



RESEARCH ARTICLE

Mapping Research Trends: A Bibliometric Analysis of Scientific Publications in Gandaki Province, Nepal

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Abstract

Employing bibliometric methods, this study examined the scientific research landscape of Gandaki Province of Nepal within the context of rapidly transforming political, economic, and geo-bio-environmental conditions. The research analyzed 524 articles published in various journals within Gandaki Province, Nepal, from 1990 to 2021, retrieved from the Web of Science and Scopus databases. The findings were analyzed using statistical tests such as Kendall's tau b and the Welch T-test. The results revealed a rising publication trend that peaked in 2017. The Welch t-test indicated a significant difference in mean publications (i.e., 2.68 and 30.06) between the two time periods (1990-2005 and 2006-2021). The spatial distribution of publications across the Gandaki Province was uneven. Geography and geoscience, along with health and allied sciences, were the dominant research fields. Natural sciences had the highest impact, as indicated by the PPTop10 value index, whereas geography and geosciences had the lowest. Additionally, more than half of the lead authors were affiliated with institutions in Nepal. The study highlights the need to sustain increased research outputs. This reveals an imbalance in publication distribution that favors urban areas, suggesting the need for increased research in underrepresented locations. Limited international collaboration indicates untapped potential for resource sharing. Despite limitations in database coverage, the insights gained offer valuable guidance for policymakers, researchers, and academic institutions. Pre-emptive approaches, including developing infrastructure and fostering an enabling research environment, are crucial to enhancing research output and quality in Gandaki Province.

Keywords: bibliometric analysis, research trends, spatial distribution, research outcomes, temporal trends

Introduction

Scientific research drives the growth of knowledge and society, with publications playing a vital role in sharing and advancing scholarly knowledge (Gauch Jr, 2002; Islam, 2023, Medina-Franco & López-López, 2022). These scientific publications provide the foundation for bibliometric analysis, which serves as a quantitative tool for assessing scholarly contributions and research trends (Glanzel, 2003). Bibliometric analysis is a statistical method that examines published materials, such as books, journal articles, keywords, and citations, and helps identify relationships among these published works (Broadus, 1987). Bibliometric analysis uses various parameters, such as co-authorship, patterns, citations, co-citations, and co-words, to generate quantitative perspectives on collaboration patterns, research trends, and the structure and evolution of scientific knowledge. Moreover, these parameters are indirect measures of the scientific community, structure, and output (Liao et al., 2018; Okubo, 1997). Such analyses have been proven effective in evaluating the scientific capacity of both developed and developing nations. Integrating bibliometric outputs with qualitative information plays a crucial role in the strategic formulation of national science policies and decisions regarding science funding. (Moed, 2006). In Nepal, such analyses are particularly for identifying research priorities and fostering collaboration opportunities, informing science policy and funding decisions, and guiding higher education strategies.

Despite their importance in shaping science, technology, and innovation policies, systematic studies in bibliometry, scientometry, and informetry remain limited in Nepal (Gautam, 2017). There have been a few initiatives on bibliometric studies in Nepal, such as Science and technology publications outcomes (Gautam, 2017; Gupta & Bala, 2012), health and allied sciences (Simkhada et al., 2010; Shrestha

et al., 2019), and geoscience (Kandel et al., 2021). Overall, these studies indicate that Nepal's scientific publication output remains relatively modest but has expanded steadily over time across various periods and disciplines (Gautam, 2017; Gupta & Bala, 2012). They also highlight a substantial dependence on international collaboration, as a large share of publications are co-authored with foreign researchers. Furthermore, discipline-specific assessments in areas such as health, pharmacy, and ecosystem services reveal that research output is limited in volume and concentrated within a narrow range of themes, with most studies focusing on national or thematic levels rather than sub-national scales, despite increasing engagement with the global research community (Simkhada et al., 2010; Shrestha et al., 2019; Kandel et al., 2021).

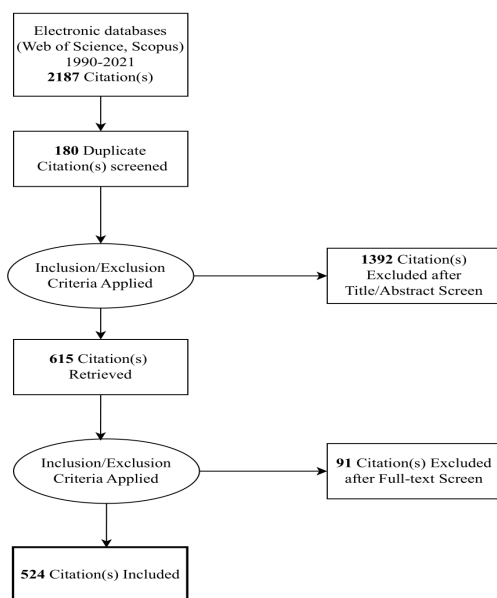
The significance of research and development is often overshadowed in lower-middle-income countries, despite its crucial role in developing economic growth (Pillay, 2011). Aligning scientific research with federal principles is essential to a nation's progress, and this can be achieved by understanding current research trends. However, a clear gap remains in province-level, multi-dimensional bibliometric analyses that integrate temporal, spatial, and disciplinary patterns, particularly for Gandaki Province, limiting evidence-based regional research planning and policy formulation.

In the context of federal restructuring in Nepal, provinces serve as key units for planning and policy implementation (Dahal, 2024). The absence of province-level bibliometric data limits understanding of regional research trends. Addressing this gap is therefore essential to support evidence-based provincial planning and to align scientific research with the country's decentralized governance framework.

Therefore, understanding research trends in relation to Nepal's evolving economic, social, and political status is essential to enhancing the country's overall

published papers included in the study. This metric indicates the relative contribution of each discipline and provides insight into the distribution of research output across diverse fields. Moreover, citation percentile equal to or below 10 (i.e., NTop10) was used to explore the impact of research within specific disciplines. This value was calculated from the citation percentiles (ranging from 0 to 100) for individual publications in Incites.

Figure 2
Summary of Search and Selection Process



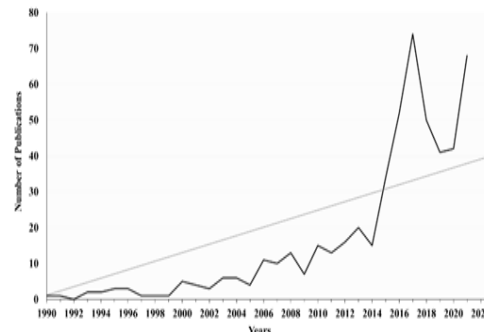
Likewise, the quality of the publications considered in this study was measured using the metric PPTop10 (i.e., the percentage of the top 10% of papers), calculated as $100 \times \text{NTop10} / \text{Ndoc} (\%)$. A value of 10% in this metric is considered indicative of world-average performance and serves as a proxy for publication quality. Thus, this systematic approach provides a comprehensive analysis of research output, encompassing both disciplinary distribution and the perceived quality of the publications. The data used in this study were analyzed and visualized using the Statistical Package for the Social Sciences version 25.0 and Microsoft Excel.

Results

Temporal Trend of Publications

Figure 3 illustrates the publication trends in Gandaki Province, Nepal, from 1990 to 2021. The trend line shows a noticeable increase in publications over time. Moreover, the number of publications began to increase in 2014, peaking in 2017 (Figure 3). However, publication numbers declined from 2019 to 2020. A Welch t-test revealed a significant difference in the mean number of publications between two specific periods. On average, the number of publications per year from 1990 to 2005 was 2.68, whereas during 2006-2021 it increased substantially to 30.06 publications per year.

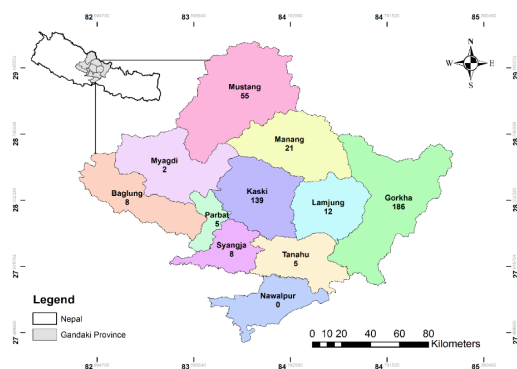
Figure 3
Number of publications by years 1990-2021. (The figure illustrates a rising trend in the number of publications from 1990 to 2021, reaching its peak in the year 2017)



Spatial Distribution of Publications

Across the eleven districts of the Gandaki Province, Gorkha had the highest number of publications ($n=186$, 35.49%), and Kaski ranked second with 139 publications (26.52%). The Mustang district ranked third with 55 publications. In contrast, Myagdi district had the lowest number of publications, totaling only 2 articles. Notably, no articles were recorded from Nawalpur district (Figure 4).

Figure 4
Spatial Distribution of Publication



Disciplinary Coverage, Share, and Bibliometric Studies of Publications

Thematic coverage of scientific research is shown in the citation matrix (Table 1). Of the eight themes considered, 2 thematic areas accounted for more than 65% of total publications. Geography and geosciences (n=188, 35.88%) and health and allied sciences (n=158, 30.15%) were the most frequently covered thematic areas. By contrast, Veterinary and fishery sciences constituted the least studied theme (n=8, 1.53%) (Table 1). A positive trend in the number of publications with time was observed in agricultural sciences (tau

b=0.72, P<0.05), engineering (tau b = 0.56, P<0.05), Forest, environment, ecology, and climate sciences (tau b= 0.78, P<0.00), geology and geosciences (tau b = 0.56, P<0.00), health and allied sciences (tau b= 0.58, P<0.00) and in social sciences (tau b= 0.60, P<0.00). However, a non-significant but upward trend was seen in natural sciences (tau b= 0.42, P=0.24) and in animal, veterinary, and fishery sciences (tau b= 0.12, P=0.78).

PPTop10 (%) was used as an impact indicator that takes into account the field-normalized citation performance. The citation impact, according to PPTop10, is above the global average for all the thematic areas. However, despite having a significant share in the publication number, the geography and geosciences field had the lowest PPTop10 value. Based on this index, Natural sciences demonstrated the highest impact among the 8 thematic areas considered.

Table 1
Coverage of Publication Across Different Thematic Areas

Thematic Area	Total number of papers (Ndoc)	% share	Number of papers (top 10) citation percentile equal	Percentage of the top 10% of papers
Agricultural	23	4.39	3	13.04
Animal veterinary	8	1.53	1	12.50
Engineering	27	5.15	4	14.81
Forest	51	9.73	6	11.76
Geography and Geoscience	188	35.88	20	10.64
Health and allied sciences	158	30.15	18	11.39
Natural sciences	26	4.96	4	15.38
Social Science	43	8.21	5	11.63
Total	524	100	7.62	100

Publication Types and Authorship Characteristics

Among the 524 published works selected from the region, 93.51% (n=490) were journal articles, followed by book chapters (n=21, 4.01%) and conference proceedings (n=13, 2.48%). Out of the 490 journal articles, 97.55% were published in Scimago-ranked journals while the remaining 2.45% were published in journals not listed and ranked in the Scimago

journal rank. Moreover, two journals were identified in Beall’s predatory journal list. Additionally, of the 478 Scimago-ranked journal articles, approximately half were published in the Q1 quartile journals. In contrast, the remaining three quartiles (Q2, Q3, Q4) accounted for the other half of the journal articles (Figure 5). Analysis of lead authors affiliation showed that more than 50% of them were affiliated with institutions in Nepal (Table 2).

Figure 5

Number of publications according to the SCImago Journal Rank (SJR) which serves as the proxy to evaluate the quality and impact level of the journals in which the studies were published where Q1 journals are generally more prestigious, widely cited, and harder to publish in, while Q4 journals have relatively lower visibility and citation impact.

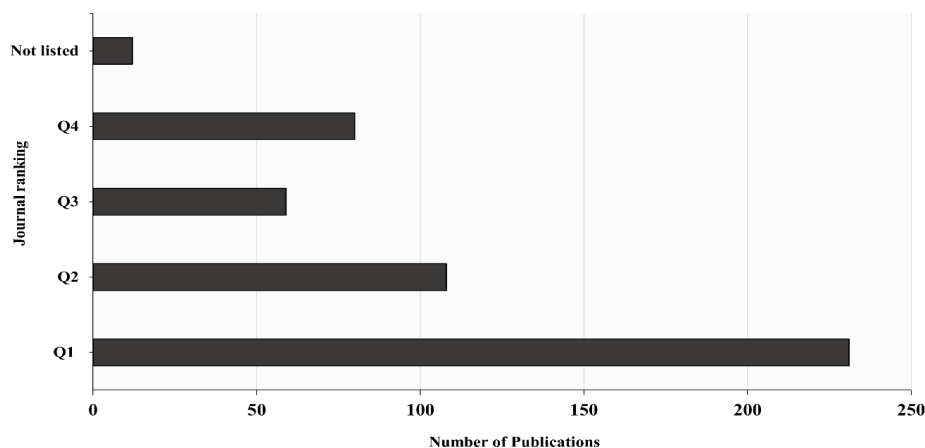


Table 2

Authorship Characteristics and Types of Publication

Names of Countries	Book and book chapter	Conference Proceedings	Journal	Grand Total	Percentage share
Nepal	12	3	253	268	51.15
India	1	2	53	56	10.69
USA		3	50	53	10.11
China		2	39	41	7.82
Japan		1	14	15	2.86
United Kingdom	1		13	14	2.67
Germany	1		11	12	2.29
France	1		9	10	1.91
Italy			6	6	1.15
Others	5	2	42	49	9.35
Grand Total	21	13	490	524	100

Discussion

This analysis of articles provides a comprehensive overview of research conducted in Gandaki Province, Nepal, over the past 30 years. It examines publication patterns across scientific disciplines and thematic areas, offering insights into the research landscape of the region. The findings indicate continuous progress in research since 1990, as evidenced by a steady increase in publications.

Temporal Pattern

The study revealed a notable rise in the number of publications from the Gandaki Province over the three decades. Additionally, the number of publications in the last fifteen years was significantly higher than in the first fifteen years indicating that Gandaki Province has been of a broader national and international expansion of research activities. A similar pattern has been recorded in other bibliometric studies in Nepal (Gautam, 2017; Paudel et al., 2023) and around the world (Gurgiser et al., 2022; Vaishya et al., 2023). The findings of Azim Majumder et al. (2012) indicate a remarkable fivefold increase in publications from Nepal between 1985 and 2009. Moreover, from 2000 to 2010, there was a noteworthy rise in the publication share, encompassing national and international levels (Gupta & Bala, 2012). These trends reflect the growing research output and recognition of Nepalese contributions in the academic and scientific communities. This rise in publications reflects the increased research capacity and stronger institutional engagement. However, such growth also underscores the need to ensure that findings are translated into locally relevant evidence capable of informing the provincial development priorities. Therefore, this observed growth is not only an indicator of academic progress but also an opportunity to enhance evidence-based policy making.

The increase in publications observed after the 1990s can be attributed to several

factors, such as the establishment of Nepal as a liberal democracy in 1990 (Joel et al., 2019). Increased policy and institutional intervention from the government level from around 2005 (Gupta & Bala, 2012) and increased funding from the University Grants Commission, Nepal (Paudel et al., 2020). Additionally, the growth of local researchers and institutions (Gautam, 2017), as well as improved access to global research and conservation communities (Paudel et al., 2023), has played a significant role. These factors contributed to Nepal's notable rise in research output during this period. Furthermore, the relatively low number of publications at the beginning of the 2000s may be attributed to constrained research efforts during Nepal's prolonged political insurgency, which lasted from 1995 to 2004 (Baral & Heinen, 2005). The restricted access to the countryside during the insurgency had impeded field-based research activities for both domestic and foreign researchers (Gautam, 2017). Furthermore, the reduction in government funding for research during the insurgency period might have exacerbated the situation (Upreti, 2006). Similarly, the significant surge in publications starting in 2015 can be attributed to the Gorkha earthquake. In addition, the decade after 2010 saw an upsurge in research productivity due to advancements in communication technologies, improved access to state-of-the-art equipment, and enhanced internet facilities (Bist et al., 2021). Overall, these findings indicate that research productivity in Gandaki province is strongly influenced by political stability, institutional investment, and infrastructure development, suggesting that continued policy support is necessary for sustained growth in scientific research.

Spatial Pattern

The examination of the geographical location of the study area in the literature incorporated in this review reveals a highly uneven and concentrated distribution of research across the Gandaki Province.

A disproportionately large share of publications originates from a few districts, particularly Gorkha (n=186, 35.49%) and Kaski (n=139, 26.52%), which together account for more than 60% of the total research output, indicating a strong concentration of scientific activity in these areas. A substantial amount of research conducted in Gorkha or focusing on Gorkha as the study area post the 2015 Gorkha earthquake positions it as the district with the highest number of publications. Moreover, the availability of resources and infrastructure significantly impacts research endeavors (Bist et al., 2021), contributing to an increase in the volume of research conducted. A comparatively higher number of academic institutions (such as Pokhara University, Institute of Forestry, and Manipal College of Medical Sciences) specializing in social and biological sciences in the Kaski district could be an additional factor contributing to the significantly higher number of publications from this district (Poudel et al., 2022). This finding is further evidenced by Gupta & Bala, 2012, who emphasized that Kaski emerged as a major geographical area contributing significantly to the overall research output of Nepal for the years 2001-2010. These statements reveal the notable role of the academic institution in Pokhara in research endeavors during the period considered in this study. In contrast, several districts contribute only marginally, with Myagdi recording only two publications, and notably, Nawalpur having no publications in the reviewed literature. Similarly, districts with fewer publications exhibited common characteristics, such as challenging geographical terrain, limited access to facilities, and greater distances from the provincial capital. Hence, the spatial distribution pattern of studies across the Gandaki Province reveals the knowledge gap in the underrepresented areas and indicates the necessity of promoting research in those locations.

Disciplinary Coverage and Publication Type

The review of published literature from Gandaki Province revealed that Geography and Geosciences were the most-published thematic areas following the 2015 Gorkha earthquake. These findings can be attributed to the immediate need for disaster assessment and planning in the aftermath of a major disaster event, which directed the research focus towards geosciences. Despite being initially short-term and event-specific, their disaster-driven research has also contributed to longer-term research. Similar patterns have been found in the South Asian region (Prasad et al., 2016) and the Hindukush-Karakoram-Himalayan and Tibetan regions (Gautam, 2021), highlighting the predominant coverage of geosciences in the realm of science and technology publications. Collectively, this pattern shows that the research priorities in the region are strongly influenced by such disaster events, implying that research in the region is reactive rather than being fully balanced thematically. It further shows the need to diversify the research attention towards other underexplored and development-related fields.

Furthermore, Health and Allied Sciences had more publications, coinciding with previous studies in Nepal (Gupta & Bala, 2012; Gautam, 2017). This trend is consistent in the broader South Asian context, where health sciences and physical sciences dominate publication shares (Uddin & Singh, 2014). Moreover, the results highlight the significant influence of health research publications, particularly in universities, medical schools, and health science institutions within and outside Nepal (Simkhada et al., 2010). These findings suggest that health research in the Gandaki Province is comparatively more institutionalized, well-funded, and aligns with national and international research priorities. On the contrary, Animal, Veterinary, and Fishery Sciences had the most negligible share among the

publications considered in the study. This could be attributed to the fact that institutions focusing on this thematic area are limited to Nepal's central region (Gautam & Dhakal, 2016). Additionally, there is a scarcity of human resources actively engaged in this field (Kattel & Sapkota, 2018). Similarly, this study revealed that journal articles are the most frequently utilized medium for disseminating scientific knowledge, aligning with findings from previous bibliographic studies (Prasad et al., 2016). Factors such as a rigorous peer-review process, potential for citations, and long-term impact contribute to the prevalence of journal articles as sources of information dissemination (Subramanyam, 2013). Likewise, the preference for high-quality international journals over local ones is attributed to a perceived inferior quality of local journals and to the incentive of waived publication fees for researchers from Low and Middle-Income Countries (LMICs). This advantage serves as motivation for Nepalese researchers to opt for international journals (Kharel et al., 2021), possibly explaining why more than half of the publications are listed in Q1 quartile journals. Additionally, the proximity and similarities between Nepal and India may explain the second-highest number of papers by Indian authors on the Gandaki Province (Vindegg, 2022). These patterns indicate that research outcomes from the region are guided by global publication incentives and collaboration among researchers, but also reveal a relative dependence on external publishing platforms and partnerships. This issue demands the strengthening of national and regional journals and providing targeted provincial-level research funding to researchers.

Conclusion

This study analyzed the spatial, temporal, and thematic trends of scientific publications in Gandaki Province, Nepal, from 1990 to 2021 using bibliometric tools.

This study aimed to provide a comprehensive understanding of research trends at the provincial level by analyzing publication trends, disciplinary coverage, spatial distribution, and authorship characteristics. The analysis revealed a dynamic landscape of research growth. The notable and evident rise in the number of publications from 2010 to 2021 shows a rapid expansion of research output. Nonetheless, a skewed distribution of research among districts, with a concentration in more urbanized areas, signals an urgent need to foster research in underrepresented and unexplored locations.

Notably, the Gorkha district emerges with the highest share, primarily due to publications related to the Gorkha earthquake. This underscores the role of external events in influencing research trends. Likewise, limited international collaboration among regional researchers emphasizes an untapped potential for resource sharing and technology transfer. These results provide important insights into Nepal's provincial-level research landscape, contributing to the limited body of provincial-level bibliometric studies. Moreover, this study emphasizes that research outcomes are shaped by institutional capacity, accessibility, and external drivers, thereby providing a foundation for evidence-based planning within Nepal's federal system.

Finally, it is crucial to acknowledge the limitations of this bibliometric review, as it omits literature not available in the Web of Science and Scopus databases. Future studies should incorporate additional data sources and explore links between research output and regional development outcomes. Nevertheless, the insights from this study provide valuable guidance for researchers, practitioners, and policymakers. The identified trends should foster proactive and strategic interventions. Urgent measures are warranted to enhance research output and improve research quality on Gandaki Province. These include expanding existing infrastructure, equipping facilities with

modern resources, fostering a conducive research climate, and bolstering investments. By addressing these imperatives, the province can embark on a sustainable research development trajectory, positively impacting the academic community and broader society.

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Funding Statement

"Not applicable"

Availability of Data and Materials

The data that support the findings of this study are available from the corresponding authors upon reasonable request.

Conflict of Interest

The authors declare no conflict of interest.

Ethical Compliance

This study involved human participants; however, no human biological data or tissue was used. We declare that the study was conducted in accordance with accepted ethical standards.

Consent for Publication

"Not applicable"

Plagiarism and AI Use

The manuscript is free from plagiarism and improper use of AI-generated content. Any permitted use of AI tools was limited to language support and has not replaced the original scholarly contribution.

References

- Azim Majumder, M. A., Shaban, S. F., Rahman, S., Rahman, N., Ahmed, M., Bin Abdulrahman, K. A., & Islam, Z. (2012). PubMed-based quantitative analysis of biomedical publications in the SAARC countries: 1985-2009. *Journal of the College of Physicians and Surgeons Pakistan*, 22(9), 560-564. <https://pubmed.ncbi.nlm.nih.gov/22980608/>
- Baral, N., & Heinen, J. T. (2005). The Maoist people's war and conservation in Nepal. *Politics and the Life Sciences*, 24(1-2), 2-11. [https://doi.org/10.2990/1471-5457\(2005\)24\[2:Tmpwac\]2.0.Co;2](https://doi.org/10.2990/1471-5457(2005)24[2:Tmpwac]2.0.Co;2)
- Bist, B., Prashant, G., Kc, N., Poudel, B., Pokheral, C., Poudyal, L., . . . Shah, K. (2021). Patterns and trends in two decades of research on Nepal's mammalian fauna (2000–2019): examining the past for future implications. *Biodiversity and Conservation*, 30. <https://doi.org/10.1007/s10531-021-02289-2>
- Broadus, R. N. (1987). Toward a definition of "bibliometrics". *Scientometrics*, 12(5), 373-379. <https://doi.org/10.1007/BF02016680>
- Dahal, G. (2024). Nepal's experience in implementing the federal government system: Assessment of law-making by the local governments of Kaski district, Nepal. *Heliyon*, 10(4), e26250. <https://doi.org/10.1016/j.heliyon.2024.e26250>
- Gauch Jr, H. G. (2002). *Scientific Method in Practice*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511815034>
- Gautam, G., & Dhakal, I. (2016). *Veterinary Education in Nepal*. <https://doi.org/10.13140/RG.2.2.36818.68808>
- Gautam, P. (2017). An overview of the Web of Science record of scientific publications (2004–2013) from Nepal: focus on disciplinary diversity and international collaboration. *Scientometrics*, 113. <https://doi.org/10.1007/s11192-017-2538-0>
- Gautam, P. (2021). A Web of Science based bibliometric reconnaissance of the Himalaya-Karakoram-Hindukush-Tibet region with

- focus on field sciences. *Journal of Nepal Geological Society*, 62, 18-33. <https://doi.org/10.3126/jngs.v62i0.38690>
- Glänzel, W. (2003). Bibliometrics as a research field: A course on theory and application of bibliometric indicators. *Course Handouts*.
- Gupta, B. M., & Bala, A. (2012). S&T publications output of Nepal: a quantitative analysis, 2001–10. *Scientometrics*, 93(3), 1029-1046. <https://doi.org/https://doi.org/10.1007/s11192-012-0778-6>
- Gurgiser, W., Price, M. F., Juen, I. F., Körner, C., Bahn, M., Gems, B., ... & Mayr, S. (2022). Rising slopes—Bibliometrics of mountain research 1900–2019. *PLOS One*, 17(8), e0273421. <https://doi.org/10.1371/journal.pone.0273421>
- Islam, M. (2023). The Importance of Research in Advancement of Knowledge and Society. *International Research Journal of Basic and Clinical Studies*, 8(4), 1-3. <https://doi.org/10.14303/irjbc.2023.49>
- Joel, T. H., Nabin, B., Prakash, K. P., & Jay, P. S. (2019). On the Road to Sustainability? A Review of a Half-Century of Biodiversity Conservation Successes in Nepal and Some Thoughts on Future Needs. In B. Ahmad Naqiyuddin & S. Mohd Nazip (Eds.), *Protected Areas, National Parks and Sustainable Future* (pp. Ch. 5). IntechOpen. <https://doi.org/10.5772/intechopen.84617>
- Kandel, P., Chettri, N., Chaudhary, S., Sharma, P., & Uddin, K. (2021). Ecosystem services research trends in the water tower of Asia: A bibliometric analysis from the Hindu Kush Himalaya. *Ecological Indicators*, 121, 107152. <https://doi.org/https://doi.org/10.1016/j.ecolind.2020.107152>
- Kattel, R. R., & Sapkota, M. (2018). Brain drain of agriculture and veterinary graduates to abroad: evidence from Nepal. *Agriculture & Food Security*, 7(1), 61. <https://doi.org/10.1186/s40066-018-0213-1>
- Kharel, M., Pokharel, A., Sapkota, K. P., Shahi, P. V., Shakya, P., & Ong, K. I. (2021). Health research capacity in Nepal: Analysis of the trend and the role of local researchers. *Tropical Doctor*, 51(2), 142-146. <https://doi.org/10.1177/0049475520982770>
- Liao, H., Tang, M., Luo, L., Li, C., Chiclana, F., & Zeng, X. J. (2018). A bibliometric analysis and visualization of medical big data research. *Sustainability*, 10(1), 166. <https://www.mdpi.com/2071-1050/10/1/166>
- Medina-Franco, J. L., & López-López, E. (2022). The essence and transcendence of scientific publishing. *Frontiers in Research Metrics and Analytics*, 7, 822453. <https://doi.org/10.3389/frma.2022.822453>
- Moed, H. F. (2006). Citation analysis in research evaluation (Vol. 9). Springer Science & Business Media. <https://doi.org/10.1007/1-4020-3714-7>
- Okubo, Y. (1997). Bibliometric indicators and analysis of research systems: Methods and examples.
- Paudel, P. K., Baniya, S., Sharma, S., Bhandari, S., & Pokharel, M. (2023). Half a century in biodiversity and conservation research in Nepal: A review. *Biodiversity and Conservation*, 32(8), 2611-2636. <https://doi.org/10.1007/s10531-023-02626-7>
- Paudel, P. K., Giri, B., & Dhakal, S. (2020). Is research in peril in Nepal? Publication trend and research quality from projects funded by the University Grants Commission-

- Nepal. *Accountability in Research*, 27(7), 444-456. <https://doi.org/10.1080/08989621.2020.1768374>
- Pillay, P. (2011). *Higher education and economic development: Literature review*. In (pp. vi, 66 p.). Cape Town: Centre for Higher Education Transformation.
- Poudel, A., Gurung, S., & Bhandari, J. (2022). Ethnobotany in Annapurna Conservation Area (ACA), Nepal: A Review. *Ethnobotany Research and Applications*, 24, 1-14. <https://ethnobotanyjournal.org/index.php/era/article/view/3961>
- Pranckutė, R. (2021). Web of Science (WoS) and Scopus: The titans of bibliographic information in today's academic world. *Publications*, 9(1), 12. <https://www.mdpi.com/2304-6775/9/1/12>
- Prasad, R., Pande, G., Singh, R., & Prasad, R. (2016). Scientometrics exploration of research publications on Himalayas during the year 1989-2014: A scientific review. *International Journal of Basic & Applied Sciences*, 5, 102-108. <https://www.crdeepjournal.org/wp-content/uploads/2016/07/Vol-5-3-9-IJBAS-1.pdf>
- Shrestha, S., Dangol, R., Shakya, D., Danekhu, K., Sharma, S., & Bhuvan, K. C. (2019). Bibliometric analysis of community pharmacy research activities in Nepal over a period of 1992-2018. *Journal of Karnali Academy of Health Sciences*, 2(3), 243-249. <https://doi.org/10.3126/jkaks.v2i3.26663>
- Simkhada, P. P., Baral, Y. R., & Van Teijlingen, E. R. (2010). Health and medical research in Nepal: a bibliometric review. *Asia Pacific Journal of Public Health*, 22(4), 492-500. <https://doi.org/10.1177/1010539510371020>
- Subramanyam, R. V. (2013). Art of reading a journal article: Methodically and effectively. *Journal of oral and maxillofacial pathology*, 17(1), 65-70. <https://doi.org/10.4103/0973-029x.110733>
- Uddin, A., & Singh, V. K. (2014). Measuring research output and collaboration in South Asian countries. *Current Science*, 107(1), 31-38. <http://www.jstor.org/stable/24103401>
- Upreti, B. C. (2006). The Maoist Insurgency in Nepal: Nature, Growth and Impact. *South Asian Survey*, 13(1), 35-50. <https://doi.org/10.1177/097152310501300103>
- Vaishya, R., Gupta, B. M., Kappi, M. M., Misra, A., Kuchay, M. S., & Vaish, A. (2023). Research on Non-alcoholic Fatty Liver Disease From Indian Subcontinent: A Bibliometric Analysis of Publications During 2001–2022. *Journal of Clinical and Experimental Hepatology*, 14(1). <https://doi.org/10.1016/j.jceh.2023.08.007>
- Vindegg, M. (2022). Borderline politics: Reading Nepal-India relations as 'energohistory'. *History and Anthropology*, 1-20. <https://doi.org/10.1080/02757206.2022.2119229>
- Zhu, J., & Liu, W. (2020). A tale of two databases: the use of Web of Science and Scopus in academic papers. *Scientometrics*, 123(1), 321-335. <https://doi.org/10.1007/s11192-020-03387-8>