



## How Much Do India's Leading Colleges Spend on Libraries? An Analysis of the Top 100 Institutions

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This article presents a comprehensive analysis of annual library expenditure among colleges in India ranked by the National Institutional Ranking Framework (NIRF). It evaluates the number of enrolled students, calculates the average per-student library expenditure, and examines the proportion of capital investment dedicated by colleges to library resources. Special attention is given to institutions with consistently ranked colleges. The authors have also done an exploration of the correlation between library expenditure and ranking performance. The study uncovers significant disparities in resource allocation across top colleges. Driven by data, the authors suggest optimal benchmarks for annual library expenditure: either ₹300 per student or 10% of annual capital expenditure, whichever amount is higher. A change in the formula of NIRF regarding the library expenditure is essential to ensure that institutions achieving top national ranking positions meet the minimum fiscal responsibility of adequate library resource allocation. These insights inform policy-makers and drive improvements in the quality of library resources, with the potential to positively impact higher education nationwide.

**Keywords:** Library expenditure, Library budget, National Institutional Ranking Framework, NIRF, College Ranking, India Higher Education, Academic Libraries

### Introduction

Libraries play a pivotal role in supporting academic and research activities in higher education institutions (HEIs). A comprehensive quantitative analysis by Bloom et al. (2025)<sup>1</sup> proved a significant correlation between increased library visits and higher GPAs, demonstrating the library's essential role in student academic success. Choi & Jung (2025)<sup>2</sup>, using longitudinal data from the Integrated Postsecondary Education Data System (IPEDS) for 1325 four-year institutions, positively associated total academic library expenditure with student graduation rates, even after controlling for a wide array of institutional and student characteristics.

In India, the National Institutional Ranking Framework (NIRF) serves as a benchmark to evaluate the quality and performance of HEIs across multiple

parameters, including teaching, research, and graduate outcomes. This article investigates the trends and extent of library expenditure in NIRF-ranked colleges and how evenly the colleges are allocating financial investments in library resources.

NIRF is a methodology for ranking HEIs in India devised by the Ministry of Education of the Government of India. The first edition of NIRF was declared on 4<sup>th</sup> April 2016. The ranking of that year categorized institutions under the categories of university, engineering, management, and pharmacy. From the 2017 ranking onwards, an overall and college categories were started. Categories of medical, architecture, and law were added in the year 2018 and dental institutions were included in the year 2020. Ranking institutions based on research started in 2021. Agricultural and allied sectors and innovation rankings

were added in 2023. The year 2024 saw the addition of the categories open university, skill university, and state public university. Ranking institutions based on Sustainable Development Goals (SDG) of the United Nations was started in 2025. As of 2025, NIRF ranks institutions category-wise as overall, universities, colleges, research institutions, innovation, state public universities, open universities, skill universities and SDGs. The subject domains for ranking are engineering, management, medical, dental, pharmacy, law, architecture and planning, and agriculture and allied sectors.

NIRF solicits the HEIs in the country to participate in the ranking process by opening a portal for data submission. The HEIs can submit their data to be included in multiple rankings at the same time. After the submission deadline, the ranking is usually released after the mid-year.

The institutions are generally assessed based on five parameters in NIRF.

1. Teaching, Learning & Resources (TLR)
2. Research and Professional Practice (RP)
3. Graduation Outcomes (GO)
4. Outreach and Inclusivity (OI)
5. Peer Perception

TLR for colleges is calculated using the following sub-parameters with the corresponding weightages.

- a) Student strength, including doctoral students (SS) - 20
- b) Faculty-student ratio with emphasis on permanent faculty (FSR) - 30
- c) Combined metric for faculty with PhD (or equivalent) and experience (FQE) - 20
- d) Financial resources and their utilization (FRU) - 30

FRU for colleges is calculated using the formula  $7.5 \times f(BC) + 22.5 \times f(BO)$ , where BC is the average annual capital expenditure per student for the previous three years and BO is the average annual operational expenditure per student for the previous three years pertaining to the college. As an example, FRU for 2025 rankings are determined based on the amount utilized for the annual capital and operational expenditure for the academic years 2021-22, 2022-23, and 2023-24. While capital expenditure include amounts incurred for library, new equipment for laboratories and other expenditure on creation of capital assets excluding expenditure on land and buildings, operational expenditure comprises of amounts spent on salaries for teaching and non-teaching staff, maintenance of

academic infrastructure or consumables and other running expenditures excluding maintenance of hostels and allied services, rent of the building, depreciation cost, etc. and seminars/conferences/workshops.

As per the methodology for ranking of colleges in NIRF (2025)<sup>3</sup>, TLR has the highest weightage in the overall NIRF score, which is 40%. This can be denoted as  $TLR = 0.4Score$ .

FRU is 30% of TLR, which means  $FRU = .3TLR$

BC is 25% of FRU, which can be denoted as  $BC = .25FRU$

$BC = .25FRU \times .3TLR \times 0.4Score$ .

From the above calculations, it is clear that BC is 0.03Score, i.e. BC makes 3% of the overall NIRF score of a college. The document on NIRF methodology cited above neither mentions the function f (BC) explicitly nor how expenditure on library is further calculated under BC.

### Scope

There are different types of institutions within the categories defined by NIRF. For example, the category “university” includes institutions of national importance (INIs) like Aligarh Muslim University, Banaras Hindu University, etc., central, state, private, and deemed universities. The category “engineering” ranks INIs like Indian Institutes of Technology (IITs), universities, and colleges together. The funding of these various types of institutions varies highly based on the funding agencies. Compared to other such categories, arts and science colleges which are generally ranked under the head “colleges” are more homogenous institutions across the country. Colleges are also usually multidisciplinary in nature. This study examines the library resource expenditures of HEIs ranked among the top 100 in the “colleges” category.

Although the ranking of HEIs by NIRF was started in the year 2016, ranking of the colleges started only in 2017. The expenditure on capital expenditure and operational expenditure was available in the 2017 and 2018 rankings; but the breakdown of these two expenditures was not available till 2019. Since library expenditure can only be extracted from the breakdown of capital expenditure, this study focuses on data from 2020 to 2025, excluding 2019 as a buffer year to account for data inconsistency, if any.

### Objectives

The present study examines how much the colleges ranked in the top 100 are spending towards the

expenditure of libraries and whether there is any pattern for this expenditure. The study also investigates whether there is any relation between the library expenditure and ranking. Determination of an optimal value for the library expenditure is also ventured by the authors.

### Review of Literature

Jones (2007)<sup>4</sup> conducted a comparative analysis of libraries of top-ranked liberal arts colleges identified by U.S. News and World Report and proposed that these institutions could serve as effective financial and operational benchmarks. The author found that the "best" liberal arts colleges reported an expenditure on library resources of roughly \$2,000 per paid full-time equivalent staff.

Few studies were conducted on the relation between library expenditure and NIRF rankings. A study by Pandita & Singh (2018)<sup>5</sup> examined the university ranking released by the Ministry of Human Resource and Development (MHRD), Government of India, on April 4, 2016. This research evaluated the ranking of university libraries by analyzing two core metrics: the resources procured and the research output recorded by the HEIs over the three-year period from 2012-13 to 2014-15. Kumar *et al.* (2021)<sup>6</sup> found that there is a correlation between the expenditure on library resources and NIRF ranking based on the rankings of the year 2019. Kumar *et al.* (2023)<sup>7</sup> investigated the return on investment of the libraries of NIRF-ranked ten universities. This research investigated the role of the total library budget also among many other criteria on the impact of overall research output.

The review of the literature revealed that no prior study has specifically investigated the expenditure on college libraries using an official dataset over a period of years like that provided by NIRF. Consequently, this research was undertaken to address this empirical gap and contribute a novel perspective on the topic.

### Methodology

The data for this study was fetched exclusively from the website of NIRF (2025)<sup>8</sup>. The data pertaining to the

top 100 institutions in the college category for the six years from 2020 to 2025, totaling 600 observations and their corresponding values of library expenditure and capital expenditure were tabulated from the data provided in the PDF files on the website. All the data were cross-checked for accuracy and further analysis was done. Microsoft Excel 2016, Python 3.12.11 and R Studio 2025.09.1 were used for data curation and analysis.

### Abbreviations

To minimize repetition, the following abbreviations will be used throughout the remainder of this article.

NIRF top hundred colleges (NIRF100) – College(s) that appear in the NIRF top hundred rank during any year from 2020 to 2025 (n=145).

Consistent colleges in NIRF top hundred (CCN60) – This study identified 60 colleges that have appeared in the NIRF top 100 rankings every year from 2020 to 2025. Their continuous presence across six years results in a total of 360 observations.

Non-consistent colleges in NIRF top hundred (Non-CCN85) – Remaining 85 colleges other than CCN60, which appear in the NIRF top hundred at least once during the years from 2020 to 2025.

Library expenditure average per student (LEAPS) – average amount spent by a college per student for library resources during the previous three years of the ranking year.

Proportion of library to capital expenditure (PLICE) – Percentage of the proportion of LEAPS to average annual capital expenditure by the college per student.

### Analysis and results

Among the total 600 observations for 6 years, 145 unique colleges appeared in the top 100 list of NIRF during its rankings from 2020 to 2025 at least once. Sixty colleges appeared in all six years in the NIRF top hundred ranks consistently during the period. Twenty colleges have appeared only once in these six years. The number of appearances of colleges in the NIRF top 100 during the period is tabulated in Table 1.

Table 1— Number of appearances of NIRF100 during 2020-2025

No. of appearances in NIRF top 100 during 6 years	No. of colleges	Percentage	Total observations
1	20	13.8	20
2	21	14.5	42
3	13	9.0	39
4	16	11.0	64
5	15	10.3	75
6	60	41.4	360
Total	145	100	600

Table 2 — State-wise number of NIRF100 during 2020-2025

State	Number of colleges
Tamil Nadu	49
Delhi	36
Kerala	29
West Bengal	10
Maharashtra	6
Karnataka	4
Chandigarh	2
Gujarat	2
Pondicherry	2
Andhra Pradesh	1
Haryana	1
Mizoram	1
Rajasthan	1
Telangana	1
Total	145

The geographical locations of these 145 colleges are given in Table 2. More than one-third of the colleges are from Tamil Nadu. Colleges from the states of Tamil Nadu, Delhi and Kerala combined together constitute more than three-quarters of colleges that appeared at least once in the NIRF top 100.

Figure 1 shows the geographical distribution of NIRF100. The extreme south Indian states, i.e. Tamil Nadu and Kerala alone has more than half of the colleges appeared in the list.

The state-wise number of CCN60 is available as Table 3, while Figure 2 gives it distribution geographically on the map. Tamil Nadu and Kerala together account for half of the colleges, establishing their dominance in the southern region among the

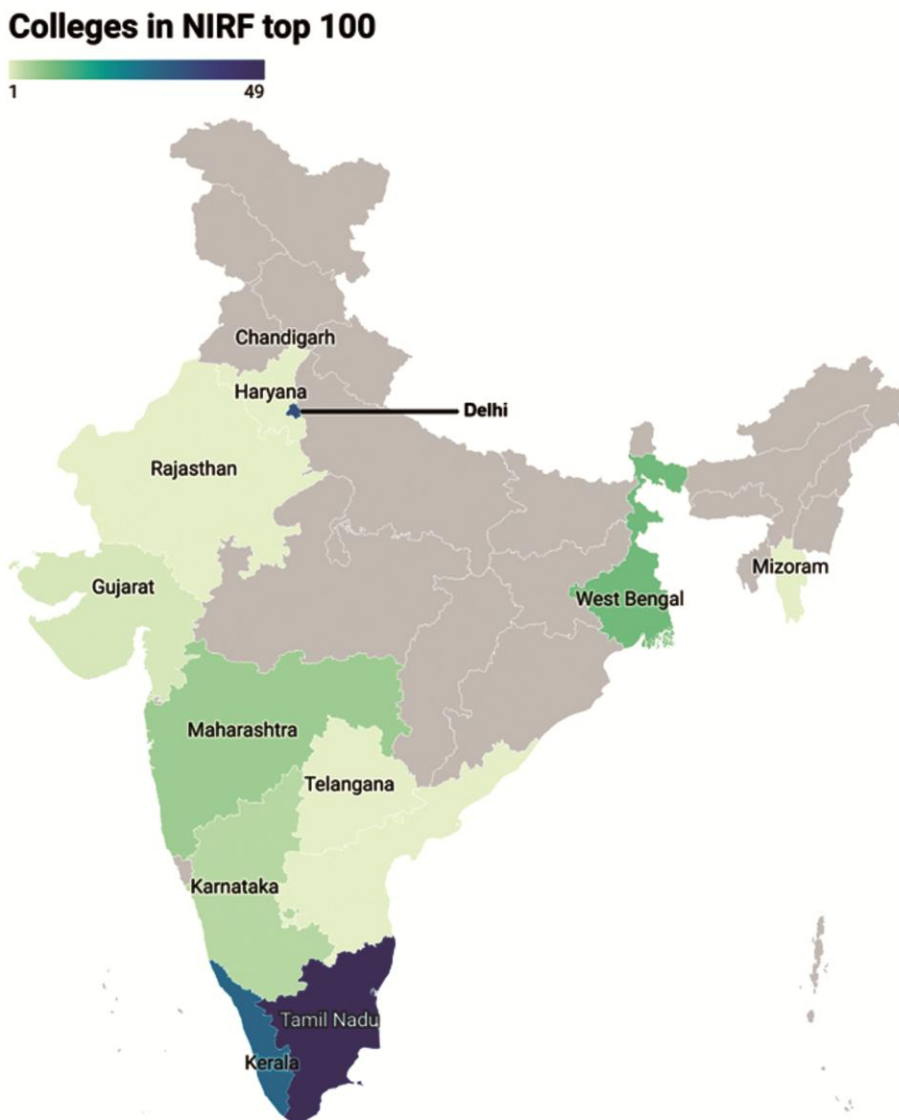


Fig. 1 — Geographical distribution of NIRF100 during 2020-2025

Table 3 — State-wise number of CCN60 during 2020-2025

State	No of CCN60
Delhi	22
Tamil Nadu	21
Kerala	9
West Bengal	4
Chandigarh	1
Karnataka	1
Maharashtra	1
Pondicherry	1

CCN60. In both the tables 2 and 3, Delhi has the highest concentration of the best colleges in the northern part of India.

**Number of students in colleges**

The number of students considered for the study is the number of students provided by each college to NIRF for 3 years. This number will be almost equal to the number of students who are attending a college at a given point of time. Since the student count at each

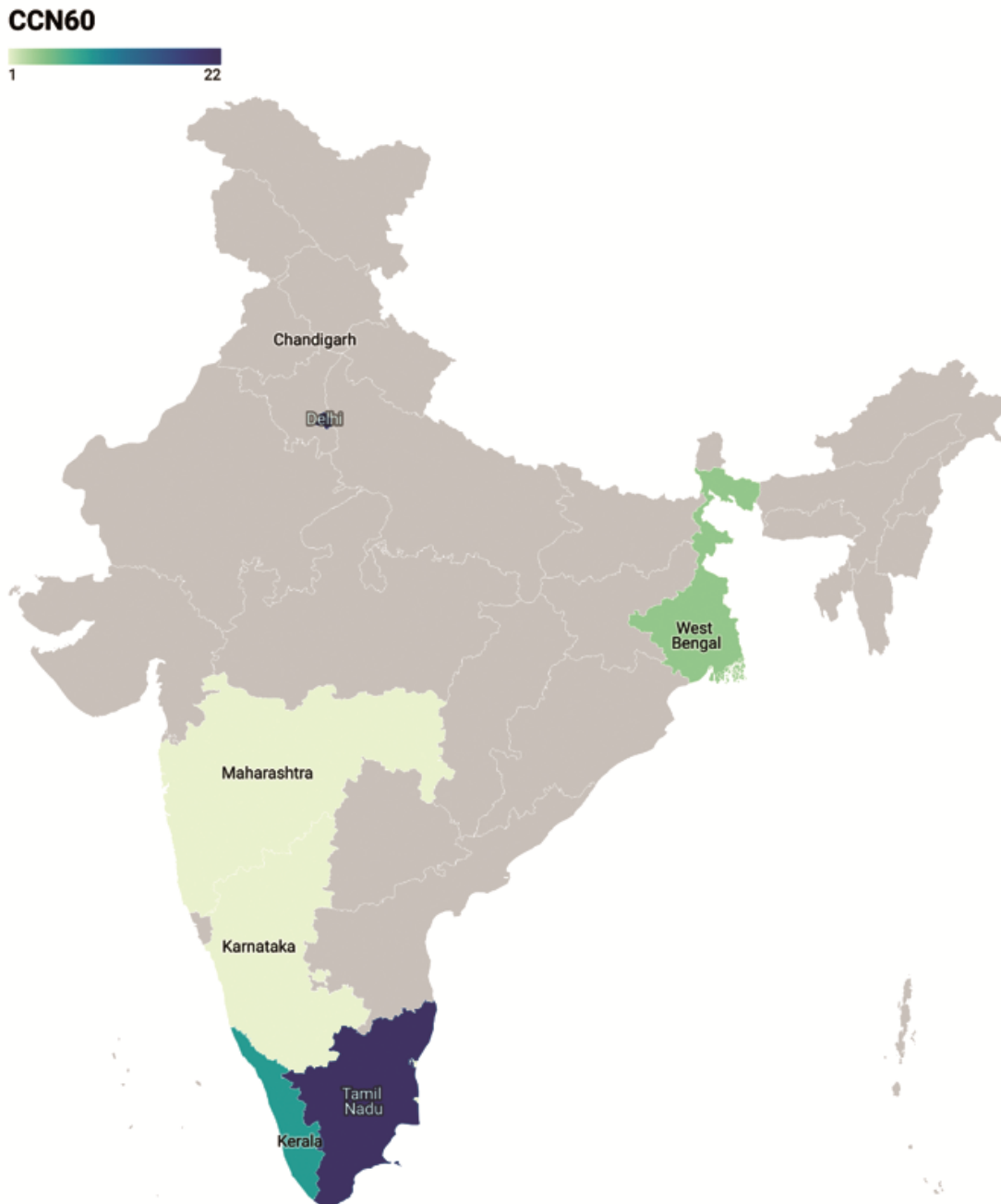


Fig. 2 — Geographical distribution of CCN60 during 2020-2025

college fluctuates annually, the average number of students per college was calculated based on the frequency of their appearances in the NIRF100 rankings. Table 4 gives the statistics of the average students in the overall NIRF100, CCN60 and non-CCN85.

On an average NIRF100 has 3829, CCN60 has 4389 and non-CCN85 has 3434 students. Fifty percent of NIRF100 colleges have at least 3289 students, while a minimum of 3937 students are studying in half of CCN60, whereas non-CCN85 has a median of 2913 students only.

Figure 3 represents the number of students in NIRF100. Figure 3 was plotted based on a frequency

Table 4 — Average number of students in NIRF100, CCN60 and non-CCN85 during 2020-2025

Average student strength	NIRF100	CCN60	Non-CCN85
College count	145	60	85
Minimum	272.0	508.8	272.0
Mean	3829.4	4389.4	3434.1
Std dev	2489.1	2709.3	2254.5
Q1	2188.8	2858.9	1865.5
Q2 (Median)	3288.7	3937.2	2913
Q3	4873.8	5747.6	4344.8
95 <sup>th</sup> percentile	9615.8	10809	9111.9
Maximum	12757.5	12757.5	10910.0

Table 5 — LEAPS of NIRF100 and CCN60 during 2020-2025

LEAPS	NIRF100	CCN60
College count	600	360
Minimum	0	25.3
Average	431.9	470.8
Std dev	559.1	642.9
Q1	163.6	177.9
Q2 (Median)	283.8	309.9
Q3	481.4	528.4
95 <sup>th</sup> percentile	1246.9	1246.9
Maximum	6921.4	6921.4

table of bin size 300 students on the horizontal axis and the number of colleges on the vertical axis. One can see 50 observations with the number of students between 3000 and 3300, which has the highest frequency. The college which have the smallest number of students in NIRF100 is College of Social Work Nirmala Niketan, Maharashtra with 260 students in 2021. The college with the least number of students among CCN60 is Government Home Science College, Chandigarh with an average of 508.8 students during 6 years. The college with largest number of students, PSG College of Arts and Science, Tamil Nadu has an enrolment of 13050 students in 2025; its average strength for six years is 12758. Twenty-four observations in NIRF100 have more than 10000 students, of which 22 are from Tamil Nadu. Among them, Bishop Heber College, Jamal Mohamed College, both from the city of Tiruchirappalli, and PSG College of Arts and Science, Coimbatore, all of which belong to Tamil Nadu, are CCN60.

**LEAPS**

The LEAPS for NIRF100 and CCN60 for all six years were calculated and their statistics are tabulated in Table 5. The average of CCN60 is 9% higher than that of NIRF100. At least fifty percent of colleges in NIRF100 spent ₹283.8 as LEAPS while half of CCN60 has spent ₹309.9 as LEAPS, which implies that LEAPS of CCN60 is 9.2% more than NIRF100. More than 75 percent of the colleges spent at least ₹163.6 as LEAPS in both categories.

Figure 4 plots the LEAPS of CCN60 from 2020 to 2025. The graph is plotted with LEAPS on the horizontal axis and the number of colleges on the vertical axis. The bin size of the graph is 50. But from 1000 onwards, the bin size changes to 500. It can be observed that the most common amount spent as

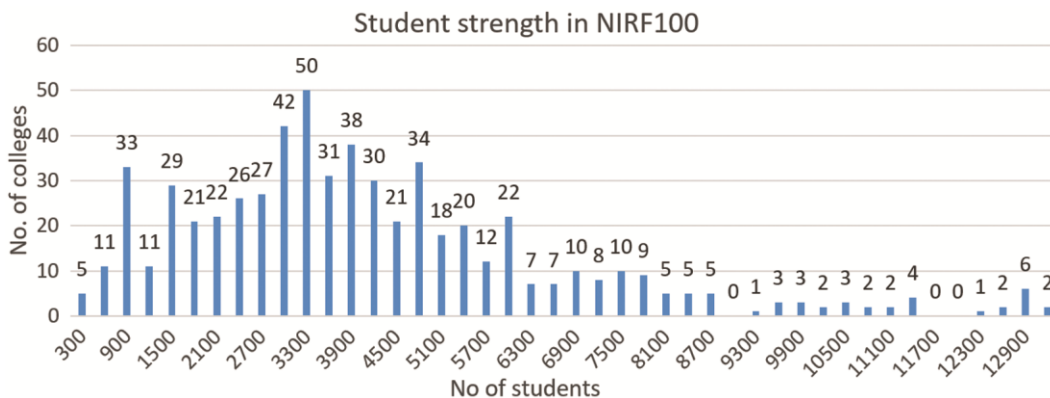


Fig. 3 — Number of students in NIRF100 during 2020-2025

LEAPS by CCN60 (n=44, 12.2%) is between ₹200 and ₹250.

LEAPS of NIRF100 and CCN60 for each year were calculated and are available as Table 6. In 2025, it can be observed that the minimum LEAPS of NIRF100 has declined to zero in 2025 from 29.8 in 2020. Similarly, all the quartile values for LEAPS of NIRF100 except the maximum can be seen going downward compared to the ranking year 2020. Except for Q1 and Q3 values, LEAPS of CCN60 have grown compared to 2020 values.

Table 7 shows the annual average amount spent by NIRF100 and CCN60 as LEAPS, along with the

standard deviation among the LEAPS of the colleges. It can be seen that, except for the year 2020, the average of LEAPS of CCN60 is greater than that of NIRF100. In the case of standard deviation, the CCN60 values are significantly greater than those of NIRF100 except for the first two years.

There are 47 observations with the LEAPS exceeding rupees one thousand in all these years. Among them, there are 20 unique colleges. The colleges that appear frequently can be found in Table 8. Rajagiri College of Social Sciences (referred to as Rajagiri College hereafter except in tables) is the only college which has LEAPS greater than ₹1000 in all

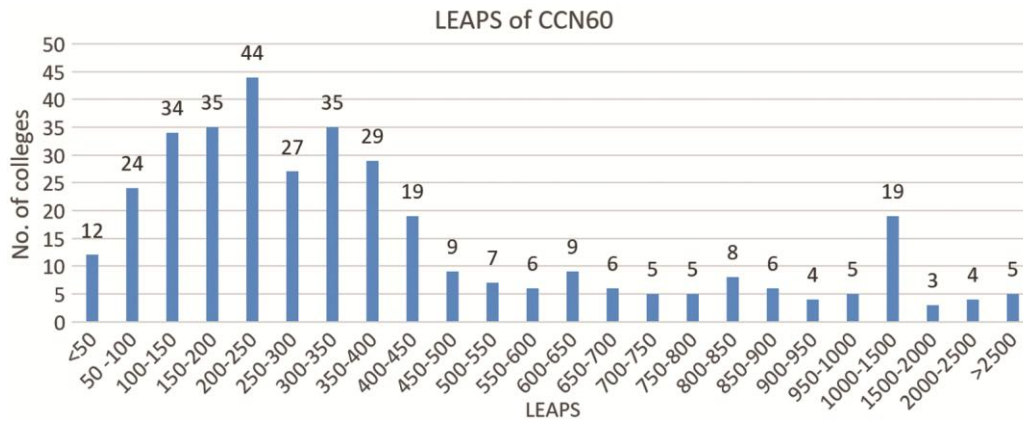


Fig. 4 — LEAPS of CCN60 during 2020-2025

Table 6 — LEAPS of NIRF100 and CCN60 for each year during 2020-2025

Year	LEAPS of NIRF100						LEAPS of CCN60					
	Min	Q1	Q2	Q3	95 <sup>th</sup> percentile	Max	Min	Q1	Q2	Q3	95 <sup>th</sup> percentile	Max
2020	29.8	197.2	317.6	550.5	1373.0	2937.4	29.8	210.9	325.3	614.5	1363.3	2274.7
2021	25.3	216.4	323.3	508.2	1709.6	2306.4	25.3	225.0	323.3	537.7	1213.1	2151.0
2022	28.9	161.3	252.9	420.3	1159.5	3572.6	28.9	184.6	291.8	430.1	1333.5	3572.6
2023	20.4	140.4	224.7	384.6	1233.5	4419.5	31.0	141.8	238.2	404.2	1246.9	4419.5
2024	19.7	134.8	246.4	495.5	1342.4	5036.9	30.9	154.7	268.3	454.3	1342.4	5036.9
2025	0.0	166.2	314.9	538.9	1285.5	6921.4	35.6	173.0	350.8	590.8	1415.6	6921.4

Table 7 — Average and standard deviation of LEAPS of NIRF100 and CCN60 for each year during 2020-2025

Year	NIRF100		CCN60	
	Average	Std dev	Average	Std dev
2020	464.6	466.6	461.3	414.1
2021	454.9	438.0	465.0	415.8
2022	382.5	459.8	425.2	524.4
2023	372.4	514.7	433.4	625.5
2024	427.1	602.7	465.3	717.8
2025	490.1	794.5	574.3	987.0

Table 8 — Colleges with LEAPS more than ₹1000, which appear frequently during 2020-2025 (CCN60 are denoted with\*)

Name	City	State	No. of years with LEAPS > ₹1000
Rajagiri College of Social Sciences*	Ernakulam	Kerala	6
St. Stephens's College*	Delhi	Delhi	5

years from 2020 to 2025. St Stephen's College has LEAPS more than 1000 in all years except in 2020. Both these colleges are CCN60.

Seventy-five observations among 600 NIRF100 have LEAPS of less than ₹100. Among them, there are 33 unique colleges. The colleges that appear frequently in the list with LEAPS less than ₹100 are listed in Table 9.

Table 10 shows the colleges that have LEAPS greater than ₹2000 for the last six years. Rajagiri College is the only college appears 5 times in the list except 2020. Ramakrishna Mission Vidyamandira and Rama Krishna Mission Vivekananda Centenary College, both from West Bengal appear in the list two times each. The above-mentioned three colleges are CCN60.

A list of those colleges which has the lowest LEAPS in each year is tabulated in Table 11. It can be

seen that all values of LEAPS for them are less than ₹30. It is noteworthy that V.O. Chidambaram College, which is the only college appearing more than once, that too consecutively for three years is in CCN60.

Among the 1800 values (3-year data of 100 institutions X 6 ranking periods) of amounts spent for the library during the previous three years of assessment, twenty-six were found to be zero. This implies that 1.4 percent of total 1800 values is equal to zero. It is observed that ten colleges have not spent anything during the year just previous to the ranking year. The details of these ten NIRF100 are tabulated in Table 12. Three colleges have appeared twice in this list: I.C. College of Home Science in Haryana, Bhaskaracharya College of Applied Sciences in Delhi and Government Victoria College in Kerala.

Table 9 — Colleges with LEAPS less than ₹100, which appear frequently during 2020-2025 (CCN60 are denoted with\*)

Name	City	State	No. of years with LEAPS < ₹100
Queen Mary's College*	Chennai	Tamil Nadu	6
Government Arts College*	Coimbatore	Tamil Nadu	6
Bishop Moore College	Alappuzha	Kerala	5
Presidency College*	Chennai	Tamil Nadu	4
V.O. Chidambaram College*	Tuticorin	Tamil Nadu	4
Nesamony Memorial Christian College, Marthandam, Kanyakumari	Marthandam	Tamil Nadu	4
Alagappa Government Arts College*	Karaikudi	Tamil Nadu	4
Midnapore College	Paschim Medinipur	West Bengal	4

Table 10 — Colleges which have LEAPS greater than ₹2000 during 2020-2025 (CCN60 are denoted with\*)

Year	Name	State	Rank	No. of students	Average Expenditure for library of 3 years	LEAPS
2020	Ramakrishna Mission Vidyamandira*	West Bengal	7	674	1533173.00	2274.74
2020	P. D. Patel Institute of Applied Sciences	Gujarat	24	683	2006271.67	2937.44
2021	Ramakrishna Mission Vidyamandira*	West Bengal	5	688	1420881.67	2065.23
2021	Rajagiri College of Social Sciences*	Kerala	31	1390	2989837.67	2150.96
2021	Government Institute of Forensic Science	Maharashtra	88	272	627344.33	2306.41
2022	Rajagiri College of Social Sciences*	Kerala	27	1505	5376699.33	3572.56
2023	Rajagiri College of Social Sciences*	Kerala	30	1777	7853509.67	4419.53
2024	Rama Krishna Mission Vivekananda Centenary College*	West Bengal	3	816	1946488.33	2385.40
2024	Rajagiri College of Social Sciences*	Kerala	20	2022	10184644.67	5036.92
2025	Rama Krishna Mission Vivekananda Centenary College*	West Bengal	6	742	2749851.67	3706.00
2025	Rajagiri College of Social Sciences*	Kerala	12	2147	14860191.67	6921.37

Table 11 — Colleges with lowest LEAPS during 2020-2025 (CCN60 are denoted with \*)

Year	Name	State	Rank	No. of students	Average Expenditure for library of 3 years	LEAPS
2020	V.O. Chidambaram College*	Tamil Nadu	68	2803	83651.33	29.84
2021	V.O. Chidambaram College*	Tamil Nadu	54	2987	75593.00	25.31
2022	V.O. Chidambaram College*	Tamil Nadu	30	2977	85898.67	28.85
2023	Midnapore College	West Bengal	73	5624	114792.67	20.41
2024	Virudhunagar Hindu Nadars Senthikumara Nadar College	Tamil Nadu	95	3539	69632.33	19.68
2025	Government College, Attingal	Kerala	99	733	0.00	0.00

Table 12 — Colleges that spent nothing on the library resources during the year just previous to the ranking year during 2020-2025 (CCN60 are denoted with\*)

Year	Name	City	State	Rank	Total students	Expenditure for library (in ₹)
2021	Government Institute of Science	Nagpur	Maharashtra	61	1024	0
2022	Bhaskaracharya College of Applied Sciences	New Delhi	Delhi	25	1314	0
2022	I.C. College of Home Science	Hisar	Haryana	42	506	0
2022	Kanchi Mamunivar Government Institute for Postgraduate Studies and Research*	Puducherry	Pondicherry	80	1167	0
2022	Government Victoria College	Palakkad	Kerala	85	2421	0
2023	Bhaskaracharya College of Applied Sciences	New Delhi	Delhi	22	1350	0
2023	I.C. College of Home Science	Hisar	Haryana	61	483	0
2024	Government Victoria College	Palakkad	Kerala	84	2266	0
2025	Government College for Women*	Thiruvananthapuram	Kerala	54	2792	0
2025	Government College, Attingal	Thiruvananthapuram	Kerala	99	733	0

### PLICE

PLICE was calculated for all NIRF100 and CCN60 and their statistics are tabulated in Table 13. Mean, quartiles and standard deviation of PLICE of CCN60 is higher than those of NIRF100. The median of NIRF100 is 9.4, while that of CCN60 is 10.9.

PLICE of NIRF100 and CCN60 for each year were calculated and is tabulated in Table 14. As in the case of LEAPS, it can be observed that the minimum PLICE of NIRF100 has declined to zero in 2025 from 0.9 in 2020. Similarly, all the quartile values for PLICE of NIRF100 and CCN60 is going downward compared to the ranking year 2020.

PLICE for NIRF100, which exceeds 50 is shown in Table 15. Out of 17 colleges in the list, 15 are from Delhi. Lady Shri Ram College for Women appears 4 times while Kamala Nehru College and Dyal Singh College appear three and two times respectively. These three colleges are CCN60.

PLICE of NIRF100 which falls less than one is tabulated in Table 16. Colleges of Tamil Nadu and Kerala frequent this list. V.O. Chidambaram College, Tamil Nadu appears four times, while Government College for Women, Kerala appears three times in the list. Both these colleges are CCN60.

### NIRF rank vs LEAPS

Figure 5 shows the scatter plot of correlation. The Spearman's rank correlation coefficient between NIRF rank and LEAPS was calculated for each year. Spearman Correlation,  $r$  for 2020 is 0.058, for 2021 is 0.120, for 2022 is 0.263, for 2023 is 0.272, for 2024 is 0.217 and for 2025 is 0.279. It can be seen that the coefficient of correlation has never gone beyond 0.279.

Table 13 — PLICE of NIRF100 and CCN60 during 2020-2025

PLICE	NIRF100	CCN60
College count	600	360
Minimum	0	0.4
Mean	14.1	15.8
Std dev	13.2	13.9
Q1	5.3	6.1
Q2 (Median)	9.4	10.9
Q3	18.1	22.6
95 <sup>th</sup> percentile	42.0	46.6
Maximum	100.0	69.3

Thus, an association between the amount spent on library resources and the NIRF rank was clearly ruled out.

### Data consistency

The data regarding financial resources utilized for the annual capital expenditure on the library under academic activities and resources for the previous 3 years are available in the NIRF data sheet of the top 100 institutions. This data on library expenditure provided by CCN60 was combined from the rankings of six years extending from 2020 to 2025 and tabulated as in Table 17. If the data is consistent and data entry is correct, the library expenditure for 8 academic years can be obtained and the figures on library expenditure will look like as demonstrated in the Table 17.

While most of the colleges ( $n=43$ ) have provided correct data, errors could be seen among data of the remaining 17 colleges. The data entry done by the colleges seems not to be up to the mark. For example, the amount spent by Jamal Mohamed College, Tiruchirappalli, for the library is given to be 1883613

Table 14 — PLICE of NIRF100 and CCN60 for each year during 2020-2025

Year	PLICE of NIRF100						PLICE of CCN60					
	Min	Q1	Q2	Q3	95 <sup>th</sup> percentile	Max	Min	Q1	Q2	Q3	95 <sup>th</sup> percentile	Max
2020	0.9	6.3	11.4	22.0	46.3	60.9	0.9	7.2	11.3	22.9	51.1	60.9
2021	0.7	6.7	11.6	19.3	41.6	65.4	0.7	7.7	12.2	23.1	48.9	65.4
2022	0.7	5.6	9.0	19.3	43.4	65.2	0.7	5.9	11.7	21.2	51.2	65.2
2023	0.6	4.5	8.7	18.9	39.7	100.0	0.6	6.3	9.7	24.1	50.2	58.9
2024	0.6	4.3	8.0	15.9	39.5	69.3	0.6	4.4	9.9	17.7	49.1	69.3
2025	0.0	4.2	7.9	16.1	45.7	51.7	0.4	4.3	8.8	17.3	45.7	48.8

Table 15 — Colleges that have PLICE greater than 50 during 2020-2025 (CCN60 are denoted with \*)

Year	College	State	Rank	Library expenditure for 3 years	Capital expenditure for 3 years	PLICE > 50
2020	Deshbandhu College*	Delhi	96	6805769	13271029	51.3
2020	Lady Shri Ram College For Women*	Delhi	2	6135013	10319957	59.4
2020	Kamala Nehru College*	Delhi	43	5881128	9662532	60.9
2021	Kamala Nehru College*	Delhi	33	5588592	8668686	64.5
2021	Lady Shri Ram College For Women*	Delhi	2	6211895	9502723	65.4
2022	Kamala Nehru College*	Delhi	40	4307094	8347817	51.6
2022	Jesus & Mary College*	Delhi	44	2173589	3981330	54.6
2022	Mahatma Gandhi Government Arts College	Pondicherry	99	426615	728186	58.6
2022	Lady Shri Ram College For Women*	Delhi	5	5957411	9133963	65.2
2023	Dyal Singh College*	Delhi	48	2821971	5561018	50.7
2023	Shaheed Rajguru College of Applied Sciences for Women*	Delhi	32	3547068	6948269	51.0
2023	Lady Shri Ram College For Women*	Delhi	9	4982185	8465104	58.9
2023	Delhi College of Arts & Commerce	Delhi	84	1310210	1310210	100.0
2024	Government Arts College, Coimbatore*	Tamil Nadu	96	825923	1570923	52.6
2024	Dyal Singh College*	Delhi	34	2965667	5272489	56.2
2024	Deen Dayal Upadhyaya College*	Delhi	26	1737020	2504957	69.3
2025	PGDAV College	Delhi	97	5997586	11606119	51.7

Table 16 — Colleges that have PLICE less than one during 2020-2025 (CCN60 are denoted with \*)

Year	College	State	Rank	Library expenditure for 3 years	Capital expenditure for 3 years	PLICE < 1
2020	V.O. Chidambaram College*	Tamil Nadu	68	250954	26445758	0.9
2021	V.O. Chidambaram College*	Tamil Nadu	54	226779	31955265	0.7
2022	V.O. Chidambaram College*	Tamil Nadu	30	257696	39477824	0.7
2022	Government Home Science College	Chandigarh	46	112963	16044456	0.7
2023	V.O. Chidambaram College*	Tamil Nadu	27	270729	41956450	0.6
2023	Govt. College for Women, Thiruvananthapuram*	Kerala	75	1159217	128583003	0.9
2024	Virudhunagar Hindu Nadars Senthikumara Nadar College	Tamil Nadu	95	208897	37222295	0.6
2024	Govt. College for Women, Thiruvananthapuram*	Kerala	49	644417	105207604	0.6
2025	Govt. College for Women, Thiruvananthapuram*	Kerala	54	297779	78349877	0.4
2025	Government College, Attingal	Kerala	99	0	1342098	0.0

and 1833613 for the 2020 and 2021 rankings respectively. For at least ten institutions, such data entry errors could be identified. For the remaining 7 institutions, the data regarding the library expenditure of same year seems to be different in different years. The highest number of discrepancies in the amounts was found in the case of Hans Raj College, Delhi,

where three different values each for the years 2018-19, 2019-20 and 2020-21 were observed in rankings from 2020 to 2024 (Table 18).

LEAPS, defined by the authors, reflects the average per-student expenditure of a college on library resources over the three years prior to the ranking year. To achieve a more accurate measure of

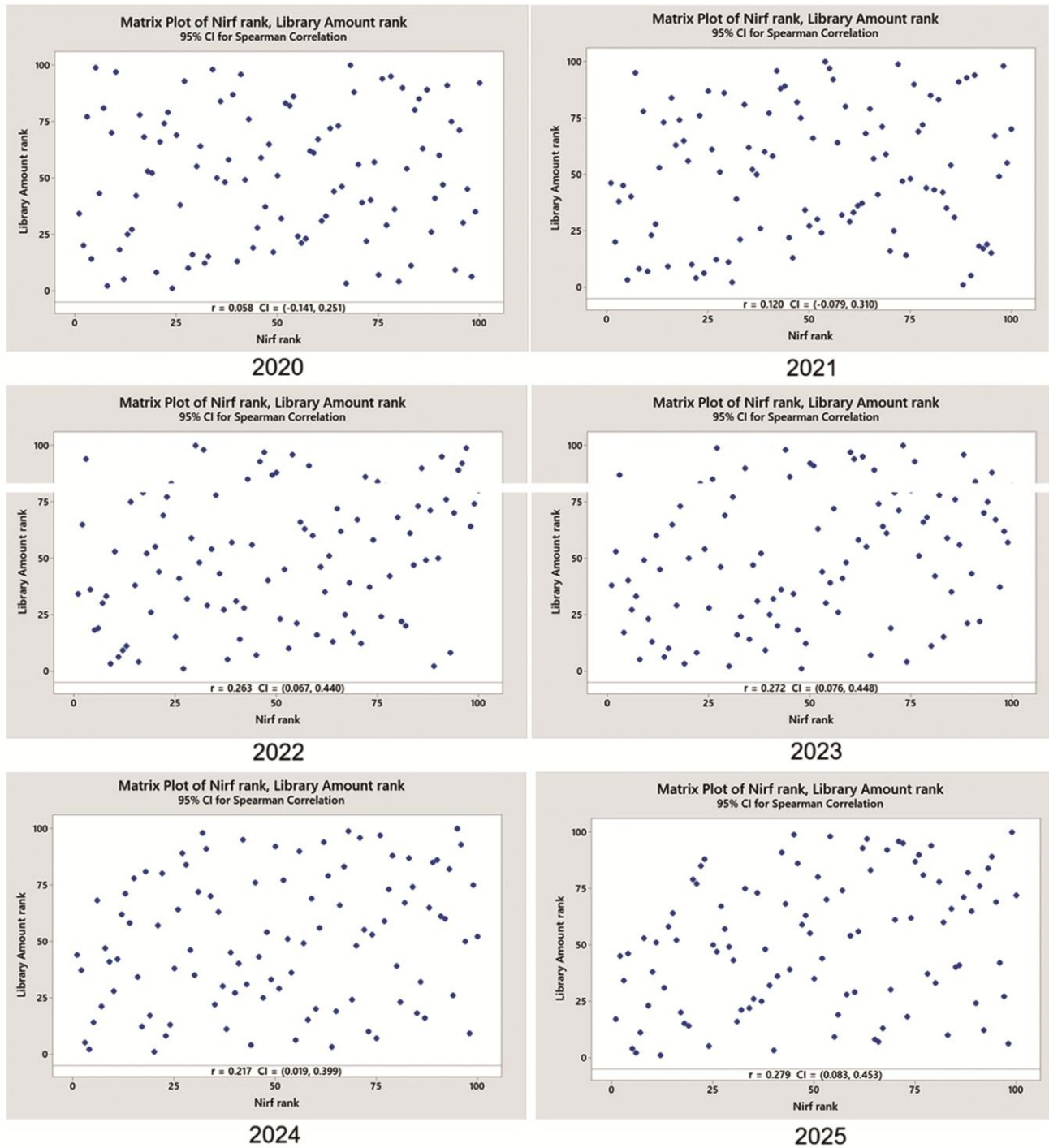


Fig. 5 — Correlation between NIRF rank and LEAPS during 2020-2025

library expenditure, a new calculation was performed using only the CCN60 data. This approach was adopted because the NIRF data provides eight years of library expenditure figures for CCN60 institutions, offering a significantly richer and more reliable dataset. This was achieved as follows: the amounts of

library expenditure provided by CCN60 were tabulated as in Table 17. Wherever there are data inconsistencies as demonstrated in Table 18, the largest values were taken into account. For example, in the case of 2018-19 expenditure of Hans Raj College, the highest value 1538500 was considered,

ignoring the two lower values. Thus, 480 values (60 CCN60 X 8 years' library expenditure) were tabulated. In the absence of student data for the 2016-17 and 2017-18 years, an assumption was made to use the 2018-19 student count for both periods. Thus the library expenditure of CCN60 per student was obtained for eight academic years and Table 19 provides the statistics

for the same. Figure 6 depicts the data in Table 19 graphically. The maximum values were omitted from the graph because their significantly larger magnitude would have skewed the scale, thereby making the trends and details of the other plotted metrics unidentifiable.

A trend of library expenditure of CCN60 during 2016-2024, based on their decreasing or increasing

Table 17 — Example of library expenditure obtained from the NIRF website if all figures are consistent in all years during 2016-2024 (St. Thomas College)

Financial Resources: Utilised Amount for the Annual Capital Expenditure on Academic Activities and Resources for previous 3 years under the head Library

Year	Name	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
2020	St. Thomas College	493736	590378	592970					
2021	St. Thomas College		590378	592970	935259				
2022	St. Thomas College			592970	935259	889112			
2023	St. Thomas College				935259	889112	667938		
2024	St. Thomas College					889112	667938	991518	
2025	St. Thomas College						667938	991518	191162

Table 18 — Library expenditure of Hans Raj College during 2016-2024 obtained from the NIRF website

Financial Resources: Utilised Amount for the Annual Capital Expenditure on Academic Activities and Resources for previous 3 years under the head Library

Year	Name	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
2020	Hans Raj College	1201467	1283401	1015579					
2021	Hans Raj College		1283401	1201467	1097000				
2022	Hans Raj College			1538500	1398974	148123			
2023	Hans Raj College				1730133	364840	1804737		
2024	Hans Raj College					331800	1729217	2380406	
2025	Hans Raj College						1729217	2380406	3355286

Table 19 — Library expenditure per student of CCN60 during 2016-2024

Academic year	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Mean	426.7	467.4	522.0	462.5	397.6	536.2	562.1	687.4
Std dev	601.3	459.8	524.7	587.2	804.3	935.3	935.5	1366.6
Minimum	34.9	8.1	32.4	37.9	0.0	28.6	18.7	0.0
Q1	181.1	203.8	216.8	181.3	99.8	141.0	183.7	195.4
Q2	292.3	351.2	360.2	298.1	230.9	265.9	313.4	391.2
Q3	448.3	535.9	577.4	544.0	354.0	414.3	532.5	635.3
95 <sup>th</sup> percentile	1019.6	1329.5	1365.1	1047.9	1230.1	1528.2	1228.2	1592.0
Maximum	4487.3	2829.9	2984.9	4340.6	5976.6	5868.1	6126.5	10137.6

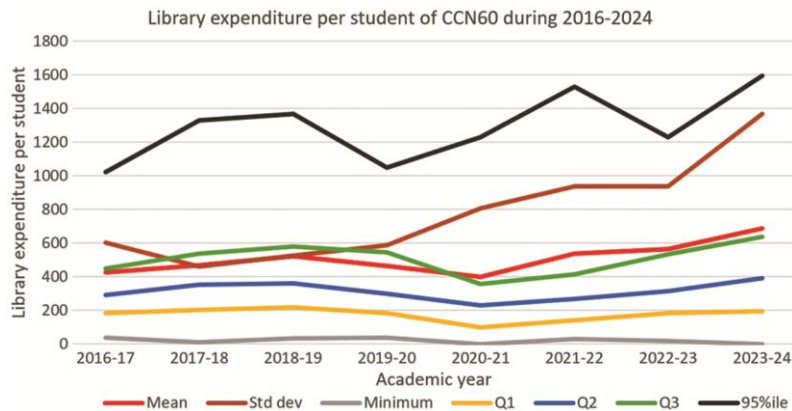


Fig. 6 — Library expenditure per student of CCN60 during 2016-2024

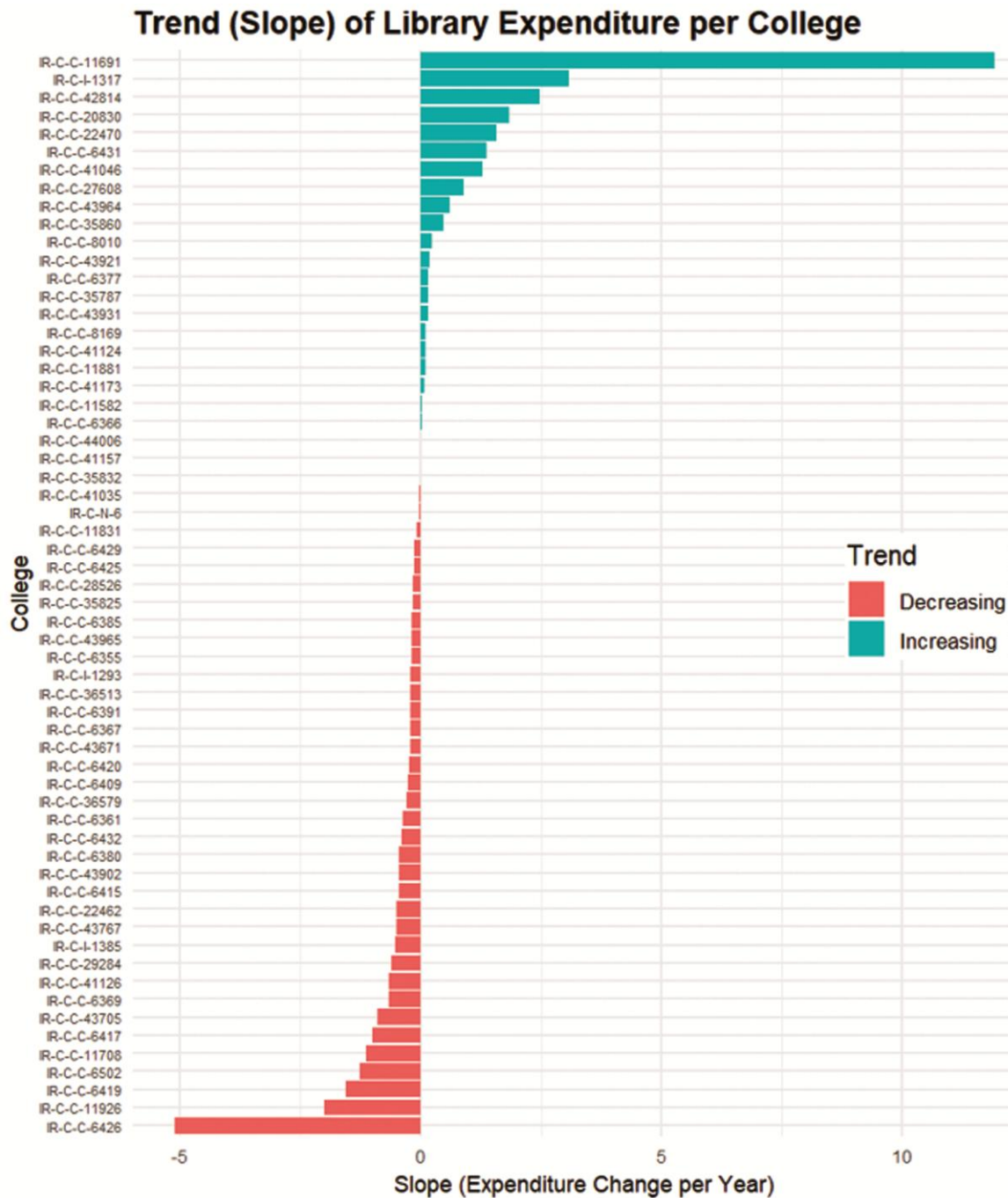


Fig. 7 — Trend of library expenditure of CCN60 during 2016-2024

nature, can be seen in Figure 7. The magnitude of slopes of these trends reflects the rate of (increasing or decreasing) change in expenditure over the observed period. The colleges are plotted on the vertical axis with their All India of Survey of Higher Education (AISHE) codes, as their names can be lengthy.

Figure 8 shows the dispersion of annual library expenditure per student for the CCN60 using a series

of violin plots. The central median of the expenditure remains relatively stable over the eight-year period. The upper quartile and maximum expenditure levels (as indicated by the height of the violin and the whisker) show a significant increasing trend, particularly from 2020-21 onwards. This shows that while the median expenditure remains almost steady, the disparity in expenditure has increased.

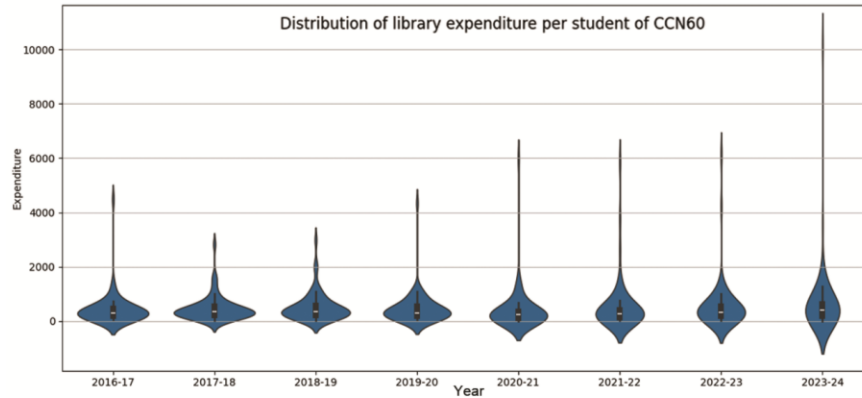


Fig. 8 — Violin plot of annual library expenditure per student of CCN60 during 2016-2024

### Discussion

From Table 1, more than half of the 145 colleges appear in the NIRF top 100 at least 5 times, and more than a quarter of institutions could achieve top positions only once or twice. Tables 2 and 3, as well as Figures 1 and 2, show that the Indian states of Tamil Nadu and Kerala and the national capital territory, Delhi, have the highest concentration of top-ranked colleges. It is interesting to note that a major portion of the northern part of India, except for Delhi, West Bengal, and Chandigarh, has no colleges belonging to the group of CCN60.

From Table 4, it can be observed that the mean and median of the average student strength of NIRF100 are greater than those of Non-CCN85. Similarly, these measures of central tendency of student numbers are larger for CCN60 compared to those of NIRF100. It can be deduced that a larger number of students may be a reason for maintaining a consistent position in the NIRF ranking. Figure 3 makes it easy to comprehend that the number of students in NIRF100 colleges has a positively skewed distribution, a result mostly of the high number of students enrolled in Tamil Nadu colleges.

As shown in Table 5, the medians and means of LEAPS for NIRF100 and CCN60 differ significantly. The medians offer a more reasonable measure of LEAPS of both groups, whereas the mean is heavily influenced by extreme values. Consistent with the number of students, the distribution of LEAPS for CCN60 follows a positively skewed pattern, as clearly visible in Figure 4. The quartiles in Table 6 show a decline for the years 2022, 2023, and 2024. This dip in library expenditure data is likely an indirect result of the economic slowdown during the COVID-19 pandemic years of 2020 and 2021. Because institutions report expenditure data for the three years

immediately preceding the ranking year, the pandemic's financial impact on 2020 and 2021 would subsequently affect the reported data for 2022, 2023, and 2024. The average of LEAPS of NIRF100 and CCN60 shows a decline in the Covid era, which eventually became better (Table 7). Although one can see an increase in standard deviation in the year-wise LEAPS, a drop can be seen in 2021 and 2022 among NIRF100, which may be due to the pandemic. Standard deviation of LEAPS of CCN60 over the years shows a steady increase, which seems to be unaffected by Covid-19.

Table 8 shows that only Rajagiri College maintained LEAPS greater than ₹1000 in all years from 2020 to 2025; St. Stephen's Delhi missed this target in 2020. Rajagiri College is the only college that has the LEAPS greater than ₹2000 during all the years between 2021-2025 (Table 10). It is also the only college with more than 1000 students on the list. It is the college that spent the highest amount as LEAPS for 2022, 2023, 2024 and 2025. Having spent ₹2150.96 in 2021, their LEAPS has become more than threefold in 2025 as ₹6921.37, progressing consistently each year. Colleges from the state of Kerala exhibit the greatest disparity in LEAPS: Rajagiri College reported the highest LEAPS of ₹6921.37 in 2025, whereas the Government College Attingal reported zero expenditure over the same period. Although consistent in ranking some colleges from Tamil Nadu have a LEAPS less than 100 as shown in Table 9. The colleges from Tamil Nadu also lead the list of NIRF100 with lowest LEAPS in four years (Table 11). Among them, V.O. Chidambaram College was consistent in spending the lowest LEAPS during 2020-2022, but it is surprising that it managed to be in CCN60 also. From the Table 12, one can observe that in spite of spending nothing towards the

library resources, Bhaskaracharya College of Applied Sciences managed to acquire a place within the first quartile of ranking in both years. CCN60 like Kanchi Mamunivar Government Institute for Postgraduate Studies and Research, Pondicherry and Government College for Women, Kerala have not spent anything on library resources in one year each. Three government colleges from Kerala dominate the list of those institutions which ignore library expenditure. If government HEIs fail to meet their responsibility for adequate library expenditure (which is a fundamental right of their users), it may set a negative precedent that encourages private sector HEIs to similarly neglect their libraries. A newcomer to the top 100 list in 2025, Government College Attingal in Kerala has not spent even a rupee for library in the entire assessment period of three years. This clearly shows that even if an institution spends nothing on library resources, it can be within the top 100 list of NIRF ranking. It is clearly evident that the expenditure on library is not a criterion to be included in the NIRF top 100 or even in overall NIRF ranking. There might be library fee for these colleges. For example, an amount of ₹100 is levied from each student as library fee in the government colleges of Kerala. Even that money is not seen spent for the benefit of students for the library resources.

A quick glance at the capital expenditure figures on the NIRF data sheet of colleges clearly shows that institutional priorities heavily favor new laboratory equipment and other capital assets, leaving library allocation as a negligible fraction of the total investment. However, given the critical, multi-faceted role of the library in supporting student academic success, skill development, and employability, this disproportionate allocation necessitates a mandated proportion in library expenditure. Table 13 shows that more than 75 percent of colleges spent at least 5 percent and half of the colleges spent nearly 10 percent of their capital expenditure for library resources. Table 14 confirms the general trend of de-prioritizing library expenditure relative to capital expenditure. This underscores the need for optimal benchmarks for the proportion of library expenditure within the capital expenditure, as the current spending practices vary dramatically. Table 15 shows that seven CCN60 from Delhi spent more than half of their capital expenditure on library resources. Complete allocation of capital expenditure was spent on libraries by Delhi College of Arts & Commerce in 2023. CCN60 institutions V.O. Chidambaram College, Tamil Nadu and Government College for Women, Kerala frequent the list of lowest

PLICE (Table 16). 100 percent allocation and non-allocation or under-allocation of capital expenditure to library expenditure are not at all desirable for an HEI. Both such scenarios, where funds are not utilized or earmarked appropriately, should be avoided.

Figure 5 shows that the rank of colleges and their expenditure on libraries does not have any correlation. This is in contrast to the findings of Kumar *et al.* (2021) that “libraries with higher per capita expenditure tend to get higher ranking scores”.

Table 18 provides evidence of data inaccuracy in submissions by HEIs to the NIRF. HEIs upload data themselves and there seems to be no verification of the supplied data. The core issue is the retrospective alteration of figures that pertain to completed, static actions, such as expenditures reported in previous years. Such post-hoc changes undermine the integrity of the ranking process, especially when overseen by a government agency. To enhance data accuracy and prevent these inconsistencies, the ranking algorithm should incorporate cross-validation checks against prior-year submissions. Alternatively, the system must lock submitted data for subsequent years, prompting HEIs to exercise due diligence and attention during the initial annual entry. Allowing discrepancies in historical data casts significant doubt on the reliability and correctness of the final rankings. The adoption of the "One Nation One Data" model in India is a promising step toward streamlining data submission for HEIs by establishing a single point of data entry for multiple purposes like surveys, accreditation, and ranking. This centralized system will compel HEIs to ensure the accuracy and consistency of their data, thereby ending the current practice of providing contradictory figures across multiple platforms. Additionally, there should be a provision for the public to verify the amounts which are declared by the HEIs. NIRF should insist institutions to clearly mention the heads under which the amounts were spent so that there will be accountability for the expenditure. This will also help to reduce the data errors as in the case of Hans Raj College and improve the integrity in the provided data.

Table 19 and Figure 6 present a more robust and accurate view of annual expenditure on library resources per student compared to the three-year average calculations provided earlier in this article. These refined calculations are done specifically on CCN60 offering a measure of library funding that is less volatile than that derived using NIRF100. Furthermore, the inclusion of an additional two years

of data (2016-17 and 2017-18) allows for a deeper temporal analysis. The data reveal a noticeable dip in the mean and quartiles of library expenditures of CCN60 during the 2020–2021 period. This decline is logically attributable to the economic slowdown caused by the pandemic. Figure 7 shows the rate of fluctuations of library expenditure within CCN60 during the eight years. Rajagiri College (AISHE code: IR-C-C-11691) exhibits the highest positive slope, indicating the most rapid increase in library expenditure among all colleges. Rama Krishna Mission Vivekananda Centenary College (AISHE code: IR-C-I-1317) follows with the second-highest positive slope. Shaheed Rajguru College of Applied Sciences for Women (AISHE code: IR-C-C-6426) has the largest decreasing slope. Ramakrishna Mission Vidyamandira (AISHE code: IR-C-C-11926) records the second-largest negative slope, indicating the second steepest decline in library expenditure. Violin plots in Figure 8 visually confirm the increasing trend in expenditure and highlight that the variability in expenditure among institutions is growing. They also show the presence of institutions like Rajagiri College with significantly higher expenditures, particularly in recent years.

### What can NIRF do?

Dr S Radhakrishnan (1949)<sup>9</sup>, the former President of India, has described “The library is the heart of all the university's work...”. For the effective functioning of the “heart”, blood is essential. Funding is the blood for the library. Consistent with this perspective, financial resources are fundamental to the library's operational effectiveness. However, the data reveal that libraries of some HEIs are currently non-funded or under-funded. Such trends are concerning for the future of academic libraries, as they risk marginalizing the library's foundational role in supporting learning and scholarship. Regardless of its direct impact on ranking performance, every HEI should allocate an optimal amount or percentage of its capital expenditure towards library resources. The ability to achieve high national rankings despite minimal or zero investment on library resources may inadvertently discourage the administration of institutions from prioritizing library development. The presence of colleges with zero or negligible library expenditure in the NIRF top 100 highlights a structural limitation in the current ranking formula. It is essential to modify the criterion regarding library expenditure to prevent such HEIs from achieving top

national ranking positions. For such institutions, an optimal library expenditure may serve as a benchmark.

Based on the expenditure patterns of CCN60, the authors sought to define data-driven optimal values for annual library expenditure per student and PLICE. Analysis of the expenditure data of CCN60, which fare well in the ranking, revealed the following key statistics:

- a) The average and median of the Q2 (Median / 50<sup>th</sup> percentile) of LEAPS are 299.6 and 307.5 respectively (Table 6).
- b) The average and median of the Q2 of annual library expenditure per student are 312.9 and 305.8 respectively (Table 19).
- c) The overall median of annual library expenditure per student for all CCN60 for 8 years is 303.2
- d) The mean and median of the Q2 of PLICE are both 10.6 (Table 14).

Considering the proximity of these central tendencies, the authors selected ₹300 and 10 as optimal values for annual library expenditure per student and PLICE respectively by pragmatic rounding. Here, the median is considered to be a more appropriate measure of central tendency to avoid the influence of extreme values, as the data is positively skewed and does not follow a normal distribution.

The libraries of HEIs would be better benefited if the criterion is enhanced by adding a condition that the amount for optimal library expenditure be the greater of either ₹300 per student annually or 10% of the annual capital expenditure. To maintain its relevance, the ₹300 figure must be periodically updated to reflect changes in inflation and market costs. These suggested expenditure amounts are intended only as minimum thresholds; they are specifically intended for institutions currently spending below the suggested level. The authors strongly urge that institutions with established, higher library budgets should maintain their present allocations and in no way decrease their funding to align with these suggested figures.

Thereafter, CCN60 which satisfy both LEAPS=>300 and PLICE=>10 in all 6 years were tabulated. Only 9 colleges (6.2% of NIRF100 and 15% of CCN60) satisfied the optimal values. Table 20, ordered in descending order of their LEAPS, shows their rank, score, number of students, LEAPS and PLICE as in the year 2025, to show their latest status. St. Stephens's College has the highest

Table 20 — CCN60 with LEAPS=&gt;300 and PLICE=&gt;10 in the descending order of their LEAPS in 2025 ranking

College	State	Rank	Score	No. of students	LEAPS	PLICE
St. Stephens's College	Delhi	5	79.41	1319	1422.1	22.9
St. Joseph`s College of Commerce	Karnataka	98	54.47	3152	1169.5	48.8
Atma Ram Sanatan Dharm College	Delhi	7	76.09	4374	866.4	42.0
Shri Ram College of Commerce	Delhi	18	69.01	3429	786.1	17.2
Lady Irwin College	Delhi	31	62.88	1752	783.9	38.2
Lady Shri Ram College For Women	Delhi	17	69.87	3926	625.4	31.4
Kamala Nehru College	Delhi	58	58.22	3340	530.4	25.3
Shivaji College	Delhi	69	57.48	4096	476.3	24.4
Deshbandhu College	Delhi	13	71.26	4796	475.0	15.5

LEAPS; given the amount of PLICE and number of students St. Joseph`s College of Commerce and Atma Ram Sanatan Dharm College are also good CCN60. St. Stephens`s has more than ₹1000 as LEAPS each year except in 2020. St. Joseph`s College of Commerce is spending nearly half its capital expenditure on library for last two years. While St. Stephens`s College and Atma Ram Sanatan Dharm College are in top ten NIRF colleges except for two years each, St. Joseph`s best position was rank 55 in 2024. It is noteworthy that Rajagiri College, despite having the highest LEAPS in India, is not included in the list because it did not satisfy the criterion of PLICE=>10 in the years 2020 and 2021. Data from Table 11 and Table 16 vouch that V.O. Chidambaram College, Tamil Nadu does not fulfill any of the optimal value criteria during 2020-2022 among CCN60.

Similarly, the authors are suggesting a minimum threshold value of ₹50 for the annual library expenditure per student and 3% as PLICE, based on the proximity of these values to the 5<sup>th</sup> percentile of the following:

- 5<sup>th</sup> percentile LEAPS of NIRF100 = 56.1
- 5<sup>th</sup> percentile LEAPS of CCN60 = 59.9
- 5<sup>th</sup> percentile annual expenditure of CCN60 per student during eight years = 48.4
- 5<sup>th</sup> percentile PLICE of NIRF100 = 2.6
- 5<sup>th</sup> percentile PLICE of CCN60 = 2.7

Ranking agencies like NIRF may consider adopting these measures as a prerequisite for institutional ranking eligibility. By choosing a minimum expenditure that is already met by 95% of ranked institutions, the ranking system promotes inclusivity of financially weak HEIs or institutions from economically backward regions. This will also avoid those institutions that do not spend a single paise/penny on library resources in such rankings. Reducing these values to the first percentile based on the data, yields a minimum threshold of ₹30 and 1%.

Although these figures would be met by 99% of institutions, the authors believe these nominal amounts are insufficient and impractical for covering the contemporary costs and market demands associated with quality library resources.

Rankings are essentially meant for upgrading the quality of institutions. For the effective working of a library, a minimum expenditure should be done towards library. Ranking agency like NIRF which is under the Ministry of Education of the Government of India has to give a little importance to libraries in ranking methodology, in order to enhance the quality of learning and research. The study started with the objective of assessing the expenditure pattern of NIRF100. After the analysis of the NIRF methodology and data provided by NIRF, it was confirmed that the library expenditure of colleges is in no way related to the ranking. The case of Government College Attingal has clearly shown that even if an institution spends nothing towards the library during the entire period considered for ranking, it can come within the top 100 institutions of NIRF. On its webpage on *Frequently Asked Questions (FAQs, 2023)*<sup>10</sup>, NIRF has a “disclaimer” that “This score is a relative score, not absolute. Therefore, a statement that ‘The institution with fail marks is ranked in the top 100’, is incorrect. This is NOT an absolute score.” NIRF FAQs also state that “In each parameter, percentile score using the log-function has been derived”. NIRF can reveal this percentile score and the function  $f(BC)$  after the declaration of results every year, so that HEIs can have an idea about them. This will help HEIs to improve their expenditure in relevant heads to attain a minimum quality, even if they could not make it to NIRF100. It will also ensure transparency in the ranking process.

Although the NIRF documents do not describe the method of calculating the function  $f(BC)$  or the BC itself, it can be deduced that BC is 3% of the overall

NIRF score. As BC contains the expenditure of three components library, laboratory and other expenditures and if it is assumed that these three carry equal weightages, the mark for library expenditure can be calculated as one third of the 0.03Score, which is 0.01Score, i.e., the expenditure for library carries a weightage of 1% of the overall NIRF score. Libraries often contribute to broader academic indicators like teaching quality and research output, which may be measured under other parameters, so explicit weightage may seem small but their indirect influence is significant. But assigning only 1% weightage to libraries undermines their importance which may cause reduction in expenditure of library infrastructure, resources, and staffing, negatively affecting research quality and student learning. Libraries are not just repositories of books but dynamic partners in teaching, learning, and research enhancement. Ranking agencies like NIRF should reflect this by giving libraries a more substantial weightage, encouraging institutions to invest adequately in library services, digital infrastructure, and skilled staff. This change would better support academic excellence, research innovation, and equitable student success.

### What can librarians do?

Some HEIs might have spent on library resources, but the institutional coordinator for NIRF might have missed the library expenditure. This is where the awareness of the librarian on NIRF comes into picture. The librarian has to be proactive and provide the information about the library expenditure to the person responsible for data entry of NIRF. During such a situation where library receives only little or a little attention from the government and management, librarians should think prospectively and act proactively by providing solutions for the following in the context of the five major parameters of NIRF:

- How library can contribute to the teaching quality and provide access to better learning resources including digital and open access ones
- Identify specific library services that boost academic and research outcomes and the quality of publications
- How library can help the students' higher studies and placement prospects
- How the library can bring more outreach for the institution and inclusivity among the academia

- How to improve the peer perception of the institution through the library and its resources, services and the events it organizes?

In addition, they can peruse case studies of HEIs with high rankings linked to strong libraries and adopt and adapt their examples.

### Conclusion

The analysis of library expenditure among NIRF-ranked colleges reveals substantial heterogeneity in funding allocation, strongly suggesting the necessity of evidence-based, strategic library budgeting. As the expenditure on libraries are not found to be uniform or adequate enough, the authors have determined optimal and minimum values, driven by the available data. The study underscores the development of a more balanced and holistic evaluation framework that explicitly recognizes and robustly incentivizes consistent and optimal investment in library resources as a non-negotiable component of institutional quality and ranking. Future work may extend this analysis by investigating the direct impact of these library resources and services on key metrics like student success and institutional ranking improvements.

### CRedit authorship contribution statement

SJ-Conceptualization, Methodology, Formal analysis, Investigation, Resources, Data curation, Writing—original draft, Visualization

JF-Validation, Supervision, Writing—review & editing

BVV-Conceptualization, Methodology, Validation, Writing—review & editing

STA-Validation, Formal analysis, Writing-Review & Editing, Visualization

All authors read and approved the final manuscript.

### Data availability

The data used in this study were derived entirely from the openly accessible official website of NIRF at <https://www.nirfindia.org/>.

### Declaration of generative AI and AI-assisted technologies in the manuscript preparation process

During the preparation of this work the authors used Grammarly for language refinement. After using this tool, the authors reviewed and edited the content as needed and takes full responsibility for the content of the published article.

### Declaration of competing interest

The authors wish to disclose the following potential

source of non-financial competing interest: All authors are currently affiliated with three different CCN60. Given that the central focus of this article is the analysis and discussion of the annual library expenditure of NIRF100 and CCN60, this professional affiliation is acknowledged. Other than the above-stated institutional affiliation, the authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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