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Financial Insights from Income and Expenditure Analysis of a Top-Ranked Indian University: An Exploratory Case Study of IISC Bengaluru (2014-2023)

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Abstract **- The Indian Institute of Science (IISc), Bengaluru ranked as India's top higher education institution under the 2024 National Institutional Ranking Framework (NIRF)-demonstrates academic and research excellence. However, the NIRF does not assess financial strategy, an essential component of long-term institutional sustainability. This study addresses that gap by analyzing IISc's financial performance over a ten-year period (2014–2023). The analysis utilizes audited financial statements and employs trend analysis, compound annual growth rates (CAGR), financial ratio assessments, and income–expenditure composition breakdowns. The evaluation covers six key financial dimensions: revenue growth, expenditure management, net operating performance, capital investment, liquidity, and income diversification. The findings reveal a pattern of steady revenue growth, sustained capital investment, and consistent operating surpluses. Despite these strengths, IISc remains significantly dependent on government funding. Self-generated income has shown only modest improvement, highlighting a potential vulnerability in the face of shifting policy or funding environments. While IISc demonstrates strong financial management in several areas, its high dependency on external grants underscores the need for greater diversification of income sources. This study contributes to a more comprehensive understanding of financial performance in top-tier Indian universities and provides valuable insights for policymakers and administrators seeking to ensure long-term financial resilience alongside academic excellence.**
Keywords: **Indian Institute of Science, Financial Performance, Higher Education Finance, Income Diversification, Capital Expenditure, Analysis, NIRF**

I. INTRODUCTION

In recent years, the financial management of higher education institutions has emerged as an increasingly important area of academic and policy interest. While considerable research has focused on academic quality, research productivity, and institutional rankings, relatively little attention has been directed toward the financial strategies and governance mechanisms that underpin these achievements-particularly within the Indian context (Tilak, 2015). This oversight is notable, given that financial health directly influences an institution's capacity to maintain academic excellence, expand infrastructure, invest in innovation, and withstand economic fluctuations (Salmi, 2009; Johnstone, 2004).

In India, public funding continues to form the bedrock of most university operations, especially for centrally funded institutions. However, with growing calls for institutional autonomy, global competitiveness, and financial sustainability, understanding how leading Indian universities manage their financial resources is essential (Agarwal, 2009; Government of India, 2020). Robust financial planning and efficient resource allocation are vital for ensuring that quality education and research can be delivered without undue dependence on single funding sources (Altbach & Salmi, 2011; Tilak, 2004). As Tilak (2004) notes in his analysis of Indian higher education financing, the sustainability of quality institutions depends heavily on diversified funding and accountability structures.
The Indian Institute of Science (IISc), Bengaluru, presents a compelling case for financial performance analysis. As the top-ranked university under the National Institutional Ranking Framework (NIRF) 2024, IISc enjoys a prestigious reputation for excellence in science, engineering, and research. The NIRF, developed by the Ministry of Education, evaluates institutions across several parameters, including teaching, research, outreach, and inclusivity. However, it notably excludes financial management as a ranking criterion (Ministry of Education, 2023). Despite this omission, financial governance likely plays a crucial yet overlooked role in enabling the institution's high performance across these metrics.

This study arises from the need to fill a critical research gap. Although public universities like IISc publish audited financial reports, few studies systematically analyze these reports to assess long-term financial performance. Existing literature on Indian higher education finance tends to focus on macro-level funding trends, student financing, or policy reforms, with limited attention to institutional-level financial strategy (Tilak, 2004; UNESCO, 2015). As a result, there is a lack of empirical understanding of what successful financial management looks like in practice, particularly within top-tier Indian institutions.

The primary aim of this paper is to conduct a ten-year exploratory analysis (2014–2023) of IISc's financial performance using its audited annual reports. The analysis focuses on key financial dimensions, including income

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diversification, expenditure management, net surplus trends, capital investments, liquidity indicators, and financial efficiency. These dimensions are studied through trend analysis, ratio assessments, and income–expenditure composition breakdowns to uncover patterns of financial strength, stability, or vulnerability. The study highlights the compound annual growth rates (CAGR) of major indicators to assess long-term sustainability and direction of growth.

The rationale for focusing on IISc is twofold. First, as the top-ranked institution in India, IISc serves as a model for excellence; its financial practices-whether effective or flawed-can yield valuable lessons for other public and private universities. Second, with the advent of the National Education Policy (NEP) 2020, there is increasing pressure on Indian universities to become financially autonomous, diversify income sources, and reduce dependency on government grants (Government of India, 2020). In this context, understanding IISc's financial trajectory can offer insights into how elite institutions navigate these evolving expectations.

The methodology involves analyzing financial data from the university's income and expenditure statements and balance sheets, which were compiled into a structured dataset. The data are assessed across six key dimensions: revenue growth, expenditure control, net operating performance, capital investment, income diversification, and financial efficiency. Indicators such as operating expenses, capital outlay, consultancy income, tuition fees, and current assets and liabilities are interpreted using visual tools like line graphs, bar charts, and composition analyses.

Ultimately, the study seeks to address the following questions: What financial strategies has IISc adopted over the last decade? Are these strategies supporting a model of financial resilience and growth? And what lessons can other higher education institutions derive from IISc's experience? These questions are especially timely, given the global financial pressures facing universities-rising costs, fluctuating government support, and increasing demand for transparency and accountability (OECD, 2022; Barr, 2004). In sum, the financial health of universities is not merely an operational concern-it reflects broader strategic choices, policy frameworks, and institutional priorities. By studying the financial performance of a top-ranked Indian university over a decade, this research contributes to a deeper understanding of sustainable financial practices in Indian higher education and offers a foundation for further comparative research and institutional benchmarking.

II. METHODOLOGY

This study adopts an exploratory quantitative approach to investigate the financial performance of the Indian Institute of Science (IISc), Bengaluru, over a ten-year period from 2014 to 2023. The purpose of this methodological framework is to systematically identify long-term financial trends, assess institutional sustainability, and interpret underlying challenges in the university's financial management. By analyzing publicly available financial records, the study contributes to a broader understanding of strategic financial planning within Indian higher education.

A. Data Source and Collection

The financial data used in this study were exclusively obtained from the annual reports published on the official IISc website. These reports contain audited financial statements-including Income and Expenditure Accounts and Balance Sheets-which served as the foundation for all analyses. The use of official audited figures guarantees the reliability and credibility of the dataset, in line with best practices for institutional financial analysis as emphasized in Indian higher education finance studies (Agarwal, 2009). Documents were downloaded in PDF format and manually converted into a structured Microsoft Excel spreadsheet. During this process, careful attention was paid to consistency and classification, ensuring that financial items were labeled uniformly across the ten-year span. Since the data come from audited public records, they provide a high degree of credibility and objectivity. No primary data collection methods (e.g., surveys or interviews) were employed, as the study is purely document-based.

B. Data Preparation

Following extraction, the data were cleaned and categorized under key financial heads, including total income, total expenditure, government grants, self-generated income (tuition, consultancy, interest, donations), capital expenditure, recurring expenditure, surplus or deficit, current assets, and current liabilities.

To facilitate cross-year comparison and longitudinal analysis, the study computed compound annual growth rates (CAGR) for selected indicators, notably total income and expenditure. Additionally, selected financial ratios-such as the Operating Expense Ratio and the Self-Generated Income Ratio-were calculated to assess efficiency and funding dependency. The analysis emphasized trend identification and directional movement across the dataset.

C. Analytical Framework

The analysis was structured around six key financial dimensions that reflect institutional performance and sustainability:

1. Revenue Growth: Measured through CAGR and overall income trends, focusing on government grants and self-generated income. This dimension helps assess the predictability and scalability of funding sources.
2. Income Diversification: Analyzed through the proportion of income derived from non-governmental sources, offering insight into the university's financial independence and alignment with policy goals (e.g., NEP 2020).

3. Expenditure Management: Examined by distinguishing between operational and capital expenditures, with attention to staff costs and administrative overheads.
4. Net Operating Performance: Assessed using annual surplus/deficit figures to determine whether the institution consistently operates within its means.
5. Liquidity and Short-Term Financial Health: Evaluated through the Current Ratio (current assets to current liabilities) to determine the institution's ability to meet immediate financial obligations.
6. Investment in Institutional Growth: Interpreted by analyzing trends in capital expenditure and their alignment with infrastructure or academic expansion.

D. Analytical Techniques and Visualization

Microsoft Excel and Google Sheets were used to structure the data, compute growth rates and ratios, and develop clear visual outputs. The key analytical techniques included:

1. Trend Analysis: Applied through CAGR and visual representation of changes in income, expenditure, and deficit over time.
2. Composition Analysis: Used to understand the breakdown of income (e.g., government vs. self-generated) and expenditure components.
3. Ratio Analysis: Focused on selected financial health metrics, such as the Operating Expense Ratio and the Self-Generated Income Ratio. Studies such as Singh et al. (2021) demonstrate how detailed financial performance assessments-like multi-ratio analysis-can reveal key profitability drivers, which are critical for institutions like IISc aiming to balance operational efficiency with capital investments.
4. Visualization Tools: Line graphs, bar charts, and pie charts were used to present financial trends, expenditure breakdowns, and income composition. These visual tools enhanced clarity and supported stakeholder engagement.

E. Ethical Considerations

This study exclusively relied on publicly available, institutional-level financial data from the university's website. No personal, confidential, or sensitive information was accessed, and no human participants were involved. As such, formal ethical clearance was not required. Nevertheless, the analysis was conducted with due diligence to ensure transparency, accuracy, and responsible interpretation of financial data.

III. RESULTS

A. Revenue Growth

Over the 10-year period from 2014 to 2023, IISc's total revenue has shown a general upward trend, albeit with some fluctuations. The compound annual growth rate (CAGR) for revenue over the period stands at approximately 5.7%. Year-on-year growth was positive in most years, though there were minor dips in 2014–2015 and 2020–2021, possibly indicating volatility in funding streams.

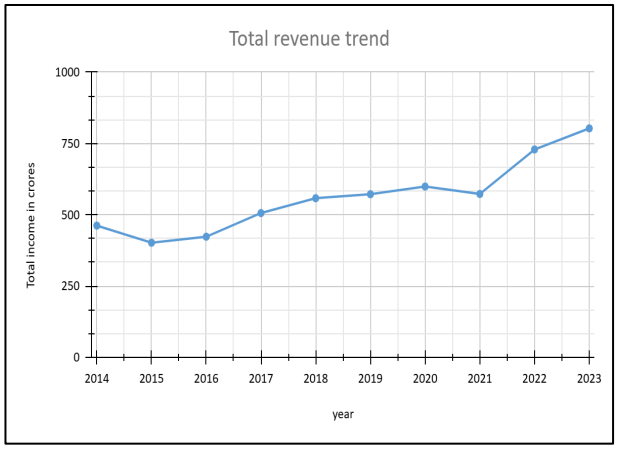

Fig.1 Total Revenue Trend

This steady revenue growth indicates a strong capacity to attract funding from both government and other sources. However, the fluctuations in some years suggest that the revenue model is partially dependent on variable income sources, warranting a closer look at diversification.

B. Expenditure Management and Strategic Focus

The Indian Institute of Science (IISc)'s expenditure profile between 2014 and 2023 reveals a steady and significant rise in total spending-from approximately ₹419 crore in 2014 to over ₹1,025 crore in 2023. Both recurring and capital expenditures contributed to this growth, with recurring expenses-comprising salaries, maintenance, and operational costs-accounting for the bulk of annual spending, consistently ranging between 65% and 75% of total expenditure.

Importantly, capital expenditure (related to infrastructure, equipment, and major projects) showed notable spikes in 2018, 2020, 2021, 2022, and 2023, suggesting concentrated investment cycles rather than a smooth or phased approach. For instance, capital outlays increased from around ₹260 crore in 2018 to over ₹622 crore in 2023, reflecting large-scale infrastructure and research investments.

However, this upward trend in total expenditure was not always matched by revenue growth. From 2015 onward, IISc began running consistent annual deficits, indicating that expenditures-particularly capital investments-frequently outpaced income. The gap became especially pronounced between 2020 and 2023, with each year recording deficits of over ₹1,600 crore. This shift from a modest surplus in 2014 to sustained deficits signals a financial trajectory that warrants attention.

This pattern suggests a need to reassess expenditure planning and resource allocation strategies. While investment in infrastructure is essential for a research-driven institution, the absence of matching revenue or dedicated

surplus deployment raises concerns about long-term financial resilience. A more strategic approach to capital budgeting, paired with operational efficiency, will be crucial.

Going forward, IISc would benefit from:

1. Linking capital expenditure cycles to long-term academic and institutional goals, supported by surplus or reserve funds.
2. Improving cost efficiency in recurring expenses to reduce pressure on operational budgets.
3. Implementing multi-year expenditure planning that anticipates fluctuations in revenue and aligns with financial capacity.

These adjustments would help ensure that spending growth contributes to institutional strength without compromising financial sustainability.

TABLE I ANNUAL EXPENDITURE BREAKDOWN TOTAL VS. CAPITAL VS. RECURRING

Year	Total Expenditure	Recurring Exp.	Capital Exp.
2014	₹419,41,23,356	₹320,70,99,784	₹236,18,67,466
2015	₹471,90,80,049	₹372,06,09,096	₹179,59,68,062
2016	₹492,50,88,083	₹388,13,28,483	₹182,03,76,476
2017	₹576,38,63,381	₹466,99,08,831	₹172,31,89,554
2018	₹638,65,52,342	₹522,73,06,272	₹260,20,93,317
2019	₹691,14,87,192	₹525,96,09,072	₹225,40,26,143
2020	₹758,57,91,954	₹570,09,03,727	₹343,67,10,558
2021	₹745,87,31,739	₹547,73,13,897	₹330,63,57,744
2022	₹935,47,66,230	₹728,77,42,626	₹546,02,72,564
2023	₹1025,76,41,755	₹802,72,07,906	₹622,85,84,186

C. Net Operating Performance

The Indian Institute of Science (IISc) has been operating under annual deficits from 2015 to 2023, with the sole exception of 2014, which saw a surplus of ₹42.31 crore. The annual operating deficit has worsened steadily, rising from around ₹69 crore in 2015 to ₹223 crore in 2023.

This decade-long trend reveals a growing financial strain, with expenditure persistently outpacing income. It highlights an urgent need for strategic fiscal interventions, including more disciplined cost control and meaningful income diversification, to ensure long-term financial sustainability.

While IISc's academic and research outputs remain world-class, its financial trajectory signals increasing pressure on internal resources and underscores the necessity for a more balanced and forward-looking financial model.

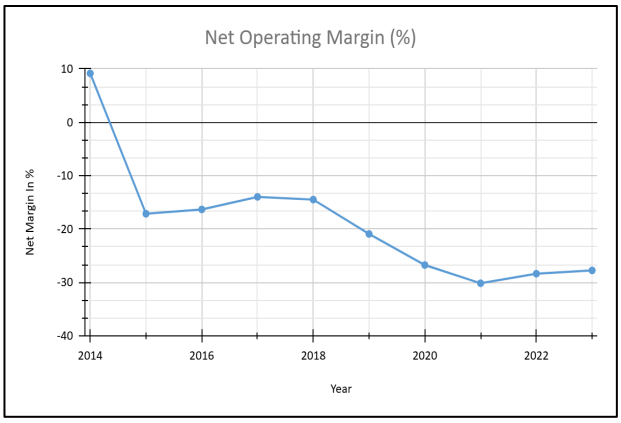

Fig.2 Net Operating Margin in Percentage

D. Asset and Liquidity Position

An examination of IISc's current assets and current liabilities over the 10-year period reveals important trends in short-term financial health and liquidity management. The Current Ratio, a key measure of an institution's ability to meet short-term obligations (calculated as Current Assets ÷ Current Liabilities), provides a snapshot of financial stability.

From 2014 to 2019, IISc consistently recorded current ratios below 1, ranging from 0.81 to 0.94, indicating that the institution had more liabilities than readily available short-term assets. This imbalance suggests liquidity stress, where the institute may have had to rely on delayed payments or non-current assets to meet obligations-a potential risk factor for operational smoothness.

The side-by-side bar graph of Current Assets versus Current Liabilities visually confirms this trend, especially between 2017 and 2019, when liabilities significantly outpaced current assets. Notably, in 2019, liabilities exceeded assets by about ₹175 crore, coinciding with a period of increasing capital expenditures and operational expansion.

From 2020 onwards, there is an observable improvement:

1. In 2020, the current ratio surpassed 1 (1.03), showing that the institution had sufficient liquidity.
2. 2022 marked the highest ratio in the decade, at 1.05, indicating a strong short-term financial position.
3. However, in 2023, the ratio dropped slightly to 0.99, falling just below the ideal benchmark of 1.

This fluctuation implies that, while IISc has taken steps to improve liquidity-especially during periods of high capital expenditure-maintaining a consistently healthy current ratio remains a challenge. These inconsistencies may reflect delays in receiving grants, faster-than-expected spending, or less effective cash flow planning.

Going forward IISc would benefit from considering the following:

1. Liquidity Buffer: IISc should consider maintaining a liquidity buffer or operational reserve, especially during

years with large capital outflows or policy shifts in funding.
2. Cash Flow Forecasting: More proactive cash flow and treasury management could help anticipate shortfalls and optimize working capital usage.
3. Target Ratio: Ideally, a current ratio of at least 1.2 would provide a cushion for unanticipated operational shocks while supporting ongoing activities.

By stabilizing its current ratio and aligning asset-liability cycles more strategically, IISc can enhance its financial agility and better safeguard its day-to-day operations.

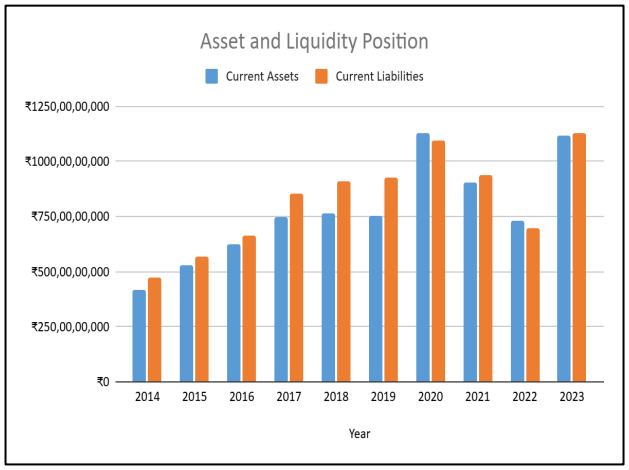

Fig.3 Asset and Liquidity Position

TABLE II CURRENT RATIO

Year	Current Assets	Current Liabilities	Current ratio
2014	₹415,92,41,862	₹470,44,76,646	0.88
2015	₹526,64,49,913	₹569,56,97,462	0.92
2016	₹624,66,72,527	₹663,13,26,034	0.94
2017	₹745,85,02,955	₹855,97,20,247	0.87
2018	₹762,78,51,809	₹911,01,76,019	0.84
2019	₹751,81,07,674	₹927,12,50,216	0.81
2020	₹1126,87,00,725	₹1095,45,25,335	1.03
2021	₹902,84,99,786	₹937,87,70,633	0.96
2022	₹730,93,33,745	₹699,22,74,856	1.05
2023	₹1119,31,75,595	₹1126,76,95,456	0.99

E. Income Diversification

An analysis of IISc's income sources over the ten-year period from 2014 to 2023 shows a clear shift toward greater dependence on government grants. In 2014, grants made up 65.49% of the institute's total income. This figure steadily increased over the years, reaching a peak of 95.54% in 2022 and slightly dropping to 94.30% in 2023. While this suggests strong support from public funding, it also highlights a growing reliance on a single source of income, which could become a risk if there are delays or changes in funding policies.

At the same time, other income sources have either declined or remained minimal. The "Other" category, which once contributed nearly a third (31.95%) of total income in 2014, has dropped sharply to just above 2% in recent years. Donations have been inconsistent and minimal, rarely exceeding 1%. Income from consultancy services, which could come from partnerships with industry or government, remained very low throughout the period, never exceeding 0.08%. Student fees contributed slightly more over the years, rising from 1.44% in 2014 to 3.35% in 2023, but still represent only a small part of the overall budget.

This trend points to a narrowing financial base. While grants are essential, relying too heavily on them may limit IISc's flexibility and its ability to handle unexpected financial changes.

Going forward IISc would benefit from considering the following:

1. Diversify Income Streams**:** Develop and strengthen alternative sources like consultancy, donations, and investments to reduce overdependence on grants.
2. Promote Consultancy Services**:** Encourage faculty and departments to engage more with industry and government projects to generate additional revenue.
3. Build a Culture of Giving**:** Launch structured alumni and corporate outreach programs to boost philanthropic donations and grow an institutional endowment.
4. Strategic Partnerships**:** Form stronger ties with private sector companies for joint research and sponsored programs.
5. Monitor and Manage Risk**:** Regularly assess the balance of funding sources to ensure long-term financial stability and resilience.

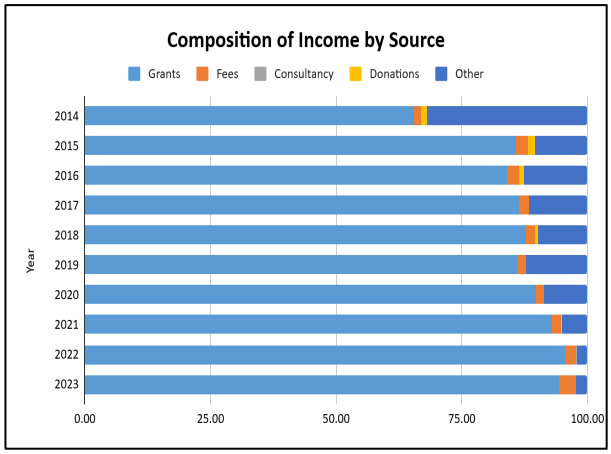

Fig.4 Composition of Income by Source

F. Investment in Growth

An analysis of IISc's capital expenditure as a percentage of total expenditure over the ten-year period reveals significant fluctuations, reflecting the institution's investment priorities and allocation of resources toward long-term assets. Capital expenditure typically includes spending on infrastructure,

equipment, and major improvements that support the university's growth and operational capacity.

From 2014 to 2017, IISc showed a downward trend in the capital expenditure percentage, starting at a high of 56.31% in 2014 and gradually declining to 29.90% in 2017. This reduction may indicate a period of consolidation or the completion of major capital projects, resulting in lower relative spending on infrastructure and asset acquisition.

In 2018 and 2019, the capital expenditure percentage rose moderately to 40.74% and 32.61%, respectively, suggesting renewed investment in capital assets. This increase could reflect new projects or upgrades to existing facilities. The years 2020 and 2021 saw further increases in the capital expenditure percentage, reaching 45.30% and 44.33%. Despite the challenges posed by the global environment during this period, IISc maintained a strong focus on capital investments, signalling its commitment to long-term development.

A marked rise occurred in 2022 and 2023, with capital expenditure percentages climbing sharply to 58.37% and 60.72%, respectively. These peaks represent the highest levels of capital spending in the decade, indicating major expansions or significant infrastructure initiatives underway during these years.

Overall, the data indicate that IISc has experienced cycles of fluctuating capital investment, alternating between phases of high and moderate expenditure. The recent surge in capital expenditure emphasizes a period of aggressive asset development, likely aimed at supporting future growth and enhancing institutional capacity.

Going forward IISc would benefit from considering the following:

1. Strategic Planning: IISc should ensure that capital expenditure aligns with long-term strategic goals and does not compromise operational liquidity.
2. Cash Flow Management: Large spikes in capital expenditure require careful cash flow forecasting to avoid financial strain.
3. Balanced Spending: Maintaining a balance between capital and operating expenditures is important to support both growth and daily operations.
4. Monitoring Impact: Evaluate the outcomes of high capital investments to ensure these expenditures translate into improved infrastructure and institutional performance.

By monitoring and managing capital expenditure carefully, IISc can continue to strengthen its infrastructure while maintaining financial stability.

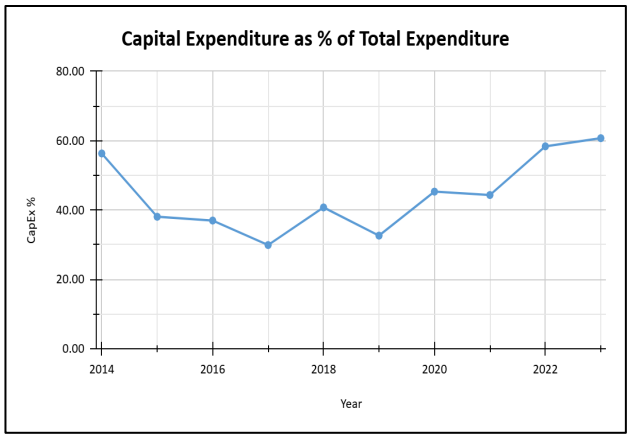

Fig.5 Capital Expenditure as percentage of Total Expenditure

G. Overall Financial Efficiency

To assess financial efficiency, two key ratios were evaluated:

1. Operating Expense Ratio (Operating Expenditure ÷ Total Income) The Operating Expenditure Ratio of IISc shows a clear upward trend from 2014 to 2023, indicating a growing share of total expenditure allocated to day-to-day operational costs. Starting at 0.6946 in 2014, the ratio steadily increased, crossing the 0.90 mark by 2015 and reaching nearly 1.0 in 2022 and 2023.

This suggests that almost all of IISc's total expenditure in recent years is directed toward operations rather than capital investment.

While this may reflect institutional maturity and consistent service delivery, it also underscores the need to monitor long-term asset investment to avoid underinvestment in infrastructure.

2. Self-Generated Income Ratio (Tuition + Consultancy + Other ÷ Total Income) The Self-Generated Income Ratio for IISc has shown a consistent decline from 2014 to 2023, falling from 0.3342 in 2014 to just 0.0561 in 2023. This ratio reflects the proportion of income generated internally through fees, consultancy, or other services, excluding government grants.

The sharp decline indicates increasing dependency on external funding sources, particularly government grants, while internal revenue generation has weakened.

This trend could pose long-term sustainability concerns, especially if external funding becomes uncertain. Enhancing revenue through research commercialization, industry partnerships, and continuing education programs could help strengthen financial independence and resilience.

TABLE III FINANCIAL EFFICIENCY RATIOS

Year	Operating Expense Ratio	Self- Generated Income Ratio
2014	0.6946	0.3342
2015	0.9235	0.1276
2016	0.9167	0.1508
2017	0.9234	0.1344
2018	0.9370	0.1172
2019	0.9202	0.1394
2020	0.9525	0.1017
2021	0.9558	0.0711
2022	1.0000	0.0440
2023	0.9997	0.0561

IV. DISCUSSION

This section provides an interpretive analysis of IISc's financial performance over the period 2014 to 2023, focusing on the key criteria of this research: revenue growth, expenditure management, net operating performance, liquidity and asset position, income diversification, capital investment, and overall financial efficiency. The findings offer insights into the strengths and risks of IISc's current financial model, as well as broader lessons for public universities in India.

A. Revenue Growth

Over the 10-year period, IISc's revenue has shown a steady upward trend, with a compound annual growth rate (CAGR) of 5.7%. Despite this overall growth, year-on-year income exhibited some fluctuations, particularly in 2014–2015 and 2020–2021, reflecting the institute's vulnerability to funding cycles and macroeconomic shocks.

This steady increase in income suggests that IISc remains a highly attractive institution for public investment, largely through government grants. However, the occasional dips reveal some volatility in income streams, indicating a need for financial strategies that can smooth out revenue inconsistencies-such as establishing a more robust reserve fund or generating a stable stream of internally sourced income.

B. Expenditure Management

IISc's total expenditure has increased significantly, from ₹419 crore in 2014 to over ₹1,025 crore in 2023, driven primarily by recurring operational costs such as salaries, maintenance, and institutional services. Recurring expenses have consistently accounted for 65–75% of total spending, leaving limited room for flexible resource allocation. While investment in people and infrastructure is essential for a research-driven institution, the rising cost burden-particularly in operational areas-raises questions about cost efficiency and budgeting discipline. Ghayas (2018) found that capital structure significantly affects profitability in Indian firms, suggesting that IISc's expanding expenditures require proportionate investment and balanced financing to safeguard long-term financial stability. The persistent increase in spending, especially when not matched by equivalent revenue growth, signals the need for a stronger expenditure framework that prioritizes both fiscal control and strategic academic goals.

C. Net Operating Performance

The most concerning trend is IISc's persistent operating deficits, which have been a constant feature since 2015. From a surplus of ₹42.31 crore in 2014, the university moved into a deficit of ₹69 crore in 2015, which widened to ₹223 crore by 2023.

This pattern indicates a structural financial imbalance, where expenditures regularly outpace income. Rather than reflecting temporary shortfalls, the trend suggests that core financial operations are misaligned. These growing deficits, particularly in the later years (2020–2023), coincide with periods of heavy capital expenditure and rising operational costs-underscoring the need for coordinated financial planning, tighter cost control, and more diversified revenue generation.

D. Asset and Liquidity Position

IISc's current ratio-a measure of its ability to meet short-term liabilities-has improved over the decade but remains inconsistent. Between 2014 and 2019, the ratio stayed below 1, indicating liquidity pressure. From 2020 to 2022, the ratio improved, even reaching 1.05 in 2022, reflecting stronger short-term financial health. However, in 2023, it dipped again to 0.99, falling below the recommended benchmark.

These fluctuations suggest that while the institute has made progress in managing liquidity, the lack of consistent performance reflects possible weaknesses in cash flow planning. Liquidity management remains a vital aspect of financial health. As illustrated by Gupta and Verma (2020) through their CAMEL model analysis of Indian banks, maintaining adequate liquidity buffers and accurate forecasting is essential. A more proactive approach to treasury management-such as maintaining a buffer fund or aligning expenditure timing with expected inflows-would strengthen the institute's operational stability.

E. Income Diversification

One of the clearest trends from the financial analysis is IISc's increasing dependence on government grants, which accounted for over 94% of total income in 2023, up from 65% in 2014. Other sources of income-such as consultancy, donations, and student fees-remain small and stagnant. Notably, consultancy income never exceeded 0.08% of total income in any year.

This narrowing of the financial base presents a significant strategic risk. The relationship between institutional financial empowerment and access to diversified funding sources is highlighted by Rao and Singh (2019), emphasizing how expanding financial outreach can build sustainable revenue bases. While government support provides essential funding, it also makes the institution vulnerable to policy changes, funding delays, or shifts in national priorities. Diversifying income-through research commercialization, executive education, industry partnerships, or philanthropy-would not only mitigate this risk but also support long-term innovation and autonomy, an approach increasingly promoted by Indian policymakers to boost self-reliance in public institutions (MHRD, 2019; NEP 2020).

F. Investment in Growth

Capital expenditure at IISc has shown sharp increases, particularly in recent years. From ₹260 crore in 2018, capital expenditure rose dramatically to over ₹622 crore in 2023, accounting for more than 60% of total expenditure that year. These peaks indicate focused infrastructure development and investment in long-term growth.

However, these expenditures have often coincided with high operating deficits, suggesting that capital outlays are not always well-aligned with financial capacity. Without clear links to strategic academic outcomes, such high spending could put long-term stability at risk. Implementing a multi-year capital planning framework tied to institutional goals-such as digital transformation, global competitiveness, or interdisciplinary research-would make investments more sustainable and outcome-driven.

G. Overall Financial Efficiency

Two critical indicators-the Operating Expense Ratio and the Self-Generated Income Ratio-shed light on IISc's financial efficiency. The Operating Expense Ratio increased over the decade, reaching nearly 1.0 by 2023, indicating that almost all income is being used for operations, with little left for capital development or savings.

Meanwhile, the Self-Generated Income Ratio dropped from 0.3342 in 2014 to just 0.0561 in 2023, revealing a steep decline in the university's ability to generate its own funds. These trends suggest that IISc's financial model is becoming increasingly consumption-oriented, with fewer resources dedicated to innovation, reserves, or reinvestment. Improving this situation will require a combination of cost rationalization, enhanced budgeting practices, and a stronger push toward income-generating academic programs and industry collaborations.

V. LIMITATIONS

While this study offers valuable insights into the financial performance of the Indian Institute of Science (IISc) over a ten-year period, it is important to acknowledge its limitations.

First, the analysis is based exclusively on secondary data drawn from publicly available audited annual reports. While these sources are reliable, they do not provide explanatory context behind financial decisions, strategic priorities, or institutional challenges that may have influenced the figures. The absence of primary data-such as interviews with financial administrators or access to policy documents-limits the study's ability to interpret causality or internal decision-making processes.

Second, the financial metrics analyzed-such as revenue growth, capital expenditure, and income diversification-reflect quantitative patterns but do not capture qualitative aspects, including financial governance structures, policy changes, or the institutional culture that may influence fiscal behavior.

Third, this study is confined to a single institution, IISc. While it is a top-ranked university, its financial model may not be representative of other Indian universities, especially smaller or less-funded institutions. Therefore, generalizing these findings should be done with caution.

Lastly, although year-on-year growth trends and ratios like the Operating Expense Ratio were computed, some advanced econometric techniques or predictive modeling tools were beyond the scope of this study due to time and resource constraints. Future research could benefit from a more robust analytical toolkit and a comparative study across multiple institutions.

Despite these limitations, the study provides a foundational framework for understanding institutional-level financial performance in Indian higher education and serves as a stepping stone for further research.

VI. CONCLUSION

The financial analysis of the Indian Institute of Science (IISc) from 2014 to 2023 reveals a complex picture of growth, excellence, and underlying structural challenges. While IISc continues to secure strong government support and invest heavily in academic infrastructure, its long-term financial sustainability appears increasingly vulnerable due to recurring deficits, limited income diversification, and rising operational costs.

The institute's persistent reliance on public funding-though common among public universities in India-has become more pronounced over the decade, reducing financial autonomy and increasing exposure to external funding risks. Despite the strength of IISc's reputation and research output, self-generated income remains marginal. In parallel, capital investments have surged without clear alignment to long-term financial capacity, contributing to widening budget gaps.

Nonetheless, IISc demonstrates several financial strengths, including moderate liquidity and continued prioritization of core academic functions. These can serve as foundations for reform. By strategically managing expenditures, improving budgetary planning, and actively pursuing diversified income avenues-such as industry partnerships, alumni fundraising, and research commercialization-IISc can strengthen its financial model while safeguarding its academic mission.

More broadly, this case underscores an important lesson for India's public universities: academic excellence does not guarantee financial health. Sound financial planning, institutional accountability, and innovation in revenue generation must become central to the governance of higher education institutions. These insights may guide similar institutions seeking to align academic goals with financial sustainability, particularly in light of the National Education Policy 2020's emphasis on institutional autonomy and diversified funding (Government of India, 2020). In doing so, universities can lead not only in academic achievement but also in building models of resilient and forward-looking financial management

VII. RECOMMENDATIONS

The financial analysis of the Indian Institute of Science (IISc) from 2014 to 2023 reveals a mix of strengths and emerging vulnerabilities. To interpret these findings constructively, the following recommendations draw on both the data trends observed in this study and widely accepted best practices in higher education financial management (Salmi, 2009; Altbach & Salmi, 2011; OECD, 2022). The goal is not to prescribe but to offer evidence-informed suggestions that align with global strategies for financial sustainability in research-intensive institutions.

A. Diversify Income Sources

The data reveal an increasing reliance on government grants, which accounted for more than 94% of total income by 2023. This level of dependence may limit financial flexibility, particularly in the context of fluctuating public funding. Literature on financial sustainability in higher education underscores the importance of diversifying income streams to build institutional resilience (Altbach & Salmi, 2011; OECD, 2022). Income diversification is recognized as a best practice both globally and nationally (OECD, 2022; Tilak, 2015; NEP 2020).

To address this, IISc may consider the following measures:

1. Expand consultancy and industry collaborations by encouraging faculty to undertake funded projects and partnerships with the private sector.
2. Introduce executive and continuing education programs aimed at professionals, a strategy employed by many global universities to generate income with relatively low overhead costs.
3. Strengthen alumni and corporate fundraising efforts through structured campaigns and endowment-building, as practiced by leading international institutions.
4. Enhance research commercialization by supporting patenting, licensing, and start-up incubation, facilitated through a dedicated office for technology transfer and innovation.

B. Improve Expenditure Planning and Operational Efficiency

From 2015 onwards, IISc has consistently recorded annual deficits, despite growth in overall income. More than 70% of the institution's yearly budget is allocated to salaries and administrative costs. Financial efficiency literature recommends adopting multi-year planning frameworks and performance-based budgeting to improve cost control (Johnstone, 2004; Salmi, 2009).
Recommended steps include:

1. Implementing multi-year budgeting to align projected expenditures with strategic goals and income expectations.
2. Conducting detailed expenditure reviews to identify cost inefficiencies and reduce recurring overheads.
3. Adopting program-based costing models, where costs are assigned directly to academic or administrative units, allowing for greater transparency and accountability.

C. Align Capital Expenditure with Strategic Priorities

The analysis shows that capital expenditure has occurred in sharp, irregular bursts, particularly in 2018 and 2021, without consistent income growth to support it. Institutions with sound financial governance typically link capital spending to long-term institutional plans and maintain reserve buffers (OECD, 2022).

To improve capital investment management, IISc could:

1. Develop a capital investment framework with clearly defined priorities, cost estimates, and timelines.
2. Undertake rigorous project evaluation and monitoring, including cost-benefit analyses and post-investment reviews.
3. Create reserve-based funding mechanisms to support large infrastructure projects without causing operational deficits.

D. Strengthen Liquidity and Cash Flow Management

While IISc's liquidity improved after 2020, the Current Ratio has fluctuated over the decade, indicating periods of potential strain. Financial management literature emphasizes the importance of liquidity buffers and forward-looking cash flow tools to ensure operational continuity (Barr, 2004; Salmi, 2009).

Practical strategies may include:

1. Maintaining a liquidity buffer in the form of operational reserves to meet short-term obligations during peak spending periods.
2. Adopting dynamic cash flow forecasting tools that account for both predictable and variable revenue streams, enabling timely adjustments to spending.

E. Institutionalize Financial Governance and Accountability

Good financial outcomes often stem from strong governance structures and financial literacy across all institutional levels (OECD, 2022). Given the scale of IISc's operations and the complexity of its finances, there is scope for more formalized oversight and capacity building.

To this end, IISc could consider:

1. Establishing a financial oversight committee comprising finance professionals, senior academics, and external advisors to review budgets, monitor risks, and align spending with strategic goals.
2. Training department and unit heads in financial literacy, ensuring that budget decisions are informed and data-driven.
3. Regularly reviewing key financial indicators, such as the Operating Expense Ratio, Current Ratio, and Self-Generated Income Ratio, to guide policy decisions and monitor progress.

Together, these recommendations aim to support IISc's long-term financial sustainability while reinforcing its leadership in research and higher education. While IISc is already among India's most prestigious institutions, proactively addressing the challenges surfaced in this financial review can ensure that it remains both academically excellent and financially resilient in the evolving higher education landscape.

F. Final Reflection

The financial examination of the Indian Institute of Science (IISc), Bengaluru, from 2014 to 2023 reveals a compelling narrative about the evolving challenges and opportunities in managing the finances of a top-tier public university in India. Despite its academic excellence and institutional prestige, IISc is not immune to the financial pressures that increasingly define the higher education landscape-rising costs, dependency on public funding, and the urgent need for sustainability.

The analysis demonstrates that while IISc has maintained operational liquidity and increased its income in absolute terms, structural issues-particularly the growing annual deficits and limited income diversification-pose serious questions about long-term financial resilience. These concerns are magnified by the institution's high reliance on government grants and the relatively static nature of self-generated income.

What stands out in this case is the paradox between academic leadership and financial vulnerability. IISc's case highlights that reputational strength and research output do not automatically translate into financial health. Rather, sustainable excellence requires a parallel commitment to strategic financial planning, innovation in resource mobilization, and robust governance mechanisms.

From a broader perspective, this research underscores the necessity for Indian public universities to rethink their financial models in the wake of policy shifts such as the National Education Policy (NEP) 2020, which advocates greater institutional autonomy and financial independence. IISc's financial trajectory offers important lessons-not just for itself, but for the wider higher education sector in India-on the importance of balancing academic ambition with fiscal responsibility.

Ultimately, ensuring the financial sustainability of leading institutions like IISc is not merely an administrative necessity but a national imperative. These universities are engines of innovation, talent development, and global academic standing. Securing their financial future means safeguarding the intellectual future of the country and incentivizing outcome-driven resource use. As India pursues global benchmarks in higher education through internationalization, research expansion, and digital transformation, universities must be empowered not only with academic mandates but also with the financial tools and governance capacity to sustain those ambitions.

Finally, for broader relevance and policy shaping, future research should adopt a comparative, multi-institutional approach, examining both public and private universities across different regions, funding models, and governance structures. Such a framework will support a deeper understanding of what drives financial sustainability and academic excellence-and how India's higher education system can balance both in a complex and fast-changing global landscape.

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