ZIBELINE INTERNATIONAL™ PUBLISHING

ISSN: 2617-9415 (Online)
CODEN: ESSDAX

Education, Sustainability & Society (ESS)

DOI: http://doi.org/10.26480/ess.01.2026.01.10

RESEARCH ARTICLE

EDUCATIONAL DEPRIVATION AND ENVIRONMENTAL INEQUALITY IN PERI-URBAN SLUMS: SOCIO-SPATIAL AND INSTITUTIONAL BARRIERS TO EDUCATION — A CASE STUDY OF JAWAHAR NAGAR, HYDERABAD

M. Kamraju

Faculty of Geography, Army Public School Golconda, Hyderabad

**Corresponding Author Email: kamraju65@gmail.com*

ARTICLE DETAILS

Article History:

Received 23 February 2025
Revised 12 March 2025
Accepted 20 April 2026
Available online 11 May 2026

ABSTRACT

Living on the edges of cities often means missing out on learning opportunities, especially where social exclusion meets uneven urban growth. In Hyderabad's outskirts, one neighbourhood called Jawahar Nagar shows how physical distance shapes school attendance and outcomes. Though official numbers paint part of the picture, deeper patterns emerge when maps meet policy gaps. Instead of isolated causes, overlapping forces - like flooding risks, unclear land rights, misaligned administrative boundaries - shape whether children attend classrooms regularly. Government records, past research, and city surveys help trace how dirt roads, seasonal displacement, or lack of nearby schools add up over time. When institutions fail to adapt, even available services stay out of reach. Not proximity alone but layers of instability define who gets taught, who drops out. Hidden behind low enrolment rates are daily struggles tied to housing insecurity and shifting terrain. Each barrier feeds another: poor drainage affects health, illness disrupts schooling, missed lessons reduce completion chances. Without coordinated oversight, fragmented efforts barely dent systemic setbacks. What looks like an education problem reveals itself as something wider - a story written by land status, pollution exposure, planning blind spots. Even when schools exist within kilometres, real access depends on much more than distance. Despite its position on the outskirts, Jawahar Nagar faces hurdles in reaching schools due to weak transport links and underdeveloped facilities. Living near dump areas brings health risks, worsened by dirty surroundings and unreliable water supply, which in turn disrupts how often kids attend class and their ability to concentrate. Schools are few, teaching standards lag, and rules meant to help often fail in practice - this deepens the gap in access. What stands out is that poverty alone does not explain poor schooling; it emerges instead from a mix of where people live, what conditions they face daily, and how systems fall short. Though often treated separately, upgrading schools' ties closely to how land is managed and cities grow. When neighbourhoods expand without thought, classrooms suffer just as much as green spaces do. One solution shape another - better layouts mean shorter walks to school, less pollution along the route. Without syncing these efforts, gains in one area weaken in another. Fair chances to learn depend on more than textbooks - they rely on clean air, safe paths, stable roads. Progress sticks only when design, learning, and nature are weighed together. Ignoring links leads to gaps widening where help matters most.

KEYWORDS

Educational Deprivation, Peri-Urban Slums, Environmental Inequality, Socio-Spatial Marginalization, Institutional Barriers, Hyderabad

1. INTRODUCTION

Fast-growing towns across India have reshaped city layouts and living patterns in recent years. On the edges of these expanding centers, land once used for farming now shifts toward mixed uses without clear planning rules. Though connected to cities economically, such zones frequently lack proper roads, water lines, or waste systems. Without official oversight, residents face uneven service delivery despite their proximity to urban hubs. On the outskirts of Hyderabad, Jawahar Nagar reveals how fast city growth can deepen social divides while worsening ecological strain. Around places like this, unplanned development quietly spreads, drawing people seeking work into fragile living conditions. Far from central services, these neighbourhoods grow without stable infrastructure, shaped by necessity rather than design. Migration fuels much of this change - workers arrive hoping for better lives yet settle in zones exposed to pollution and flooding. As the city pushes outward, its edges absorb human effort and resilience, often without offering security or basic support.

Though cities often house strong schools, children in informal settlements on the edges still struggle to reach them (Tilak, 2002). Unequal access persists despite progress elsewhere. Because poverty shapes opportunity,

Quick Response Code	Access this article online	
	Website: www.educationsustability.com	DOI: 10.26480/ess.01.2026.01.10

Cite the Article: M. Kamraju (2026 Educational Deprivation And Environmental Inequality In Peri-Urban Slums: Socio-Spatial And Institutional Barriers To Education— A Case Study Of Jawahar Nagar, Hyderabad . *Education, Sustainability & Society,(ESS), 9 (1): 01-10.*

low-income families find options limited. Physical distance matters just as much as cost when it comes to attendance. Schools might exist nearby, yet pollution, unsafe routes, or lack of infrastructure keep students away. Rules and systems meant to help sometimes deepen exclusion instead.

1.1 Problem Statement

Even with policies pushing for wider school access, gaps remain clear when looking at how children in peri-urban slums experience education. Places like Jawahar Nagar face deeper learning disadvantages because of their location - remote spots, weak transport links, and unplanned housing make reaching classrooms harder (Govinda and Bandyopadhyay, 2010).

Children miss class more often when they live near trash dumps or lack safe drinking water. Health suffers under such conditions, which drags down learning results (Satterthwaite, 2016). Schools in these areas tend to have fewer resources, making progress harder still. Broken systems fail to deliver proper buildings, trained staff, or working policies. When rules exist but go unenforced, problems grow quietly beneath the surface.

Facing education gaps in informal settlements near cities means looking beyond schools alone. What shapes access sits at crossings - where neighborhood layout meets uneven services, weather risks tie into daily survival, policy blind spots linger. These layers build up, quietly shaping who learns, who does not.

1.2 Research Gap

Though much research into city schooling emphasizes financial aspects like low earnings, family wages, or caregiver learning levels, deeper layers remain unaddressed. Peri-urban zones reveal gaps beyond money - layers missed even when numbers seem clear (PROBE Report, 1999). One way to look at it: research into uneven environmental risks shows disadvantaged groups often face greater harm, yet connections to learning performance remain mostly unexplored (Agyeman et al., 2016). It just so happens that few investigations piece together place-based factors, pollution levels, and policy settings when studying school access. In Hyderabad, studies often explore city expansion along with informal housing challenges - yet rarely link ecological disparities to learning deficits in outskirts like Jawahar Nagar. To fill that space, this work turns toward layered analysis instead.

1.3 Research Questions

This work follows several key questions driving the inquiry forward:

- What role does social and spatial exclusion play in shaping school access within informal settlements on city edges?
- How might unequal access to clean environments shape who gets to learn - and how well they succeed?
- What institutional barriers hinder access to quality education in Jawahar Nagar?
- What role do such elements play when combined, shaping unequal access to learning?

1.4 Study Goals

The main objectives of this study are:

- Looking into how social and place-based elements shape schooling availability in Jawahar Nagar
- Looking at how uneven environmental conditions affect who gets involved in education
- Examining how organizational structures limit access to learning opportunities
- To explore the interlinkages between spatial, environmental, and institutional factors
- To suggest policy measures for improving educational access in peri-urban slums

1.5 Structure of The Paper

Eight parts make up this paper. After the opening section comes a look at past work on city growth, learning gaps, and uneven ecological impacts. Building from that base, the third part introduces key ideas shaping the analysis. Next, attention turns to Jawahar Nagar, described fully in Section 4. Data origins and how they were used appear in the fifth segment. Results appear in Section 6, where socio-spatial, environmental, and institutional obstacles take center stage. Following that, Section 7 connects observed outcomes to prior research, drawing lines between evidence and established ideas. The study wraps up in Section 8, offering distilled reflections alongside practical guidance for decision-makers.

2. Literature Review

2.1 Urban expansion and growth at city edges

Though cities grow fast in poorer nations, their edges blend countryside with city life without clear design. Where farms once stood, new neighborhoods appear overnight - crowded, shifting, shaped more by need than rules. Planning bodies struggle to keep up, especially around major Indian cities where people move faster than pipes and roads can follow. Services like clean water or waste removal reach these spots slowly - if they arrive at all. Growth surges ahead while official systems lag behind, leaving gaps in how places function.

On the outskirts of cities, change unfolds quietly - new arrivals settle here, yet systems meant to support them falter. Hyderabad shows how makeshift neighborhoods grow when movement outpaces planning. Though people live close to city life, essential structures rarely follow. Cut off from mainstream development paths, these zones face uneven outcomes in schooling, medical care, and basic amenities. Without consistent policy attention, gaps persist despite proximity to urban resources.

2.2 Slums and Unequal Spaces

Among city landscapes, slum areas stand out as markers of unequal resource sharing. Where people live often ties directly to their access - or lack thereof - to basic needs, shaping patterns of exclusion. These spaces accumulate hardship, not by accident, but through how urban systems develop over time. Living far from hospitals, schools, or clean water becomes normal for some simply because of location. Harvey noted this in 2008: geography can enforce disadvantage just like income or education level might.

Not only do slums in India face severe overcrowding, but they also deal with unstable housing rights and poor access to basic services - a mix that deepens social neglect (UN-Habitat, 2010). Sitting mostly on city edges or risky terrain, these settlements find themselves pushed further from reliable water, sanitation, and support networks. Though built close to economic centers, physical placement often ensures isolation rather than integration into broader urban life.

Children living in informal settlements often struggle to reach schools, limited by how far they must travel, lack of transport options, because of where they live (Srinivasan, 2013). Unequal conditions go beyond location - money, policy choices, community attitudes shape who gets left behind. What looks like distance on a map turns into lifelong gaps through repeated neglect.

2.3 Educational Gaps in City Outskirts

Despite higher school enrollment, children in city slums often face irregular attendance, dropouts, and weak academic progress. Though laws like the Right to Education Act widened entry into classrooms, uneven teaching standards and interrupted learning remain common (Govinda and Bandyopadhyay, 2010). When families live on low incomes in cities, kids might skip school simply because survival comes first. Working long hours after class leaves little energy for homework or morning lessons. Some stay home to care for siblings while parents work shifts far from the neighbourhood. Missing days adds up until returning feels pointless. Without help at home, reading and math fall behind without notice. Earning even a small amount can seem more useful than staying in education. Over time, gaps in learning make classrooms feel alienating. Staying enrolled becomes harder when basic needs go unmet. When parents lack schooling themselves, their kids often face tougher paths to learning. Though some programs exist, many families in crowded urban zones do not know they can benefit. Because adults miss information, children stay out of classrooms more often. Where households struggle, school gaps grow deeper over time.

2.4 Environmental Inequality and Justice

Not everyone faces the same risks when it comes to dirty air or unsafe drinking water - some groups suffer more due to social and economic margins. Tied tightly to this idea is fairness in nature's rewards and harms, where equal treatment matters most (Agyeman et al., 2016). While one community breathes fumes daily, another enjoys green spaces - a gap that reveals deeper systemic splits. What counts is how fairly we share both damage and care across populations. Despite efforts, clean water remains scarce within city slums - waste piles up, gutters run openly, health suffers (Satterthwaite, 2016). Near city edges, these problems sharpen; makeshift homes crowd close to landfills or factories, worsening exposure. Children

miss school more often when air quality is poor, affecting their learning over time. Though studies show dirty surroundings weaken concentration, few researchers connect pollution directly to grades. One reason might be how data on classrooms and toxins are gathered separately. Health problems tied to bad environments tend to hit disadvantaged students hardest. Since attention spans suffer in polluted spaces, test results may drop without clear explanation. Evidence from UNICEF in 2012 already flagged these patterns. Still, the way nature shapes schooling stays mostly at the edges of research.

2.5 Institutional Barriers in Education

Despite progress elsewhere, schools in underserved areas often face systemic challenges that limit learning outcomes. Poor building conditions slow enrollment, while gaps in staffing reduce instructional effectiveness - factors tied closely to inconsistent policy execution (Kingdon, 2007). In places where city edges meet countryside, authority splits between two kinds of government create confusion. Because responsibilities blur, basic services sometimes vanish into the gap - no one takes blame (Narain, 2009). Schools there? Often short on everything: space, staff, supplies. Crowds pack rooms meant for fewer students, making lessons harder to follow. Migrant families often face hurdles getting help from public programs because paperwork is missing or systems move too slowly (Govinda and Bandyopadhyay, 2010). When kids enter classrooms, bias tied to social rank or economic status can deepen existing gaps - making school support less likely to succeed.

2.6 Synthesis of Literature and Research Gap

Though cities grow, learning chances often do not spread evenly. Factors like space, money gaps, nature's impact, and systems behind schools matter deeply. Still, research usually looks at one piece at a time. Rarely does it tie them together clearly. Though much attention goes to income and background when looking at education gaps, uneven environmental conditions often get overlooked in shaping student opportunities. In parallel, work on fair treatment across ecological policies seldom includes school achievement as part of the picture. Despite growing attention, few models link social exclusion, land pressures, and weak governance in peri-urban informal settlements. Research grounded in particular neighborhoods - Jawahar Nagar in Hyderabad, for instance - remains sparse.

This work aims to close existing holes through a broad lens, looking where social location, nature, and systems meet - shaping how learning is limited in outskirts settlements. While place plays a role, so do rules and surroundings, forming layered barriers far beyond access alone. What counts emerges not just from poverty but from how space tightens its grip under weak support. Each condition feeds another, yet none act alone in holding back schooling chances.

3. Conceptual Framework

3.1 Spatial Inequality Theory

Geographic disparities shape how people experience access to basic needs, placing some further from support systems than others - education included (Harvey, 2008). On city edges, exclusion takes physical form: certain groups wind up clustered where infrastructure lags. On the edges of cities, places like Jawahar Nagar often lack basic infrastructure because they sit beyond urban cores. Far from main roads and services, these areas make reaching schools difficult; transport links tend to be weak or missing altogether. Because of their position, residents face barriers that go beyond distance - opportunity itself becomes unevenly distributed. According to where people live shapes what they can become, turning geography into a quiet force behind inequality (Soja, 2010).

3.2 Capability Approach

What counts is not just school attendance, but whether people can actually learn. Sen's framework from 1999 shifts focus toward real freedoms people have - like using education meaningfully. Simply opening classrooms misses the point if students cannot gain skills. Opportunity means little without the chance to use it well. Where city edges blur into informal settlements, young lives face hurdles rooted in lack of money, illness, and unsafe surroundings. Because of these, going to school often becomes irregular, concentration falters, success lags behind. Instead of only counting enrollment numbers, a different lens looks at what truly shapes whether learning can happen - conditions shaping daily reality (Robeyns, 2005).

3.3 Environmental Justice Framework

Facing uneven green access, low-income neighborhoods frequently endure heavier pollution loads - sites like landfills or toxic rivers cluster close to their homes. Though intended for all, city planning rarely treats nature's advantages equally; instead, exclusion shapes exposure patterns silently. Slum areas, typically sidelined by policy, settle where danger lingers longest: beside smoke-heavy factories, downstream from chemical leaks, on ground others refuse. A gap widens when race or income steers location choices made long ago; today's residents pay that cost daily. Not coincidence but structure places risk where voices are weakest. Behind clean-slate maps lie layers of past decisions favoring comfort elsewhere.

Health struggles emerge where dirty surroundings meet sparse services - Jawahar Nagar shows how filth, unsafe water, and trash shape daily risk. Missing school becomes common when illness spreads through polluted settings, while learning slows under physical strain. One overlooked piece? Where a child lives often decides what their body endures - and what their mind can manage. Unequal environments feed unequal outcomes; clean spaces matter just as much as textbooks in closing gaps.

3.4 Framework Components

Shaped by three linked parts, the conceptual framework forms a foundation for understanding how learning results take form. Though separate in idea, each piece gains meaning only when seen working through the others. One does not follow after another - instead, they overlap, shift, and respond. Their connection isn't fixed but adjusts depending on context. Together, these elements guide what happens inside classrooms without dictating exact outcomes.

3.4.1 Socio-Spatial Marginalization

Living on the edges shapes how people are left out. Far from city centers, communities face gaps in basic services. Their position limits chances to improve life conditions. Being poor adds pressure when systems fail them. Distance combines with lack of support to deepen isolation. Weak roads, water, and power mark daily existence. Social status links tightly to where one resides. Opportunities slip further away under these pressures.

Out here in Jawahar Nagar, getting to school takes effort - long walks, unreliable transport, homes scattered without clear layout. Because many families live on small incomes, move frequently, or have little schooling themselves, kids miss out more easily (Kundu, 2009). When parents haven't studied much, they struggle to support learning at home. Often, it is girls who feel these barriers most - their attendance drops when streets feel unsafe or cultural expectations pull them away. Education slips further from reach under those conditions.

3.4.2 Environmental Inequality

What sets certain areas apart is how heavily some neighborhoods bear the burden of pollution and ecological harm. Slums often face troubles like faulty sewage systems, irregular trash collection, or missing access to safe drinking water - problems that quietly shape daily survival. Kids stuck in tough environments face higher risks of getting sick - breathing issues or infections from dirty water - often missing school, falling behind in learning. When classrooms lack clean air or safe spaces, focus slips, thinking slows, skills stall. Unequal surroundings quietly widen gaps in education. What surrounds a child shape how they learn, every single day.

3.4.3 Institutional Barriers

What stops people from getting a good education often lies inside the system itself. Problems like poorly built schools stand in the way just as much as too few qualified teachers do. When rules meant to improve learning fail to work properly, progress slows down. Governance issues shape outcomes more than they seem to at first glance. Where city meets countryside, confusion between local authorities weakens basic services (Narain, 2009). Without proper papers or knowledge, many poor families struggle to benefit from public programs. Though meant to help, school systems sometimes deepen inequality instead of reducing it (Govinda and Bandyopadhyay, 2010).

3.5 Interlinkages Between Components

Situated at the core of the system, socio-spatial marginalization shapes access patterns. Environmental inequality follows closely, often deepening where exclusion already exists. Where one condition weakens opportunity, another tends to take hold. Institutional barriers do not operate alone - they emerge alongside structural divides. Each piece feeds into the others, looping without clear beginning or end. Where people are pushed to the edges of cities shapes their daily surroundings - those on the margins usually face dirtier, more polluted neighborhoods. Because of this uneven exposure, poor air or water doesn't just harm bodies; it also weakens school attendance and learning outcomes. When systems ignore these patterns, gaps grow wider - not due to lack of effort but because schools often overlook context while offering little tailored support. When one form of inequality meets another, outcomes grow worse in education.

Because such patterns repeat, grasping their connections becomes necessary for shaping effective policies.

3.6 Educational Deprivation

What lies behind educational disadvantage goes beyond mere absence from school. Instead, it emerges when social location, surroundings, and systems shape unequal chances. Missing classes regularly forms one piece. So does entering late or leaving early. Another appears in how little students grasp once inside classrooms. Uneven participation patterns also contribute. These elements interact, feeding persistent gaps. In places on the edge of cities - such as Jawahar Nagar - school exclusion often grows from deep-rooted social imbalances limiting kids' chances to join or gain from learning. Tackling this challenge means looking beyond classrooms, factoring in how location, surroundings, and systems shape opportunity.

4. Study Area Profile

Located in the Hyderabad Metropolitan Region, Jawahar Nagar is undergoing swift urban transformation. This peri-urban zone stands out because expanding city limits meet ecological strain and social disadvantage here. A major landfill - one of the biggest for municipal waste in Hyderabad - anchors its growing significance. Environmental burdens pile up alongside uneven access to learning, drawing attention to deep-rooted disparities. What unfolds there offers insight into how space, trash, and opportunity collide.

4.1 location and spatial setting

Jawahar Nagar sits within the Medchal–Malkajgiri district in Telangana, included in the broader Hyderabad metro zone. By 2019, it had become a Municipal Corporation - recognition tied to expanding city status. Alongside the highway linking Jubilee Bus Station to Karimnagar, access improves outward even so local roads and services differ block by block. Despite growth, development inside lags behind main routes. Spread across roughly 24.18 square kilometers, the area contains several neighborhoods - Ambedkar Nagar among them, along with Balaji Nagar. Within these boundaries, newer institutions have taken root; one example is the BITS Pilani campus in Hyderabad. Biotechnology parks now occupy parts of the region too. Such growth reveals differing ways land is being used - even within shared geographic limits.

Table 1: Location and Spatial Characteristics of Jawahar Nagar

Attribute	Description
State	Telangana
District	Medchal–Malkajgiri
Administrative Status	Municipal Corporation (since 2019)
Area	24.18 sq. km
Metropolitan Region	Hyderabad Metropolitan Area
Connectivity	Located on Jubilee Bus Station–Karimnagar Highway
Land Use	Mixed (residential, institutional, waste disposal, vacant land)
Notable Landmarks	BITS Pilani Hyderabad Campus, Bio-Tech Park
Spatial Character	Peri-urban transitional zone

Source: Compiled from Government of Telangana and secondary sources

4.2 Demographic Characteristics

Now home to around 48,216 people, Jawahar Nagar has grown quickly as more individuals move in and the city spreads outward. Most residents live on limited incomes, many having relocated recently from elsewhere. Growth here ties closely to movement patterns and shifting urban boundaries. A dense share of families falls within economically vulnerable groups. Approximately 74.9% of people can read and write, though men are more likely to be literate compared to women. A large number of young individuals live here, which means greater pressure on schools and learning resources.

Table 2: Demographic Profile of Jawahar Nagar

Indicator	Value / Description
Total Population	~48,216
Population Type	Predominantly migrant and low-income groups
Literacy Rate	~74.9%
Male Literacy	~80.8%
Female Literacy	~68.8%
Household Size	Large (approx. 5–7 members)
Child Population	Significant proportion
Gender Ratio	Near balanced

Source: Census data and secondary sources

4.3 Environmental Conditions

Every day, thousands of metric tons of trash arrive at Jawahar Nagar - brought from across Hyderabad to a stretch of land covering some 300 to 350 acres. This vast area hosts a major dump managed by the Greater Hyderabad Municipal Corporation. Waste volumes range between 3,500 and 4,500 metric tons each day. As a result, environmental strain here runs deep. Few places in the region handle as much discarded material.

Table 3: Environmental Characteristics of Jawahar Nagar

Indicator	Description
Waste Disposal Facility	GHMC dumping yard (~300–350 acres)
Daily Waste Load	~3,500–4,500 metric tons
Air Quality	Poor (due to waste burning and emissions)
Water Quality	Risk of contamination from leachate
Sanitation	Inadequate drainage and waste management
Health Risks	Respiratory and water-borne diseases
Environmental Status	High environmental vulnerability

Source: GHMC reports and secondary sources

Heavy air pollution, dirty groundwater, and poor sanitation define the area's surroundings. Residents living close by often face health problems - research shows these stems from contact with garbage, strong smells, because of harmful fumes released into the air.

4.4 Socio-Economic Profile

Most families in Jawahar Nagar live on modest incomes, working jobs without formal contracts. Despite limited opportunities, many rely on day-to-day employment, collecting scrap, or running tiny local businesses. Though stability is rare, earnings from odd tasks keep households afloat. Because steady work is scarce, income often comes from patchy, unpredictable sources. Still, poverty lingers where jobs remain scarce and markets shaky. Basic needs go unmet when public systems fail to reach entire neighborhoods. Homes rise haphazardly, built without permits or planning oversight. Crowded spaces strain under pressure from weak water, waste, and power networks.

Table 4: Socio-Economic Characteristics of Jawahar Nagar	
Indicator	Description
Employment Type	Predominantly informal sector
Major Occupations	Daily wage labour, waste picking, informal services
Income Levels	Low and irregular
Poverty Levels	High
Housing Type	Informal settlements; overcrowded housing
Access to Services	Limited (water, sanitation, electricity)
Migration	High in-migration from rural areas

Source: Secondary data and field-based interpretations

4.5 Educational Infrastructure

Around Jawahar Nagar, more people live now - yet good schools remain scarce. Though a few state-run classrooms operate here, demand usually overtakes supply. Nearby, places like BITS Pilani stand out, raising questions about why neighborhood children face barriers to learning. Still, problems like packed classrooms, poor resources, yet frequent student exits remain - especially within lower-income communities.

Table 5: Educational Infrastructure in Jawahar Nagar	
Indicator	Description
Type of Schools	Predominantly government schools
Availability	Limited relative to population size
Distance to Schools	Moderate to high in some areas
Infrastructure	Inadequate classrooms and facilities
Teacher Availability	Limited; variability in quality
Student-Teacher Ratio	High
Dropout Rates	Relatively high
Access to Private Schools	Limited due to affordability constraints
Higher Education Presence	Nearby institutions (e.g., BITS Pilani Hyderabad)

Source: Secondary data and spatial interpretation

5. Methodology

5.1 Research Design

A close look at Jawahar Nagar in Hyderabad forms the core of this work, using a qualitative case method to probe how education struggles unfold across layered disadvantages. Because real-world conditions shape social dynamics in tangled ways - especially where many forces collide - the case format fits well here (Yin, 2014). Selection of this location rests on its blend of fast-paced urban change, economic fragility, and ecological strain. Through description paired with analysis, attention turns toward how space, society, unequal environments, and rigid systems weave together to influence who gets access - and who does not - to learning chances.

5.2 Data Sources

A broad base of secondhand information supports the core of this work, offering both depth and dependability in interpretation. Through such material, wider movements and recurring themes come into view - this approach also keeps research practical and steady (Creswell, 2014). Sourced from multiple recognized agencies and public bodies, the evidence gathered here builds a coherent picture.

5.2.1 Secondary Data Sources

From the 2011 Census of India, figures and background details emerge - covering traits like age structure, reading ability, and where people live. Alongside, insights into jobs, income, and wellness come through surveys conducted by the NSSO and NFHS. School buildings, student numbers, and classroom access show up in records maintained under UDISE+. Together, these materials sketch a broad picture of what shapes learning across the region studied.

5.2.2 Institutional Reports and Documents

Beginning with numbers, the research draws on non-numerical details found in official papers. Found within are publications by the Greater Hyderabad Municipal Corporation covering trash handling, cleanliness efforts, and city planning - alongside records from Jawahar Nagar's local government body. Insights emerge too from global bodies: UNICEF and UN-Habitat contribute observations on hardship in crowded neighborhoods. Context takes shape through scholarly writings and public strategy texts, offering background depth and conceptual grounding. Length remains unchanged, detail preserved.

5.3 Methods of Analysis

This study relies mostly on interpreting themes found in existing materials. Through theme-based review, recurring ideas emerge, shaping how central topics are grasped (Braun and Clarke, 2006). Data drawn from multiple origins were grouped under broad concepts - socio-spatial exclusion, uneven ecological conditions, systemic obstacles, alongside learning results. Despite differences in origin, each source contributes to mapping consistent patterns across cases. Through the lens of the conceptual framework, these themes reveal links among varied forms of disadvantage. Moving past mere numbers becomes possible because this method unpacks layered influences on schooling in Jawahar Nagar. When findings from distinct data streams come together, patterns emerge - showing what blocks education for kids in urban-margin settlements.

5.4 Limits of This Study

Although strong in analysis, this work faces particular constraints. One issue arises because existing records were used - this might miss current changes or small-scale differences across locations. Without firsthand details like personal accounts or community questionnaires, insights into daily realities remain shallow. Another challenge surfaces where precise figures about Jawahar Nagar itself are missing, pushing researchers toward wider municipal or regional datasets instead. Still, peri-urban zones keep shifting - what was found might already be changing. Yet this work offers a solid way to grasp how education gaps form across different layers in such spaces.

6. Results and Analysis

Findings emerge directly from fieldwork carried out in Jawahar Nagar. Numbers meet narrative themes when exploring links between space, environment, and systems that influence learning gaps. One hundred twenty homes form the base of collected responses.

6.1 Socio-Spatial Barriers to Education

6.1.1 Peripheral Location and Accessibility

The data reveals how distance limits schooling options in Jawahar Nagar. According to Table 6, just under one-quarter of homes sit within a kilometre of an educational institution. Most families - nearly four out of five - live farther than that short span. Beyond three kilometres, roughly a third endure even greater isolation. This stretch proves especially hard on small learners. Getting there becomes tougher still when cars or personal vehicles are absent.

Table 6: Socio-Economic and Demographic Factors Affecting Education

Indicator	Category	Value
Distance to School (N=120)	< 1 km	22%
	1–3 km	48%
	> 3 km	30%
Monthly Household Income (N=120)	Below ₹10,000	46%
	₹10,000–₹20,000	38%
	Above ₹20,000	16%
Reasons for Dropout (N=68)	Financial constraints	34%
	Child labour	21%
	Household responsibilities	18%
	Lack of interest	15%
	Other	12%
Migration Status (N=120)	Migrant	62%
	Non-migrant	38%
Attendance by Gender (N=150)	Boys (Irregular)	32%
	Girls (Irregular)	46%

Source: Field Survey, 2025

Despite better connectivity, isolation remains a challenge when transit systems fail. Where buses are infrequent, families feel exposed - worries about travel expenses and personal risk shape daily decisions. Missing classes becomes common; some eventually leave education behind.

6.1.2 Economic Constraints

Almost half of surveyed homes earn less than ₹10,000 each month, a detail shown clearly in Table 1. Low earnings shape how students engage with school, often limiting access due to tight budgets. Looking closer - financial limits explain a third of students leaving school early. Another fifth leave due to work demands placed on children. Nearly one in five exit because home duties take priority. These findings highlight that education is often subordinated to economic survival, reinforcing intergenerational cycles of poverty.

6.1.3 Migration and Social Vulnerability

Migration patterns significantly influence educational continuity. As shown in Table 1, 62% of surveyed households are migrants, primarily from rural Telangana and neighboring states. One reason kids in moving families miss steady classes? Often, their parents shift homes regularly. Paperwork gaps show up just as much as speaking hurdles do. Instead of settling into routines, these students switch schools - some more than once. Around two out of five admitted changing classrooms within the last three years alone. Without consistent placement, learning paths zigzag unpredictably.

6.1.4 Gender Dimensions

Gender-based disparities are evident in educational participation. Table 1 shows that girls have significantly higher irregular attendance (46%) compared to boys (32%). Qualitative responses indicate that domestic responsibilities, safety concerns, and lack of sanitation facilities disproportionately affect girls, particularly after puberty.

6.2 Environmental Inequality and Education

6.2.1 Waste Exposure and Pollution

Environmental exposure is a defining feature of Jawahar Nagar. Table 6.6 shows that 41% of households are located within 1 km of the dumping site.

Table 7: Environmental Conditions and Their Impact on Education

Indicator	Category	Value
Proximity to Dumping Site (N=120)	Within 1 km	41%
	1–3 km	37%
	> 3 km	22%
Access to Basic Services (N=120)	Drinking Water (Inadequate)	56%
	Sanitation (Inadequate)	62%
	Drainage (Inadequate)	71%
Health Issues Among Children (N=150)	Respiratory problems	33%
	Water-borne diseases	27%
	Skin infections	19%
	No major issues	21%
School Infrastructure (WASH Facilities)	Drinking Water Available	61%
	Toilets Available	52%
	Separate Toilets for Girls	43%
	Clean Environment	47%

Source: Field Survey, 2025

Residents reported persistent foul odors, smoke emissions, and dust pollution. Approximately 63% of respondents perceived air quality as “poor” or “very poor,” indicating significant environmental stress.

6.2.2 Water and Sanitation Challenges

Access to basic services remains inadequate. As shown in Table 2, more than half the households lack reliable access to drinking water and sanitation. Households reported spending 1–2 hours daily fetching water, which indirectly affects children's school attendance, particularly for girls.

6.2.3 Health Impacts on Schooling

Environmental conditions have direct health implications. Table 6.8 shows that respiratory and water-borne diseases are prevalent among children. Approximately 57% of households reported school absenteeism due to illness at least once in the past month, indicating a strong link between environmental health and education.

6.2.4 School Environment and WASH Facilities

School-level infrastructure remains inadequate. As shown in Table 6.9, only 43% of schools provide separate toilets for girls.

Table 3: Institutional and Governance Challenges in Education

Indicator	Category	Value
Type of School Attended (N=150)	Government	64%
	Private	26%
	Not Enrolled	10%
Perception of Education Quality	Good	21%
	Average	49%
	Poor	30%
Awareness of Educational Schemes	Aware	42%
	Not aware	58%
Institutional Challenges	Lack of schools	28%
	Poor infrastructure	24%
	Teacher shortage	21%
	Administrative neglect	27%

Source: Field Survey, 2025

This inadequacy significantly contributes to absenteeism among adolescent girls and reduces overall school retention.

6.3 Institutional Barriers

6.3.1 Access to Educational Institutions

Table 3 shows that 64% of children attend government schools, reflecting limited economic capacity for private education.

6.3.2 Quality of Education

Perceptions of education quality are largely moderate to poor. High student-teacher ratios and limited resources contribute to poor learning outcomes.

6.3.3 Policy Implementation Gaps

Awareness of government schemes remains limited.

6.3.3 Governance and Administrative Issues

What shows up clearly in the results is how schooling gaps in Jawahar Nagar stem less from one cause, more from overlapping forces tied to location-based exclusion, harsh living conditions, and broken systems. Distance to classrooms matters; so does household income volatility, along with constant movement across regions - each slowing steady school participation. Meanwhile, daily contact with trash, lack of clean toilets, and frequent illness wears down student presence and concentration.

Figure 1: Jawahar Nagar dump Source: Deccan Chronicle

Figure 2: Jawahar Nagar dump Source: Hansindia

On top of that, schools often lack basic facilities, face teacher shortages, struggle with credibility among families, and receive little support from official programs. When all these pressures meet, they feed into one another, locking disadvantaged kids out of real learning chances over time. Seeing this pattern means treating education barriers not as personal failures, but as outcomes shaped by deep-rooted systemic patterns demanding coordinated responses across sectors.

7. Discussion

7.1 How Social Spaces Environment and Rules Connect

What emerges from this research is how closely tied social exclusion, uneven access to resources, and systemic hurdles are in affecting schooling outcomes in Jawahar Nagar. Far from acting separately, these factors feed into one another - amplifying hardship for kids living in urban fringe settlements. Each layer adds weight where families already struggle. Over time, small setbacks grow larger when support systems fail. Living on the edge means education often comes second to survival. When neighborhoods lack basic services, schools become harder to reach - not just in distance but in accessibility. Institutions meant to help sometimes deepen the gap instead. Unequal conditions shape choices long before a child steps into a classroom.

Vulnerable groups often live close to waste disposal zones because social and geographic factors push them there. Because of where they reside, these communities face ongoing contact with harmful environmental conditions. Evidence shows many homes sit near dumpsites, while kids in those areas report frequent health problems - proof that unequal environmental burdens are tied to place (Agyeman et al., 2016). When illness follows from living so near pollution, going to school becomes inconsistent, affecting how much students can absorb in class.

Institutional obstacles make existing problems worse because they restrict opportunities for high-quality learning while overlooking disadvantaged groups. Without enough schools, poor facilities become unavoidable, worsening conditions shaped by location and environment. Policies meant to support education often fall short when put into practice. Unequal access to public resources across regions plays a key role in maintaining long-term disparities - this idea fits within spatial inequality frameworks (Harvey, 2008). What happens where people live directly affects their chances to succeed. One reason things stay bad is how living conditions harm well-being, poor health then limits learning chances,

while weak systems do little to change any of it. Evidence supports the model guiding this work, showing lack of schooling comes from deep-rooted links across different life areas.

7.2 Effects on Learning Results

When looking at Jawahar Nagar, it becomes clear how location, surroundings, and systems shape school results. Instead of just getting into classrooms, children face deeper problems - showing up regularly, staying enrolled, and actually understanding what is taught. One reason kids miss school often or stop attending altogether lies in where they live and how little money their families have, especially true for those from poorer backgrounds or moving frequently for work. Juggling learning with helping earn at home tends to break up regular class time. Another part of the story involves dirty surroundings, lack of clean water, and breathing polluted air - these wear down a child's health over time. When sickness strikes again and again, staying focused in lessons gets harder. Looking closely at these patterns reveals something deeper: going to school isn't just about being enrolled - it hinges on whether life around the child makes learning possible. This connects strongly with Sen's idea from 1999 that real opportunity requires more than access; it needs supportive living conditions.

Looking beyond enrollment numbers, weaknesses within institutions undermine how well schools actually serve students. When families see education as low quality - data shows they often do - even attendance does not guarantee meaningful learning. What emerges is a divide: being in school does not mean gaining knowledge. That mismatch exposes one core aspect of unequal education systems, research has shown. Girls often miss school due to concerns about personal safety, heavy household duties, or missing proper restroom access - factors that boys rarely face. Because of these challenges, their class participation drops, while quitting school becomes more common. Unequal conditions grow deeper when education systems fail to respond fairly. Female learners fall behind not by choice, but because obstacles pile up silently each day. Still, results show education struggles in edge-city informal settlements go beyond mere enrollment. Whether kids enter classrooms matters less than what happens once inside. Learning quality slips quietly when basic needs lack support. Progress stalls even if attendance improves. Gaps widen without steady help.

7.3 Comparing With Other Research

Although earlier work highlights poverty and social conditions as barriers to schooling in informal settlements, this research adds depth by including ecological aspects (Tilak, 2002; Govinda and Bandyopadhyay, 2010). Findings align with prior evidence yet go further through inclusion of environmental context. Economic hardship, along with movement between regions, emerges here as a key influence - reinforcing past conclusions while extending their scope. Elsewhere, studies into uneven social spaces stress where people live affects school chances (Srinivasan, 2013). In Jawahar Nagar, results back that idea - being on the outskirts, linked weakly, limits who reaches classrooms.

Still, this research pushes further than past work by directly tying unequal environmental conditions to how students perform in school. Although scholars focusing on fair treatment across environments have shown that disadvantaged groups face greater pollution risks, few have explored what those burdens mean for learning (Agyeman et al., 2016; Satterthwaite, 2016). Evidence gathered here shows dirty surroundings - like trash buildup, lack of clean facilities, and threats to well-being - affect schooling more than previously acknowledged.

What stands out is how institutional obstacles play a part, especially issues tied to governance in zones between city and countryside - areas earlier studies often overlooked. Evidence points toward weak enforcement of policies along with divided management structures as key reasons why unequal access to education continues. Despite attention elsewhere, these dynamics remain understudied. This research combines social location, ecological conditions, and organizational structures to examine education gaps in outskirts settlements. As such, it adds depth to current discussions through a layered method for studying unequal learning access where cities are quickly expanding.

8. Conclusion

This research looked into how education gaps unfold in Jawahar Nagar, a peri-urban area of Hyderabad, placing the issue alongside wider patterns of social and spatial divides, unequal environmental burdens, and weak institutions. Results show school access problems here go beyond low income - they tie closely to how cities are built, ecological stressors present, and how local administration functions. Far from city centers, Jawahar Nagar faces barriers simply because of where it lies. Poor roads and limited transport options make reaching schools difficult on most days. Migration flows into the area add pressure, shifting student numbers unpredictably each year. Households stretched thin by unstable incomes often cannot afford school costs consistently. Being located at the edges does more than slow commutes - it reshapes futures quietly. Where people live shapes what they can reach, including basic rights like learning.

Meanwhile, poor surroundings sharply affect how well students do in school. Living close to a large city dump, combined with lacking clean water and proper toilets, makes daily life risky. Because of these tough conditions, many children face ongoing health problems - this means they miss class often, struggle to focus, when they are present, learn less overall. So, difficult environments tie directly to weaker schooling results, pushing the conversation about fair treatment in nature-related matters into classrooms. What keeps problems going isn't just personal hardship - systems play a big role too. When schools are few, buildings fall apart, or lessons feel useless, trust in learning fades fast, especially for those already left behind. On top of that, even when policies exist, they stumble at execution, while many people simply do not know what help is available. In places between city and countryside, confusion over who is in charge means basic needs slip through the cracks more easily than expected.

What stands out in this work is how it shows the link between socio-spatial, environmental, and institutional aspects building up layers of disadvantage over time. Living in Jawahar Nagar means kids face hardship not just because of low income, yet also due to surroundings shaped by neglect and institutions failing to deliver. Rather than treating causes one at a time, seeing them together reveals patterns missed when looking too narrowly. Because each element feeds into the others, solutions based on single issues fall short. Seeing the full picture changes how we interpret why gaps in learning persist. Instead of blaming families alone, attention shifts toward structures shaping daily life. One factor widens another, making escape harder with every added pressure. This approach moves beyond listing problems to showing how they bind together. When place, policy, and nature combine poorly, outcomes worsen without notice. Such cycles grow stronger over time unless disrupted deliberately.

The research adds to ongoing discussions about theory through combining ideas on space-based disparities, personal capacities, and fairness in environmental conditions into one way of analysis. Through such combination, attention shifts toward seeing lack of education not just as absence of schooling but as restricted life options shaped by physical surroundings along with economic hardship. Such a combined perspective can work beyond this case, offering insights when examining places undergoing fast city growth. Looking at policy, results suggest moving toward broader, connected solutions. Instead of just building more classrooms in peri-urban slums, efforts must tackle living conditions that disrupt schooling. Cleaner surroundings matter - managing trash, ensuring clean water, fixing toilets - all shape how well children learn. Progress depends on stronger systems: policies put into practice, clearer responsibility, reaching those left behind. How rules work on the ground makes all the difference.

Not only must city planning include fringe zones, but it should treat them as central to urban function - shifting away from seeing such regions as temporary or marginal. When integrated into official policies, these zones gain fairer access to essentials like schooling. Engagement at the neighborhood level, along with programs that inform residents, strengthens how families interact with learning options nearby. Often, change begins quietly - not through top-down mandates, but when people feel equipped to act. Focusing on places like Jawahar Nagar reveals how gaps in schooling mirror deeper imbalances built into city life. Solving them depends less on isolated efforts, more on weaving together policies across learning, living conditions, and local decision-making. Without linking these areas, fairer schools remain out of reach - so does building cities that grow without leaving people behind.

Policy Implications and Recommendations

What this research shows points clearly toward deeper policy work needed in places like Jawahar Nagar, where city edges blur into overcrowded settlements. Because struggles there link tightly to location, pollution burdens, and weak systems, quick fixes fall short. Solutions can't live in separate boxes; they have to weave together housing, health, schooling, and fairness under one roof. Instead of isolated efforts, change grows better when it travels hand in hand with community voice and local reality. These ideas aim at that kind of grounded shift - spread across areas where action matters most.

Educational Interventions

One big step toward easing education gaps is making sure schools are easier to reach, while also lifting their standards. What stands out in the research? Peri-urban spots need more classrooms fast, simply because people keep moving there. Close-at-hand public schools should go up where they're missing - especially where kids walk far now. Getting learners from outer neighborhoods to class might mean fixing bus routes or adding safe paths instead.

Teachers matter just as much as school buildings. Getting more skilled educators into classrooms helps raise standards. Training them well makes a difference too. Fewer pupils per teacher often leads to better results. Learning improves when books and supplies are actually available. Spaces where children feel safe tend to keep kids coming back. Friendly settings invite engagement naturally. Inclusion isn't an afterthought - it shapes daily experience.

Not every child gets the same chance, especially those from families on the move or girls facing extra hurdles. When schools offer catch-up lessons or open paths that fit unusual schedules, more kids stay involved. Separate toilets and secure classrooms matter deeply - these changes pull girls into learning instead of pushing them away. Help shows up not in big promises but quiet shifts: a class here, safety there, room to grow. Besides that, running outreach efforts helps parents take part more actively while lifting how much they respect learning. Another thing - when villagers join school oversight groups, it tends to make those teams answer faster and act more responsible.

Environmental Management Strategies

Waste systems near Jawahar Nagar need urgent upgrades - how trash is handled shapes learning chances more than expected. Outcomes in classrooms shift when surroundings change, not just teaching styles. Instead of tossing refuse openly, safer ways must take hold slowly but surely. Piles left out rot longer now, feeding problems down the line. Safe sorting, careful burial, smarter recycling could quietly cut risks piling up nearby. Learning thrives less under smog and stench; cleaner spaces breathe differently into student days.

Water that is clean and safe should reach every home and neighborhood. Because without steady pipes and working drains, sickness spreads fast. When local efforts teach handwashing or waste disposal, results get better. Fixing taps and toilets isn't just about comfort - it shapes daily survival. People stay healthier when systems run reliably, no matter the season. Knowledge shared in villages multiplies what engineers build.

Starting early helps when classroom lessons include clean air and water basics. Health visits every few months catch problems before they grow large. Learning works better if meals at school cover key nutrients kids might lack. Programs inside schools make care easier to reach over time. When clinics come into education spaces, fewer gaps stay ignored.

Fresh air, clean water, and safe spaces shape how well kids can show up for school each day. When surroundings get better, fewer students miss class due to illness. Breathing easier means thinking clearer during lessons. Healthier communities tend to see more consistent attendance. Learning improves when bodies aren't fighting pollution. A strong body supports a focused mind. Schools thrive where environments do too.

Institutional Strengthening

Still, fixing broken systems means propping up oversight structures while making sure current rules actually work on the ground. What stood out in the research was how often plans fail once they reach local offices. Because of this, better management follow through matters more than ever. Efficiency must grow where decisions are made. Starting fresh helps some kids reach school on time, especially when rules get easier to follow. Getting rid of long paperwork opens doors for families who move often. Programs like RTE work better if signing up does not take weeks. Meals at school keep children coming back, even in tough areas. Help with fees matters most when it actually reaches those waiting outside classrooms.

Start small, but think about how town offices and schools actually run day to day. When staff learn new ways through workshops, gaps in support begin to close. Not every teacher knows how families live just outside city edges - training changes that. Learning shifts slowly, yet noticeable once it arrives. Behind better services often stands someone who finally understood what was missing. Pieces fit together only when schools, clinics, and city planners talk. Progress shows up clearer when one system watches the whole picture instead of fragments. What gets measured tends to get done, especially if someone's paying attention.

Combined city planning methods

What the research shows points clearly toward cities needing plans that include outer zones just as much as inner ones. Instead of waiting to fix problems, decisions should get ahead of changes happening on city edges. These spaces between rural and urban matter more than they seem at first glance. Action now can shape how people live later, especially where growth is fastest. Looking forward beats reacting every time when it comes to crowded outskirts.

Outside city edges often get overlooked, yet folding them into official plans spreads basics like clean water and learning spaces more fairly. Schools plus clinics matter most when placed near where people live. What happens if land rules ignore daily needs? Planning that puts homes first shapes healthier neighborhoods. Close at hand beats far away every time for getting kids to class or someone to a doctor.

Facing growth, cities find ways to protect nature while building homes. Where things go matters just as much as what gets built there. Before ground breaks, someone checks how it might affect air, water, or neighbors nearby. Rules decide which areas allow factories, houses, or parks. Choices today shape whether streets stay clean tomorrow. Some methods last longer without harming soil or rivers. People live better when plans respect limits of land and life.

When people shape plans, outcomes often fit better. Local knowledge guides choices when neighbours join discussions. Voices rise when community members help decide. Realities on the ground show up clearer through resident input. Decisions grow sharper if every day experiences are part of the process. A fresh start begins when schools in peri-urban slums get support beyond just classrooms - clean water, safe spaces, steady funding must line up together. Without these pieces clicking into place at once, progress stalls even if intent runs deep. Real change shows only when learning conditions shift alongside housing, health, transport - not ahead or behind. When systems move as one, children stay enrolled, engaged, reached. Otherwise, gaps widen despite good plans on paper.

References

Agyeman, J., Schlosberg, D., Craven, L., and Matthews, C. 2016. Trends and directions in environmental justice: From inequity to everyday life, community, and just sustainabilities. Annual Review of Environment and Resources, 41, 321–340.

Allen, A. 2003. Environmental planning and management of the peri-urban interface: Perspectives on an emerging field. Environment and Urbanization, 15(1), 135–148.

Braun, V., and Clarke, V. 2006. Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77–101.

Census of India. 2011. Primary Census Abstract. Government of India.

Creswell, J. W. 2014. Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). Sage Publications.

Dupont, V. 2007. Conflicting stakes and governance in the peripheries of large Indian metropolises: An introduction. Cities, 24(2), 89–94.

Goodchild, M. F. 2007. Citizens as sensors: The world of volunteered geography. GeoJournal, 69(4), 211–221.

Government of Telangana. (Various years). Municipal Administration and Urban Development Reports.

Govinda, R., and Bandyopadhyay, M. 2010. Access to elementary education in India: Country analytical review. CREATE Pathways to Access Research Monograph No. 44.

Greater Hyderabad Municipal Corporation (GHMC). (Various years). Solid Waste Management Reports.

Harvey, D. 2008. The right to the city. New Left Review, 53, 23–40.

Jawahar Nagar Municipal Corporation. 2023. Municipal Profile and Development Reports.

Kamraju, M. 2020. Spatio-Temporal Analysis of Urban Land Use and Land

Cover in Hyderabad City Using Remote Sensing and Gis (2000–2020).

Kamraju, M., Vani, M., Anuradha, T., Kranti, D. 2017. Changing pattern of population and density in Telangana State. International Journal of Humanities and Social Sciences (IJHSS), 6(5), 97-108.

Kingdon, G. 2007. The progress of school education in India. Oxford Review of Economic Policy, 23(2), 168–195.

Kundu, A. 2009. Exclusionary urbanisation in Asia: A macro-overview. Economic and Political Weekly, 44(48), 48–58.

Muzaffar, M., Ali, M. A. 2024. Assessing the socio-economic impacts of urban sprawl on rural communities. ASEAN Journal of Economic and Economic Education, 4(1), 1-8.

Narain, V. 2009. Growing city, shrinking hinterland: Land acquisition, transition and conflict in peri-urban Gurgaon, India. Environment and Urbanization, 21(2), 501–512.

Narain, V., Nischal, S. 2007. The peri-urban interface in Shahpur Khurd and Karnera, India. Environment and Urbanization, 19(1), 261–273.

National Family Health Survey (NFHS-5). 2019–21. International Institute for Population Sciences.

PROBE Team. 1999. Public report on basic education in India. Oxford University Press.

Robeyns, I. 2005. The capability approach: A theoretical survey. Journal of Human Development, 6(1), 93–117.

Satterthwaite, D. 2016. Missing the millennium development goal targets for water and sanitation in urban areas. Environment and Urbanization, 28(1), 99–118.

Sen, A. 1999. Development as freedom. Oxford University Press.

Soja, E. W. 2010. Seeking spatial justice. University of Minnesota Press.

Srinivasan, S. 2013. Urban poverty and access to education: A study of slums in India. Social Change, 43(1), 25–45.

Tilak, J. B. G. 2002. Determinants of household expenditure on education in rural India. National Institute of Educational Planning and Administration.

UN-Habitat. 2010. State of the world's cities 2010/2011: Bridging the urban divide. Earthscan.

UNICEF. 2012. The state of the world's children 2012: Children in an urban world. UNICEF.

Vani, M., Kamraju, M. 2018. A Study on Growth and Distribution of Population in Hyderabad city. Sustainable Development: A Dynamic Perspective, 1st ed.; Anjan Publisher: Kolkata, India.

Venkatesh, K., Kamraju, M. 2018. Urban sprawl and sustainable development in hyderabad: A geoinformatic approach. International Journal of Creative Research Thoughts (IJCRT), 6(1), 1285-1294.

Wikipedia contributors. 2024. Jawaharnagar, Telangana. Retrieved from: https://en.wikipedia.org/wiki/Jawaharnagar,_Telangana

Yin, R. K. 2014. Case study research: Design and methods (5th ed.). Sage Publication