

## **Research Trends of National Law Universities (NLUs), India: A Scientometric Approach and Knowledge Mapping**

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### **Abstract**

The study aims to explore current trends in the research output of National Law Universities (NLUs) across the country. Efforts have been made to retrieve and analyze the number of publications, the most productive universities, international collaboration, active authors, co-authorships, author network analysis, and countries. A total of 847 publications are reflected in the Scopus database from 2013 to 2022, the research output trends are observed. Owing to the nature of the data, tools including Bibliometrix, VOSviewer, and MS Excel were used to study scientometric indicators. A number of publications showed a visible increase starting from early 2013 to 2017. Pellissery S with 28 publications, followed jointly by Das R. and Jayaram N., each contributing 16 publications. The National Law School of India University (with 203 publications) in Bangalore has been observed as the most productive institution. The findings of this study have implications for policymakers, academic administrators, and researchers within the NLUs. It will help identify the pros and cons of the current research ecosystem, guide resource allocation decisions, and foster interdisciplinary collaborations. Furthermore, the study can enhance the quality and relevance of legal research within the NLUs, thereby strengthening their position as leading institutions in law.

**Keywords:** National Law University, Co-authorship, Research Trends, Knowledge Mapping.

### **Introduction**

Law is a system that binds people living in a given geographical area to specific rules. It defines the rights and obligations of people and regulates an individual's behavior towards others, society, and the community (Mabikke, 2016). Each country has its own egalitarian

system, which varies from one country to another. Broadly, it can be divided into two categories: public and private law. Public law concerns government and society, i.e., constitutional law, administrative law, civil law, and criminal law; and Private law deals with legal disputes between individuals and organizations, i.e., contracts, property, torts/ delicts, commercial law, etc. The National Law Universities (NLUs) in India have gained prominence as centres of legal education and research. These institutions are known for their rigorous academic programs, esteemed faculty, and comprehensive legal analysis. Understanding research trends in NLUs is considered pivotal for assessing the growth and development of legal scholarship in India (Sudhandradevi & Bhuvanewari, 2022).

The Law Commission of India defines legal education as a science that imparts to students knowledge of certain principles and provisions of law, enabling them to enter the legal profession. Established during the 1980s and 1990s, with the National Law School of India University (NLSIU) in Bangalore as the first in 1987, several NLUs have been set up across the country to foster excellence in legal education and promote research and innovation in law. Since their establishment, NLUs have been noted for a multidisciplinary approach to legal education. Apart from core law subjects, social sciences, humanities, and management studies are other focal areas that enable students to develop a holistic understanding of legal issues in a broader societal context (Nigam *et al.*, 2020). Till now, twenty-three (23) National Law Universities (NLUs) have been established; however, four (4) new NLUs are in the establishment phase. NLUs are internationally acclaimed for their outstanding contributions to teaching and research, academic standards, specialized faculty, and state-of-the-art library facilities. NLUs offer undergraduate, postgraduate, and doctoral programs in legal and social sciences.

Scientometrics is a quantitative research method that examines patterns of publication, authorship, and citation to identify trends, assess research impact, and map the intellectual landscape of a specific field or institution (Hasan *et al.*, 2023). By conducting a scientometric analysis of the NLUs' research output, it is possible to explore various aspects, including publication volume, research focus areas, collaboration patterns, prolific journals, and the overall impact of their research contributions. The study offers valuable insights by analyzing scholarly publications and citations within the NLUs. Further, the study provides a comprehensive overview of research trends in NLUs in India by systematically analyzing scholarly publications. By examining the research output of these institutions, the most prolific authors, popular research themes, and emerging areas of interest can also be identified. Furthermore, emphasis has been placed on collaborative networks among different NLUs and other research institutions at national and international levels. Moreover, the impact on stakeholders regarding NLU research is also covered.

After an exhaustive review of the literature, it is found that no such studies have been conducted to map the scholarly output at National Law Universities (NLUs) across India. Therefore, this research effort was undertaken to fill a gap in the literature by evaluating and analyzing research productivity in the field of law and legal studies using the scientometric technique. The study may benefit the NLUs by evaluating their research performance and developing future strategies to improve their research outcomes. It also helps scholars in determining the venues for publication (Journals, books, etc.) to which they can submit their manuscripts. It will also help to identify research areas that still require policy-based research.

### Objectives of the study

Since no research effort had been undertaken to assess the trends of research productivity of NLUs in India, this study was conducted to examine the research output of these nationally important higher education institutions with the following broader objectives.

- 1) To trace the research output of NLUs through the Scopus database and analyze its pattern of growth and citations for the last ten years (2013-2022).
- 2) To identify funding agencies sponsoring NLUs for conducting research.
- 3) To enumerate the most prolific venues of publications (Journals) and their impact.
- 4) To trace the research collaboration of NLUs with other organizations.
- 5) To determine the prolific authors with high research productivity and the impact of their output, as well as the collaboration between the NLUs.
- 6) To identify the author's keywords on NLUs research.

### Literature Review

Higher educational institutions play a pivotal role in imparting learning, teaching, and research. Several studies have been conducted using the scientometric method at the national level to map the research contributions of institutions, including IITs, IIMs, NITs, and NIPERs. These types of studies provide an overall picture of research trends in that area, the most prolific publication avenues, authors, and a comparative analysis between institutions. The landmark studies of this nature have been reviewed here to facilitate a better micro-scientometric analysis of research output across various universities/institutions at the national and global levels. The literature review has been carried out based on landmark international studies, in line with similar studies conducted at leading IITs, IIMs, and Central Universities.

The remarkable study by Niñerola et al. (2021) examined Six Sigma research studies indexed in Scopus and Web of Science using a bibliometric approach. The findings were based on 798 papers from 392 scholarly journals. They revealed the United States as the leading country in publications, citations, and co-authorships in this field. In another effort, Confraria & Godinho (2015) analyzed scientific papers by African researchers published from 2007 to 2011 using a bibliometric approach. Their study revealed that only a handful of external partners, including the US, UK, and France, account for the majority of scientific collaborations from the top publishing nations in Africa. While 1% of Africa's scientific production, with its top ten academic allies, is represented by the co-authorship patterns of 13 African nations. Yet another study, Tantengco et al. (2021), carried out a bibliometric study on gestational diabetes mellitus to identify the aspects and trends of published papers across Southeast Asian countries. The study found Malaysia with the most papers, while the National University of Singapore has the most productive GDM research field in Southeast Asia. Likewise, Ruiz-Saenz & Martinez-Gutierrez (2015) investigated a bibliometric study of Latin American publications on viruses and viral illnesses in indexed journals from 2000 to 2013. Their work was based on MedLine, SciELO, LILACS, and Scopus databases. Similarly, a peer group of scholars (Zhang et al., 2021) worked in the field of Bioenergy research under climate change. The study revealed that the USA, the UK, and Germany are the leading countries among other nations in terms of publications. Compared with industrialized nations, several emerging nations (such as China, India, and Brazil) have a higher percentage of papers with fewer than 10 citations and of researchers with a one-year academic career. In yet another international study, Zia (2021) found that 22,19,943 articles were published from BRICS countries, of which 4,02,199 were

published in Open Access journals. This study, however, found the Chinese Academy of Sciences as the leading institution with 39,036 papers published in OA journals, and China as the promising leader in OA journal publications, accounting for 71.25% of the total 402,199 OA journal publications.

After landmark international Studies, some of the prominent Indian studies in this direction are reviewed. The notable scientometric study by Hasan and Singh (2015) examined trends in research output among top IITs published from 2009-2013, as indexed in Web of Science. A record number of 2,15,019 papers, constituting a 2.72% contribution to global records, were found to be Indian input. Among Indian institutions, IITs accounted for 9.32% of the total Indian share. While 2013 was found to be the highest indexed year, with 22.27% of papers in comparison to 18.41% in 2009. Similarly, Tyagi (2022) conducted a bibliometric study across four premier IIMs to evaluate the research productivity of IIM authors. The study revealed an upward trend in research productivity, with a total of 4397 publications from 2010 to 2021, averaging 366 articles per year. Further, 81.03% of publications were contributed by multiple authors across the network of 125 nations, with the USA, UK, Germany, and China as the main collaborative efforts. Likewise, another scientometric study was conducted among NITs by Shettar and Hadagali (2022) to examine differences in research performance between old and new NITs. Their observation revealed that, barring some of the new NITs, including NIT Meghalaya, NIT Goa, and NIT Delhi, established NITs are performing well as new NITs. Their observation further revealed that NIT Rourkela, NIT Trichy, and NIT Surathkal together account for 29% of the overall publications of all NITs. Moreover, NIT Jamshedpur and NIT Srinagar have less contribution, though they were established during the 1960s. The investigation by Gu et al. (2014) compared the publication output of six universities, including Harvard University, Princeton University, the University of California, Berkeley, Tsinghua University, Peking University, and Zhejiang University. Based on the Web of Science, this study assessed the research productivity of scholarly literature among these universities published in the field of management. Another similar indigenous scientometric study by Mahala & Singh (2021) among five leading central universities, including the University of Delhi, Banaras Hindu University, Anna University, Jadavpur University, and Punjab University, found persistent growth after analyzing 26173 journal articles. The study brought forth the University of Delhi as the leading university in scientific research publications. Like other studies, this research effort also identified the USA, South Korea, and Germany as the leading collaborative countries, and that articles with joint authorship have greater research impact. However, among Indigenous universities, Anna University, IIT, and CSIR have been found to be the most collaborative institutions in the country.

### Materials and Methods

Scopus (Elsevier), the largest abstract and citation database of peer-reviewed literature, was used for the search. Over 41,000 source titles (journals, conference proceedings, books, and reviews) from about 12500 publishers are covered by Scopus, with about 94% of them being peer-reviewed. Every year, all journals included in the Scopus database are examined to ensure that high standards are maintained, regardless of the authors of the publications (Duplančić Leder *et al.*, 2023).

To conduct bibliographic research for a comprehensive literature review of NLU from the Scopus database, the scholar searched for papers and articles on the National Law University

of India, published from 2013 to 2022. With the scope restricted to National Law Universities in India, the search term 'scientometric' was used in the titles, abstracts, and keywords of the information sources. Publication titles, authors' affiliations, source titles, publication type, abstracts, publication year, author keywords, number of citations, funding information, and references from Scopus were extracted using built-in tools. Further, these were placed in a CSV-formatted corpus file. Below is a list of the exact keywords that were used:

AFFILIATION= (“National Law University Delhi”) AND (“National Law University, Jodhpur”) AND (“Gujarat National Law University, Gandhinagar”) AND (“ Maharashtra National Law University, Aurangabad”) AND (“National University of Study & Research in Law, Ranchi”) AND (“National Law Institute University, Bhopal”) AND (“National Law University Odisha, Cuttack”) AND (“Maharashtra National Law University, Mumbai”) (“Hidayatullah National Law University, Raipur”) AND (“The West Bengal National University of Juridical Sciences, Kolkata”) AND (“Damodaram Sanjivayya National Law University Chanakya”) AND (“National Law University Patna”) AND (“Tamil Nadu National Law University Maharashtra”) AND (“National Law University, Nagpur”) AND (“Dr. Ram Manohar Lohiya National Law University, Lucknow”) AND (“Rajiv Gandhi National University of Law, Patiala”) AND (“National University of Advanced Legal Studies, Kochi”) AND (“Dharmashastra National Law University, Jabalpur”) AND (“The National Academy of Legal Studies and Research, Hyderabad”) AND (“National Law University & Judicial Academy, Assam”).

To collect the data, the affiliation search section in Scopus was used to retrieve research data for a particular institution. The following search query was used in the Scopus search section (Figure 1)

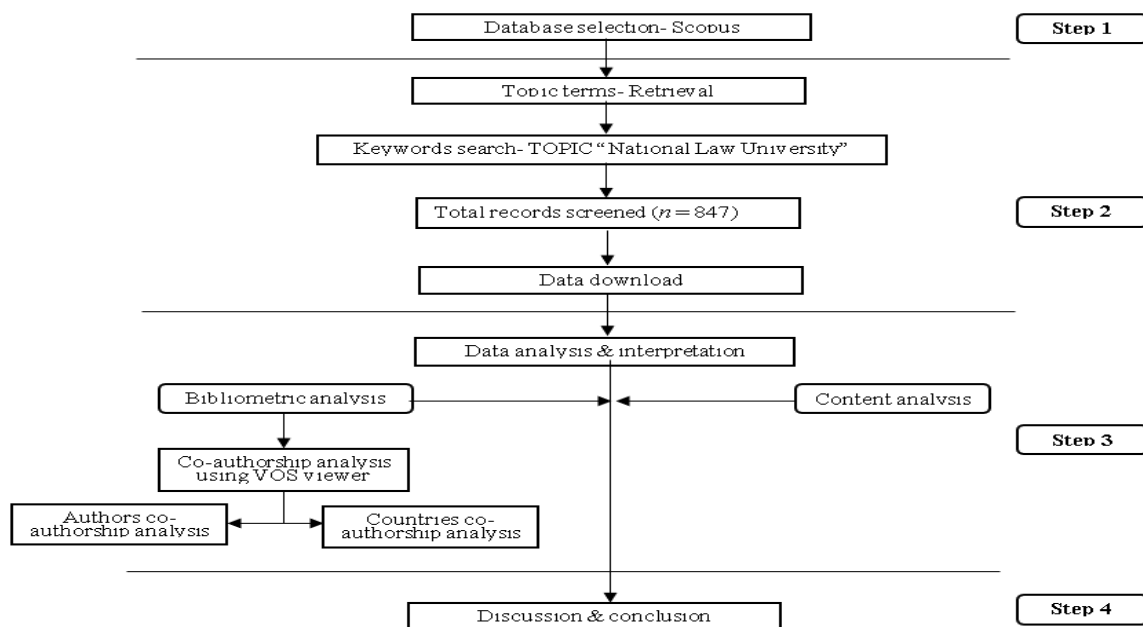


Figure 1: Research flowchart design

The selection criteria were met by 847 documents in total. The scholars extracted or calculated the following variables from Scopus' built-in services and MS Excel: the total number of publications, the number of citations, the average number of citations per publication, the percentage of publications that were cited, the maximum number of citations,

and the number of publications with an h-index. Microsoft Excel was used to create a figure of annual research output, and the bibliometric software RStudio (Hossain & Batcha, 2021) was used to perform bibliometric analysis. In this study, co-authorship networks for authors and countries were created using the VOSviewer tool (Hossain et al., 2022; Oladinrin et al., 2023).

## Results

### Total research output by NLUs, India

The National Law School of India University (NLSIU), Bangalore, has been the first NLU in India, established in 1986. Since then, an NLU has been established in almost every Indian state. Presently, twenty-three (23) NLUs are fully imparting teaching and research across the country; however, four (4) NLUs are in the development phase. Table 1 below presents the overall research productivity and the contribution of research output published by NLUs between 2013 and 2022. A total of 847 articles were published by NLU and indexed in the Scopus database. After thoroughly analyzing the data, it has been observed that the National Law School of India University is leading with 203 articles among all NLUs, followed by the National Academy of Legal Studies and Research, Hyderabad with 110 publications; West Bengal National University of Juridical Sciences, Kolkata with 96; National Law University, Delhi with 90; and Gujarat National Law University, Gujarat with 77 articles respectively. On the contrary, Himachal Pradesh National Law University has yet to publish any article indexed in the Scopus database.

Table 1

Research Output by NLUs, India (as indexed in Scopus from 2013-2022)

S. No.	National Law Universities	Year of Est.	URL	Research Output
1	National Law School of India University	1986	<a href="https://www.nls.ac.in/">https://www.nls.ac.in/</a>	203
2	National Academy of Legal Studies and Research, Hyderabad	1988	<a href="https://library.nalsar.ac.in/">https://library.nalsar.ac.in/</a>	110
3	West Bengal National University of Juridical Sciences, Kolkata	1999	<a href="https://www.nujs.edu/">https://www.nujs.edu/</a>	96
4	National Law University, Delhi	2008	<a href="https://nludelhi.ac.in/home.aspx">https://nludelhi.ac.in/home.aspx</a>	90
5	Gujarat National Law University, Gujarat	2003	<a href="https://www.gnlu.ac.in/GNLU/Home">https://www.gnlu.ac.in/GNLU/Home</a>	77
6	National Law University, Jodhpur	1999	<a href="http://www.nlujodhpur.ac.in/index-main.php">http://www.nlujodhpur.ac.in/index-main.php</a>	70
7	National Law University Odisha, Cuttack	2009	<a href="https://www.nluo.ac.in/">https://www.nluo.ac.in/</a>	29
8	National University of Study & Research in Law, Ranchi	2016	<a href="http://www.nusrlranchi.ac.in/">http://www.nusrlranchi.ac.in/</a>	20
9	Maharashtra National Law University, Nagpur	2016	<a href="https://nlunagpur.ac.in/">https://nlunagpur.ac.in/</a>	20
10	National Law Institute University, Bhopal	1997	<a href="https://nliu.ac.in/">https://nliu.ac.in/</a>	16

S. No.	National Law Universities	Year of Est.	URL	Research Output
11	Rajiv Gandhi National University of Law, Patiala	2006	<a href="https://www.rgnul.ac.in/">https://www.rgnul.ac.in/</a>	16
12	National Law University & Judicial Academy, Assam	2009	<a href="http://www.nluassam.ac.in/">http://www.nluassam.ac.in/</a>	16
13	Hidayatullah National Law University, Raipur	2003	<a href="https://hnlu.ac.in/">https://hnlu.ac.in/</a>	12
14	The National University of Advanced Legal Studies	2005	<a href="https://www.nuals.ac.in/">https://www.nuals.ac.in/</a>	12
15	Tamil Nadu National Law University	2012	<a href="https://tnnlu.ac.in/">https://tnnlu.ac.in/</a>	11
16	Dharmashastra National Law University, Jabalpur	2018	<a href="https://www.mpdnlu.ac.in/">https://www.mpdnlu.ac.in/</a>	11
17	Chanakya National Law University, Patna	2006	<a href="https://cnlu.ac.in/">https://cnlu.ac.in/</a>	9
18	DamodaramSanjivayya National Law University	2005	<a href="https://www.nuals.ac.in/">https://www.nuals.ac.in/</a>	9
19	Dr. Ram Manohar Lohiya National Law University, Lucknow	2005	<a href="http://www.rmlnlu.ac.in/">http://www.rmlnlu.ac.in/</a>	9
20	Maharashtra National Law University, Mumbai	2014	<a href="https://mnlumumbai.edu.in/">https://mnlumumbai.edu.in/</a>	8
21	Maharashtra National Law University, Aurangabad	2017	<a href="https://mnlua.ac.in/">https://mnlua.ac.in/</a>	2
22	Dr. B.R. Ambedkar National Law University	2012	<a href="https://www.dbranlu.ac.in/">https://www.dbranlu.ac.in/</a>	1
23	Himachal Pradesh National Law University	2016	<a href="https://www.hpnlua.ac.in/">https://www.hpnlua.ac.in/</a>	0

### Growth pattern of research productivity

The annual growth trends of the research output of NLU's show that during the selected timeline from 2013 to 2022, a total of 847 articles were published, as shown in Figure 2, according to the Scopus database. A persistent increase in research output has been observed, with 39 articles in 2014 and 84 in 2017. However, this trend is seen to have taken a sharp upward turn in the years 2019, 2020, 2021, and 2022, contributing 90, 98, 124, and 171 articles, respectively. The significant surge in 2022 indicates that scholars have shown enthusiasm for publishing more articles in Scopus-indexed journals.

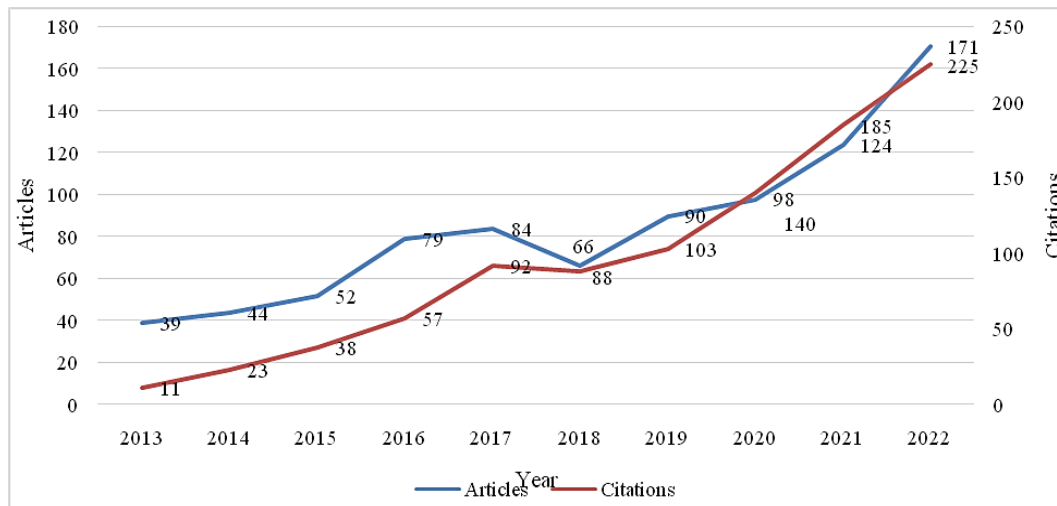


Figure 2: Number of Articles against the number of citations during the selected timeline

The graph in Figure 2 below shows the year-wise citation distribution from 2013 to 2022. The publications with the highest number of citations (225) were published in 2022, followed by 185 citations in 2021 and 140 citations in 2020. Like the publication trend, the citation trend has also been found to increase continuously from 2013 to 2022. Though the year 2013 has seen only eleven (11) citations to the publications, it always takes time for publications to be widely recognized and cited. The analysis further shows that the total retrieved publications received an average of 1.119 citations per article.

### Indian Law Schools Research: Funding agencies

The Scopus database indicates that 39 funding agencies supported the research output of National Law Universities (NLUs) during the study period. However, explicit funding information was reported for only 11 papers, as shown in Table 2, which lists the top ten funding agencies identified in the dataset. Among these, the Indian Council of Social Science Research (ICSSR) sponsored two papers, while the remaining agencies each supported one paper. This distribution reflects a highly dispersed, limited pattern of reported funding, suggesting that externally funded research accounts for only a small proportion of the overall publication output.

Table 2

Top 10 funding agencies for NLU research

Rank	Funding sponsor (n = 39)	Papers
1	Indian Council of Social Science Research	2
2	Directorate-General for International Cooperation and Development	1
3	European Central Bank	1
4	European Research Council	1
5	Horizon 2020 Framework Programme	1
6	Indian Council of Agricultural Research	1
7	Indiana Arts Commission	1
8	Institute for New Economic Thinking	1
9	International Monetary Fund	1
10	Korea Institute of Science and Technology	1

### Impact sources on NLU's research

The table (Table 3) depicts the impact of different academic sources on mapping academic findings from National Law Universities (NLUs) in India using scientometric analysis. It emphasizes the breadth and depth of the journals that publish NLU research, highlighting their importance in shaping the academic landscape. The sources differ significantly in terms of the number of papers published, citation counts, h-index, quartile (Q) ranking, and SCImago Journal Rank (SJR), offering nuanced insights into their importance and status in academia. Publications including "Economic and Political Weekly" and "Journal of Intellectual Property Rights" have high article counts and citations, showing the importance, they play in distributing and citing NLU findings.

Table 3

*Most prolific venues of publications (Journals) and their impact*

Sources	Articles	Citations	h-index	Q	SJR	Publishers
Economic and Political Weekly	51	90	5	2	0.339	Economic and Political Weekly
Journal of Intellectual Property Rights	28	25	2	1	0.178	NISCAIR
Indian Law Review	20	11	2	3	0.135	Taylor & Francis
Commonwealth Law Bulletin	15	4	1	2	0.276	Taylor & Francis
Arbitration International	14	4	1	4	0.109	Oxford University Press
Law And Economics in India: Understanding and Practice	10	2	1	3	0.131	Taylor & Francis
Astropolitics	9	6	1	2	0.254	Taylor & Francis
Journal of Intellectual Property Law and Practice	8	3	1	4	0.119	Oxford University Press
Statute Law Review	8	7	1	1	0.28	Oxford University Press
Asian Journal of Legal Education	6	2	1	4	0.101	Sage

The h-index, which evaluates both publishing output and citation impact, and SJR, which measures source scholarly impact, help determine the relative importance of various journals. For example, "Economic and Political Weekly" has an h-index of 5 and an SJR of 0.339, making it a notable venue for significant effects scholarly publication. Other publications, such as "Asian Journal of Legal Education" and "Journal of Intellectual Property Law and Practice," have lower SJR values, reflecting a more specialized but perhaps less far-reaching effect. Reputable publishers such as Oxford University Press and Taylor & Francis are represented, which underscores the academic merit and legitimacy of NLU study results and the organization's contributions to international legal studies.

### Collaboration with organizations

This figure is a network visualization map that illustrates the connections and cooperation among different research and academic institutes. Each node represents an institution, and the lines (edges) connecting them signify collaborations or affiliations (Figure 3). Each node's size is proportional to its importance or centrality in the network, and color coding indicates clusters of organizations with strong connections and frequent collaboration. The visualization map depicts the collaborative landscape of research production across National Law Universities (NLUs) in India, emphasizing significant institutions and their interconnectedness. The largest nodes—National Law University and National Law School of India University, for example—hold key positions, underscoring the importance of these institutions within the academic network. Different clusters identify different types of collaborations: worldwide partnerships (such as the one with the City University of Hong Kong), interdisciplinary research (such as the one with ISRO, the Indian Statistical Institute), and specialized subjects (such as those in health and legal studies).

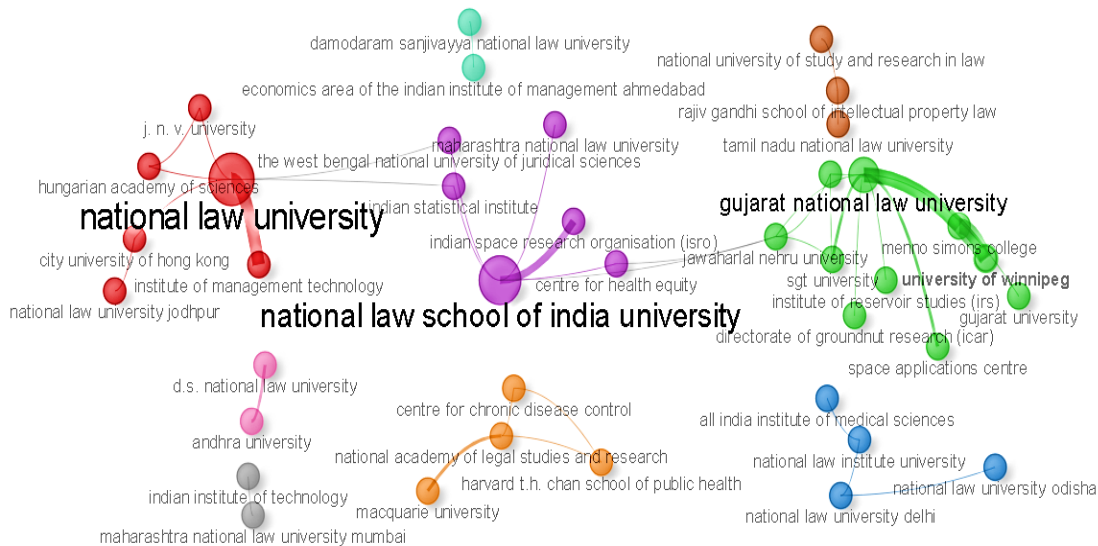


Figure 3: Research collaboration of NLUs with organizations

Using the VOS viewer tool, we identified nine clusters. Gujarat Law University is the most prominent node found in the green cluster. Cluster 1 indicates a wide network of cooperation, composed of both domestic and international institutions. The second and third clusters, illustrated in red and purple, are primarily composed of Indian institutions, suggesting close collaboration among Indian universities. The purple cluster also includes a wide range of national and international organizations, including specialized research centres such as the Space Applications Centre and universities such as the University of Winnipeg. The gold cluster comprises four institutions: three from India and one from the United Kingdom, demonstrating a mix of domestic and international collaboration. Four organizations in the blue cluster are working together with Indian universities. There are three universities in the brown cluster. The remaining three clusters (grey, sky blue, and pink) represent organizations that work together primarily within the Indian context, underscoring the significance of domestic collaboration in these clusters. This combination represents multidisciplinary and international cooperation,

reflecting India's expanding trend of merging several fields of study to strengthen legal research and teaching.

### Most prolific authors

The study revealed that 558 authors contributed to the total number of NLU publications during the selected timeline. The top productive authors, ranked by publications and citations, are listed in Table 4 below. Of the ten productive authors, Pellissery S from National Law School of India University, Bangalore, stood as the leading author with 28 publications, followed jointly by Das R. and Jayaram N., each contributing 16 publications and ranked second. It is further revealed that all these leading authors belong to India. Pellissery S had the highest number of citations, h-index, and g-index. It shows that articles with multiple authors predominate over all other paper types. Alexander, A., had received one citation.

Furthermore, 166 papers have been found as sole-author papers in the past five years, while a total of 358 papers have been published by dual and multi-author. The study indicates that papers with multiple authors dominated NLU research. However, collaborations between authors from various universities contribute to increased research influence in the research world.

Table 4

Top 10 productive authors

Rank	Author	Publications	Citation	h-index	g-index	Productive Year
1	Pellissery, S	28	61	4	8	2013
2	Das, R	16	11	2	2	2013
3	Jayaram, N	16	4	1	1	2017
4	Pandey, S.C.	14	38	2	2	2016
5	Pattnaik, P.N.	14	27	2	2	2013
6	Lilienthal, G.	9	2	1	1	2013
7	Shukla, M.K.	9	18	1	1	2013
8	Alexander, A.	8	1	2	2	2017
9	Guha, S.K.	8	19	0	0	2013
10	Kannabiran, K.	8	37	1	1	2013

The VOS viewer visualization map shows NLU authors who have contributed at least one document to publications, as depicted in Figure 4 below. There were three clusters on the map. The highest productive authors were mainly grouped in 32 clusters. 57 of 558 authors met this requirement. Pertinently, the size of the bubble indicates the number of citations—the most significant link strength reported by Pellissery, S. and Malik, A.K. The study also found no strong evidence among the authors.

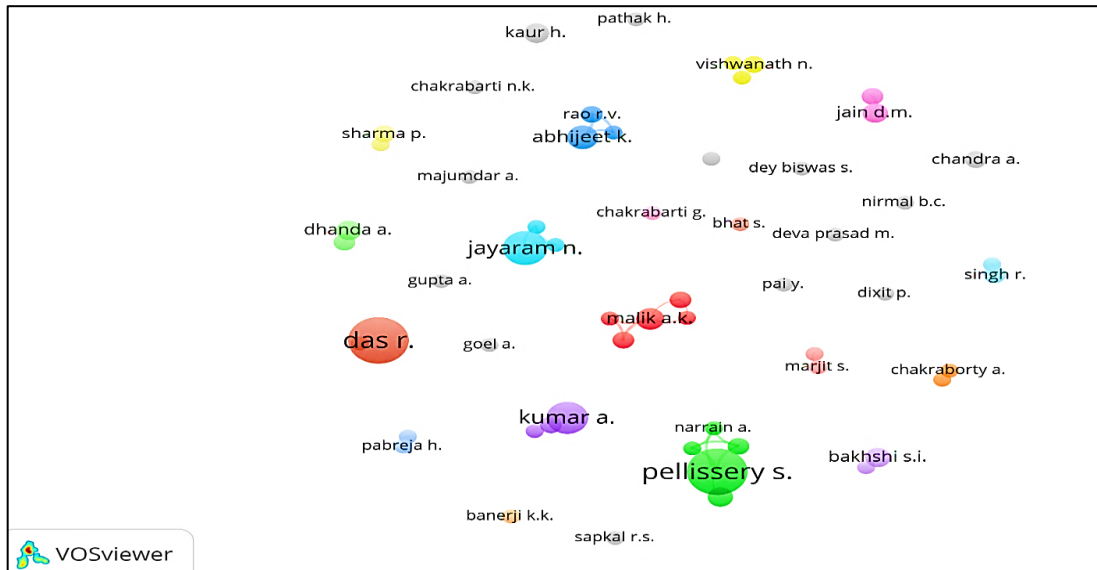


Figure 4: Co-authorship networks of the most productive authors

**Distribution of the author’s keywords in the law school’s research**

The keywords, which are usually precise, are used to convey the study's impression and to make the article searchable appropriately. The VOS viewer chart, shown in Figure 5 below, and the analysis of this study clearly show the prevalence of frequently used author keywords. The size of the circle reflects how frequently a specific keyword is used in scientific research (Hossain & Sadik Batcha, 2021). The color-coded patches below represent the categories of frequently used terms observed in the writings of major Indian organizations. The chart below shows 8 clusters generated from the author’s keywords using the VOS viewer. India, with 43 hits, is the most frequently occurring keyword, followed by ‘WTO’ with 9, ‘articles’ with 7, and ‘human’ and ‘human rights’ with 6. The thickness of the network line is an indicator of the strength of the intra-association between terms. The stronger the bond, the thicker the line.

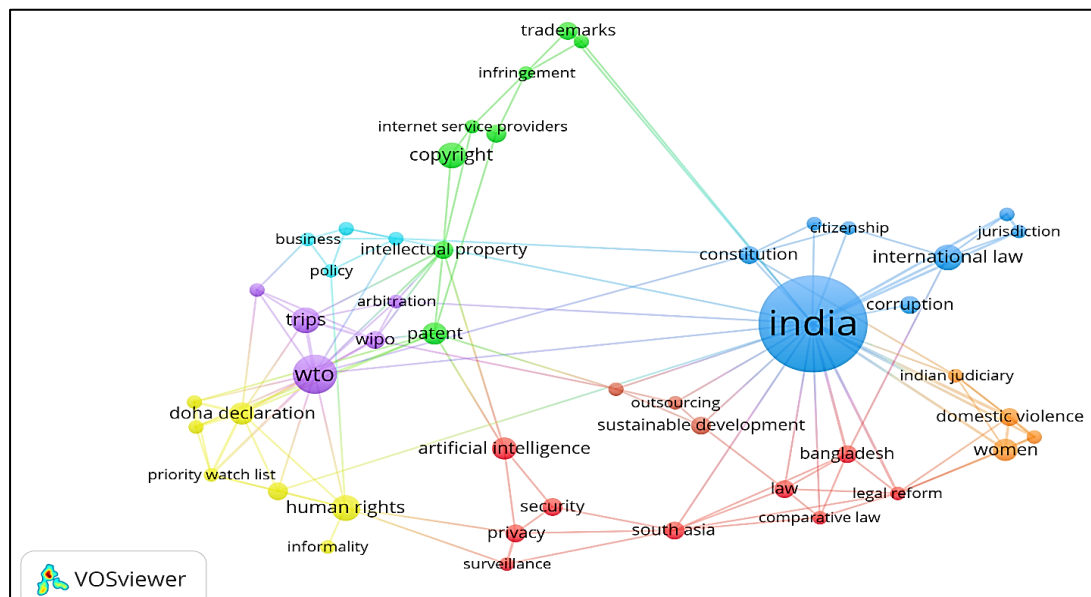


Figure 5: Author keywords on NLU research

### Discussion

As institutions of national importance in law and legal studies, the National Law Universities (NLUs) in India have gained prominence as centers of legal research. This necessitates an analysis of research trends within NLUs to identify areas of focus, publication patterns, and the contribution to legal scholarship in terms of research productivity. This scientometric study offers historical perspectives and insights into NLU research during 2013-2022. It found a significant increase in NLUs' research output over the years, indicating an upward trend in research within these institutions. This upward growth substantiates the NLUs' commitment to advancing legal scholarship. The study found the National Law School of India University, National Law University (Delhi), and National Law University (Jodhpur) as the key contributors to the development of NLU research. Further, the partnership and Memoranda of Understanding with foreign universities have paved the way for joint research projects and publications (Morandi, 2013). As evidenced by the citation impact and citation patterns, NLUs have made significant contributions to legal scholarship, highlighting their expanding visibility within the academic community (Singh et al., 2021).

This research effort also revealed that over the past ten years, the number of publications on the National Law University has varied. However, it emerged that over the previous six years, the number of articles has generally increased. The study also identified constitutional law, criminal law, and intellectual property rights as the top three areas of research receiving the most attention. Needless to point out here that these constitutional and criminal laws have huge significance in the Indian Legal System. In contrast, Intellectual property rights have increasing importance in the contemporary digital age. This suggests their vibrancy in contemporary legal issues, as they address the needs of the legal profession and society at large. The increasing trend of interdisciplinary research has been another outcome of NLUs, embracing the intersectionality of law with economics, sociology, political science, and technology. This approach fosters a comprehensive understanding of legal issues and encourages collaborations across disciplines (Kalyanakrishnan *et al.*, 2018). Notably, these collaboration patterns have enabled researchers to pool their expertise and resources, leading to more comprehensive and impactful research outcomes.

Concerning publication patterns, NLUs have predominantly published their research in national and internationally renowned journals, indicating their desire for a broader audience within global legal discourse. The majority of NLU-related studies were published in the Economic and Political Weekly and the Journal of Intellectual Property Rights. A substantial increase in research output from NLUs over the past decade has been observed. Several NLUs have established their research centers and journals, encouraging faculty and students to publish their research findings. A significant number of articles have been published in peer-reviewed journals, both nationally and internationally, showcasing the scholarly endeavors of NLUs (Rabari, 2015). Overall, this study provides valuable insights into NLU research trends in India, demonstrating their commitment to research, identifying key areas of focus, emphasizing the importance of collaboration, and highlighting the significance of publishing in reputable journals.

### Conclusion

The scientometric study of NLU's research trends in India demonstrates the increasing research output, interdisciplinary approach, and emerging focus areas. NLUs have made

valuable contributions to legal scholarship, engaging in collaborative research and international collaborations. As NLUs continue to evolve, it is pivotal to promote and support research to address contemporary legal challenges and to develop a robust legal framework in India.

As discussed elsewhere, only 847 articles were published in Indian journals regarding the National Law University. To maximize the opportunities presented by the open access movement, Indian Governments, scholars, libraries, and librarians should build a permanent structure. Researchers from India should view NLU publishing as a unique opportunity to enhance their international prominence by publishing their legal research output. The body of existing research shows that NLU publishing increases access to research articles, encouraging citations and strengthening the research impact of authors, institutions, and journals. The findings of this study can be seen as helpful in understanding the comparative state of legal research across Indian states, sources, and organizations. Moreover, these findings may serve as a springboard for further NLU research, particularly motivating institutions, researchers, and stakeholders to focus on the key areas.

Research evaluation is a complex area; in this study, the researchers used the Scopus database, and the publication output coverage spans 2013-2022. However, there are other indexing databases, e.g., Web of Science and the Indian Citation Index; the research output from these databases is not covered in this study. Also, while evaluating the research output of NLUs, one essential aspect that remains is that they are contributing significantly to policy-making and working very closely with the Supreme Court of India and High Courts through their research, helping the judicial system reach appropriate decisions. Many of the research centers affiliated with these NLUs are helping the less privileged to get their rights. These research centers are doing a lot of research while helping these less privileged people, but it is not correctly documented in the form of an article or book, and is not necessarily published in any Scopus-indexed journal. So, these critical efforts could not have been evaluated here.

#### Implications

The implications of this research are essential for multiple stakeholders.

- The study provides insight into the strengths and weaknesses of the present research ecosystem in NLUs. This study can guide funding and policy decisions to enhance study productivity and quality.
- The study can improve the caliber and applicability of legal research by examining research trends and collaboration patterns, thereby solidifying NLUs' standing as preeminent legal organizations.
- The findings can encourage interdisciplinary study by emphasizing areas where law intersects with other domains, such as social sciences, economics, and technology, so supporting a more complete approach to legal problems.
- The insights provided can help scientists identify the most significant journals and productive research fields, directing further research efforts toward areas with high impact potential.

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