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Investment Without Equity? Government Funding Allocation and Its Educational Returns in CM Rise and Other Government Schools of Madhya Pradesh

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Abstract

Madhya Pradesh's CM Rise Schools initiative channels substantially more public funding into a designated set of government schools than the state's conventional Government Schools receive, on the premise that concentrated investment will produce proportionately superior educational outcomes. This paper examines that premise directly, comparing government funding allocation and academic achievement returns across the same sample of 20 schools (10 CM Rise Schools and 10 other Government Schools) drawn from the Ujjain division of Madhya Pradesh used in earlier comparative work on this initiative. CM Rise Schools receive approximately 3.2 times the average annual grant of other Government Schools (₹79 lakh against ₹24.8 lakh per school) and 2.5 times the per-student funding (₹28,000 against ₹11,000), yet recorded academic achievement (percentage of Class 10 students scoring above 60% in 2023-24) of 52.1% against 45.3%, a gap of only 6.8 percentage points. Expressed as achievement generated per rupee of per-student funding, other Government Schools are approximately 2.2 times more cost-efficient than CM Rise Schools. The paper argues that this pattern reflects diminishing marginal returns to concentrated infrastructure investment once basic adequacy thresholds are met, and that it raises a genuine equity concern: whether the same public funds, distributed more broadly rather than concentrated in a designated set of schools, would generate larger aggregate learning gains across the state's government school system as a whole.

Keywords: Government funding; Educational equity; Cost-efficiency; CM Rise Schools; Madhya Pradesh; Resource allocation; Human Capital Theory; Public education finance

1. Introduction

Public investment in school infrastructure and resources is typically justified on the expectation that additional funding produces proportionate, or at least substantial, improvements in student learning outcomes. Madhya Pradesh's CM Rise Schools initiative represents one of the most

concentrated applications of this logic in recent Indian school reform, directing capital investment of ₹29-38 crore per campus into a designated set of government schools with the explicit aim of transforming them into centres of educational excellence [9]. The scale of this investment, and its concentration in a subset of the government school system, makes the CM Rise initiative a natural setting in which to examine a question of direct relevance to public education finance generally: does additional funding, once basic adequacy is achieved, continue to generate proportionate returns in student achievement, or do returns diminish?

This paper addresses that question using the same 20-school dataset (10 CM Rise Schools and 10 other Government Schools of the Ujjain division of Madhya Pradesh) analysed in earlier comparative work on the CM Rise initiative [16,17], focusing specifically on the funding and academic achievement dimensions of that dataset and computing, for the first time in this line of research, a simple cost-efficiency measure relating funding level to achievement outcome for each category of school.

1.1 Rationale

Aggregate comparisons of CM Rise and other Government Schools have consistently found CM Rise Schools ahead on both funding and academic achievement [16,17], a pattern that is often read, implicitly, as evidence that the funding differential is justified by the achievement differential. Whether the size of the achievement gap is actually proportionate to the size of the funding gap, however, is a distinct question that aggregate comparison alone does not answer, and one with direct implications for how a state government facing a fixed education budget should allocate it.

1.2 Objectives of the Study

This paper pursues three objectives: (1) to compare government funding allocation, in total and by category, between CM Rise Schools and other Government Schools; (2) to compare the funding differential against the academic achievement differential between the two categories; and (3) to compute and interpret a simple achievement-per-rupee efficiency measure for each category.

2. Review of Related Literature

Human Capital Theory [1] provides the classical justification for public investment in schooling, treating expenditure on teacher quality, infrastructure, and learning resources as an investment that raises the future productivity of students. The theory predicts a positive relationship between investment and outcomes, but does not by itself specify whether that relationship is linear across the full range of possible investment, or whether it flattens once certain thresholds of adequacy are reached. Hanushek's [2,3] extensive empirical work on education production functions has repeatedly found that the observed relationship between school expenditure and student achievement, across many national contexts, is considerably weaker than Human Capital Theory's investment framing alone would predict, particularly once a basic level of resourcing is in place; his Input-Output model attributes this to variation

in how efficiently different schools convert a given level of input into instruction, rather than to the level of input itself.

Hattie's [4] synthesis of school-effect research reaches a compatible conclusion from a different direction, finding that structural and resource variables such as facilities spending carry smaller average effect sizes on achievement than teacher-related and instructional variables, implying that expenditure directed at physical infrastructure alone should be expected to show diminishing returns relative to expenditure directed at teaching quality. The World Bank's [5] review of education production in developing-country contexts similarly cautions that capital-intensive school reform models can outrun the absorptive capacity of an education system to convert new facilities into improved instruction, particularly where staffing and pedagogical support do not scale proportionately with infrastructure investment.

Sen's [6] Capability Approach reframes the funding question in explicitly equity terms, arguing that the relevant policy criterion is not only the average return generated by a given level of investment, but whether the distribution of that investment allows every child, regardless of which school they attend, the opportunity to develop their capabilities. UNESCO's [14,15] global monitoring of education systems has repeatedly identified this tension, terming the coexistence of well-funded flagship institutions and under-resourced mainstream schools within the same public system a form of 'quality within inequality', a framing directly applicable to the CM Rise / other Government School divide examined in this paper. Within the Indian context, Muralidharan's [7] review of school reform evidence found that the largest, most cost-effective gains in developing-country school systems typically come from targeted, lower-cost interventions such as teacher training and monitoring, rather than from capital-intensive infrastructure spending alone, a finding this paper's cost-efficiency comparison tests directly against the CM Rise funding model.

2.1 Research Gap

Prior comparative research on the CM Rise initiative has documented the scale of the funding differential between CM Rise and other Government Schools and has documented an accompanying achievement differential, but has not directly related the two by computing a comparative measure of achievement generated per unit of funding. This paper addresses that gap.

3. Research Methodology

3.1 Research Design and Data Source

This paper employs a descriptive, comparative research design [8], drawing on government funding data and Class 10 academic achievement data for the same 20-school sample (10 CM Rise Schools and 10 other Government Schools of the Ujjain division of Madhya Pradesh) used in the parent comparative study [16].

3.2 Cost-Efficiency Measure

For each category of school, a simple cost-efficiency measure was computed by dividing the percentage of Class 10 students scoring above 60% in 2023-24 by the approximate per-student annual funding for that category, expressed as achievement percentage-points generated per ₹1,000 of per-student funding. This measure is intended as an illustrative, first-order indicator of relative funding efficiency, not as a rigorous production-function estimate.

4. Results

4.1 Funding Differential (Previously Reported)

As reported in prior comparative work on this initiative [16,17], CM Rise Schools receive approximately 3.2 times the total average annual grant of other Government Schools (approximately ₹79 lakh against ₹24.8 lakh per school), with the largest relative gaps in ICT and digital learning and in professional development (each approximately 4:1), and 2.5 times the per-student funding (₹28,000 against ₹11,000). These figures are not reproduced in full table form here, since they are available in the cited source; this paper's original contribution begins from this point, relating the previously reported funding differential to the achievement differential and to a cost-efficiency measure not previously computed for this dataset.

4.2 Funding Differential Against Achievement Differential (Original Analysis)

Table 1: Funding Differential Against Achievement Differential

Measure	CM Rise Schools	Other Govt. Schools	Ratio (CM Rise : Govt.)
Per-Student Annual Funding	₹28,000	₹11,000	2.5 : 1
% Above 60% (2023-24)	52.1%	45.3%	1.15 : 1
Achievement per ₹1,000 Per-Student Funding	1.86 points	4.12 points	1 : 2.2

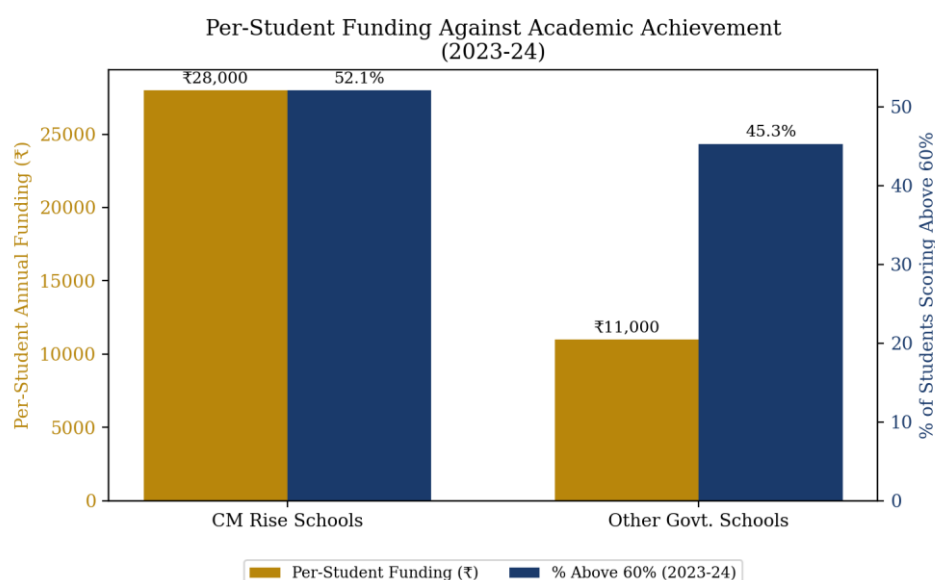


Figure 1: Per-Student Funding Against Academic Achievement, 2023-24

Table 1 shows that while CM Rise Schools receive 2.5 times the per-student funding of other Government Schools, the resulting achievement advantage is far smaller in proportional terms, a ratio of 1.15:1 rather than 2.5:1. Expressed as achievement generated per ₹1,000 of per-student funding, other Government Schools generate 4.12 percentage-points of above-60% achievement per ₹1,000 spent, against 1.86 percentage-points for CM Rise Schools, meaning other Government Schools are approximately 2.2 times more cost-efficient by this measure [2,3].

5. Discussion

5.1 Diminishing Marginal Returns to Concentrated Investment

The gap between the size of the funding differential (2.5:1) and the size of the achievement differential (1.15:1) is consistent with Hanushek's [2,3] long-standing finding that education expenditure and achievement are not related linearly once a threshold level of resourcing is reached. CM Rise Schools' additional funding appears to buy substantially better infrastructure, more frequent professional development, and superior technology access, all of which are documented advantages in the parent dataset [16,17], but these input advantages are not converting into a proportionate achievement advantage, consistent with Hattie's [4] finding that structural and resource inputs carry smaller effect sizes than instructional and teacher-related factors.

5.2 The Equity Cost of Concentration

The cost-efficiency finding, that other Government Schools generate more than twice the achievement return per rupee of per-student funding, carries a direct equity implication in Sen's [6] terms: the same aggregate public funding, if distributed more broadly across the government school system rather than concentrated in a designated set of CM Rise Schools, might plausibly generate larger aggregate gains in student capability development, even if no single school achieved CM Rise's absolute level of infrastructure. This is precisely the tension UNESCO [14,15] describes as 'quality within inequality', concentrated investment that improves outcomes at the schools receiving it, while foregoing potentially larger aggregate gains achievable through broader, more efficient allocation.

5.3 Implications for Public Education Finance

For policymakers managing a finite education budget, this analysis does not argue against continued investment in CM Rise Schools, whose absolute achievement level remains the highest in the sample, but it does suggest, consistent with Muralidharan's [7] finding that targeted, lower-cost interventions often outperform capital-intensive spending in cost-effectiveness terms, that incremental additional funding may generate larger state-wide achievement gains if directed toward extending professional development, ICT access, and basic infrastructure adequacy across the wider Government School network, rather than toward further deepening investment in schools that have already crossed a basic adequacy threshold.

6. Conclusion

This paper finds that CM Rise Schools' 2.5-fold funding advantage over other Government Schools in Madhya Pradesh is associated with only a 1.15-fold advantage in academic achievement, and that other Government Schools generate more than twice the achievement return per rupee of per-student funding. This pattern is consistent with established production-function evidence on diminishing returns to concentrated educational investment [2,3,4] and raises a genuine equity question, articulated through Sen's [6] Capability Approach and UNESCO's [14,15] concept of quality within inequality, about whether the state's education funding is being allocated in the manner most likely to maximise aggregate learning gains across the government school system as a whole.

7. Recommendations

- Future CM Rise-style investment decisions should incorporate a cost-efficiency assessment, not only an absolute-achievement assessment, when allocating additional public funding across designated and conventional government schools.
- Lower-cost, high-leverage interventions such as professional development and ICT access, shown here to be associated with efficient achievement gains, should be prioritised for extension to other Government Schools ahead of further capital-intensive infrastructure investment at already well-resourced CM Rise Schools.
- State education finance planning should set an explicit, minimum funding floor for all Government Schools, so that the efficiency advantage identified in this paper is not achieved at the cost of basic adequacy in the wider system.
- Future research should extend this cost-efficiency analysis to additional outcome measures beyond Class 10 board results, to test whether the pattern identified here holds across other dimensions of school quality.

8. Limitations

The cost-efficiency measure used in this paper is a simple ratio of achievement to funding and does not control for differences in student intake, prior achievement, or local socio-economic context between CM Rise and other Government Schools; it should be read as an illustrative, first-order indicator rather than a rigorous causal estimate of funding efficiency. The analysis is confined to Class 10 board achievement and to the same 20-school sample used in the parent study, which is itself confined to the Ujjain division of Madhya Pradesh.

References

- [1] Becker, G. S. (1993). Human capital: A theoretical and empirical analysis, with special reference to education (3rd ed.). University of Chicago Press.
- [2] Hanushek, E. A. (1995). Interpreting recent research on schooling in developing countries. World Bank Research Observer, 10(2), 227-246.
- [3] Hanushek, E. A. (2011). The economic value of higher teacher quality. Economics of Education Review, 30(3), 466-479.

- [4] Hattie, J. (2009). Visible learning: A synthesis of over 800 meta-analyses relating to achievement. Routledge.
- [5] World Bank. (2018). World development report 2018: Learning to realize education's promise. World Bank.
- [6] Sen, A. (1999). Development as freedom. Oxford University Press.
- [7] Muralidharan, K. (2017). New approaches to public school reforms in developing countries. *Annual Review of Economics*, 9, 353-380.
- [8] Cohen, L., Manion, L., & Morrison, K. (2018). Research methods in education (8th ed.). Routledge.
- [9] Government of Madhya Pradesh. (2021). CM Rise Schools: Policy framework and implementation guidelines. Department of School Education, Bhopal.
- [10] Aggarwal, J. C. (2008). Development and planning of modern education. Vikas Publishing House.
- [11] Mukherjee, P. (2014). Education reforms in India. Oxford University Press.
- [12] Moon, B. (2007). Attracting, developing and retaining effective teachers: A global overview of current policies and practices. *International Journal of Educational Development*, 27(4), 374-384.
- [13] Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives*, 8(1), 1-44.
- [14] UNESCO. (2015). Education 2030: Incheon Declaration and Framework for Action. UNESCO.
- [15] UNESCO. (2021). Reimagining our futures together: A new social contract for education. UNESCO.
- [16] Shrivastav, A., & Pandey, R. P. (2026a). Educational practices, policies, and student outcomes: A comparative study of CM Rise and other Government Schools in Madhya Pradesh. *Scientific Culture*, 12(4), 11350-11363.
- [17] Shrivastav, A., & Pandey, R. P. (2026b). Visualizing educational reform: A comparative analysis of CM Rise and other Government Schools in Madhya Pradesh. *ShodhKosh: Journal of Visual and Performing Arts*, 7(13s), 167-178.
- [18] World Bank. (2004). Books, buildings, and learning outcomes: An impact evaluation of World Bank support to basic education in Ghana. World Bank Operations Evaluation Department.