2 CHAPTER: Review of Related Literature

2.1 Introduction

A robust review of existing literature is fundamental to any rigorous academic inquiry. It serves to contextualize the research problem within the broader scholarly landscape, identifies existing knowledge, and critically, illuminates the gaps that the current study aims to address. This chapter systematically reviews national and international studies pertaining to school enrolment trends, the impact of school infrastructure, comparative analyses of different government school types, and related educational disparities. Furthermore, it outlines the theoretical foundations that underpin this research, providing a conceptual lens through which the empirical findings will be interpreted and discussed.

2.2 Theoretical Frameworks of the Study

The present study is conceptually grounded in two prominent theoretical frameworks that offer distinct yet complementary perspectives on the relationship between educational inputs and outcomes:

Psacharopoulos & Woodhall (1985) This economic model, widely applied in educational research, posits that educational outcomes or "outputs" are a direct function of various inputs. These inputs can include tangible resources such as school infrastructure, teacher quality, curriculum, and financial investments. Within this framework, school infrastructure is explicitly recognized as a critical educational input that directly influences outputs like student enrolment, attendance, and academic achievement. The model provides a quantitative lens to examine how the availability and quality of physical facilities such as classrooms, laboratories and sanitation can impact student's presence and retention in the educational system. By analysing infrastructure as an input, the study seeks to understand its functional relationship with enrolment patterns.

2.3 Studies on School Enrolment: National and Global Perspectives

School enrolment is a multifaceted phenomenon, influenced by a complex interplay of socioeconomic conditions, parental educational attainment, prevailing gender norms and the physical environment and quality of the school itself.[1] Understanding these factors is crucial for addressing educational access and equity.

National Studies: In the Indian context, research has consistently pointed to the significance of various determinants. Kingdon (2007) highlighted that parental perceptions of school quality play a crucial role in their decisions regarding where to enrol their children. This suggests that factors beyond mere accessibility, such as perceived infrastructural quality or teaching standards, influence choices. Mehrotra (2006) established a direct correlation between high dropout rates in government schools and deficiencies such as poor infrastructure and a lack of incentives for students to remain in school. Conversely, Tilak (2015) observed that central government schools generally maintain stable enrolment, a trend attributed to their structured administration and more consistent funding mechanisms. Recent national data from the Unified District Information System for Education Plus (UDISE+ 2023-24) provides a contemporary snapshot of enrolment trends. India's school education system serves a vast student population of 24.8 crore, with government schools accounting for 69% of the total institutions and enrolling 50% of the students. The National Education Policy (NEP) 2020 has set an ambitious target of achieving a 100% Gross Enrolment Ratio (GER) by 2030. While the GER at the primary level is near universal (93%), there remain notable gaps at the secondary (77.4%) and higher secondary (56.2%) levels, indicating a significant drop-off as students progress through the system. Dropout rates, though steadily declining, remain a concern, standing at 1.9% for primary, 5.2% for upper primary, and 14.1% for secondary levels. The Annual Status of Education Report (ASER) 2024 further confirms high overall school enrolment rates for the 6-14 age group, exceeding 95% for nearly two decades and remaining stable at 98.1% in 2024. This report also indicates a slight increase in enrolment in government schools for this age group, from 65.5% in 2018 to 66.8% in 2024.

Global Studies: International research corroborates the importance of infrastructure in driving enrolment. A global study conducted by UNESCO in 2018 found that countries implementing targeted infrastructure development initiatives witnessed a substantial 15–25% increase in secondary school enrolment, with a particularly pronounced impact on girls' participation.

The analysis of these national and global studies reveals that while India has achieved near-universal primary enrolment, the declining enrolment at secondary and higher secondary levels, coupled with persistent dropout rates, suggests that initial access is not sufficient. Instead, the quality of infrastructure and the overall learning environment become critical determinants for student retention and progression. This indicates a

funnel effect in the education system, where early access is not consistently matched by conditions conducive to sustained learning.

2.4 Studies on School Infrastructure: National and Global Perspectives

School infrastructure is not merely a collection of buildings; it is a fundamental determinant of educational access, student retention, and effective learning outcomes. The physical environment of a school profoundly impacts the teaching-learning process and student well-being.

National Studies: In India, various studies and reports have consistently highlighted the critical role of infrastructure. The World Bank (2011) underscored that schools equipped with adequate toilets, well-stocked libraries, and safe buildings consistently report higher attendance rates and lower dropout rates. This emphasizes the direct link between basic amenities and student presence. A report by the Ministry of Human Resource Development (MHRD) in 2019 revealed a substantial infrastructure gap in state-run schools across various Indian states, particularly in urban slum areas. Reddy and Sinha (2010) found that improvements in basic facilities such as proper classrooms, reliable electricity, and access to clean drinking water significantly boosted enrolment, especially among girls. Similarly, Banerjee et al. (2012) highlighted that even seemingly simple improvements, like functional toilets and secure boundary walls, had a measurable positive effect on student participation.

More recent national data from UDISE+ 2023-24 paints a mixed picture of progress and persistent challenges. While there have been some improvements in basic facilities, critical gaps remain, particularly in digital infrastructure. Only 57.2% of schools across the country possess functional computers, and a mere 53.9% have internet access. Furthermore, only 52.3% of schools are equipped with ramps, indicating accessibility challenges. A significant number of schools, approximately 1.52 lakh out of 14.71 lakh, still lack functional electricity. Despite these deficits, the Annual Status of Education Report (ASER) 2024 indicates small improvements in certain areas: the fraction of schools with usable girls' toilets increased from 66.4% in 2018 to 72% in 2024, and the proportion of schools with drinking water available rose from 74.8% to 77.7% over the same period. The availability of books other than textbooks also saw an increase, from 36.9% to 51.3%. However, some North-eastern states continue to lag in these basic facilities.

Global Studies: Globally, the importance of infrastructure is widely recognized. A UNESCO (2020) report affirmed that adequate infrastructure positively correlates with increased enrolment and retention rates. A significant international contribution to this understanding is *The Impact of School Infrastructure on Learning: A Synthesis of the Evidence* by Barrett, Treves, and Shmis (2019). This book synthesizes extensive research, emphasizing that "accessible, well-built, child-centred, synergetic and fully realized learning environments" are crucial for improved student learning. It also underscores the ongoing need for rigorous research to establish verifiable and reliable connections between facility quality and student outcomes, guiding decision-makers in resource allocation.

The evidence suggests that despite some national improvements in basic infrastructure, significant gaps persist, especially in digital resources and specialized facilities. This perpetuates the rural-urban and government-private school divide, directly impacting learning environments and student engagement. The continued underinvestment in school infrastructure, as highlighted by reports like ASER 2024, indicates that while basic amenities are slowly improving, the provision of modern infrastructure essential for 21st-century learning remains largely inadequate, particularly in many state government schools. This contributes to the inequality of educational opportunity.

2.5 Comparative Analyses of Central and State Government Schools

The educational landscape in India is characterized by a significant structural difference between Central and State Government schools, which operate under distinct resource and administrative frameworks. This divergence often leads to notable differences in their performance and offerings.

Govinda and Josephine (2004) attributed this success to factors like smaller student-teacher ratios, availability of digital laboratories, and functional infrastructure. These schools typically benefit from more stable funding and centralized oversight, which allows for consistent maintenance and resource provisioning. Tilak (2015) also noted the stability of enrolment in central government schools, linking it to their structured administration and better funding. Furthermore, the CBSE (2021) observed a positive correlation between infrastructure adequacy in central government schools and increased enrolment and retention rates, a correlation that was often inconsistent in state schools due to infrastructural deficits.

In stark contrast, State Government schools frequently face systemic challenges. The

Azim Premji Foundation (2017) highlighted that these schools often experience delays in receiving maintenance grants and in teacher appointments, factors that directly affect enrolment consistency and overall quality. Kumar (2020), in a comparative study of Kendriya Vidyalayas and state board schools in Delhi, concluded that the physical and academic infrastructure was significantly superior in the former.

Recent academic papers further reinforce these disparities. A study on academic achievement motivation during the COVID-19 pandemic found that private school students had significantly higher academic achievement motivation than government school students at the secondary level. While this specific study compares government (implicitly including state) with private schools, it broadly aligns with the understanding that government schools, particularly state-run ones, often face greater challenges in maintaining student motivation and performance compared to their better-resourced counterparts. Another analysis of the Indian educational system during COVID-19 highlighted the varying technological preparedness of stakeholders and how this created digital equity and inclusivity issues for digital learning in Indian schools, especially in government settings.

The consistent superior performance and infrastructure of Central Government schools compared to State Government schools are not merely anecdotal observations. They are systematically linked to their distinct funding mechanisms, greater administrative autonomy, and more effective policy implementation.

2.6 Urban Education and School Access Dynamics

Urban settings, while often perceived as hubs of opportunity, present a unique set of challenges and dynamics concerning school access and quality. These challenges are exacerbated by factors such as high population density, significant internal migration, and pronounced socio-economic diversity within urban populations.

Research on urban education in India reveals that despite the concentration of resources in cities, disparities persist. The PROBE Report (1999) emphasized that urban poverty and limited physical space often result in state schools being severely under-resourced, even as they face increasing enrolment pressure due to population growth and migration. This creates a paradoxical situation where demand for public education is high, but the capacity to deliver quality education is constrained.

A study by NUEPA (2014) focusing on cities like Bhopal found that students from low-income families frequently enrol in state schools primarily when central schools are

unavailable or inaccessible. This suggests that for many urban poor families, state schools are a fallback option rather than a preferred choice, indicating a perceived or actual gap in quality and facilities. Ramachandran (2013) further noted that social aspirations often lead parents to seek better infrastructure and discipline in centrally managed schools, even if it means overcoming logistical or financial hurdles. This highlights that parents, when given a choice, are often driven by the desire for better learning environments for their children.

The presence of both state and central schools' side-by-side in urban centres like Bhopal makes the contrasts particularly stark. While central schools often boast advanced ICT labs, structured pedagogies, and superior maintenance, many state schools may operate in dilapidated buildings, lack basic amenities, or share spaces with other institutions. These differences can actively discourage enrolment in state schools, especially among the urban poor who, despite their socio-economic constraints, still aspire for quality education.

Urbanization, therefore, while offering perceived opportunities, also concentrates educational disparities. Socio-economic factors and parental aspirations create a demand for quality that many state schools, burdened by resource constraints and administrative challenges, often fail to meet. These dynamic pushes vulnerable populations into under-resourced institutions, perpetuating a cycle of inequality even within the seemingly resource-rich urban environment.

2.7 Gender and Enrolment: The Interplay with Infrastructure and Policy

Gender plays a crucial role in educational access and retention, with girls' enrolment being particularly sensitive to the quality and safety of school infrastructure. The presence or absence of certain facilities can significantly influence whether girls attend school and remain enrolled.

Jha and Kelleher (2006) documented how the lack of basic amenities such as functional toilets, secure boundary walls, and the absence of female staff can actively discourage girls from attending state government schools. These infrastructural deficiencies directly impact girls' privacy, dignity, and safety, making the school environment less conducive for them. UNICEF (2020) further affirmed that proper sanitation facilities and secure infrastructure are directly correlated with higher attendance and retention rates among adolescent girls in public schools. This highlights that investments in

gender-sensitive infrastructure are not merely about compliance but are essential for fostering an inclusive learning environment.

Bandyopadhyay and Subrahmanyan (2008) observed that centrally managed schools, due to their stricter guidelines on gender sensitivity and often better resource allocation, tended to achieve higher gender parity in enrolment compared to state schools. This suggests that a more centralized and standardized approach to policy implementation and infrastructure provision can positively impact gender equity.

Recent national studies on gender disparities in India reinforce these findings. Gender inequality in education remains prevalent, despite numerous policy efforts aimed at bridging this gap. While there has been an improvement in overall enrolment at the primary level, disparities persist at higher educational levels. The 2011 census data, for instance, revealed a significant literacy rate gap, with only 63% of females being literate compared to 80% of males. This gap directly impacts gender equality, particularly in higher education and employment opportunities. Inadequate gender-sensitive infrastructure is identified as a key challenge, alongside entrenched social norms, domestic responsibilities, and deep-rooted societal discrimination that create barriers for girls. Recent reports indicate that girls consistently lag behind boys in enrolment and opportunities across all educational levels, from pre-primary to higher education.

The persistence of gender disparities in education, particularly in state schools, is not solely a cultural issue but is deeply intertwined with the tangible lack of gender-sensitive infrastructure. This directly impacts girls' safety, dignity, and ultimately, their access and retention in schooling. Addressing these infrastructural gaps is a fundamental prerequisite for achieving genuine educational equity and empowering girls in India.

2.8 Identified Research Gaps and the Present Study's Contribution

Despite the extensive body of literature on education in India, several critical research gaps persist, particularly concerning localized comparative analyses of school systems. The present study is specifically designed to address these identified voids:

- **Lack of localized comparative studies:** Most national surveys aggregate data, often missing the nuanced intra-urban variations in infrastructure and enrolment between different types of government schools in mid-sized Indian cities like Bhopal.
- **Missing intra-urban variation data:** There is a scarcity of research that delves

into how educational disparities manifest within a single urban setting, where central and state government schools coexist and serve the same population.

- **Limited school-level comparative infrastructure audits:** Few studies provide a granular, school-level comparative audit of infrastructure that is directly aligned with student enrolment statistics, making it difficult to draw precise correlations between physical facilities and student participation.
- **Limited gender-segregated analysis:** There is a notable lack of gender-segregated analysis of enrolment patterns in relation to infrastructure quality specifically within urban government schools, which is crucial for understanding and addressing gender-specific barriers to education.

By focusing on these specific gaps, the present study offers a unique and critical contribution to the existing empirical evidence and policy dialogue. It provides a localized, comparative, and gender-disaggregated analysis of infrastructure and enrolment, offering granular data that is often overlooked by broader national surveys. This detailed approach allows for a more nuanced understanding of the institutional and systemic factors affecting student participation and retention within the dual public education system in India.

2.9 Conclusion

It draws insights from both national and global research. The review consistently reveals that while central government schools generally benefit from superior infrastructure and exhibit greater enrolment stability, state government schools frequently confront systemic deficits in both areas. Despite ambitious national policies aimed at universal access and quality, the on-ground reality often presents a fragmented picture, characterized by persistent disparities.

Crucially, the literature highlights a significant scarcity of city-level comparative studies, particularly in urban centres within states like Madhya Pradesh. The present study fills a critical void by investigating Bhopal's central and state government secondary schools within a focused comparative framework, specifically examining infrastructure availability and enrolment patterns. This approach is designed to generate actionable insights that can inform targeted policy interventions and improve educational equity.