papers) and R.Bharadwaj (19 papers) during 2006-15. Ten authors registered more than the average citation per paper (6.37) of all authors: A.Grover (16.64), P.C.Sharma (12.76), R.K.Gupta (12.03), P.Singh (9.30), B.D.Malhotra (9.10), S.Kuriakosa (8.27), A. Gupta (7.89), A.Kaur (7.75), R.Sharma (7.44) and V.Choudhary (7.33) during 2006-15. Ten authors have registered more than the average h-index (5.35) of all authors: R.K.Gupta (11), P.C.Sharma (10), P.Singh (9), R. Kumar and A.K.Narula (8 each), A.Grover and S.Mohapatra (7 each), B.D.Malhotra, S.Kuriakosa and V.Choudhary (6 each) during 2006-15. Five authors registered more than the average share (6.67%) of international collaborative papers of all authors: R.Sharma (55.56%), S.Mohapatra (31.03%), P.C.Sharma (16.0%), A.Grover (14.29%) and R.K.Gupta (7.69%) during 2006-15.

Table 6. Scientometric Profile of Top 20 Authors of the of Guru Gobind Singh Indraprastha University during 2006-15

S.No	Name of Author	Affiliation of the Author (University Institute of -)	TP	TC	ACP	HI	ICP	%ICP	NC	%NC
1	A.K.Narula	Basic & Applied Sciences	44	197	4.48	8	0	0	22	50.00
2	R.K.Gupta	Biotechnology	39	469	12.03	11	3	7.69	23	58.97
3	R. Kumar	Basic & Applied Sciences	31	144	4.65	8	1	3.23	24	77.42
4	S.Mohapatra	Basic & Applied Sciences	29	155	5.34	7	9	31.03	1	3.45
5	P.C.Sharma	Biotechnology	25	319	12.76	10	4	16.00	14	56.00
6	A.Gosain	Information Technology	24	24	1.00	2	0	0.00	15	62.50
7	P.Singh	Basic & Applied Sciences	20	186	9.30	9	0	0.00	15	75.00

8	R.Bharadwaj	Basic & Applied Sciences	19	39	2.05	4	1	5.26	12	63.16
9	Y.Singh	Information Technology	17	99	5.82	4	0	0.00	7	41.18
10	P.Chandra	Information Technology	15	7	0.47	2	0	0.00	6	40.00
11	A.Grover	Biotechnology	14	233	16.64	7	2	14.29	9	64.29
12	N.Rajpal	Information Technology	13	5	0.38	1	0	0.00	1	7.69
13	R.S.Gupta	Basic & Applied Sciences	13	4	0.31	1	0	0.00	5	38.46
14	V.Choudhary	Basic & Applied Sciences	12	88	7.33	6	0	0.00	12	100.00
15	A.Kaur	Information Technology	12	93	7.75	4	0	0.00	1	8.33
16	B.D.Malhotra	Basic & Applied Sciences	10	91	9.10	6	0	0.00	8	80.00
17	S.Kuriakosa	Basic & Applied Sciences	11	91	8.27	6	0	0.00	8	72.73
18	A. Gupta	Environment management	9	71	7.89	4	0	0.00	4	44.44
19	C.S.Rai	Information Technology	9	6	0.67	2	0	0.00	4	44.44
20	R.Sharma	Biotechnology	9	67	7.44	5	5	55.56	9	100.00
		Total of 20 authors	375	2388	6.37	5.35	25	6.67	200	53.33
		Total of the university	668	3286						
		Share of 20 authors in university output	56.14	72.67						
TP=Total Papers; TC=Total Citations; ACPP=Average Citation Per Paper; NCP=National Collaborative Publications; ICP=International Collaborative Publications; HI=h-index										

4.7 Medium of Communication

Of the 668 publications of Guru Gobind Singh Indraprastha University, 535 appeared in journals, 91 in conference proceedings, 25 in book series and 17 as books during 2006-15. The top 20 journals together accounted for 108 publications (16.17% share of the university output) during 2006-15, which decreased from 21.69% to 13.99% from 2006-10 to 2011-15. The largest number of publications (13) had appeared in Journal of Applied Polymer Science, followed by Nuclear Instrutmens & Methods in Physics Research. Section B (9 papers), Asian Journal of Chemistry (8 papers), Indian Journal of Pure & Applied Physics (7 papers), etc during 2006-15 (Table 7).

Table 7. List of Most Productive Journals Publishing Guru Gobind Singh Indraprastha University Output during 2006-15

S.No	Name of the Journal	Number of Papers		
		2006-09	2010-15	2006-15
1	Journal of Applied Polymer Science	11	2	13
2	Nuclear Instrutmens & Methods in Physics Research. Section B	1	8	9
3	Asian Journal of Chemistry	3	5	8
4	Indian Journal of Pure & Applied Physics	5	2	7
5	Journal of Alloys & Compounds	0	6	6
6	Current Science	3	3	6
7	Advanced Materials Letters	0	5	5
8	Physiology & Molecular Biology of Plants	3	2	5
9	Journal of Thermal Analysis & Calorimetry	3	2	5
10	Vaccum	0	4	4
11	Wireless Personal Communication	0	4	4
12	Applied Surface Science	0	4	4
13	Environmental Science & Pollution Research	0	4	4
14	Critical Reviews in Biotechnology	2	2	4
15	International Journal of Business Information System	3	1	4
16	Library Philosophy & Practice	4	0	4
17	Journal of Basic Microbiology	0	4	4

18	Beilstein Journal of Nanotechnology	0	4	4
19	Molecular Genetics & Genomics	3	1	4
20	Natural Hazards	0	4	4
	Total of 20 journals	41	67	108
	Total of the university	189	479	668
	Share of 20 journals in university output	21.69	13.99	16.17

5. Summary & Conclusion

The Guru Gobind Singh Indraprastha University, Delhi published 668 publications during 2006-15. Its annual publications increased from 13 to 121 publications from year 2006 to 2015, registering an annual average growth rate of 37.53%. The average citation per paper registered by all publications of Guru Gobind Singh Indraprastha University was 4.92 during 2006-15, which decreased from 9.41 during 2006-10 to 3.15 during 2011-15. Guru Gobind Singh Indraprastha University is ranked at 6th place in publication output, 7th rank in average citation per paper, 6th rank in terms of h-index and 7th rank in terms of share of high cited papers in comparison with other Delhi universities during 2005-14. The Guru Gobind Singh Indraprastha University share of national and international collaborative publications in its total output was 52.69% and 8.53% during 2006-15. The national collaborative publications of the university decreased from 53.44% during 2006-10 to 52.40% during 2011-15, in comparison to international collaborative publications which increased from 6.88% to 9.19% from 2006-10 to 2011-15. Of the total publications of the university, only 61.08% registered 1 or more citations during 2006-15. Among the cited publications, 0.30% share of publications (received 100 or more citations) registered 8.58% of university’s citation share in comparison to 47.90% share of publications of the university (received 1-10 citations) registered 34.02% India’s citations share during 2005-14. Among the broad subjects, engineering sciences contributed the largest share of publications (48.35%) to the output of Guru Gobind Singh Indraprastha University, followed by physical sciences (38.47%), life sciences (24.25%), medical sciences (11.53%) and social sciences (8.53%) during 2006-15. Life sciences registered the highest citation impact per paper (8.73), followed by medical sciences (5.17), physical sciences (4.54), engineering sciences (3.47) and social sciences (2.47). Among narrow subjects, computer science contributed the largest

publication share of 22.60%, followed by engineering (19.61%), materials science (15.27%), biochemistry, genetics & molecular biology (14.52%), physics & astronomy (13.17%), chemistry (12.11%), medicine (11.38%), agricultural & biological sciences (9.58%), mathematics (7.78%), environment science (6.59%), chemical engineering (5.69%), etc. during 2006-15. Biochemistry, genetics & molecular biology registered the highest citation impact per paper (12.03), followed by environment science (6.07), chemistry (5.89), pharmacology, toxicology and pharmaceuticals (5.80), chemical engineering (5.79), agricultural & biological science (5.55%), medicine (5.20), etc during 2006-15. The contribution of 20 top authors of the university accounted for 56.14% and 72.67% share of publication and citation output of the university during 2006-15. The top 20 most productive journals together accounted 16.17% share of the university output during 2006-15, which decreased from 21.69% to 13.99% from 2006-10 to 2011-15.

Concludes from above analysis that the performance of Guru Gobind Singh Indraprastha University lag far behind with other leading Delhi universities, in terms of both publications output and citation impact. As a result, the university must plan in terms of enlarging its research output and also in raising the quality and impact of its research output, by enlarging the size of qualified faculty and intake of intelligent Ph.D students and also improve its citation impact through enlarged participation of its faculty in national and international collaborative projects and increasing participation of its Ph.D students in international conferences and workshops. In addition, more efforts should be made to attract extra-mural grants for getting research projects from different major Indian funding agencies/departments, which may also lead to greater research output and qualitative research.

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