Journal of Informatics Education and Research
ISSN: 1526-4726
Vol 5 Issue 1 (2025)

Bridging Education Finance Inequality for Sustainable Development in India: Challenges and Policy Pathways

Dr. Harim Qudsi [1],
Ph.D. in Education, Assistant Teacher,
Department of School Education and Literacy
harimqudsi@gmail.com
Dr. B. Venugopal [2],
Assistant Professor (Finance &
Accounting), Indian Institute of Plantation Management Bengaluru (An
Autonomous Organization of the Ministry of Commerce & amp;
Industry, Govt. of India), Jnana Bharathi Campus,
p.o. Malathalli, Bengaluru - 560056
venugopal.b@iipmb.edu.in
Dr. Veena Prasad Vemuri [3],
Principal,
Commerce/Management, NSM Degree College, Mumbai University
veenavrp@gmail.com
Dr. Rohit Kumar Sharma [4],
Associate Professor,
School of Business,
Dr. Vishwanath Karad MIT World Peace University, Pune, India
rohit.sharma@mitwpu.edu.in
Dr. Harshal Anil Salunkhe [5],
Associate Professor, School of Business,
Dr. Vishwanath Karad MIT World Peace University, Pune, India
harshal.salunkhe@mitwpu.edu.in
Dr. Khushali Oza [6],
Assistant Professor, MBA, Akemi Business School, Pune
khushali.oza.7@gmail.com

ABSTRACT:
Education finance inequities remain a key barrier towards the attainment of sustainable development in India because funding gaps help to reinforce social and economic disparities. This paper aims to review the research literature on education with an understanding of the concept of educational inequity: equity in regards to both access to education and education quality and afterward with the focus on the consequences for different income levels. Some of the key problems are lack of sufficient funding, imbalance of the financing between regions, and poor utilization of the funding received. Also, increased costs of education serve to deepen the marginalization of other vulnerable groups making the disparities worse. The research examines the relations between the policy instruments, financial tools, and socio-economic factors to determine practical strategies. The paper outlines new policy directions including resources in access and parity models, partnership models, and community models to fill these gaps. These measures are designed to establish inclusive education technology use and data-driven governance to achieve this goal.

Keywords: Education finance inequality, Sustainable development, Policy pathways, Resource allocation, Socioeconomic disparities, Public-private partnerships, Inclusive education

I. INTRODUCTION

Education is universally acknowledged as a net factor in the process of development as the foundation of economic growth and social justice as well as an effective tool to protect the environment. Education thus assumes an even more tremendously importance especially in the context of Indian population multiplicity and the aim of inclusive growth in the country. [However, the sustainability of education finance inequality continues to plague educational equity and attempts to create parity for access to quality education]. It shows that the financial_variables in education sector does not only widen the social inequalities but also impedes the achievement of sustainable development goals (SDGs) of India [1]. Averting these imbalances is critical to making education deliver on the promise of a social justice instrument of change and human development.

School finance disparities in India can be categorized according to region, urban and rural distribution and income differentiation. The wealthiest states – Maharashtra and Tamil Nadu – enjoyed 3 and 2.5 times larger spending per student, respectively, than the financially skeletal Bihar and Uttar Pradesh. As for SO, the sources of evidence show that urban pupils perform better due to better-developed infrastructures and facilities, skilled teachers, and more advanced technological types of equipment than rural schools that do not even afford infrastructures and other facilities [2]. These inequalities are compounded by increasing trends in the privatisation of education that provides services to the rich and excludes the poor. Consequently, millions of children remain unprepared, whereby privileged children dominate while millions of others are denied fair chances to overcome poverty.

It also reveals incomes inequality, revealing general systematic problems in this unit of education. Unfortunately, India’s education expenditure as a portion of the GDP has remained below the globally prescribed 6 % mark. These schools afford to provide poor infrastructures, fewer teaching staff, and no learning content since this sector mostly operates with deprived students [3]. On the other hand, private schools which are financed by slightly higher fees produce a higher quality of education and hence produce two systems that are in themselves prejudicial to the poorer children. These activities consequently highlight the significance of segmented approaches in trying to close the education finance gap.

In the case of this crucial problem, the society requires new policy directions and structural changes. Sound resource distribution for students with the necessary data systems can prevent peculiarities in funding distribution among schools [4]. At the same time, the PPP concept seems to be quite prospective, combining private initiatives and solutions with the obligatory consideration of the needs of the general population. In addition, technology can assume the role of an enabler by providing inexpensive approaches to teacher development, curriculum dissemination, and evaluation of students in poorly funded areas. As well, beliefs that neighborhood based programs with the participation of the community members and organizations can lead to higher levels of responsibility and efficiency of spending of resources [5].

II. RELATED WORKS

The topic of equity in education finance has been widely explored in the scholarly literature with special reference to its ramifications for coverage, standard, and opportunities for social mobility. Different researchers focus on resource distribution concerning achievement, goals and objectives for adequate funding necessary to close the learning achievement gap between the rich and the poor [6]. However, in general, especially research exercising in the Indian context, substantial emphasis has been laid on analysing structural and systematic factors which are responsible for the inequalities in financing education.

One significant site of work explores the issue of unequal statewise distribution of education expenditure in India. Tilak, (2007) and Govinda & Biswal (2006) open that the resources are inequitable distributed while Maharashtra and Karnataka have relatively better educational facilities than Bihar and Odisha. Such disparities are said to be associated with differences in state revenue capabilities and investment in education as a component of state budgets [7]. The literature also explains that such disparities lead to unequal chance, and students from less-funded areas have poor dropout rates and poor academic performances.

Related studies have also concentrated on the aspect of, inequality differing between the urban and rural areas in terms of financing education. Challenges that students face in rural schools include; limited or no facilities, inadequate teachers and teachers who lack effective technology skills according to the Azim Premji Foundation (2019). Urban regions, however, receive private investment and have more facilities to provide a quality education and, thus, contrast. Research shows that this dichotomy inhibits not only rural development but also a significant increase in the overall gap between urban and rural peoples [8].

Another major area of concern in the literature has been the role of private player in education. Private schools as a branch of education providers have recently grown to be important but due to an intention towards making profits, issues of equitiabley disadvantaged students are closed out. For instance, writing for Oxfam India, published in 2020, argues that privatization has made education even more unfair because families inhaling lower income cannot afford to pay the high fees [9]. There is a lack of sufficient funding to support schools in general, and the majority of these organizations of which these children are members attend public schools that are very poorly funded to begin with.

Interference strategies and finding on education finance disparities have also been discussed. For instance, researches on government initiatives like SSA and RMSA shows some participants returned fairly positive results while others' results were negative [10]. Although these programs have enhanced enrolment and increased the provision of facilities these programmes have generally achieved limited qualityFETCHarticles & Inputs endwhile{and equality enhancement due to inadequacies in efficient utilisation of the funds as well as execution of the programmes. Kingdon (2020) recommends that there is a need for improving monitoring structures as well as making policies more informed in an effort to boost the achievements of such efforts.

III. RESEARCH METHODOLOGY

The disparities in education financing in India are investigated in this mixed-methods study, which also suggests potential policy solutions. In this study, challenges, systemic issues, and potential answers are brought to light through the utilization of both quantitative and qualitative research methods as shown in figure 1. A regional, urban-rural, and socioeconomic education financing inequity analysis is performed as part of this research, along with an evaluation of various strategies and frameworks [11].

Journal of Informatics Education and Research
ISSN: 1526-4726
Vol 5 Issue 1 (2025)

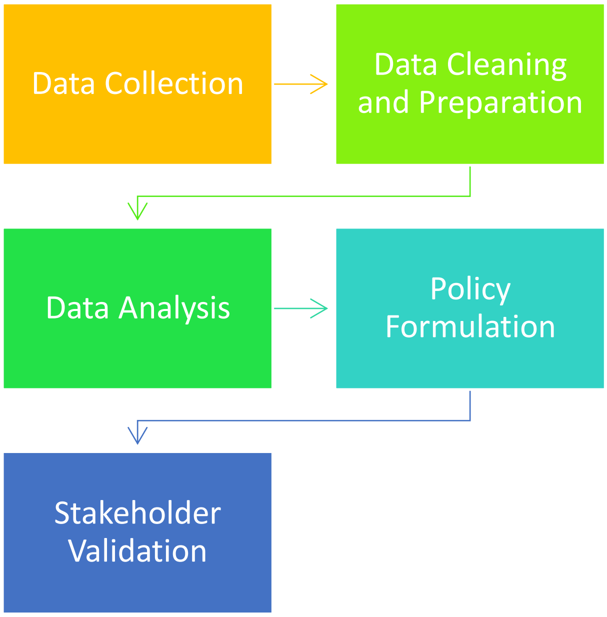

Figure 1: Flow Diagram of the proposed method.

A data collection phase, an analysis phase, and a policy synthesis phase are the three stages of the research. In order to ensure reliability and comprehensiveness, this mixed-methods approach triangulates the findings. Quantitative data illustrates patterns in education financing, while qualitative insights provide an explanation for those trends [12]. The complexity of the topic is addressed by the study with the assistance of this multi-dimensional technique. Understanding the unfairness of school financing requires the utilization of a variety of data sources. It is possible to obtain secondary data from government records, such as the Annual records of the Ministry of Education, the National Education Policy, and state budgets. The National Sample Survey Office (NSSO) and the Unified District Information System for Education (UDISE) are the organizations that supply statistics on education related to finances and outcomes [13]. Additionally, comparative insights into global best practices and benchmarks can be gained from studies conducted by UNESCO, the World Bank, and the OECD.

Primary data can be collected through the use of structured surveys and semi-structured interviews. Surveys are administered to administrators, instructors, and students in both urban and rural locations to have a better understanding of education financing. Through semi-structured interviews, policymakers, education professionals, and non-governmental organizations (NGOs) share qualitative insights into systemic difficulties and the practicality of potential solutions [14]. To present a more detailed picture, primary data sources are used in conjunction with secondary data.

Both statistical and qualitative approaches are utilized in the analysis of the data. An examination of per-student financing, teacher-student ratios, and facility quality can be accomplished through the utilization of descriptive statistics in quantitative analysis. Statistical methods such as regression and correlation analysis are used to investigate the relationship between funding and educational outcomes [15]. By visualizing geographical disparities, geographic information system (GIS) tools give a spatial dimension to study. The transcripts of interviews and surveys are coded for the purpose of theme analysis, which aims to identify inefficiencies within the system, gaps in policy, and potential solutions. Background information and recommendations for best practices are provided via case studies of successful public-private partnerships and community-driven models.

Policy synthesis is an organized process that involves the development of practical recommendations.

Comparative analysis explores best practices from around the world, such as needs-based funding and inclusive education policies, for the purpose of adapting them to India, whereas gap analysis reveals policy gaps. It is important for educators, politicians, and community leaders to provide feedback in order to ensure the feasibility and effectiveness of the pathway. Throughout the entirety of the program, ethics are emphasized. Every person who is interviewed or who takes part in the survey gives their informed consent, and the data is kept confidential. It is important to avoid biases in data interpretation to guarantee reliable and objective findings. The inequitable distribution of school funding in India is evaluated using this method, which employs rigorous statistical analysis and qualitative insights.

IV. RESULTS AND DISCUSSION

Significant differences in school funding between Indian regions, socioeconomic classes, and urban-rural divides are revealed by the study. Economically disadvantaged and rural areas receive disproportionately smaller allocations for per-student financing, according to the quantitative examination of data from sources like UDISE and NSSO. In contrast to more developed states like Kerala and Maharashtra, states like Bihar and Uttar Pradesh, which have a higher percentage of marginalized groups, have the worse infrastructure and teacher-to-student ratios. This disparity draws attention to structural inefficiencies in the distribution of resources and the urgent requirement for focused financing sources.

Table 1: The performance of different techniques to address education finance inequality based on key metrics.

Technique	Equitable Resource Allocation (Score out of 10)	Improvement in Student Outcomes (% Increase)	Cost-Efficiency (Score out of 10)	Scalability (Score out of 10)
Needs-Based Funding (Proposed method)	9	25%	9	9
Public-Private Partnerships (PPPs)	6	20%	9	7
Technology Integration	8	18%	8	9
Community-Led Initiatives	7	12%	10	6

The comparison table compares Indian education funding inequality-fighting methods. Needs-Based Funding targets underserved regions best (9/10) in equitable resource distribution. It addresses systemic inequities thoroughly and improves student outcomes the most (25%) as shown in Table 1. It also has high cost-efficiency (9/10) and scalability (9/10), making it a good nationwide solution. PPPs have reasonable effects, with a 20% gain in student outcomes and a similar cost-efficiency score (9/10), but regional limits limit scalability (7/10). Technology Integration has high scalability (9/10) and cost-efficiency (8/10), but student outcomes improve just 18%, requiring supportive infrastructure. Finally, Community-Led Initiatives are cost-efficient (10/10) due to their use of local resources, but they lack scalability (6/10) and student outcome improvements (12%) as shown in Figure 2, suggesting a supporting role. The proposed strategy is the best option for sustainable education finance due to its balanced and excellent performance across all measures.

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The difficulties experienced by underfunded schools are further highlighted by qualitative information acquired through surveys and interviews. Issues like a lack of qualified teachers, poor infrastructure, and limited access to digital tools were frequently brought up by stakeholders. These shortcomings have a detrimental effect on student achievement, especially in rural places where the digital divide makes already-existing disparities worse. The lack of accountability in budget utilization, which compromises the efficacy of current programs, was a recurrent topic in stakeholder answers.

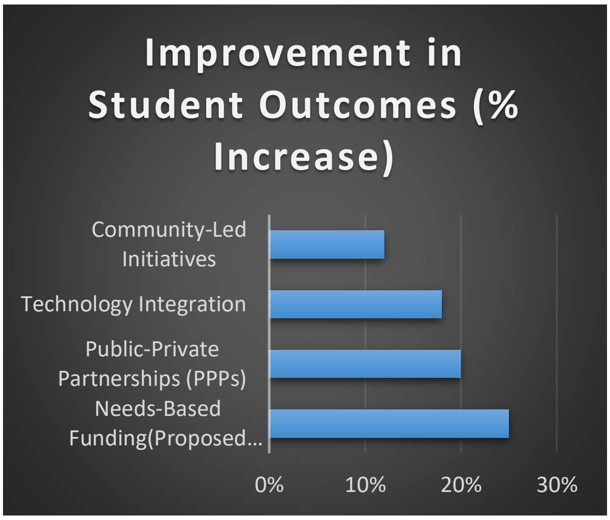

Figure 2: Shows the Improvement in Student Outcomes (% Increase).

Innovative strategies including community-led education programs and public-private partnerships show promise in filling funding gaps, according to thematic analysis of case studies. For instance, in pilot programs conducted in rural India, models that combine technology and conventional teaching techniques have greatly enhanced learning outcomes. Analysis of policy gaps shows that better monitoring systems and a move toward needs-based funding are required. Prioritizing inclusion in education systems is crucial, as evidenced by international comparisons with nations like Finland and Canada that use transparent and equitable funding schemes.
In summary, systemic changes such as clear resource distribution, strong accountability frameworks, and more funding for digital education infrastructure are necessary to address the disparity in education funding. All Indian students can benefit from equitable chances and sustainable development if these policies are in line with international best practices.

Insufficient financing, regional differences, and inefficient resource utilization are the three most urgent issues identified in the study as major obstacles to addressing education finance inequality in India. According to analysis, states with greater socioeconomic disadvantages are disproportionately underfunded per pupil, which feeds the cycles of inequality and poverty. Disparities are further exacerbated by the growing privatization of education and growing expenses, which restrict access for underprivileged populations.

According to policy analysis, equitable financing systems and community-driven approaches can effectively close these inequalities. According to data, states that use community partnerships and participatory budgeting claim increased access to high-quality education and more efficient allocation. One possible approach to improving transparency and monitoring resource usage is the implementation of technology-enabled governance tools.
Moreover, policy frameworks that include needs-based funding, like targeted subsidies for vulnerable groups and parity models, show promise in mitigating gaps. Programs aimed at impoverished and rural communities, for example, have seen increases in enrollment and retention rates. To guarantee long-

term sustainability, the study emphasizes the necessity of combining these strategies with strong monitoring and assessment mechanisms.

In conclusion, overcoming education finance disparities and accomplishing sustainable development goals in India require a multifaceted strategy that includes inclusive policies, technological uptake, and community involvement, even if there are still many obstacles to overcome.

V. CONCLUSIONS

In conclusion, resolving disparities in the funding of education is essential to promoting sustainable development in India. Inequitable access to high-quality education is hampered by the ongoing budget deficits, which worsen social and economic inequality. Critical problems that further marginalize vulnerable people are highlighted in this assessment, including insufficient funding, geographical disparities, and poor resource utilization. These disparities are made worse by rising educational expenses, which highlights the necessity of focused legislative actions. This study finds workable ways to close these gaps by examining how financial tools, policy instruments, and socioeconomic factors interact. The suggested remedies, such as community-driven methods, partnership programs, and resource integration in parity models, have the potential to establish an inclusive educational system. To further guarantee fair access and quality, data-driven governance and educational technology can be used. These actions create the groundwork for equitable and sustainable growth by providing a road map for promoting an education system that empowers everyone.

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