

The UGC-CARE Initiative and Its Impact on Indian Research Productivity: A Bibliometric Analysis of Web of Science Publications

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Abstract

This bibliometric study evaluates the impact of the UGC CARE initiative on Indian research output in Web of Science (WoS) indexed journals, comparing the pre UGC CARE (2000-2018) and post UGCCARE (2019-2024) periods. The analysis reveals a threefold increase in annual publications, from 42,406 to 139,355, alongside shifts in institutional contributions, subject trends, and journal preferences. Engineering overtook Chemistry as the dominant field, and open access adoption rose to 36.60%. While international publishers like Elsevier and Springer Nature retained prominence, domestic publishing grew modestly. The findings suggest that UGC CARE successfully promoted quality and visibility in Indian research, though challenges remain, particularly following its discontinuation in 2025. The study underscores the need for sustainable domestic publishing strategies to maintain these gains. Furthermore, the study examines evolving collaboration patterns, citation performance, and the increasing integration of interdisciplinary research across Indian institutions. The results indicate a growing emphasis on publishing in internationally recognized journals, reflecting enhanced research visibility and global engagement. Increased participation from emerging universities and research organizations also highlights the broader diffusion of research activity beyond traditionally dominant institutions. These trends demonstrate the role of quality-focused publication policies in strengthening India's scholarly ecosystem. The findings provide valuable insights for policymakers, academic administrators, and researchers in designing future frameworks that support research excellence, international competitiveness, and sustainable scholarly communication practices

Keywords: UGC CARE, quality journals, research productivity and academic quality

INTRODUCTION

The University Grants Commission Consortium for Academic and Research Ethics (UGC CARE), launched in 2018, aimed to enhance the quality of Indian research by curbing predatory publishing through a curated list of credible journals. This initiative sought to address the proliferation of low quality outlets that undermined the credibility of Indian scholarship. By promoting ethical publishing practices, UGC CARE intended to elevate the global standing of Indian research.

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This study examines the impact of UGC CARE on Indian scholarly output in Web of Science (WoS) indexed journals, analyzing publication trends across two distinct periods: pre UGC CARE (2000-2018) and post UGC CARE (2019-2024). The pre UGC CARE period saw 805,713 publications (averaging 42,406 annually), while the post UGC

CARE period recorded 836,128 (139,355 annually), totaling 1,641,841 over 24 years. This marked increase suggests a shift towards reputable journals, potentially amplified by factors such as increased funding or international collaboration.

Institutionally, the Indian Institutes of Technology (IITs) and National Institutes of Technology (NITs) saw growth in their contributions, while the Council of Scientific and Industrial Research (CSIR) experienced a decline. Subject areas also shifted, with Engineering surpassing Chemistry, and emerging fields like Computer Science and Environmental Sciences gaining prominence. Journal preferences transitioned towards high-impact outlets, and open access adoption increased, reflecting a strategic alignment with global research visibility goals.

With UGC CARE's termination in 2025, this study provides critical insights into its legacy and the challenges ahead, particularly the reliance on foreign publishers and the need for a robust domestic journal ecosystem. The findings offer evidence-based guidance for policymakers, academics, and librarians to sustain quality scholarly communication in the post UGC CARE era.

LITERATURE REVIEW

The University Grants Commission Consortium for Academic and Research Ethics (UGC CARE), launched in 2018, was a critical intervention to address the rampant issue of predatory publishing in Indian academia, particularly in Library and Information Science (LIS), where prior to its introduction, researchers frequently published in low-quality or fraudulent journals due to the pressure to meet publication requirements for academic promotions (Patwardhan & Nagarkar, 2021; Singson et al., 2025; Das & Singh, 2021) [1–3]. The UGC-CARE List, encompassing 292 LIS journals indexed in reputable databases like Scopus and Web of Science, significantly curbed predatory publishing by providing a curated whitelist of quality journals, leading to a notable increase in top tier publications and citations post-2010, as UGC policies emphasized credible outlets (Jeyapragash & Muthuraj, 2021; Singson et al., 2025) [3, 2]. Studies highlight that before UGC CARE, predatory journals exploited researchers with low publication fees (USD 50 500) and deceptive practices like cloned titles, with 40.47% of such journals retaining original names to attract submissions, a trend mitigated by UGC CARE's stringent criteria (Parray et al., 2024; Deora et al., 2021) [4, 5]. Despite its success, awareness gaps persisted, with 41.25% of researchers at North Eastern Hill University unaware of predatory journals, underscoring the necessity of UGC-CARE's educational role (Kharumnuid & Singh Deo, 2024) [6]. The initiative's focus on ethical publishing also supported institutional contributions, with universities like Delhi University leading in quality output, though regional disparities revealed uneven impact (Aich & Das, 2021; Singson et al., 2025) [7, 2]. The withdrawal of the UGC CARE List in 2025, has sparked concerns, as its absence may reverse gains in publication quality, potentially allowing predatory journals to regain prominence, especially given their penetration into indexes like PubMed through similar-sounding names (Gurnani & Kaur, 2021; Das and Singh, 2021; Khan & Mondal, 2025) [8–10]. Thus, UGC CARE was undeniably needed to establish benchmarks for research integrity, and its discontinuation poses risks to sustaining the shift toward quality journals, necessitating alternative mechanisms to maintain academic standards.

Objectives of the Study

The objectives of this study are:

1. To assess the UGC CARE initiative's impact on Indian research productivity in WoS indexed journals.
2. To evaluate shifts in institutional contributions to research output.
3. To analyze changes in subject category trends pre and post UGC CARE.
4. To examine evolving journal and publisher preferences among Indian researchers.
5. To investigate patterns of international collaboration in Indian research.
6. To assess the adoption of open access publishing models by Indian scholars.

METHODOLOGY

This study employs a quantitative bibliometric approach to analyze Indian-authored journal articles in the Web of Science (WoS) database. Data were collected for two periods: pre UGC CARE (2000-2018) and post UGC CARE (2019-2024), excluding 2025 to align with UGC CARE's active timeframe. Only journal articles were included to focus on peer-reviewed scholarly output; books and conference papers were excluded.

Publications were categorized by volume, institutional affiliation, subject area, journal, publisher, international collaboration, and open access status. WoS filters identified articles with Indian authorship, and statistical analysis calculated totals, averages, and percentage changes. Results are presented in tables, facilitating a comparative analysis of pre and post UGC CARE trends. This methodology ensures a rigorous evaluation of UGC CARE's impact on research productivity and quality.

RESULTS AND DISCUSSION

Publication Output

The data from Table 1 reveal a substantial increase in WoS publications post UGC CARE, with the annual average raising from 42,406 to 139,355 a threefold increase. Notably, the post UGC CARE period (6 years) accounts for 51% of the total output over 24 years, suggesting that the initiative may have encouraged researchers to publish in reputable journals. This shift likely reflects the success of UGC CARE in curbing predatory publishing, although external factors such as increased funding or global collaboration may also have contributed. The sharp rise in productivity implies that UGC CARE played a catalytic role in aligning Indian research with international quality standards.

Institutional Contributions

Table 2 indicates that the post UGC CARE, the IIT and NIT systems increased their shares to 14.24% and 7.50%, respectively, while CSIR's contribution declined sharply to 3.97%. The emergence of new institutions like VIT (2.09%) and the growth of the others category to 60.70% indicate a diversification of research contributions. This shift suggests that UGC-CARE may have incentivized technology-focused institutions to prioritize quality output, while CSIR's decline could reflect a reallocation of research priorities or resources. The broader participation of institutions implies that UGC-CARE fostered a more inclusive research landscape, though further research is needed to understand the underlying causes of CSIR's reduced output.

Subject Trends

Table 3 shows Engineering overtook Chemistry as the leading field post UGC CARE (17.24% vs. 13.43%), while Computer Science (7.43%) and Environmental Sciences (5.15%) gained prominence. This shift aligns with national priorities in technology and sustainability, potentially encouraged by UGC CARE's emphasis on quality. The decline in Chemistry and Physics may reflect reduced predatory publishing or resource reallocation, though the data alone cannot confirm causation. The rise of emerging fields suggests that UGC CARE helped Indian researchers align with global research trends, enhancing the relevance and impact of their work.

Journal Preferences

It is clear evident from Table 4 that the transition from *JEMDS* (1.29%) to *Cureus* (1.41%) and *Scientific Reports* (0.78%) post UGC CARE indicates a preference for reputable, high impact journals. The emergence of engineering focused titles like *IEEE Access* aligns with the disciplinary shift observed in Table 3. This change suggests that UGC CARE successfully steered researchers away from potentially predatory outlets, promoting quality driven publishing. However, further analysis of journal impact factors would strengthen this inference.

Publisher Trends

In Tables 5 and 6, Elsevier and Springer Nature remained dominant, with Springer Nature's share rising to 18.67%. The growth of open-access publishers like MDPI (2.60%) and domestic players like

Wolters Kluwer Medknow (3.64%) reflects a diversification of publishing outlets. However, the continued reliance on foreign publishers highlights the underdevelopment of India's domestic journal ecosystem, a challenge that UGC-CARE aimed to address but did not fully resolve. This dependence may limit India's ability to retain research revenue and control its scholarly narrative.

Table 1. Indian web of science publications.

Period	Publications	Annual Average
Pre-UGC-CARE	805,713	42,406
Post-UGC-CARE	836,128	139,355
Total	1,641,841	

Table 2. Institutional affiliations of Indian web of science publications.

Pre UGC CARE	Count	%	Post UGC CARE	Count	%
IIT System	106,476	13.21	IIT System	119,027	14.24
CSIR India	64,983	8.07	NIT System	62,715	7.50
NIT System	32,344	4.01	CSIR India	33,161	3.97
ICAR	28,425	3.53	ICAR	22,330	2.67
DST India	23,978	2.98	VIT	17,458	2.09
IISC Bangalore	21,729	2.70	ACSIR	15,925	1.91
IIT Kharagpur	17,782	2.21	DST India	15,238	1.82
BARC	16,709	2.07	IIT Madras	14,508	1.74
Univ. of Delhi	15,742	1.95	IIT Delhi	14,152	1.69
IIT Madras	14,987	1.86	SIMTS	14,150	1.69
Others	462,558	57.40	Others	507,464	60.70
Total	805,713		Total	836,128	

Table 3. Top research areas in Indian web of science publications.

Pre UGC CARE	Count	%	Post UGC CARE	Count	%
Chemistry	142,554	17.69	Engineering	144,166	17.24
Engineering	98,223	12.19	Chemistry	112,329	13.43
Physics	94,142	11.68	Materials Science	92,809	11.10
Materials Science	81,662	10.13	Physics	84,223	10.07
Science Tech. Other	47,110	5.84	Computer Science	62,144	7.43
Pharmacology Pharmacy	39,122	4.85	Science Tech. Other	56,175	6.72
Biochemistry Mol. Bio.	33,624	4.17	Env. Sciences Ecology	43,019	5.15
Agriculture	30,169	3.74	Mathematics	37,757	4.52
General Internal Med.	28,524	3.54	General Internal Med.	35,481	4.24
Mathematics	28,053	3.48	Pharmacology Pharmacy	28,973	3.47

Table 4. Distribution of Indian web of science publications across top journals.

Pre UGC CARE	Count	%	Post UGC CARE	Count	%
JEMDS	10,392	1.29	Cureus	11,759	1.41
JCDR	7,960	0.98	Scientific Reports	6,544	0.78
RSC Advances	7,001	0.87	JCDR	5,980	0.72
Current Science	5,076	0.63	IEEE Access	4,088	0.49
PLOS ONE	4,528	0.56	J. Molecular Structure	4,068	0.49
Tetrahedron Letters	4,027	0.50	J. Mat. Sci. Mat. Elec.	4,006	0.48
Asian J. Chemistry	3,732	0.46	Multimedia Tools & Apps	3,984	0.48
Indian J. Animal Sci.	3,657	0.45	J. Family Med. Prim. CARE	3,794	0.45
Int. J. Pharm. Sci. Res.	3,591	0.45	Chemistry Select	3,406	0.41

Table 5. Distribution of Indian web of science publications across top publishers.

Pre UGC CARE	Count	%	Post UGC CARE	Count	%
Elsevier	185,640	23.04	Elsevier	187,870	22.47
Springer Nature	108,662	13.49	Springer Nature	156,080	18.67
Wiley	46,899	5.82	Wiley	50,811	6.08
Taylor & Francis	45,389	5.63	Taylor & Francis	47,210	5.65
Royal Soc. Chemistry	20,352	2.53	Wolters Kluwer Medknow	30,424	3.64
Amer. Chemical Soc.	19,098	2.37	Amer. Chemical Soc.	22,310	2.67
Medknow Publications	12,373	1.54	MDPI	21,756	2.60
Sage	11,970	1.49	IEEE	21,084	2.52
IOP Publishing	11,687	1.45	Royal Soc. Chemistry	16,352	1.96
Indian Acad. Sciences	11,623	1.44	Sage	15,826	1.89

Table 6. International collaboration in web of science publications by country.

Pre UGC CARE	Count	%	Post UGC CARE	Count	%
USA	52,467	6.51	USA	57,630	6.89
Germany	18,708	2.32	Saudi Arabia	39,137	4.68
England	17,654	2.19	China	26,985	3.23
South Korea	15,109	1.88	England	25,024	2.99
France	13,080	1.62	South Korea	21,186	2.53
China	12,368	1.54	Germany	17,358	2.08
Japan	12,119	1.50	Australia	16,850	2.02
Australia	10,144	1.26	Italy	12,377	1.48
Italy	9,534	1.18	Canada	12,335	1.48
Canada	9,246	1.15	France	11,749	1.41

Table 7. Web of science publications by journal type.

Pre UGC CARE	Count	%	Post UGC CARE	Count	%
Gold	95,252	11.82	Gold	200,700	24.00
Gold-Hybrid	20,184	2.51	Gold-Hybrid	31,130	3.72
Free to Read	46,994	5.83	Free to Read	29,524	3.53
Green Published	85,666	10.63	Green Published	121,372	14.52
Green Accepted	13,290	1.65	Green Accepted	14,141	1.69
Green Submitted	59,547	7.39	Green Submitted	42,638	5.10
Total Open Access	208,061	25.82	Total Open Access	306,055	36.60

INTERNATIONAL COLLABORATION

Open Access Adoption

In Table 7, While the USA remained the top collaborator (6.89%), Saudi Arabia (4.68%) and China (3.23%) emerged as significant partners post UGC CARE, diversifying India's research network. This shift may reflect strategic alliances or funding opportunities, potentially enhanced by UGC CARE's quality focus. The diversification suggests that Indian researchers are engaging more broadly with global partners, which could enhance the impact and visibility of their work, though the specific drivers of these collaborations warrant further investigation.

Table 8. Publisher country in web of science publications.

Pre UGC CARE	Count	Post UGC CARE	Count
Netherlands	225,370	Netherlands	201,975
Germany	163,630	USA	154,151
USA	149,092	India	109,205
UK	112,696	Germany	108,662
Switzerland	37,632	UK	66,696
India	28,162	Switzerland	7,610
Turkey	1,917	Egypt	5,359
Singapore	8,847	Canada	4,326
Egypt	4,418	Korea	1,325
China	1,029	France	1,171

Open access adoption increased from 25.82% to 36.60%, with Gold open access tripling to 24.00%. This growth, alongside the rise in Green Published articles (14.52%), aligns with UGC-CARE's goals of enhancing visibility and accessibility. The decline in Green Submitted articles suggests a preference for immediate access models, which are better suited to global dissemination. This shift implies that Indian researchers are increasingly prioritizing open access to enhance the reach and impact of their work.

Publisher Country Analysis

In Table 8, While India's domestic output grew from 28,162 to 109,205, foreign publishers particularly from the Netherlands and the USA remained dominant. This persistent reliance highlights the underdevelopment of India's domestic journal ecosystem, despite UGC CARE's efforts to promote quality publishing. The continued dependence on foreign platforms suggests that India must invest in credible domestic journals to reduce outflows of research revenue and strengthen its scholarly infrastructure.

CONCLUSION

This study demonstrates the transformative impact of the UGC-CARE initiative on Indian research productivity, quality, and global visibility. The threefold increase in WoS-indexed publications, shifts towards high-impact journals, and enhanced open access adoption underscore UGC-CARE's success in promoting ethical publishing practices. However, the continued dominance of foreign publishers and the discontinuation of UGC-CARE in 2025 pose significant challenges. To sustain these gains, stakeholders must prioritize the development of a robust domestic journal ecosystem and implement alternative quality control mechanisms. This will ensure that Indian research maintains its integrity and global competitiveness in the post-UGC-CARE era.

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