

Mapping 25 Years of Scientific Productivity: A Bibliometric Analysis of the University of Kashmir

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Abstract: This paper gives a bibliometric review of the research activity of the University of Kashmir (UoK) (J&K) in Web of Science database between 2000-2025. The sample size comprised 13,882 publications, which were evaluated to investigate the change in the research productivity, pattern of citation, structure of authorship and network of collaboration. The analysis shows that there are very high growth rates in both the publications and citations and especially during the past ten years which is a good indication of the improvement in the research performance. There was a high rate of collaboration with close national and international connections particularly with the Pakistani, Saudi Arabia, Chinese, and the United States institutions. It is also validated by the results that there is a skewed pattern of authorship with a small fraction of authors contributing to most of the publications. Moreover, there are losses in certain fields with the majority of the most powerful and widely-read publications being clustered in particular disciplines like food technology, botany, chemistry, physics. Nonetheless, there is also little exhaustive data on the research performance of the UoK in the long term. The present study contributes to the field, providing a new bibliometric evaluation, identifying the major trends, the impact, and the patterns of collaboration. The research sheds some light on the dynamics of research and it may be an effective model in the assessment of institutional scientific productivity through the methods of bibliometric.

Keywords: Bibliometric Analysis, Research Productivity, UoK, Research output, VOSviewer, Web of Science

1 Introduction

The bibliometric analysis has turned out to be a valuable method of assessing the productivity of research, and it is also used to comprehend the organization and development of scientific output. It allows to quantitatively evaluate publications, citation pattern, authorship trends and collaboration pattern. Over the past few years, bibliometric techniques have been extensively used to evaluate the research performance of a given institution, country and even a given discipline [1-3]. The systematic use of statistics in order to examine scholarly publications and determine the level of research output, trends, and impact is known as bibliometrics [4-5]. To handle the vast volume of data published in various sources, such as journals, books, patents and proceedings, bibliographic databases are used to store information for future use. This information, including citations, keywords, journals, authors and affiliation of institutions, serves as valuable input for bibliometric analysis in subsequent research [6-8]. Bibliometric studies are popular and rigorous methods for analyzing scientific data [7] and used to identify the pattern of publications, authorship, citations and journal coverage with the hope to give an insight into the dynamics of the field under consideration [9]. It is the identification of possible trends and gaps in knowledge and plays an important role in management and decision-making in science and technology [10]. The data obtained due to bibliometric analysis have a great value and help researchers, policymakers to set their future directions

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and make comparisons among different disciplines, researchers, institutions, regions and even individual countries [11,4]. The bibliometric analysis unveils the fundamental evolution of the knowledge structure and sheds relevant insight on the topic based on relevant research streams [2]. Universities are essential to a nation's research and development. Scientific progress, technological advancements and development is the backbone of a society. New and original scientific research is open to the scientific community through publications. The reports that are read and used by the scientific community at large, reflects the intellectual capacity and the collective research potential of a society to look into the issues facing the world. Universities worldwide exist to generate advance human knowledge through research efforts of their departments and laboratories. The largest Union Territory in India is Jammu and Kashmir, which has 1.30 crore people living there. It has a strong history of academic excellence, with 330 colleges connected with Jammu and Kashmir's universities, as well as 14 central and state universities. One would assume that the region would have enough scientific output for bibliometric analysis and that it would be standard practice to evaluate the academic output of research given the region's diverse higher educational system. The present study aims to map out the Bibliometric Analysis of the Scientific Research Output of the UoK during 2000-2025, as reflected in the Web of Science (WOS) database. The present study is bibliometric study and has selected the Science Citation Index (SCI) of WOS core collection for selecting the university in terms of total publications in the last 25 years (2000–2025). The study attempt to examine the content of papers published, including the annual average growth rate percent, authorship pattern, degree of collaboration, distribution of citations, and organizational affiliation of papers. The data were downloaded from the Web of Science Core Collection for a period of 25 years and analysed through VOS viewer, a data visualization software. A few studies have used bibliometric methods to analyse the output of research in institutions, countries and disciplines to give an insight into publication patterns, collaboration patterns as well as research impact. Even though bibliometric means of measuring research performance is currently utilized more frequently, no long-term and large-scale evaluations have been carried out on the performance of public universities in the Kashmir and further on the Himalayan region. Current literature is too narrow or fails to represent longitudinal changes in publication output, citation impact, and collaboration patterns. The proposed research is expected to fill this gap through a systematic and comprehensive bibliometric synthesis of the UoK.

1.1 UoK: A Brief Profile

The University of Jammu and Kashmir was founded in the year 1948. In the year 1969 it was bifurcated into two full-fledged Universities: UoK at Srinagar and University of Jammu at Jammu. The UoK is situated at Hazratbal in Srinagar flanked by the world famous Dal Lake on its eastern side and Nigeen Lake on the western side. At present, university has 12 Faculties, 47 Academic Departments, 21 Research centres, 36 affiliated colleges and 6 recognized institutes. It has established Satellite Campuses at Anantnag (South Campus), Baramulla (North Campus) and Kupwara (Kupwara Campus) to make higher education more accessible to people living in remote areas of Kashmir valley. The University has also established a Sub-Office at Jammu to cater to the needs of the candidates enrolled with the University from outside Kashmir. According to its Statistical Digest (2020-21), the total enrolment across all programs has more than 112,903 students in 156 affiliated / constituent colleges with 530 full-time teaching faculty. UoK is ranked University is ranked as 59th overall in NIRF (National Institutional Ranking Framework, India) and 8th among State Public Universities in NIRF 2025. Based on Edu Rank KU is ranked 2,538 in the world (2025 data) and 67 in India. 451–500 top universities in the Asian university ranking monitoring the research index (scientific publications) can show the share of this index in the success rate. The University is committed to provide an intellectually stimulating environment for productive learning to enhance the educational, economic, scientific, business and cultural environment of the region. The University offers programmes in all the major faculties; Arts, Business & Management Studies, Education, Law, Applied Sciences & Technology, Biological Sciences, Physical & Material Sciences, Social Sciences, Medicine, Dentistry, Engineering, Oriental Learning and Music & Fine Arts. It has been constantly introducing innovative/ new programmes to cater to the needs and demands of the students and the society. Over the years, the University has marched towards excellence in its programmes and activities. It has been re-accredited as Grade-A+ University by the National Assessment & Accreditation Council (NAAC) of India. This is recognition and reflection of the high standard of quality in teaching and research at the UoK (www.kashmiruniversity.ac.in).

2 Review of Literature

Bibliometric techniques have been used by a significant amount of literature to assess the research productivity and scientific impact in various contexts. These papers are aimed at determining the publication patterns, networks of collaboration, the impactful authors, and the literature trends. Tyagi, S. (2024a) recently used the Scopus database to assess the research output on the digital divide between 2018 and 2022 with a sample of 3,571 studies [12]. The

performance and science mapping analysis shows that recent research on the digital divide has not been sufficiently exposed and examined. The analysis discovered emerging topics, prolific authors and nations, affiliations, a network of collaboration among authors, countries and institutions, bibliographic coupling and keyword co-occurrence. Barik and Jena (2019), recently used the Web of Science database to assess the research output on the GKMC “digital divide” from 2001 to 2020. This analysis identifies a total of 5,518 publications on the subject of the digital divide that were produced over the course of the past 20 years (2001–2020) by 14,277 authors from 130 different countries and published through 2,843 source titles. Globally, the annual growth of publications (AGP) on the subject of the digital divide is 38.43 percent [14]. Doulani (2021) studied the scientific publications of Alzahra University (Iran) as the top 100–200 universities during 1986–2019 using bibliometrics and visualization techniques [15]. The results showed that the trend of scientific production and received citations by the university is on the rise. The authors of this university have the most collaboration with the Tehran, the United States, Canada and Germany. 80 percent of scientific publications were published by 20 percent of authors and 70 percent of the highly cited articles were published in journals with quartile 1 [15]. A recent study investigated the current status of research output published in open access journals from Brazil, Russia, India, China and South Africa (BRICS) countries from 2010 to 2019.

Mokhtari et al. (2019) examined the scientific publications of Hamadan University of Medical Science (HUMS), Iran indexed in the Scopus database during 1992–2018 [16]. The resulting data revealed an upward trend in scientific production and the citations received by the university are on the rise. The majority of the scientific production has been produced in collaboration with the USA, UK and Sweden. Sadik Batcha et al. (2018) examined the research output of the faculties in Christian institutions in Tamil Nadu, India, using bibliometric methods [5]. The Web of Science (WoS) has been consulted for the retrieval of data from 1989 to 2016 with most productive year 2016. Similarly, a major increase and decrease were found in the research production during 32 years. The degree of collaboration was recorded 0.98 percent among researchers and Karunya University. South Korea was the major collaborative partner at the international level of Christian institutions. This study suggests that scholars must focus on international collaborative research [17]. In a study, Tsafe et al. (2016) analyzed the scientific productions of 165 librarians from 16 Nigerian universities. The total number of librarians’ publications was 373, often in the field of information technology [18]. Most of the publications (67.5 percent) belonged to male librarians. Banshal et al. (2017) analyzed the growth rate of research output, the productivity of the different Indian Institute of Technology (IITs) [19]. The research output of the IITs has been compared with top-ranking institutions such as MIT-USA and NTU-Singapore.

And some studies have also evaluated the bibliometric analysis of research output in different disciplines and journals. Mokhtari et al. (2019) analyzed research literature of Library and Information Science (LIS) from the Journal of Documentation (JDoc) from its inception in 1945–2018 [16]. A study [20] examined the bibliometric analysis of Library Herald Journal published during 2006–2010. This study concluded that 138 articles were published during this period and Library Automation was the most preferable research area with 31 articles. Patra and Chand (2007) analyzed research literature of Library and Information Science (LIS) from Library and Information Science Abstracts (LISA) during the period of 1967–2004 [21]. This study found that the highest number of papers published in the year 1999 and that Herald of Library Science was the most prolific journal and Late Professor P. N. Kaula was the most prolific contributor Tyagi (2024b) performed a scientometric analysis of five NIPERs in terms of 3,926 publications, with an average of 327 publications from 2010 to 2021, as reflected in the Scopus database [13]. The publications grew steadily from 168 to 509 registered, with an average growth rate of 18.44 percent on average. With an average citation impact of 17.26, the papers that were retrieved yielded 67,772 citations in total. The study found USA as the most dominant country. The average doubling time and relative growth rate of research output are 2.94 and 0.26, respectively. Wijewickrema (2023) examine the research progress in a combined subject domain using multiple aspects including, individual performance, institutional progress, geographical contribution [22]. Bibliographic records of the publications during 2010 and 2019 were retrieved from the Scopus database and VOSviewer data visualization tool used to perform citation, co authorship, bibliographic coupling, co-citation and co-occurrence analysis. Dwivedi (2017) conducted an A3-D bibliometric assessment of Banaras Hindu University (BHU), India. A total of 16,556 data indexed in the Web of Science, Science Citation Index was extracted for the period 1989 to 2016 [23]. The results showed exponential growth of publications since 2005. The maximum number of publications were produced in the field of Chemistry and Physics. The USA with 607 publications was the main collaborative country followed by Germany with 471 publications. Wahid et al. (2024) evaluates the research productivity of the most prolific authors of Pakistan considering their trends toward publications, citations and collaboration. Bibliographic data of the top ten authors of top ten universities were extracted from the Web of Science database. One of the findings of this study is that most of the productive authors are males [24]. Scientometric analysis techniques were carried out to evaluate the research profile of these authors. The findings revealed that majority of the productive authors were male working in the position of Professor. Khan and Hussain (2023) explore the status of collaborative research productivity and trends among LIS faculty in Pakistan using bibliometric attributes during 1975–2021 (47 years) [25]. Siddique (2021) investigate the research productivity of library and information science (LIS) authors affiliated with the 22 countries of the Arab League between 1951 and 2021 using bibliometric methods [26]. The Elsevier Scopus database was selected for data retrieval and for data visualization and analysis

VOSviewer, BiblioAnalytics, Microsoft Access and Microsoft Excel were used. The results of the study highlighted an upward trend in the growth of the publications, especially in the past four years with the largest number of studies published in the year 2020. The Kuwait University, the King Fahd University of Petroleum and Minerals and the Imam Abdul Rahman Bin Faisal University were the three most productive organizations. Barney et al. (2022) examining data collected from 324 management faculties at public universities in the USA disclose that there are no single job resources that predict research productivity [27]. Lohia and Prakash (2022) conducted an examination of the GS profiles of LIS faculties employed in central universities of North India to determine their research online visibility [28]. The correlation analysis reveals a robust inverse relationship between faculty visibility on GS and their citation metrics, including citation count, h-index and i-10-index. Mahala and Singh (2021) tracked the scientific research productivity of the top five Indian universities, University of Delhi (DU), Banaras Hindu University (BHU), Anna University (AU), Jadavpur University (JU) and Punjab University (PU) in terms of publications (26,173 documents) as reflected in the WoS database between 2015–2019. The results showed that DU had produced the maximum number of publications and majority of the papers were published in a co-authorship pattern [29]. The findings also revealed that the USA, South Korea and Germany emerged as the most collaborating countries in terms of research publications. Dhar (2022) depicted a picture of bibliometric analysis of the journal of librarianship and information science during 2012–2021. Study findings revealed that the maximum number of publications published and maximum number of citations were received in 2019 with the maximum number of publications published by female authors (518). A total of 991 authors contributed. Among these, two-authored papers were the highest (1,506); highest AAPP (2.55) was recorded in 2018; and the highest production per author (0.49) was recorded in 2012 [30]. Aslam et al. (2021) presents a comprehensive overview of the content of JoLIS from 1999 to 2019 and provides a methodological framework for the research productivity of this journal in future [31].

Callaghan (2017) measures the research productivity of the developing country (South Africa) in the context of gender in terms of journal articles indexed by Thomson Reuters Institute for Scientific Information, Pro Quest's International Bibliography of the Social Sciences and the South African Department of Higher Education and Training. The study found that gender moderates the relationship between experience and research productivity as a form of academic job performance [32]. Chakravarty and Madaan (2016) measured the research productivity of seven institutes in Chandigarh city in India engaged in diverse fields as indexed in the Scopus database for the period from 1964 to 2014. The study confined to Punjab University (PU), Post Graduate Institute of Medical Education and Research (PGIMER), Government Medical College and Hospital (GMCH), Punjab Engineering College (PEC), University Institute of Pharmaceutical Sciences (UIPS), Institute of Microbial Technology (IMTECH) and Central Scientific Instruments Organization (CSIO). The analysis revealed that the USA emerged as the most collaborative nation and PGI and PU were the most productive institutions in terms of publications [33].

A recent study [19] analyzed the growth rate of research output, the productivity of the different Indian Institute of Technology (IITs). The research output of the IITs has been compared with top-ranking institutions such as MIT-USA and NTU-Singapore. Sureka et al (2021) aims to provide a retrospective overview of the journal's leading trends and its thematic developments during 2004 and 2018, using bibliometric tools. The study uses bibliometric methodology along with network analysis on the bibliographic data extracted from the Scopus database. Findings show that the journal's influence in the academic world has significantly increased in the tenure of the past 15 years [34]. Powell and Dusdal (2017) measured the growth of scientific production in major three countries France, Germany and the United Kingdom European Science indexed in Thomson Reuters 'Science Citation Index Expanded (SCIE) from 1975 to 2010. The resultant data inferred that the research universities in all the three countries play an important role in the scientific production accounting for 50 percent of the publications [35]. Cancino et.al., (2017) provides a general bibliometric overview and identified the top 100 most influential universities that are most productive and influential in innovation research between 1989 and 2013 in the Web of Science (WoS). The results show that the most prestigious American universities are not only the most influential, taking into account the number of citations of their publications, but are also highly productive universities in this area, given the greater number of publications that they have accumulated on innovation research in the last twenty five years. There are also some universities in the UK, France and the Netherlands which are worth mentioning. They not only appear in the top 20 of our ranking, but their presence increases as we reach the list of top 100 universities, especially those in the UK and Netherlands. The influence of these universities in research innovation primarily comes from publishing in specialized journals that have been created in Europe [36]. Rodenburg et al. (2021) conducted a bibliometric study on business school ratings in support of a sustainable future and revealed that the rating of institutions in business schools is an essential parameter for the quality of education. The research contribution of faculty members and researchers affiliated with academic institutions is considered an indicator to estimate the research output [37]. Aslam et al. (2021) study presents a comprehensive overview of the content of JoLIS, from 1999 to 2019 and provides a methodological framework for the research productivity of this journal in future [31]. Ewokurai and James (2019) [38] and Barik and Jena (2019) [14] conducted a study examining the perceived and actual e-visibility of researchers affiliated with the School of Environmental Sciences at the University of South Africa, aiming to assess their inclusive research impact. Their findings indicate a tendency among researchers to prioritize free

information resources and websites over fee-based ones to enhance their online presence, discoverability, accessibility of research output and overall inclusive research impact.

3 Research questions

1. How is the number and historical trend of scientific publications authored by the UoK researchers indexed in Web of Science database?
2. How is the annual distribution and patterns of citations of scientific publications distributed across years by the UoK researchers in Web of Science database?
3. How does self-citation influence the h-index of the UoK researchers in the Web of Science database?
4. How is the status of national and international research collaboration between the UoK, authors as reflected in the Web of Science database?
5. How are the prolific and influential writers of the UoK, in terms of the of publication output, citation count, departmental affiliation, and collaboration patterns?
6. How the status of journals publishing scientific works of the UoK researchers, based on the number of publications, country, cites core and quartile ranks?
7. How is the status of influential scientific publications of the UoK researchers, in terms of type of journal, journals rank, year of publication and number of citations?
8. How is the trend of scientific output of the UoK researchers, in terms of subject areas?

4 Data sources and methodology

The present study focuses on the Bibliometric Analysis of the Scientific Research Output of the UoK from 2000 to 2025. The quantitative study was conducted using bibliometric patterns for achieving the desired research questions. The information in this paper was obtained in the WOS core collection database, which contains another database called the Science Citation Index Expanded (since 1985) the Conference Proceedings Citation Index -Science, the Conference Proceedings Citation Index -Social Science and Humanities (since 1990), the Emerging Sources Citation Index (since 2015), which is a product of Clarivate Analytics, USA and a popular and trustworthy database, commonly used in Bibliometric, scientometric and scientific research [39]. The WoS provides a multidisciplinary, comprehensive, and authoritative coverage at a global level for more than 21,000 international research journals wide-ranging data about the author, journal, subject and country's contribution [39-44]. For the WoS database, an advanced search strategy was implemented using the search query: OG = (UoK) OR OO=(UoK) OR AD=(University SAME Kashmir) Timespan: 2000 to 2025" and as the retrieval time was on November 18, 2025. The search query was crafted such that it retrieved publications that are affiliated to the UoK in a holistic manner. Nonetheless, since there is a chance of having records in institutions with similar names, further data cleaning procedures were done. All the retrieved records were filtered with utmost caution depending on the author affiliations, institutional names, and geographic identifiers so as to only have publications that were related to the UoK (India). Any document of other institutions of similar names was detected and left out. Redundant records were also eliminated to ensure that there was accuracy and consistency of the data. The query string brought up a total of 13,882 documents, which included a wide range of document types, including articles, review articles, proceedings papers, book review, editorial materials, reviews and book chapters, early access articles and other associated data. Data collection took place on November 18, 2025. The following bibliometric indicators were used to analyze and represent the final dataset: the total number of publications and citation year analysis , top ten cited articles, the top source of information, institutions, countries and most prolific authors on the topic, to provide insight into the relevance of an author, institution or country in that research field and the h-index, a measure of the impact and productivity of a researcher based on how frequently his/her publications have been cited. It is also necessary to mention that the data of the year 2025 are incomplete as they include the data about the first half year of 2025 as the data were accessed on November 18, 2025. As such, the number of publications and citations in 2025 can be lower than published years before. The refined records were exported to Microsoft Excel. The author used tabulations and various fields in the Microsoft Excel file to differentiate between various types of data. To analyze the bibliometric data on the subject, the VOSviewer and MS Excel software were used as data analysis tools. The threshold of 50 was used to ensure that only high-frequency keywords were included so that the co-occurrence network would be more interpretable and robust. The reason why this threshold was chosen is to retain enough coverage of the dataset and reduce noise on the infrequent terms, which is a popular way to run bibliometric network analysis. The trends of citation were analyzed by using Citation Reference Explorer (CReXplorer) to determine the effectual references over time. It is an especially handy tool in identifying citation peaks and being able to grasp the history behind the evolution of research areas. It was chosen because it gives in-depth information about the dynamics of citation and time patterns.

5 Findings

5.1 Publication Trends of UoK (WoS)

Figure 1 shows the frequency distribution of scientific publications of UoK during the years 2000–2025. In total, 13882 documents have been published by the authors of Kashmir University. The first work entitled “Anhaar and Bazyaft” was published by Kashmir University in the Journal Anhaar, Department of Kashmiri and Urdu. Year 2022 has the most publications with 1752 articles. Low publications documents retrieved in the year 2000, 2001 and 2002. Citation impact increased significantly over time, with a sharp rise observed during the last decade, indicating growing research visibility.

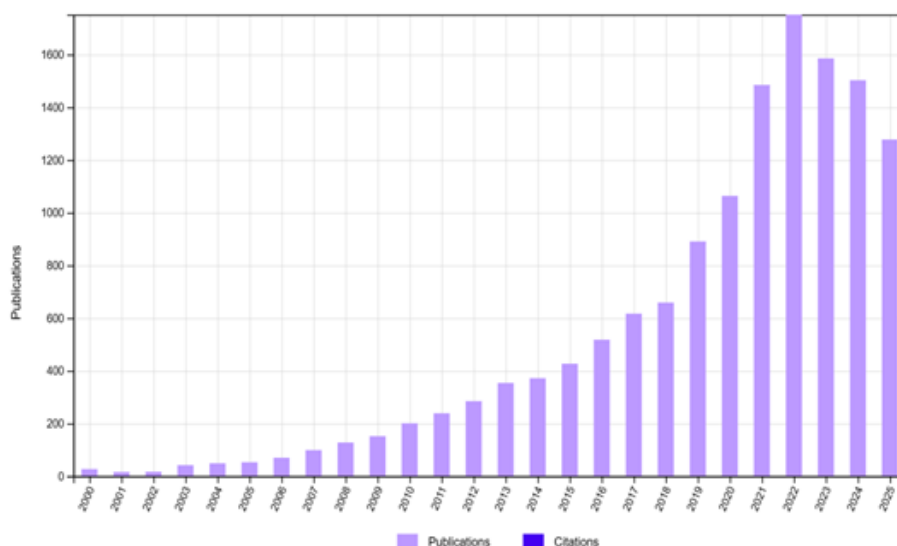


Fig. 1: Distribution of the scientific publications of the UoK

5.2 Citation Patterns of UoK Publications

Figure 2 shows the trend of citations received by Kashmir University Scientific Publications by CRExplorer software from the beginning of the year 2000 to the end of the year 2025. In general, the increasing trend of citations received from university papers has started slowly since the year 2000 and 2001. In general, the trend of increasing citations to articles is somewhat similar to the increasing trend of the number of articles (Figure 1). It seems that the increase in the number of articles from the mentioned years has naturally increased the number of quality articles as well. Table 1 shows the annual structure of citations received by researchers published by UoK. Of UoK’s 13882 published papers, 12095 (87 percent) received one or more citations. In other words, only 13 percent of publications had no citations. In total, 12095 documents have been cited 246194 (17.77 average per item) times.

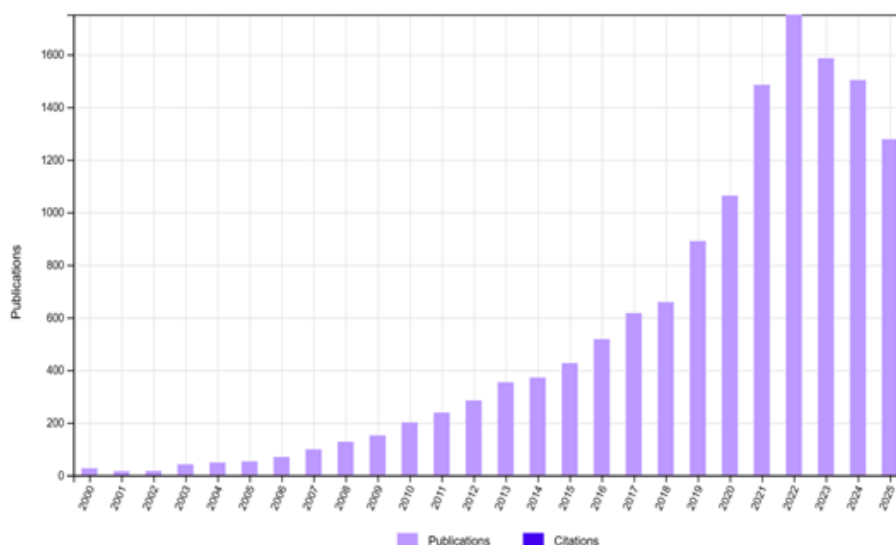


Fig. 2: Distribution of the trend of citations received from scientific products of the UoK

5.3 Self-Citation and h-index of UoK

Table 2 shows the status of h-index of UoK, documents in web of science, before and after self-citation deletion. The highest h-index is 154 and belongs to 2022, 2023 and 2024. The lowest h-index is 6 and dates back to 2001. And Also 12047 citations are related to self-citation. There is a difference in the h-indexes calculated based on the mentioned years, considering the self-citation and without considering it, the high rate of self-citation is noted. It seems the reason for this is the increase in the h-index as a quality indicator for authors to increase future citations. It should be noted that the h-index calculated in the following table is related to the same year. For example, in 2022, a total of 402 articles were indexed on the web of science database by university researchers, of which eight articles received at least eight citations each (including self-citations). Therefore, the calculated h-index for the respective year is eight. The year-wise h-index values should be interpreted as indicative of annual impact rather than a cumulative measure of research performance.

5.4 National & International Collaboration (UoK)

The UoK researchers' national collaboration with other researchers from other institutes and universities is shown in Table 4. The UoK has the most collaboration with the University of Azad Jammu Kashmir with 2031 cases with 14.6 percent (Excluding self-affiliation). Most universities and scientific institutes with the highest rate of cooperation with UoK (Table 4) have a good ranking in the IRF Indian ranking system of Jammu and Kashmir as well as in global ranking systems compared to other Jammu and Kashmir universities and scientific institutes. It seems that such universities are the most attractive for cooperation due to their favorable scientific position. Frequency distribution of UoK's collaboration at international level is shown in Table 3. The UoK has collaborated with 47 countries around the world. Accordingly, the highest international collaborations were with the Pakistan (17.41) Saudi Arabia (14.01 percent), People R China (8.85 percent) and USA (7.44 percent). The following table lists the 20 countries that have the most collaboration. Figure 3 shows the co-authorship of countries with 20 or more scientific collaborations with researchers at UoK. The five countries with the most collaboration are: Pakistan, Saudi Arabia, People R China and United States. In the co-authorship map, the size of the circles indicates the number of publications and the thickness of the lines indicates the number of co-authorship. According to this researchers at the UoK University are the largest collaborators with Pakistan (3752 documents), Saudi Arabia (1945 documents), People R China (1229 documents) and USA (1034 documents) respectively.

It is noteworthy that the rate of cooperation of the UoK (as an Indian and Asian university) with the universities of four countries with the most cooperation shows that the total scientific cooperation of the university with Indian and Asian universities (145 cases) and African universities 66 cases), none alone not as big as UK and American universities. This is also true to a lesser extent with the level of cooperation with other European countries. Perhaps the reason for this is the willingness of university researchers to cooperate with researchers from prestigious universities, which was explained in the previous lines regarding the cooperation of UoK with other universities at the national level.

Table 1: Annual Citation Structure of the UoK

Year	≥100	≥50	≥40	≥30	≥20	≥10	≥1	0	TP	TC	CPP
2025	0	0	0	0	0	5	353	206	1276	48318	37.86
2024	5	3	1	2	16	95	406	100	1503	48287	32.12
2023	4	3	5	17	8	94	267	72	1586	38958	24.56
2022	3	6	9	9	23	80	283	58	1752	32459	18.47
2021	2	17	7	17	19	84	242	56	1485	24165	12.06
2020	1	18	13	9	15	88	210	46	1064	16004	16.27
2019	3	4	6	17	17	86	211	22	891	10482	11.76
2018	4	11	8	4	13	80	216	32	659	7308	11.08
2017	1	7	10	17	20	78	230	43	617	5529	8.96
2016	1	9	9	8	10	75	110	17	518	4024	7.76
2015	2	11	7	14	17	63	120	20	427	3056	7.15
2014	4	9	4	3	9	68	99	15	372	2358	6.33
2013	10	14	8	15	11	77	89	16	354	1643	4.64
2012	4	13	5	7	18	61	78	9	285	1231	4.31
2011	3	8	7	8	7	53	67	11	239	820	3.43
2010	0	7	0	1	5	60	77	6	201	520	2.58
2009	0	0	0	0	5	49	51	3	152	371	8.62
2008	1	6	0	5	7	39	47	1	128	243	1.89
2007	0	1	0	1	7	36	42	8	99	169	1.70
2006	0	0	0	3	6	12	17	4	70	77	1.10
2005	0	1	0	0	0	15	14	2	53	82	1.54
2004	0	0	1	0	3	11	12	1	49	43	0.87
2003	0	1	0	0	1	0	9	0	42	28	0.66
2002	0	0	0	1	1	0	6	2	17	14	0.82
2001	0	0	0	0	0	0	3	1	16	5	0.31
2000	0	0	0	0	0	0	2	0	27	0	0.00
Total	48	149	100	158	238	1309	3261	751	13882	246194	217.89

Note: TP: Total Publications; TC: Total Citations; CPP: Citations per Publications.

Table 2: Distributions of documents, number of citations and number of self-citations of scientific products of the UoK

Year	Total Publications	Total Citations	H-index with self-citations	Self-citations	Citations without self-citations	H-index without self-citations
2025	1276	48318	8	159	259	7
2024	1503	48287	18	543	1195	16
2023	1586	38958	23	717	1386	18
2022	1752	32459	28	961	2571	24
2021	1485	24165	31	1039	2242	23
2020	1064	16004	31	1033	1788	23
2019	891	10482	25	764	1839	21
2018	659	7308	27	746	2323	23
2017	617	5529	29	640	2511	26
2016	518	4024	26	460	1992	23
2015	427	3056	29	732	2027	24
2014	372	2358	22	492	1959	20
2013	354	1643	30	844	2586	25
2012	285	1231	29	1306	1721	23
2011	239	820	20	469	936	17
2010	201	520	14	304	483	11
2009	152	371	12	103	216	8
2008	128	243	15	249	625	10
2007	99	169	11	211	219	7
2006	70	77	11	173	131	8
2005	53	82	7	33	115	5
2004	49	43	7	39	136	7
2003	42	28	4	12	112	4
2002	17	14	4	15	61	3
2001	16	5	2	1	11	2
2000	27	0	2	2	5	1
Total	13882	246194	–	12047	–	–

Note: H-index with self-citations refers to the H-index calculated including self-citations, whereas H-index without self-citations excludes self-citations.

5.5 Prolific and Influential Authors (UoK)

Table 5 presents the specifications of 20 active and prolific writers of the UoK in terms of the number of documents. The specifications include author name, department, number of publications and number of received citations, h-index and number of coauthors.

Table 3: Top international institutions collaborating with University of Kashmir 2000–2025 by countries

Rank	Countries/Regions	Documents	% of total 13882
1	PAKISTAN	3752	27.02
2	SAUDI ARABIA	1945	14.01
3	PEOPLES R CHINA	1229	8.85
4	USA	1034	7.44
5	SOUTH KOREA	490	3.52
6	EGYPT	406	2.92
7	ENGLAND	351	2.52
8	MALAYSIA	349	2.51
9	GERMANY	338	2.40
10	U ARAB EMIRATES	251	1.80
11	CANADA	234	1.68
12	JAPAN	230	1.65
13	ITALY	224	1.61
14	AUSTRALIA	222	1.59
15	SOUTH AFRICA	193	1.39
16	BRAZIL	185	1.33
17	POLAND	176	1.26
18	CZECH REPUBLIC	159	1.14
19	FRANCE	156	1.12
20	RUSSIA	153	1.10

Table 4: Top national institutions collaborating with the UoK, 2000–2025

Rank	Affiliation	Documents	% of total 13882
1	UOK	4880	35.10
2	UNIVERSITY OF AZAD JAMMU KASHMIR	2031	14.60
3	SHER E KASHMIR UNIVERSITY OF AGRICULTURAL SCIENCES TECHNOLOGY OF KASHMIR (SKUAST KASHMIR)	1810	13.03
4	SHER E KASHMIR UNIVERSITY OF AGRICULTURAL SCIENCES TECHNOLOGY OF JAMMU (SKUAST JAMMU)	1015	7.31
5	UNIVERSITY OF JAMMU	915	6.59
6	SHRI MATA VAISHNO DEVI UNIVERSITY	812	5.84
7	KING SAUD UNIVERSITY	606	4.30
8	ISLAMIC UNIV SCIENCE TECHNOLOGY	577	4.15
9	INDIAN COUNCIL OF AGRICULTURAL RESEARCH (ICAR)	544	3.91
10	COUNCIL OF SCIENTIFIC INDUSTRIAL RESEARCH (CSIR INDIA)	516	3.71
11	COMSATS UNIVERSITY ISLAMABAD (CUI)	478	3.44
12	CENTRAL UNIVERSITY OF JAMMU	457	3.29
13	INDIAN INSTITUTE OF TECHNOLOGY SYSTEM (IIT SYSTEM)	442	3.18
14	QUAID I AZAM UNIVERSITY	431	3.10
15	EGYPTIAN KNOWLEDGE BANK (EKB)	390	2.80
16	WOMEN UNIV AZAD JAMMU KASHMIR	357	2.57
17	NATIONAL INSTITUTE OF TECHNOLOGY (NIT SYSTEM)	344	2.47
18	CENTRAL UOK	334	2.40
19	CSIR INDIAN INSTITUTE OF INTEGRATIVE MEDICINE (IIIM)	333	2.39
20	UNIV POONCH RAWALAKOT	330	2.30

Table 5: Top 20 authors in terms of number of publications

Rank	Authors	Department	Documents	Citation	H-index	Co-author
1	Masoodi, F. A.	Food Technology	173	10167	58	463
2	Khuroo, Anzar Ahmad	Botany	131	5567	40	36
3	Reshi, Zafar Ahmad	Botany	130	3532	34	450
4	Sheikh, Javed	Physics	121	6867	44	65
5	Arya, Sandeep	Physics	120	9026	48	47
6	Gani, Adil	Food Technology	119	9147	58	481
7	Dar, Aijaz Ahmad	Chemistry	114	3682	33	450
8	Shah, Firdous A.	Mathematics	113	3603	27	66
9	Ganai, Bashir Ahmad	Biochemistry	110	7114	38	105
10	Ahmad, Pervaiz	Geography	104	861	12	11
11	Wani, Shabir	Zoology	103	5167	40	65
12	Parah, Shabir	Electronics	98	4953	39	35
13	Ahmed, Muhammad Naeem	Chemistry	96	2017	26	24
14	Shariefuddin Pirzada	Mathematics	94	2990	26	22
15	Bhat, G.H.	Physics	94	1690	23	36
16	Hussain, Syed Zameer	Food Technology	93	3452	28	28
17	Shakil Romshoo	Geo informatics	93	7804	49	44
18	Shah, Manzoor Ahmad	Botany	86	3303	34	27
19	Bhat, Maya Baskar	Chemistry	85	2303	26	24
20	Andleeb, Saiqa	Biotechnology	84	2100	24	27

Accordingly, Masoodi, F. A. is the most active author of the UoK from the beginning of the year 2000 until the end of the year 2025 with the publication of 173 articles, h-index 58 and 10167 received citation. Khuroo Anzar Ahmad with 131 article and Reshi, Zaffar Ahmad with 130 article are ranked second and third, respectively. As the data in the following table show, more than 60 percent of the university's active writers are in only five subject areas: Food Technology, Botany, chemistry, physics and Engineering. According to the data in the document column, it can be concluded that many departments in the university are in a severe stagnation in terms of production of international scientific articles. The data in Table 5 also show that high-index authors have collaborated with more authors. This indicates that the more collaboration between authors, the higher the h-index, while it is possible that the authors themselves are only in some (or in most cases) have the role of coauthor of the original author.

Masoodi with 173 documents, he is the most important author of this cluster. The third cluster is green. In the third cluster, Khuroo is the author of the core of this cluster with 131 documents. The fourth cluster is yellow. The core author of this cluster is Reshi with 130 documents. The fifth cluster is pink. The core author of this cluster is Javed Sheikh with 121 documents. The sixth cluster is blue. The core author of this cluster is Sandeep Arya with 120 documents. In this diagram, based on VOSviewer software data, we saw six clusters as described earlier. It also identifies different clusters by matching the color of the lines at both ends of each cluster. For example, the end of a red cluster has lines with pink, purple and so on that indicate a scientific connection between them. Another point to consider is the creation of separate clusters in a field such as Food Technology, botany, chemistry. As the data collected from the web of science database show, the researchers in the field of chemistry at UoK have the most scientific products of the university. In fact, most of the university visibility in the web of science database is limited to a few disciplines that refers to them in Table 5. Another strength of the researchers is that the production of their papers is not limited to one or a certain number of researchers, but most of them have published a significant number as the first author (not just a collaborator). That is why they are considered the main authors in their cluster.

5.6 Journal Publication Profile (UoK)

Table 6 presents the characteristics of the 25 journals that published the most documents of researcher of the UoK. Journal of "Scientific reports" has published the most articles with 183 articles with the authors of the UoK.

Indian Journal of Animal Sciences (177) and Indian Journal of Agricultural Science (150) are also ranked next. The data also show that out of the top 25 journals, 7 journals are in Quartile 1, 11 journals are in Quartile 2, 4 journals are in



Fig. 3: Co-authorship network map of the top 20 prolific authors



Fig. 4: Co-authorship map of the UoK's most prolific authors

Quartile 3 and 3 journals are in Quartile 4. Another point is that out of the top 25 journals in which the most documents of UoK have been published, only Six journals belong to India. Of course, it should be noted that the publication of articles in the countries mentioned in the following table does not indicate the international cooperation of UoK with the authors of these countries and only indicates the country that publishes the journals.

Table 6: Top journals publishing of the UoK

Rank	Journal	No. of Documents	Publishing Country	Cite Score	Cite Score Quartile
1	SCIENTIFIC REPORTS	183	United Kingdom	7.2	Q1
2	INDIAN JOURNAL OF ANIMAL SCIENCES	177	India	0.6	Q4
3	INDIAN JOURNAL OF AGRICULTURAL SCIENCES	150	India	1.2	Q4
4	ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH	108	Germany	6.6	Q1
5	PLOS ONE	106	USA	–	Q1
6	IEEE ACCESS	98	USA	6.4	Q1
7	INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES	94	Netherlands	10.3	Q1
8	PAKISTAN JOURNAL OF BOTANY	82	Pakistan	7.3	Q1/Q2
9	CURRENT SCIENCE	80	India	6.4	Q1/Q2
10	SUSTAINABILITY	79	Switzerland	7.7	Q1
11	ENVIRONMENTAL MONITORING AND ASSESSMENT	74	Netherlands	6.8	Q3
12	HELIYON	72	USA	7.1	Q2
13	INDIAN JOURNAL OF ANIMAL RESEARCH	70	India	5.5	Q4
14	PAKISTAN JOURNAL OF ZOOLOGY	70	Pakistan	6.4	Q1/Q2
15	FRONTIERS IN PLANT SCIENCE	68	Switzerland	7.3	Q1
16	JOURNAL OF MOLECULAR STRUCTURE	68	Netherlands	5.1	Q3
17	JOURNAL OF FOOD SCIENCE AND TECHNOLOGY MYSORE	66	India	5.0	Q3
18	INDIAN JOURNAL OF HORTICULTURE	62	India	4.9	Q3
19	PHYSICAL REVIEW C	57	USA	6.9	Q2
20	MULTIMEDIA TOOLS AND APPLICATIONS	56	Netherlands	7.3	Q1/Q2
21	JOURNAL OF MATERIALS SCIENCE MATERIALS IN ELECTRONICS	54	Netherlands	6.7	Q2
22	MATERIALS RESEARCH EXPRESS	52	UK	6.6	Q1/Q2
23	MOLECULAR BIOLOGY REPORTS	52	USA	5.9	Q2
24	NEW JOURNAL OF CHEMISTRY	52	UK	5.5	Q2
25	RSC ADVANCES	51	United Kingdom	4.6	Q1/Q2

5.7 Influential Publications of UoK

Table 7 presents the specifications of eleven highly cited articles of UoK. According to the table, the article “(Emerging concepts in the nutraceutical and functional properties of pectin-A Review)” is the most cited article. This article was published by Masoodi, F. A. in 2017 in Journal of Carbohydrate Polymers. Interestingly, 75 percent of the most influential and highly cited articles have been published in Quartile 1 journals. On the other hand, as shown in Table 5, most of the top writers are from specific disciplines and departments, such as chemistry, physics and a short distance from biology. The same situation can be seen in the top articles of the university. This means that many faculty members of different departments rank lower in terms of quantity and quality in publishing articles. This undeniably points to the scientific imbalance at UoK. Also quartile metric of journal shows that quality and highly cited articles are published in high-quartile metric journals, while this is not true of the number of articles published in a particular journal (Table 6).

5.8 Subject-wise Research Trends (UoK)

The visualization technique was used to cluster the scientific publications of the UoK. First, with the help of VOSviewer software, 88632 terms were extracted from the titles and abstracts of scientific publications. Then the threshold of 50 was considered. In other words, terms that were repeated 50 or more times were mapped. Regarding the process of selecting words to form thematic clusters, it should be considered that the maximum and minimum frequency of words (e.g. frequency 50 in this research) depends on the number and composition of articles in different thematic areas. Undoubtedly, to determine the clusters with the lowest amount of error (given that some words are repeated in different subject areas and only increase the frequency of repetition of these words, determine the belonging of these words to that subject area), according to experts, determining the frequency of words through trial and error can be effective in obtaining optimal clusters. In other words, by increasing and decreasing the frequency of repetition of words, the definite belonging of words in that subject area is maximized. Also, with the re-emergence of Table 5 and Figure 5, which are related to the top authors in terms of the number of scientific productions based on different subject areas, we can find the degree of consistency of the clusters drawn in Figure 5, which is a kind of scientific front of the university.

As can be seen in Figure 5, the map of UoK scientific publications consists of five clusters. The first cluster is marked in red. There are terms such as “crop science,” “food Science & technology,” “soil Science,” “dairy & animal sciences,” “forestry,” Therefore, this cluster can be called “food science technology - plant sciences” studies in this cluster. The second green cluster consists of phrases such as “thermodynamics,” “nanoparticles,” applied physics,” “numerical methods,” The best title for this cluster is “physics multidisciplinary.” The third yellow cluster consists of phrases such as “phylogenetics & genomics,” “dairy & animal sciences” “autophagy & apoptosis,” “protein structure,” “bacterial,” “genetics,” “gene”. Therefore, “molecular, cell biology and genetics studies” is a good title for this cluster. The fourth

Table 7: UoK highly cited articles

Rank	Title	Author	Journal	Cite Score Quartile	Year	Cited by
1	Emerging concepts in the nutraceutical and functional properties of pectin–A Review	Masoodi, F. A.	Carbohydrate Polymers	Q1	2017	322
2	Nano-encapsulation of catechin in starch nanoparticles: Characterization, release behavior and bioactivity retention during simulated in-vitro digestion	Masoodi, F. A.	Food Chemistry	Q1	2019	257
3	Production of resistant starch from rice by dual autoclaving-retrogradation treatment: In-vitro digestibility, thermal and structural characterization	Masoodi, F. A.	Food Hydrocolloids	Q1	2016	230
4	Global maps of soil temperature	Khuroo, Anzar Ahmad	Global Change Biology	Q1	2022	217
5	The alien flora of Kashmir Himalaya	Khuroo, Anzar Ahmad	Biological Invasion	Q1	2007	123
6	Functional Traits in Lichens Along Different Altitudinal Gradients in Indian Himalayan Regions as Potential Indicator of Climate Change	Khuroo, Anzar Ahmad	International Journal of Environmental Research	Q2	2025	135
7	Phyllosphere microbiome: Diversity and functions	Reshi, Zafar Ahmad	Microbiological Research	Q1	2022	165
8	Alien flora of India: taxonomic composition, invasion status and biogeographic affiliations	Reshi, Zafar Ahmad	Biological Invasion	Q2	2012	107
9	Wide climatic niche and adaptive phenology contribute to the spread of the invasive plant Himalayan balsam (<i>Impatiens glandulifera</i> Royle) in Europe	Reshi, Zafar Ahmad	Neobiota	Q1	2025	105
10	Evidence of a doublet wobbling excitation mode in ^{105}Pd	Sheikh, Javed	Physical Review C	Q2	2025	103

cluster is marked in purple. There are terms such as” artificial intelligence & machine learning,” “computer vision & graphics,” “wireless technology,” “digital signal processing,” in this cluster. Based on this, this cluster can be called “studies in the field of computer science information systems.” The fifth cluster is blue and includes terms such “management,” “applied statistics & probability,” “diffusion” “costs,” “numerical methods. So, this cluster can be called “accounting, management and computer studies.”

In Figure 4 co authorship map of the most prolific authors is visualized. To draw the map, the top 20 authors were selected and entered into the map. In the map, each color represents a cluster. Authors who are in the same cluster have the most writing together. The size of the circles indicates the number of publications and the thickness of the lines indicates the number of co authorship. According to this co authorship map of prolific authors consists of six main clusters. The first cluster is red, but at the same time it is composed of authors of different clusters. With 173 documents and 10,167 citations, Masoodi (Food Technology) is the core author of this cluster.



Fig. 5: Keyword co-occurrence map of UoK publications (VOSviewer)

6 Discussion

Universities and Educational institutions are the most influential social institutions in any civilization. By expanding and producing knowledge, universities have the role of supporting various programs for social, economic, cultural, scientific and technological development.

Therefore, evaluating the scientific products of universities, which are their main products, is important and vital. As a quantitative technique, the bibliometric approach is used to uncover the current state and the development trends of research in various [45]. This study investigated the number and type of publications, the sources, channels of the publications and their publishers and locations, as well as authorship size, page volume and number of references of publications, the research growth and trends, highly cited articles, productive publication titles, institutional and country collaboration on UoK indexed in WoS core collection covering the period 2000-2025.

UoK is ranked as 59th overall in NIRF (National Institutional Ranking Framework, India) and 8th among State Public Universities in NIRF 2025. Based on Edu Rank KU is ranked 2,538 in the world (2025 data) and 67 in India. 451–500 top universities in the Asian university ranking monitoring the research index (scientific publications) can show the share of this index in the success rate. Therefore, the study of scientific products of this university as a research index can be useful.

The findings showed that in general, the process of scientific production of UoK has been on the increase over time. These results are consistent with the findings of Mokhtari et al. (2019) [16]. According to their findings, at the end of the last five years of the study, most scientific productions were reported. The findings [23] also consistent with the findings of the present study.

According to the citation index, the results show that the increase in the number of received citations by UoK has been upward, and nearly 87 percent of the documents have received at least one citation or more. These results are consistent with those of Mokhtari et al. (2019) [16].

Based on the data collected, the average citation for each document at UoK is 17.77, although the average citation mentioned for all UoK articles seems to be favorable and may be one of the effective reasons for improving the university ranking in some university ranking systems. However, as the research findings show, most of the articles and citations they received were in very limited subject areas such as Food Technology, Botany chemistry, physics, Biochemistry and other scientific departments have a very small share in this index. Also, regarding the analysis of national and international collaboration of the researchers of UoK, the results showed that at the national level, the most collaboration was with the researchers of top universities as University of Jammu, SKUAST-Kashmir, SKUAST Jammu and Shri Mata Vaishno Devi University. In terms of international collaboration, it has been the most collaborative with researchers in the Saudi Arabia,

Pakistan and People Republic China. The results of this section are consistent with the results of research by Mokhtari et al. (2019) [16]. It seems that the Saudi Arabia and People Republic China has been very successful in attracting international collaboration, especially with universities of the desired level in different countries, and this has led to a steady improvement in the rankings of universities and journals in most ranking systems. Of course, this has the same effect on the collaborator countries.

Regarding the assessment of the most prolific researchers at UoK, the results showed that more than half of the documents were published by 20 (top) authors i. e 80 percent of scientific publications are published by only 20 percent of authors, so-called scientific front. Regarding journals results showed that researchers at the university have published their scientific publications in more than 200 journals. As a result, among the first 25 journals (Table 6), only seven journals were in Quartile 1, eleven journals are in Quartile 2, four journals are in Quartile 3 and three journals are in Quartile 4. The results of this section are consistent with the results of research by Mokhtari et al. (2019) [16].

It seems that most universities in developing countries, such as India, Pakistan, Saudi Arabia and so on, even at the level of their country's top universities, publish their scientific products in lower quality journals. Therefore, creating more research facilities and creating various incentives can be on the agenda of scientific policymakers in these countries in order to increase the quality of scientific products and improve their scientific level.

Regarding the highly cited articles of UoK, the results showed that most of the highly cited articles have been published in journals with quartile 1. It is clear that in order to publish effective articles, it is necessary to select high-level journals. Another point is that most of the highly cited articles in the university have been published by very limited people (Table 6), this subsequently indicates that quality articles have been produced in very limited fields. Due to the fact that the number of fields of study at UoK is very large (more than 100 fields), other fields of study have a very small role in the research of this university. Also, the clustering of scientific publications of University showed that most of the articles are belonged into five main clusters. Given that the threshold for repetition of 50 keywords was considered, it seems that a limited number disciplines at University have the most scientific output. These disciplines included food technology, botany chemistry, physics, biology and computer science. As mentioned earlier, given that the number of undergraduate, graduate and doctoral disciplines at UoK is very high, it seems that many courses at the university are not productive and are in a scientific recession.

Besides the number of publications that an author has written, the study also includes the aspect of author influence which is measured with citation based measures like total citations and h-index. This difference puts forth that although some authors do produce a large number of publications, others are more scholarly due to high citation visibility thus showing their presence in the research field. This study finding carries significant implications on the planning of institutional research. The identified increase in the number of publications and collaboration results in the necessity to support further interdisciplinary research, internationalization of activities, and distribution of funds into high-impact spheres. It can support more research output and publicity through the reinforcement of research infrastructure and the promotion of collaborative networks. To conduct such a research in the future, other bibliometric reviews can be expanded to other universities within the Himalayan region to allow comparison of assessments. Also, the inclusion of different databases and sophisticated methods of analytical processing, including network analysis and topic modelling, might help to obtain more information about the changing tendencies in research and topic trends.

7 Conclusion

As a conclusion from the data extracted from the web of science database about UoK, it can be stated that the scientific development of university researchers is not balanced and is limited to a few specific subject areas. Of course, it should also be noted that some subject areas due to their nature, such as practical and experimental research (e.g. food technology, botany, chemistry, etc.) greatly increases the chances of publishing articles by researchers. On the other hand, unfortunately, sometimes the incentive policies of universities, including UoK, to increase the rate of international articles are very low and even deterrent. For example, one of the reasons for writing articles, especially international articles, by faculty members is to upgrade the degree, but due to the inability of researchers, especially the humanities, to publish international articles, universities consider it sufficient to publish only articles in domestic journals. Therefore, with such policies, the motivation to write articles and international scientific collaborations to exchange opinions among researchers in such universities is lost. It seems that adopting policies to increase, albeit small, international papers in other fields can lead to balanced scientific growth of universities. Based on this, strategies such as introducing international journals in any subject area and teaching how to write international articles can be used. Of course, conducting an independent and comprehensive research in this regard can be very useful. In the end, it should be added that the methods and techniques of bibliometrics analysis is very optimal method for depicting the scientific situation of universities, countries and even the whole world. Doing such research with various methods and tools that are growing faster and more diverse at present can be a good model for continuous evaluation of science products in the world.

Therefore, according to what has been said, in order to complete the results of such researches, other scientometrics software that have different indicators and analyzes can be used. This will remove some limitations in the results of such research, such as how to report and display data and so on.

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