RESEARCH ARTICLE

A comparative study of the research output of the University of Jaffna, Sri Lanka, during the war and post-war periods: analysis based on the SCOPUS database

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Abstract: This study presents a scientometric analysis of the research productivity at the University of Jaffna, Sri Lanka, during two distinct periods: the civil war (1984–2009) and the post-war period (2010–2025). Drawing on data from the Scopus database, it examines the University's publication trends over four decades. The University of Jaffna, situated in Sri Lanka's war-affected northern region, faced significant challenges during the conflict. Despite these challenges, the University has shown remarkable growth in scholarly output, especially in the post-war era. For this research, the search query was conducted using the keyword "University of Jaffna" in the title field. The analysis reveals that Scopus indexed a total of 1,545 publications with 25,100 total citations from 1984 to 2025. During the war period, 187 publications were recorded with 5,275 citations. In the post-war period, this number increased significantly to 1,358 publications with 19,825 citations. The study employed tools such as Biblioshiny, VOSviewer, and MS Excel for data analysis. It assessed authorship patterns, annual publication trends, productive authors, citation metrics, keyword distribution, funding sources, and international collaboration. Notably, during the war period, only 12% of the total research output was produced, whereas around 88% occurred after the war. This clearly indicates the strong influence of peace, enhanced global partnerships, and technological advancements on academic productivity. This research highlights the resilience of the University of Jaffna and the broader implications of conflict on higher education in Sri Lanka. The findings offer valuable insights such as Policy direction, Funding priorities, Strategic planning, Collection development and Regional development for governments, academic institutions, librarians, and researchers, contributing to an understanding of regional scholarly growth and supporting future academic planning and development.

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INTRODUCTION

Higher education institutions play a crucial role in knowledge creation, dissemination, and societal development in Sri Lanka. Universities, as centers of academic excellence, contribute significantly to national and international research outputs. **(**Ministry of Higher Education, 2020**).** The Sri Lankan civil war, which lasted from 1984 to 2009 for over 25 years, significantly affected many things, especially it largely impacted the educational sector and had hindered the academic and research processes not only at the University of Jaffna but also at other Universities in Sri Lanka (Somasundaram, 2010**).** The conflict resulted in infrastructure damage, resource limitations, restricted academic mobility, displacements and reduced research funding. In higher education, faculty members and students faced numerous challenges, including displacement, lack of access to international research collaborations, and financial constraints, economical banned all of which contributed to a decline in research productivity. Furthermore, the war limited opportunities for networking, publishing, and participation in global academic conferences, thereby affecting the University's visibility in international research communities (Senanayake, 2009**).**

The University of Jaffna (UoJ*)* is one of Sri Lanka's major public Universities, located in the Northern Province. Established in 1974, it has played a crucial role in higher education, research, and cultural preservation in Sri Lanka. The University of Jaffna continues to be a leading centre for education and research in Sri Lanka, playing a vital role in the academic and socio-economic development of the Northern Province and beyond (Tharmaratnam, 2018**).**

The Scientometric study is a quantitative analysis of scientific research output. It examines publications, citations, authorship patterns, and research trends to assess the growth and influence of scientific knowledge. Scientometrics is widely applied in evaluating institutions, researchers, and disciplines, often using databases. Scientometric studies are essential for evaluating the research performance of academic institutions. Scientometrics points out the stronger and weaker areas of research and helps researchers to contribute more. These studies use bibliometric indicators to assess publication

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trends, citation impact, collaboration networks, and keyword distributions (Hood & Wilson, 2001). By analyzing research output from the University of Jaffna using the SCOPUS database, this study provides a comparative evaluation of research productivity during the war and after the civil war.

Research problem

The civil war in Sri Lanka (1984–2009) had a significant impact on higher education, particularly at the University of Jaffna, disrupting academic activities and limiting research opportunities. Challenges such as displacement, resource constraints, and restricted international collaborations hindered scholarly productivity during the conflict. However, in the post-war period, the University has experienced a notable increase in research output. A total of 1,545 documents were retrieved from the Scopus database for the period 1984 to 2025. Among them, 187 records were published during the war period (1984–2009), and 1,358 records were published in the post-war period (2010–2025). (ScienceDirect, 2025). Despite this growth, there is no comprehensive scientometric analysis comparing the war and post-war period's research productivity of the University based on Scopus database such as citation impact, authorship patterns, yearly output, subject areas, keyword distributions, and international collaborations remain unexplored in this context. Therefore, this study seeks to fill this gap by systematically analyzing the effects of the war on the University's research productivity using bibliometric tools.

Objectives of the study

1. To compare the research productivity of the University of Jaffna during the war (1984–2009) and post-war (2010–2025) periods.
2. To analyze publication trends and citation impact across both periods to assess the growth and scholarly influence of research output.
3. To examine authorship patterns, key contributors, and national and international collaboration networks in research teams over time.
4. To investigate Publication sources, keyword distributions, and research themes in academic focus on war and after the war periods.

Limitations of the study

The selected data was collected from Scopus database from 1984 to 2025. During the civil war (1984 to 2009) and post war period (2010 to 2025). The most war-affected higher educational institution in Sri Lanka is the University of Jaffna. Hence, the researcher has chosen the research productivity of this University for the study. The findings are specific to the University of Jaffna and may not be directly applicable to other Sri Lankan Universities. A total of 1,545 documents were retrieved from the Scopus database for the period 1984-2025. Among them, 187 records were published during the war period (1984–2009), and 1,358 records were published in the post-war period (2010–2025).

RESEARCH METHODS

This study employed a systematic data collection approach to retrieve bibliometric data from Scopus, a leading citation database. This study adopts a systematic approach to collect and analyze bibliometric data from Scopus, one of the world's largest abstract and citation databases of peer-reviewed literature. The data were extracted in April 2025. Scopus was selected for data collection due to its comprehensive, multidisciplinary coverage and reliable indexing standards. Owned by Elsevier, it includes over 27,000 active titles from more than 7,000 publishers, spanning journals, books, and conference proceedings. With over 90 million records and 1.8 billion cited references, Scopus offers extensive coverage from 1996 onward and daily updates, making it a trusted source for bibliometric and scientometric research. (Elsevier, 2024).

The methodology begins with the formulation of a structured search strategy using the keyword "*University of Jaffna"* integrated with Boolean operators (AND, OR, NOT) and relevant filters such as affiliation, subject area, document type, and time period. The second step involves executing the search within the Scopus database, applying an institutional filter, and exporting the results in Plain Text and CSV formats. In the third step, the data undergoes cleaning and preprocessing. Subsequently, the cleaned data is categorized based on publication year, research domain, citation impact, authorship patterns, keywords, and international collaborations. Additionally, the publications are classified into two time periods: the war period (1984–2009) and the post-war period (2010–2025). For a robust scientometric analysis, this study utilizes a combination of bibliometric tools and statistical software, including Biblioshiny, VOSviewer, and Microsoft Excel, to conduct advanced

bibliometric mapping and visualization.

Key bibliometric indicators- total citations, average citations per publication, and H-index- were calculated. The 1,545 publications collectively received 25,100 citations. Of these, during the period 1984 to 2009, only 187 publications (12%) accounted for 5,275 citations (22%), while from 2010 to 2025, 1,358 publications (88%) contributed 19,825 citations (78%). To enhance interpretation and clarity, data visualization techniques including tables and figures were employed to illustrate publication trends, authorship patterns, and citation distributions.

Significance of the study

The University of Jaffna has demonstrated remarkable resilience in rebuilding its research productivity following the civil war. This study is significant as it provides empirical evidence of the university's scholarly growth, comparing research output during the war and post-war periods to reveal how conflict and recovery have shaped academic progress. Through a scientometric analysis, it offers valuable insights into the impact of war on higher education and highlights the transformative role of technological advancement, funding, and global collaboration in fostering research development. The findings will contribute to academic literature while supporting policymakers, administrators, and librarians in formulating strategies to enhance research productivity and international partnerships. Moreover, this study serves as a foundation for future research on post-conflict higher education and provides a framework for strengthening research-oriented environments in Sri Lanka's Northern Province.

Review of Literature

Over the past two decades, scientometric research has become a key tool for understanding the patterns, productivity, and impact of scholarly communication. Studies using databases such as Web of Science (WoS) and Scopus have enabled researchers to evaluate institutional performance and global research trends. However, much of these studies focuses on well-established or resource-rich universities, leaving a significant gap in understanding how conflict-affected institutions function within constrained environments.

Against this background, the present study investigates the research productivity of the University of Jaffna, comparing two critical periods - the war years (1984–2009) and the post-civil war era (2010–2025) - to examine how conflict and recovery have shaped scholarly output, collaboration, and research growth.

Scientometric Studies on Research Productivity of Universities

Scientometric investigations across India and Sri Lanka have provided insights into institutional research capacity and collaboration networks. For instance, Mahala and Singh (2021) analyzed the research output of leading Indian universities between 2015 and 2019 using the WoS database. They found that multi-authored and internationally collaborative works tend to achieve higher citation rates, emphasizing the positive correlation between collaboration and impact. This suggests that research productivity is not only a function of institutional resources but also of network strength and visibility. However, their study primarily focused on elite universities such as the University of Delhi and Banaras Hindu University, which benefit from substantial funding and international ties. Such contexts differ sharply from that of universities in post-conflict or resource-limited regions, such as the University of Jaffna.

Similarly, Yadav et al. (2020) examined Mizoram University's output using the Indian Citation Index (ICI) and found that the degree of collaboration and co-authorship index played a key role in productivity. Yet, as Mizoram University is located in a geographically peripheral region, its experience provides a closer comparison to Jaffna than that of large metropolitan universities. The findings imply that regional context and institutional isolation can shape research outcomes, an issue this study explores through a conflict-sensitive lens.

Rahaman (2022) investigated the research performance of Calcutta University (2002–2021) using WoS data and highlighted a steady increase in publication volume and collaboration indices. His application of Bradford's Law revealed the concentration of research across specific core journals. While the university benefited from policy stability and strong academic traditions, such patterns may not apply to Jaffna, where war-induced disruptions likely altered publication behavior and research focus.

Wijetunge et al. (2020) conducted a scientometric study assessing the research productivity of five multidisciplinary state universities in Sri Lanka—Colombo, Kelaniya, Peradeniya, Ruhuna, and Sri Jayewardenepura—

during 2015–2018, using SciVal data on scholarly output, citation impact, and collaboration. Their findings revealed that the University of Colombo and the University of Peradeniya produced the highest research outputs, reflecting the dominance of well-established, resource-rich institutions in Sri Lanka's research landscape. The study also underscored the critical role of university libraries in supporting research excellence through collection development, training in information retrieval, citation management, and plagiarism detection, as well as maintaining institutional repositories. However, while the study provided valuable insights into the research performance of major universities, it excluded institutions such as the University of Jaffna. This omission creates a notable gap in understanding how universities in post-conflict regions, often operating under infrastructural and resource constraints, contribute to national research productivity. Addressing this gap is essential to form a more inclusive picture of Sri Lanka's academic development and to evaluate how regional disparities influence research capacity and collaboration.

Across these studies, a consistent theme emerges: research productivity thrives under conditions of stability, collaboration, and institutional support. However, none of these studies assess how prolonged conflict disrupts or reshapes such productivity. Furthermore, while the emphasis on collaboration and infrastructure is well established, the psychosocial and structural aftermath of war on knowledge production remains largely unexplored.

Impact of Civil War on Higher Education in Sri Lanka

The Sri Lankan civil war (1983–2009) profoundly influenced the nation's educational and research landscape. Russell (2022) approached this from a sociological perspective, introducing the concept of the "university substrate," which conceptualizes universities as social entities embedded within conflict experiences. Using interviews at the University of Jaffna, Russell illustrated how the institution's structure, identity, and research priorities were reshaped by the war's socio-political pressures. His findings underscore that conflict not only reduces human capital but also reconfigures academic culture and institutional resilience.

Complementing this, Ito et al. (2024) examined the educational outcomes of individuals exposed to conflict using a within-sibling comparison design. They demonstrated that war-related trauma, property loss, and migration had long-term negative effects on educational attainment, suggesting that the consequences of conflict extend beyond immediate disruptions. These results imply that academic institutions in war zones face intergenerational impacts that may persist well into the post-conflict era, influencing both student and faculty productivity.

These findings provide crucial theoretical grounding for the current study. While Ito focus on qualitative and socio-economic dimensions of war's impact, this study seeks to quantify those effects through scientometric indicators- linking sociological observations to measurable research patterns. The convergence of these perspectives strengthens the rationale for a comparative analysis of Jaffna's war and post-war research output.

Previous Scientometric Studies on the University of Jaffna

Only a handful of scientometric studies have specifically focused on the University of Jaffna. Janen (2021) analyzed publications between 2000 and 2019 and reported that the number of papers increased significantly after 2014, with multi-authorship becoming more prevalent. This shift indicates a growing culture of collaboration and possibly enhanced access to research networks in the post-war era. Likewise, Latha and Lakshman (2020) examined the Faculty of Science from 2003 to 2018 and observed a general upward trend in productivity, though the growth was uneven across departments and years. Both studies highlight post-war progress but do not contrast it explicitly with wartime conditions or explore the underlying factors driving change.

While these works are valuable, they offer fragmented snapshots of Jaffna University's research landscape. None examine the entire university's output across disciplines, nor do they conduct a temporal comparison between war and post-war periods. This underscores the need for a comprehensive scientometric study that contextualizes Jaffna's research trajectory within Sri Lanka's broader post-conflict recovery framework.

In summary, existing literature confirms that research productivity is strongly linked to collaboration, resource availability, and institutional stability. However, the influence of armed conflict on these parameters remains insufficiently explored in scientometric research,

particularly in the Sri Lankan context. Previous studies on Jaffna University have identified trends of growth but have not provided a comparative, longitudinal analysis to evaluate the effects of war and recovery phases systematically.

Hence, the present study fills this critical research gap by applying scientometric methods to assess how the University of Jaffna's research output, collaboration patterns, and scholarly impact evolved between 1984 and 2025. This investigation not only extends scientometric literature into new geographical and social terrains but also contributes to a broader understanding of knowledge reconstruction and institutional resilience in post-conflict developing regions.

RESULTS AND DISCUSSIONS

Summary of total research output of University of Jaffna during the War and Post-War periods

Table 1 presents the overall research output of the University of Jaffna, highlighting a significant increase in productivity from the war period to the post-war era, as evidenced by data retrieved from the Scopus database.

During the war period (1984–2009), the University produced 187 publications, representing 12% of the total output across both periods. These publications received 5,275 citations (22% of total citations) and achieved an H-index of 34, with a relatively high average of 28.21 citations per publication. In contrast, during the post-war period (2010–2025), the University's research activity expanded considerably, producing 1,358 publications (88% of total output) that garnered 19,825 citations (78% of total citations) and an H-index of 57, with an average of 14.60 citations per publication. Overall, across both periods (1984–2025), the University recorded 1,545 publications, 25,100 citations, and an H-index of 64, with an average of 16.25 citations per publication. This comparison highlights the substantial increase in research productivity following the end of the civil war, although the average citation impact per publication was higher during the war period, likely due to the greater influence or selectivity of the limited research produced at that time.

Analysis of research publications and citations of University of Jaffna

Table 2 provides the analysis of research publications from 1984 to 2025 in the Scopus database. The results revealed a distinct contrast between the war and post-war periods in Sri Lanka. During the civil war (1984–2009), research productivity was relatively low and inconsistent, with total publications remaining below 20 annually and highly fluctuating growth rates. This period reflected the disruption of academic activities due to conflict and limited institutional support.

Citations during this era were also modest, although some years like 2001 and 2006 saw unusually high citation counts, indicating a few highly influential works. In contrast, the post-war period (2010–2025) shows a marked surge in research activity, with a significant and steady increase in publications and citations. The number of publications rose sharply, peaking at 228 in 2024, while citations reached their highest at 2,783 in 2019. This growth is indicative of renewed academic focus, improved research infrastructure, and enhanced collaboration. The years from 2016 to 2024 can be viewed as a golden era for research output. Overall, the post-war period demonstrates a strong recovery and advancement in research output and impact.

Analysis of total Publication in Scopus database during the War & Post - War periods

In the continuous of table 2, figure: 1 depicts the annual research publication output at the University of Jaffna from 1984 to 2024, divided into the war (Yellow) and post-war (Maroon) periods. During the war (1984–2009), publication output remained low and stagnant, rarely exceeding 15 annually, reflecting the impact of the Sri Lankan Civil War on academic productivity due to conflict-related disruptions and limited infrastructure. Starting around 2010, coinciding with the war's end, there was a marked and sustained increase in research output. Publications grew each year steadily, peaking at 228 in 2024. This growth is attributed to restored peace, enhanced research funding, infrastructure improvements, and expanded local and international collaborations. The upward trend from 2015 onward illustrates a post-conflict academic revival. Overall, the figure highlights the resilience and recovery of the Jaffna University academic community in the post-war era.

Table 1: Total research output of the University of Jaffna during the War and Post-War periods in the SCOPUS database

Periods	Total Publications	Total Citations	H-Index	Av. Citations per Item
War Period (1984–2009)	187	5,275	34	28.208
Post-War Period (2010–2025)	1,358	19,825	57	14.598
Both Periods (1984–2025)	1,545	25,100	64	16.245

Table 2: Analysis of research publications and citations growth during the War & Post-war periods

Year	TP	%	AGR %	TC	%	Year	TP	%	AGR %	TC	%
1984	6	0.39	-	40	0.16	2005	8	0.52	-11.11	320	1.27
1985	2	0.13	-66.67	16	0.06	2006	15	0.97	87.5	1032	4.11
1986	6	0.39	200	4	0.02	2007	13	0.84	-13.33	676	2.69
1987	7	0.45	16.67	38	0.15	2008	14	0.91	7.69	189	0.75
1988	4	0.26	-42.86	90	0.36	2009	9	0.58	-35.71	89	0.35
1989	5	0.32	25	85	0.34	2010	20	1.29	122.22	386	1.54
1990	11	0.71	120	217	0.86	2011	28	1.81	40	420	1.67
1991	5	0.32	-54.55	61	0.24	2012	29	1.88	3.57	646	2.57
1992	4	0.26	-20	23	0.09	2013	32	2.07	10.34	1046	4.17
1993	7	0.45	75	399	1.59	2014	33	2.14	3.13	297	1.18
1994	5	0.32	-28.57	23	0.09	2015	37	2.39	12.12	1390	5.54
1995	8	0.52	60	175	0.70	2016	56	3.62	51.35	2391	9.53
1996	8	0.52	0	196	0.78	2017	54	3.50	-3.57	1563	6.23
1997	11	0.71	37.5	211	0.84	2018	80	5.18	48.15	1781	7.10
1998	7	0.45	-36.36	38	0.15	2019	107	6.93	33.75	2783	11.09
1999	7	0.45	0	94	0.37	2020	113	7.31	5.61	1709	6.81
2000	3	0.19	-57.14	72	0.29	2021	145	9.39	28.32	2064	8.22
2001	6	0.39	100	685	2.55	2022	152	9.84	4.83	1629	6.49
2002	3	0.19	-50	84	0.33	2023	205	13.27	34.87	1158	4.61
2003	4	0.26	33.33	39	0.16	2024	228	14.76	11.22	574	2.29
2004	9	0.58	125	406	1.62	2025	39	2.52	-82.89	6	0.02
						Total	**1,545**			**25,100**	

Note: TP- Total Publicationm, TC-Total Citation, AGR%- Annual Growth Rate

Analysis of total citations in the Scopus database during the War and Post-War periods

Figure 2 illustrates the annual citation trend of the University of Jaffna's research publications indexed in the Scopus database over four decades (1984–2024). The blue bars represent the war period, during which citation counts remained relatively low, seldom exceeding 400 citations per year. This limited citation impact reflects the challenges faced by the academic community, such as restricted access to research resources, minimal international collaboration, and limited participation in global scholarly networks.

In contrast, the red bars represent the post-war period (2010 onwards), which shows a remarkable upward trajectory in citation counts. Beginning in 2010, citations began to rise steadily, peaking at **2**,783 citations in 2019. This post-conflict surge signifies substantial growth in research productivity and impact, driven by enhanced institutional stability, greater research funding, improved infrastructure, and increased international engagement. Overall, the figure demonstrates a clear transition from constrained research visibility during conflict years to a period of vibrant academic development and global recognition in the post-war era.

Most Productive authors of the University of Jaffna

Table 3 presents the top ten most productive authors affiliated with the University of Jaffna

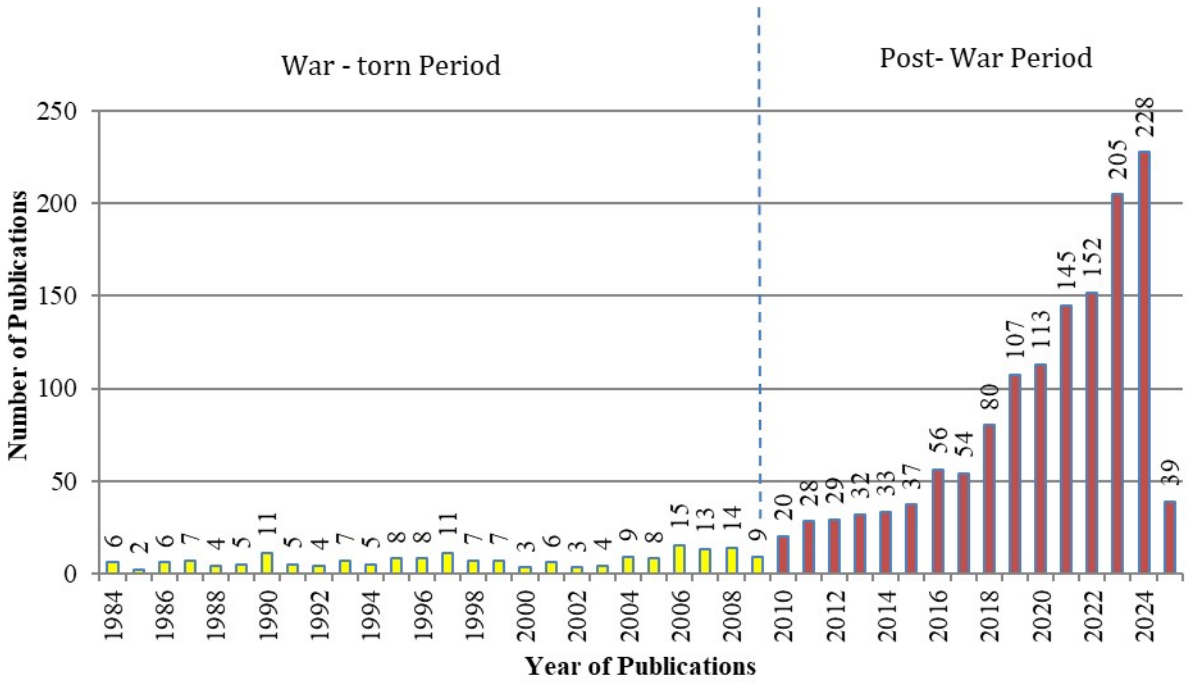
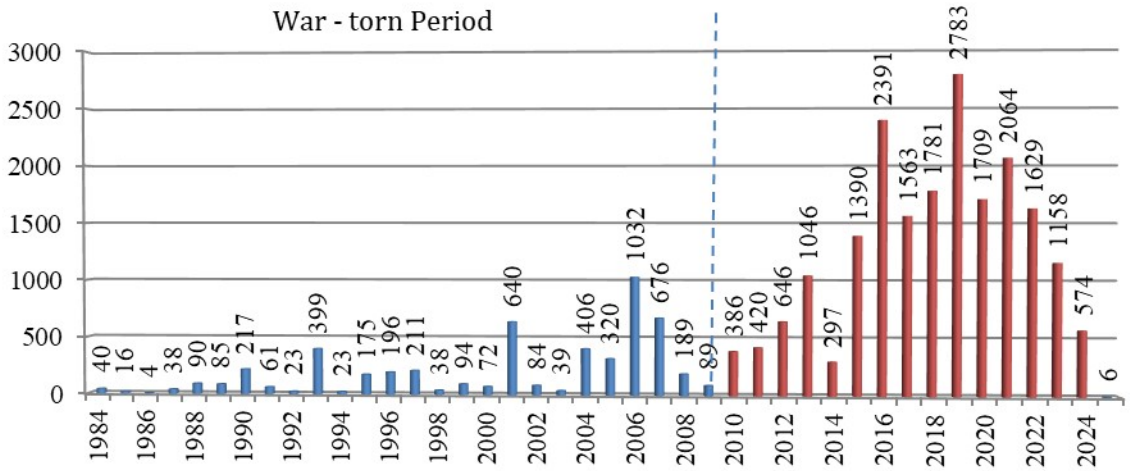


Figure 1: Total research publications of University of Jaffna during the War & Post-War periods in Scopus database



during the war and post-war periods based on Scopus data. In the war period, *Arasaratnam V. and Kandasamy K.* were the most productive, each with 17 publications (9.09%). *Surendran S. and Ravirajan P.* also had notable outputs and higher citation impacts, with *Ravirajan P*. leading in citations (1,765). *Somasundaram D.* also stands out with 901 citations from just 10 papers, highlighting high-impact research despite limited output. In the post-war period, the scale of productivity expanded. *Sathiparan N.* topped the list with 73 publications (5.38%) and 1,254 citations, followed by *Surendran S.* with 66 publications and the highest h-index (21). *Ravirajan P., Subramaniyam D., and Ranjan R.* continued their scholarly contributions, indicating consistency across periods. The post-war era reflects broader participation in research, with increased publication counts and higher citation metrics, suggesting enhanced academic engagement and visibility.

Table 4 highlights the most impactful authors during the war and post-war periods based on total citations (TC) in the Scopus database. During the war period, *Ravirajan P***.** was the most influential, accounting for 33.44% of total citations (1,764 from 12 publications), followed by *Somasundaram D.* with 20.87% (1,101 citations), demonstrating the significant impact of a few key scholars despite limited output. Others like *Kandasamy K., Surendran S.N., & Arasaratnam V.* also contributed meaningfully with moderate citation shares. In the post-war period, citation impact diversified across a broader range of scholars. *Vignarooban K***.** led with 3,088 citations (15.58%), followed by *Kannan N.* (1,612 citations) and *Surendran S.N.* (1,328 citations), indicating a strong emergence of new impactful authors. *Sathiparan N.,*

Ramasamy R., & Ketheesan B. also made significant contributions. Notably, *Ravirajan P. and Somasundaram D***.** maintained high impact across both periods, reflecting consistent scholarly influence.

International Collaboration Networks of the University of Jaffna

Figures 3 & 4 illustrate the collaboration patterns with other countries from 1984 to 2025 based on publications from the University of Jaffna in the Scopus database.

Figure 3, analysis includes a total of 33 items, 15 clusters, 72 links, and an overall link strength of 167. Sri Lankan authors have collaborated most frequently with researchers from England (60 links), China (21), USA (17), Japan (14), Netherlands (10), Cambodia (9), Sweden (7), Algeria (6), Ireland (6) and Israel (6). During the war period (from 1984 to 2009).

Figure 4 illustrates the collaboration patterns with other countries in the post war period (2010 to 2025) in the Scopus database. The analysis

Table 3: Top 10 Most Productive authors during the War and Post war periods in Scopus database

War Period					**Post-War Period**				
Name of author	TP	%	TC	H-In	Name of author	TP	%	TC	H-In
Arasaratnam. V	17	9.09	195	7	Sathiparan.N	73	5.38	1254	19
Kandasamy.K	17	9.09	287	10	Surendran.S	66	4.86	1325	21
Surendran.S	14	7.49	270	11	Ravarajan.P	47	3.46	630	13
Ravarajan.P	12	6.42	1765	8	Subramaniyam.D	42	3.09	333	11
Ranjan.R	12	6.42	189	9	Ranjan.R	41	3.02	997	19
SomasundaramD	10	5.35	901	8	Velayuthampillai.	41	3.02	660	13
Migunthan.G	6	3.21	29	3	Ramanan.A	38	2.80	347	9
Kajatheepan.M	6	3.21	92	5	Jeyananthan, P.	32	2.36	205	8
Hoole.R	5	2.67	10	2	Kuganathan, N.	29	2.14	339	10
Thiranagama.R	4	2.14	92	4	Surenthirakumar.R	26	1.91	117	5

Note: TP-Total publications, TC-Total Citations, % of TP- Total Publications Percentage

Table 4: Most impactful authors during the war & post-war periods in Scopus database

War Period				**Post-War Period**			
Name of the author	TC	% of TC	TP	Name of the author	TC	%	TP
Ravirajan P	1764	33.44	12	Vignarooban.K	3088	15.58	24
Somasundaram D	1101	20.87	10	Kannan.N	1612	8.13	16
Kandasamy.K	319	6.05	18	Surendran.S.N	1328	6.70	67
Surendran S.N	270	5.12	14	Sathiparan.N	1128	5.69	70
Arasaratnam.V	241	4.57	18	Ramasamy .R	999	5.04	41
Ramasamy.M.S	206	3.91	12	Ketheesan.B	958	4.83	20
Parameswaran.K	127	2.41	3	Somasundaram.D	660	3.33	10
Suppiramaniam. V	127	2.41	3	Ravirajan.P	634	3.20	47
Uthayathas. S	116	2.20	2	Thanihaiselvan.M	611	3.08	33
Thiranagama.R	92	1.74	4	Mathanarangan.T	497	2.51	24

TC-Total Citations, % of TC – Percentage of Total Citations, TP-Total publications

includes a total of 87 items, 15 clusters, 729 links, and an overall link strength of 2205. Sri Lankan authors have collaborated most frequently with researchers from England (380 link), USA (314), Australia (240), India (215), Malaysia (139), Canada (131), Pakistan (80), Norway (79), South Africa (75) and Japan (74).

Analysis of collaborated institutions

Table 5 highlights the top ten institutions that collaborated with the University of Jaffna during the war and post-war periods based on Scopus data. During the war period, collaborations were limited, with the *University of Peradeniya* leading (33 publications, 17.65%), followed by *Queen's University Belfast* (20, 10.70%) and the *University of Colombo* (16, 8.56%). Notably, *Imperial College London* had the highest citation count (1,493) despite fewer publications. Post-war, institutional collaboration expanded significantly. The *University of Peradeniya* remained the top collaborator (132 publications, 9.72%), while the *University of Colombo* (67), *Western Norway University of Applied Sciences* (42), and the *University of Sri Jayewardenepura* (36) emerged as prominent partners. *Teaching Hospital Jaffna and Eastern University* also featured post-war, reflecting stronger regional academic integration. The rise in both the number and diversity of collaborating institutions post-conflict indicates an increased research network, greater academic engagement, and broader global reach for the University of Jaffna.

Dynamic trend of publication sources

Table 6, an analysis of top publication sources from the University of Jaffna reveals a shift from limited, specialized research during the war period (1984–2009) to expanded, multidisciplinary output post-war (2010–2025). During the war, energy and public health journals like the *International Journal of Hydrogen Energy* and *Tesol Quarterly* saw notable impact. In contrast, the post-war era showed increased volume and global reach, with leading sources such as the *International Journal of Surgery Case Reports*, *Scientific Reports*, and *Construction and Building Materials*. The rise in international conference participation highlights improved research networking and the University's growing global academic presence.

Table 7 presents the top ten author keywords used during the war and post-war periods in Scopus, reflecting evolving thematic focuses. During the war period, keywords were predominantly biomedical, with "HUMAN" and "ARTICLE" leading (both used in 52 publications, over 27%), followed by "SRI LANKA" (22.99%), "MALE," and "FEMALE." These terms, along with others like "ADULT," "NONHUMANS," and "ANIMALS," suggest a strong concentration on clinical, biological, and demographic studies. In the post-war period, while biomedical themes persisted, the volume and diversity of keywords increased. "ARTICLE" (222 publications) and "SRI LANKA" (217) remained prominent, indicating a rising focus on local context and scholarly output. "HUMAN" continued to be widely used, and new terms like "CONTROLLED STUDY" and "NONHUMAN" gained visibility, reflecting a shift toward more structured, experimental research. Overall, the data illustrates a transition from a narrow health-oriented focus during the war to broader and more nuanced research themes in the post-war era.

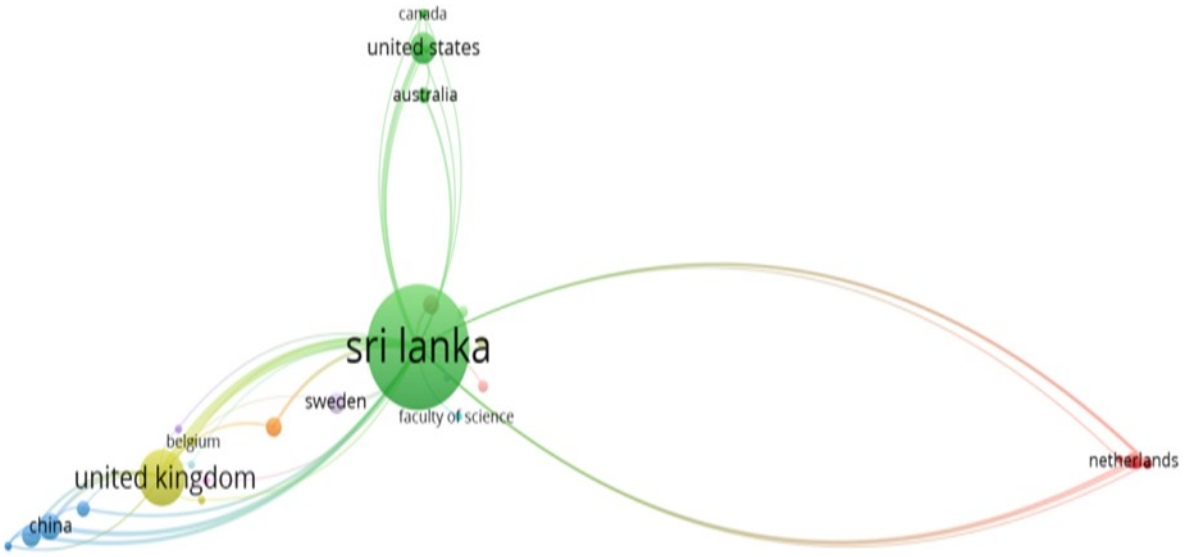


Figure 3: International collaboration during the war period in Scopus database

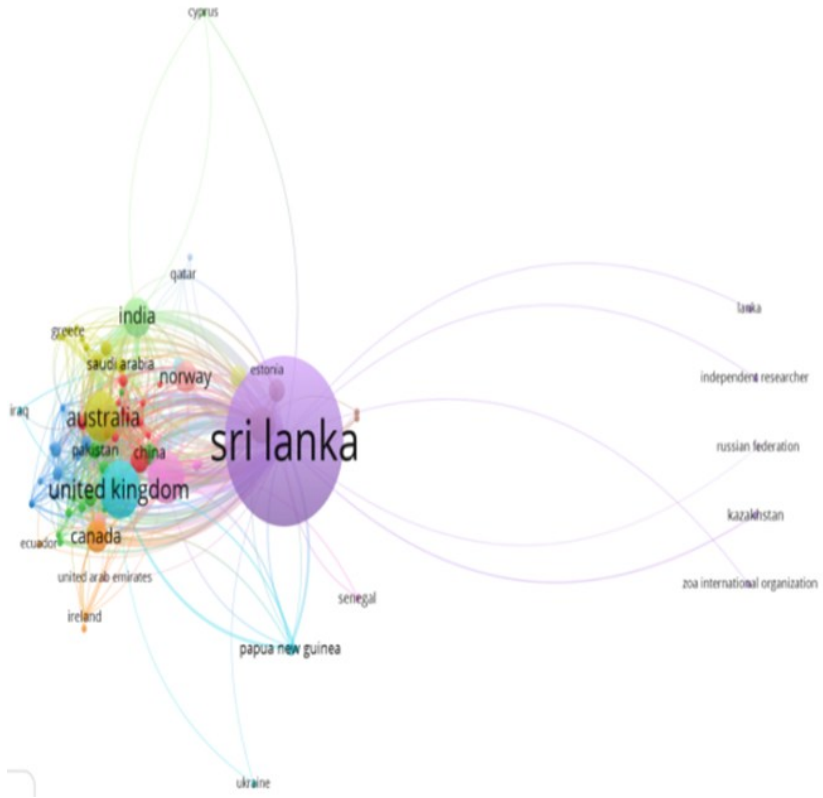


Figure 4: Collaborated countries during the post-war period in Scopus database

Table 5: Top ten (10) Institutions collaborate with University of Jaffna during the war and post war period in Scopus database

War				Post-War			
Name of the Institutions	TP	%	TC	Name of the Institution	TP	%	TC
University of Peradeniya	33	17.65	670	University of Peradeniya	132	9.72	1487
Queen's University Belfast	20	10.70	408	University of Colombo	67	4.93	482
University of Colombo	16	8.56	861	Western Norway University of Applied Sciences	42	3.09	660
Imperial College London	11	5.88	1493	Imperial College London	38	2.80	430
Tsinghua University	11	5.88	227	University of Sri Jayewardenepura	36	2.65	302
National Institute of Fundamental Studies, Sri Lanka	8	4.28	141	Teaching Hospital Jaffna	31	2.28	105
University of Oxford	8	4.28	1109	National Institute of Fundamental Studies, Sri Lanka	31	2.28	443
City University of New York	8	4.28	759	Eastern University, Sri Lanka	28	2.06	814
Lunds university	6	3.21	217	University Malaya	25	1.84	451
Liverpool School of Tropical Medicine	4	2.14	54	Queensland University of Technology	23	1.69	294

Note: TP-Total Publications, TC-Total Citations, % of TP- Percentage of Total publications

Analysis of major research areas

Table 8 an analysis of Scopus data reveals a significant shift in the University of Jaffna's research focus from the war to the post-war period. During the war, Medicine dominated with 28.34% of publications, while fields like Agricultural Sciences and Physics also featured. Despite fewer outputs, Chemistry had the highest citation impact. In the post-war period, Engineering emerged as the top field (24.37%), alongside growth in Computer Science, Materials Science, and Social Sciences, reflecting a move toward applied, interdisciplinary research. This evolution highlights the university's transition from traditional scientific disciplines to a more diversified, technology-driven research agenda in the post-conflict era.

Table 6: Top ten (10) Publication sources at the University of Jaffna during the war and post-war period in the Scopus database

War Period					**Post war**				
Name of Sources	TP	%	TC	JIF	Name of Sources	TP	%	TC	JIF
International Journal Of Hydrogen Energy	9	4.81	163	8.1	International Jrl. of Surgery Case Reports	26	1.91	13	0.6.
Journal of The National Science Foundation Of Sri Lanka	8	4.28	16	0.4	Journal of The National Science Foundation of Sri Lanka	25	1.84	118	0.4
Singapore Medical Journal	6	3.21	5	3.331	Ceylon Journal of Science	16	1.18	0	1.0
World Journal Of Microbiology And Biotechnology	4	2.14	84	4.0	Parasites And Vectors	15	1.10	241	3.43
Journal Of Vector Borne Diseases	4	2.14	80	0.8	10th International Conf. on Information And Automation For Sustainability 2021	14	1.03	134	-
Tesol Quarterly	3	1.60	292	4.665	Scientific Reports	11	0.81	300	3.8
Starch Starke	3	1.60	29	2.741	Construction And Building Materials	11	0.81	848	7.4
Process Biochemistry	3	1.60	26	3.7	IEEE 9th Internl. Conf. on Information & Automation For Sustainability	11	0.81	38	-
Proceedings Of Spie The International Society For Optical Engineering	3	1.60	10	0.26	PLOS one	10	0.74	69	2.9
Journal Of Tropical Pediatrics	3	1.60	1	1.8	Lecture Notes In Civil Engineering	10	0.74	8	0.42

Note: TP-Total publications, TC-Total Citations, JIF- Journal Impact Factor

Table 7: Top ten (10) author keywords were used during the war & post-war - war periods in the Scopus database

War				**Post war**			
Keywords	TP	%	TC	Keywords	TP	%	TC
HUMAN	52	27.81	1701	ARTICLE	222	16.35	3011
ARTICLE	52	27.81	1929	SRI LANKA	217	15.98	2447
SRI LANKA	43	22.99	859	HUMAN	206	15.17	3030
MALE	29	15.51	1367	FEMALE	128	9.43	1435
FEMALE	29	15.51	1347	HUMANS	116	8.54	1948
ADULT	25	13.37	1129	ADULT	109	8.03	843
NONHUMANS	20	10.70	503	MALE	103	7.58	988
ANIMALS	20	10.70	353	CONTROLLED STUDY	90	6.63	1105
HUMANS	15	8.02	368	NONHUMAN	83	6.11	1275
ADOLESCENT	14	7.49	457	ANIMALS	67	4.93	1404

Note: TP-Total publications, TC-Total Citations, % of TP-Total Publications Percentage

Table 8: Top ten (10) Major research areas of publications during the war & post-war periods

War Period				Post War			
Research areas	TP	%	TC	Research Area	TP	%	TC
Medicine	53	28.34	1,542	Engineering	331	24.37	6,046
Agricultural & Biological Sciences	31	16.58	467	Medicine	272	20.03	3,546
Physics & Astronomy	27	14.44	864	Computer Science	234	17.23	1,869
Biochemistry, Genetics & Molecular Biology	24	12.83	536	Materials Science	173	12.74	2,907
Immunology & Microbiology	22	11.76	468	Agricultural & Biological Sciences	163	12.00	2,160
Engineering	20	10.70	130	Social Sciences	150	11.05	1,033
Materials Science	19	10.16	1,659	Mathematics	138	10.16	829
Chemistry	16	8.56	2,536	Environmental Science	129	9.50	2,391
Mathematics	14	7.49	970	Physics & Astronomy	121	8.91	2,646
Social Sciences	10	5.35	1,509	Biochemistry, Genetics & Molecular Biology	90	6.63	1,658

Note: TP-Total Publications, TC-Total Citation

CONCLUSIONS

This scientometric analysis examined the research productivity of the University of Jaffna during the war (1984–2009) and post-war (2010–2025) periods using data from Scopus. The findings reveal a remarkable transformation in scholarly output and impact between the two phases. During the war period, research was severely constrained by infrastructural damage, limited funding, and restricted academic mobility, resulting in only 187 publications (12% of the total) and 5,275 citations. Research at that time focused mainly on Physics, Chemistry, and Medicine to address immediate societal needs, with few international collaborations confined largely to England, China, and the USA.

In contrast, the post-war era witnessed exponential growth in research productivity and impact, with 1,358 publications (88%) and 19,825 citations, alongside a substantial rise in the h-index from 34 to 57. The year 2024 recorded the highest publication output, while 2019 saw the peak in citation count. Research diversified into emerging disciplines such as Engineering, Computer Science, and Environmental Sciences, with Engineering contributing 24.37% of total publications. Collaborative networks also expanded, encompassing new international partners such as Australia, Canada, Malaysia, Norway, South Africa, and Pakistan, and establishing stronger institutional collaborations with leading global universities.

Prominent authors such as *Surendran S., Ranjan R., and Ravirajan P.* remained consistently productive across both periods, while new impactful researchers - like *Vignarooban K. and Sathiparan N.*- emerged in the post-war phase. Thematic and keyword analyses revealed a transition from fundamental biomedical terms such as “Human” and “Adult” during the war to broader scholarly and region-specific terms like “Sri Lanka” post-war, reflecting thematic diversification and enhanced international visibility.

Overall, this study highlights that the University of Jaffna has demonstrated remarkable resilience and growth in research capacity following the civil war. Improved funding, institutional rebuilding, access to digital infrastructure, and enhanced international collaborations have been critical in this recovery. The findings provide valuable insights for policymakers, academic administrators, and researchers in post-conflict nations, emphasizing the importance of sustained investment, collaboration, and strategic research development for long-term academic growth.

Suggestions

To sustain and boost research productivity, the University of Jaffna should focus on five key areas:

1. Strengthening Research Funding Mechanisms by increasing investments and encouraging

international grants.
2. Expanding International Collaborations through joint research projects and exchange programs.
3. Enhancing Digital and Research Infrastructure by upgrading laboratories and promoting open-access platforms.
4. Promoting High-Impact Research and Publications by supporting quality journal submissions and recognizing research excellence.
5. Developing Capacity-Building Programs with workshops and improved Ph.D. and postdoctoral opportunities.

REFERENCES

Hood, W. W. & Wilson, C. S. (2001). The literature of bibliometrics, scientometrics, and informetrics. *Scientometrics*, 52(2), 291–314. DOI: 10.1023/A:1017919924342

Ito, T., Li, J., Usoof-Thowfeek, R., & Yamazaki, K. (2024). Educational consequences of firsthand exposure to armed conflict: The case of the Sri Lankan Civil War. *World Development*, *173*, 106430. DOI: 10.1016/j.worlddev.2023.106430

Janen, T. (2021). Research output of University of Jaffna, Sri Lanka during 2000-2019. *DESIDOC Journal of Library & Information Technology, Vol. 42, No. 1*. DOI: 10.14429/djlit.42.1.17000

Latha,U., & Lakshman,I.M.(2020).A review of research progress and projection of future publication trend amongst the science stream academics of University of Jaffna, Sri Lanka. *Journal of the University Librarians Association of Sri Lanka*, *23*(2). DOI: 10.4038/jula.v23i2.8013

Mahala, A., & Singh, R. (2021). Research output of Indian universities in sciences (2015–2019): a scientometric analysis. *Library Hi Tech*, *39*(4), 984-1000. DOI: 10.1108/LHT-09-2020-0224

Ministry of Higher Education. (2020). *Sri Lanka Higher Education: Vision and Strategic Plan 2020 -2025.* Colombo: Ministry of Higher Education.

Senanayake, D. (2009). Between reality and representation: Women's agency in war and post-conflict Sri Lanka. In Wenona Giles, Malathi de Alwis, Edith Klein, & Neluka Silva (Eds.), *Feminists under fire: Exchanges across war zones* (pp. 104–123). Toronto: Between the Lines.

Rahaman, J. (2022). Scientometric Assessment of the Research Productivity of Calcutta University, West Bengal. *Indian Journal of Natural Sciences*, *13*, 44881-44893.

Russell, I. (2022). Degrees of Peace: Universities and Embodied Experiences of Conflict in Post-War Sri Lanka. *Third World Quarterly, 43(4), 898–915.* DOI: 10.1080/01436597.2022.2038129

Somasundaram, D. J. (2010). Collective trauma in the Vanni: A qualitative inquiry into the mental health of the internally displaced due to the civil war in Sri Lanka. International Journal of Mental Health Systems, 4(1), 22. DOI: 10.1186/1752-4458-4-22

Tharmaratnam, T. (2018). *University of Jaffna: Historical evolution and contemporary challenges.* In Proceedings of the Jaffna University International Research Conference (pp. 1-10). University of Jaffna.

Wijetunge, P., Silva,A. & Manatunga,P.K.S.(2020). Research productivity of the Covid-19 Pandemic Using Scientometric Indicators. *Online Information Review, 44(7).*

Yadav, S. K., Verma, M. K. & Singh, S. N. (2020). Research Productivity of Mizoram University during 2004-2017: A Scientometric Study Based on Indian Citation Index. *DESIDOC Journal of Library & Information Technology, 40(3).* DOI: 10.14429/djlit.40.03.15022

Elsevier. (2024). Scopus: Abstract and citation database. Retrieved from https://www.elsevier.com/solutions/scopus

ScienceDirect. (n.d.). *Search results for "University of Jaffna"*. Elsevier. Retrieved 27, April 2025, from https://www.sciencedirect.com/search?qs=university+of+jaffna