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"An Exploratory Study of Government Housing Problems in Chennai,"

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Abstract

This research presents a **design-oriented investigation** into the spatial, social, and infrastructural deficiencies of state-provided housing for low-income groups in Chennai. As India's fourth-largest metropolis globalizes, urban renewal in the center has triggered the **mass eviction and resettlement** of the urban poor to large-scale colonies in the peri-urban periphery. This study examines how relocation-based housing initiatives, implemented via the **Tamil Nadu Urban Habitat Development Board (TNUHDB)**, attempt to solve issues of urban growth while affecting long-term livability. Adopting an **exploratory and analytical mixed-methods approach**, the research integrates literature review and architectural assessment of primary resettlement contexts including **Kannagi Nagar, Perumbakkam, and Semmencherry**. Primary data was gathered through structured surveys focusing on key lenses such as **proximity, infrastructure, housing space, and mobility access**. The results demonstrate that housing performance depends less on physical dwelling units and more on **spatial integration and livelihood connectivity**. Ultimately, the study reframes housing as a **networked system of the city** rather than an isolated constructed entity.

Keywords: Informal Settlements, Chennai Slums, Resettlement Projects, Urban Connectivity, Livability, Social Reproduction

1.INTRODUCTION

Urbanization is recognized as a critical index for the transformation of traditional rural economies into **modern industrial societies** (Jaysawal & Saha, 2014). This historic transformation involves a progressive concentration of population within urban units, shifting settlements from spread-out patterns to **high-density concentration** (Davis, 1965). India is currently undergoing rapid urbanization driven by industrialization and economic liberalization, mirroring trends in other emerging nations. While the world is expected to be 66% urban by 2050, the bulk of this growth will occur in Asia, with India expected to add **404 million new urban residents** by that time (Sahasranaman & Bettencourt, 2019).

The scale of India's urban expansion is evident in census data; the urban population grew from 25.8 million (10.8%) in 1901 to **377.1 million (31.2%) in 2011**. For the first time in India's history, the absolute increase in urban population between 2001 and 2011 surpassed the rural increase, with a compound annual growth rate of 2.8%. The growth of **"million-plus" cities** highlights this surge, expanding from only five such cities in 1951 to **53 by 2011**. These 53 cities alone encompass 160.71 million people, representing over 42% of the country's total urban population. Major metropolises like Mumbai and Delhi have populations nearing 20 million, while Chennai reached approximately **7 million by 2021** (Thamilarasan, 2022).

1.1 Background of the Study

Chennai, the port capital of Tamil Nadu, has evolved from a trade-centric presidency into a **major manufacturing hub** and a global hotspot for IT and automobile sectors (Dowall & Monkkonen, 2008). This structural transformation acted as a powerful magnet for migrants seeking employment in formal and informal sectors. Consequently, the city's population surged from 2.64 million in 1971 to an estimated 7 million by 2021. This rapid influx has facilitated a **floating population**

of approximately 85,000 migrant laborers entering the city daily. In Chennai alone, the 2011 Census indicated that close to **31% of the population** resided in informal settlements or slums, often concentrated around commercial zones and riverbanks.

The pressure of unplanned urbanization has resulted in a **critical shortage of affordable housing**, which reached 18.78 million units nationally between 2012 and 2017. Approximately 95% of this demand comes from **Economically Weaker Sections (EWS)** and Low-Income Groups (LIG). In response, the state established the **Tamil Nadu Slum Clearance Board in 1971** (renamed in 2021 as the TNUHDB) to manage the housing needs of the urban poor. The primary legal framework, the **Tamil Nadu Slum Areas (Improvement and Clearance) Act 1971**, defines slums as localities posing physical or health threats, often reflecting a bias that "others" slum dwellers from formal residents.

The state's primary strategy transitioned after 2000 from in-situ upgrading to **large-scale peripheral relocation**. Over the last five decades, approximately **1,31,600 tenements** have been constructed to clear informal settlements. These mass-scale projects, such as **Perumbakkam (24,000 units)** and **Kannagi Nagar (15,656 units)**, are typically located 20–40 km away from original habitations. This shift toward **"peripheralization"** is often justified for infrastructure development or waterway restoration, yet it frequently disregards the well-being of the poor. Resettled families often become **"metropolitan exiles,"** physically uprooted from the city core but remaining entirely dependent on it for work, education, and social networks (Coelho et al., 2020).

1.2 Shift in Sacred Architectural Discourse

Classical temple studies emphasize cosmic order, ritual hierarchy, and theological symbolism as primary generators of sacredness (Eliade, 1959; Kramrisch, 1946). Sacred architecture is interpreted as a representation of metaphysical order spatialized through geometry and axiality (Michell, 1988).

Recent scholarship, however, shifts attention toward embodied spatial engagement and experiential sequencing (Pallasmaa, 2005). Norberg-Schulz (1980) argues that architectural meaning emerges through lived spatial experience and orientation within place. Jain (2025) further contends that sacred experience unfolds through movement and spatial transition rather than through symbolic observation alone.

Empirical studies on contemporary sacred spaces indicate that openness, layered circulation, and inclusive spatial planning enhance contemplative engagement (Raghani et al., 2022). These studies suggest that sacredness can emerge from spatial organization even in the absence of overt ritual symbolism (Raghani et al., 2024).

1.3 Problem Context

Resettlement housing in Chennai is currently defined by a "dynamic of disconnection," where large-scale developments prioritize the quantity of units over the quality of the living environment (Coelho et al., 2020). These settlements are typically located on the city's southern and western peripheries, situated 20 to 40 kilometres from the urban core, which severs the vital link between habitation and livelihood (Coelho et al., 2020). For the urban poor, who traditionally rely on walking to reach workplaces, this spatial isolation transforms mobility into a significant financial and time burden, leading to a documented 48% loss of employment in sites like Perumbakkam (IRCDUC & HLRN, 2017).

Furthermore, the built environment of these high-density tenements (ranging from G+3 to G+8) often suffers from infrastructure stress and maintenance gaps (Ramya & Peter, 2014). Residents frequently face non-functional elevators, contaminated water supplies, and overcrowding within standardized units that measure as little as 195 to 340 square feet (HLRN, 2014). This standardized unit design fails to provide essential "spill-over" spaces for social interaction or home-based enterprises, which are critical anti-poverty instruments for the informal workforce (Resilient Chennai, n.d.). Systemic failures are exacerbated by the siting of these mass projects on ecologically fragile marshlands, such as the Pallikaranai marsh, which increases the disaster vulnerability of the poor during monsoon floods (Jain et al., 2017).

1.4 Purpose of the Study

The primary purpose of this research is to **investigate the impact of spatial planning issues** faced by residents of resettlement housing in Chennai and to suggest evidence-based architectural interventions This

study seeks to move beyond traditional policy-focused research by providing a detailed analysis of **architectural performance and spatial functionality** from the perspective of the residents ,It aims to monitor the state's massive displacement processes—often used as a "quick fix" after disasters like the 2015 floods—and highlight the routine failure to conduct mandatory **Social and Environmental Impact Assessments** (Peter & HLRN, 2017).

By documenting lived realities in sites such as Kannagi Nagar and Perumbakkam, the research strives to provide a **rational tool for evaluating design alternatives** in hot and humid climates (Elango & Devadas, n.d.). The study aims to assist the **Tamil Nadu Urban Habitat Development Board (TNUHDB)** in transitioning from a logistical "provider" of residential shells to a "facilitator of holistic empowerment" (Magudapathy & Krishnan, 2025). Ultimately, the research seeks to propose a paradigm shift toward **inclusive, people-centric redevelopment and in-situ upgrading** that aligns with the "human right to adequate housing"

1.5 Structure of the Paper

This research is structured into six chapters to provide a systematic evaluation of the resettlement housing crisis

Chapter 1: Introduction presents the background of India's rapid urbanization, the problem context in Chennai, the research questions, and the overall scope and limitations of the study

Chapter 2: Literature Review and Theoretical Framework examines global and national housing models, establishing the theoretical foundations for understanding the "dynamic of disconnection" and the Impoverishment Risk and Reconstruction (IRR) model (IJISRT, 2022).

Chapter 3: Research Methodology outlines the mixed-methods approach, detailing the use of structured livability surveys, spatial documentation, and the Analytical Hierarchy Process (AHP) for design evaluation.

Chapter 4: Study, Synthesis, Interpretation, and Discussion provides a within-case and cross-case comparative analysis of three resettlement contexts to identify recurring planning drivers of housing performance.

Chapter 5: Conclusions and Recommendations summarizes the key findings and offers practical design and policy guidance for architects and urban planners.

Chapter 6: Bibliography compiles all referenced sources used throughout the dissertation .

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Conceptual Foundations

The conceptual foundation of this study is rooted in the definition of urbanization as a progressive concentration of population within urban units, marking a historic transformation from rural cultures to high-density modern industrial societies (Davis, 1965).

Within this context, the study identifies a "slum household" based on UN-Habitat criteria, which include a lack of durable housing, insufficient living area (overcrowding), and inadequate access to safe water and sanitation (UN-Habitat, 2003).

The Tamil Nadu Slum Areas (Improvement and Clearance) Act 1971 further defines slums as localities posing physical, health, and security threats to nearby formal housing settlements, a definition that researchers argue reflects an "othering" bias against the urban poor (Government of Tamil Nadu, 1971).

A critical conceptual term utilized here is peripheralisation, which describes the state-led shift toward constructing mass-scale, high-rise tenements on isolated city fringes where land is cheaper, effectively turning residents into "metropolitan exiles" who are physically uprooted yet economically dependent on the city core (Coelho et al., 2020).

This leads to a "dynamic of disconnection," where spatial dislocation constrains the physical and socioeconomic mobility of the urban poor and severs the integral linkage between habitation and livelihood (Coelho et al., 2020).

Consequently, this study adopts the concept of "housing as a verb," viewing shelter not as a static product (or "noun") to be delivered but as an ongoing process of place-making and social reproduction (Cohen, 2015).

2.2 Theoretical Models

The study is anchored in several established theoretical frameworks to analyze the multifaceted impacts of relocation and urban development on marginalized populations .The Scudder-Colson Relocation Theory posits that relocation, whether voluntary or

compulsory, is an inherently stressful experience that predictably limits the range of coping responses within a community (International Journal of Innovative Science and Research Technology [IJISRT], 2022). Complementing this psychosocial lens is Michael M. Cernea's Impoverishment Risk and Reconstruction (IRR) Model, which identifies eight convergent sub-processes resulting in lasting impoverishment if not addressed: landlessness, joblessness, homelessness, marginalization, increased morbidity, food insecurity, loss of access to common property, and social disarticulation (Cernea, 1999; IJISRT, 2022).

From a rights-based perspective, the "Human Right to Adequate Housing" framework serves as the primary analytical lens, emphasizing that housing must pass a "test of adequacy" based on seven core criteria established by UN CESCR General Comment 4: legal security of tenure, availability of services/infrastructure, affordability, habitability, accessibility, location, and cultural adequacy (Housing and Land Rights Network [HLRN], 2014; World Health Organization [WHO], 2018;). Furthermore, the "Right to the City" concept advocates for the democratic participation of all residents in urban development and benefits, ensuring they are recognized as active citizens rather than mere "Project Affected Persons" (HLRN, 2014).

To quantify the decline in household standards following resettlement, the Human Capital Model is employed to assess five essential livelihood capitals—human, physical, social, natural, and financial assets—that determine a household's standard of living (IJISRT, 2022;). In the realm of architectural decision-making, the Analytical Hierarchy Process (AHP) serves as a rational, multi-criteria tool for architects to move beyond intuitive methods and evaluate design alternatives based on utilitarian efficiency, usability of space, and resource optimization (Elango & Devadas, n.d.). Finally, urban-scale interventions are guided by Transit-Oriented Development (TOD) and the Two-Network Strategy (2NS), which propose that sustainable and livable urban growth must be carrying-structured by well-integrated mobility and ecological networks (Suresh et al., 2022;).

2.3 Evolution of National and Local Housing Policy

The national approach to managing housing demand in India has evolved through four distinct phases since 1950, transitioning from the state as a direct provider to a facilitator of market-driven stock (Kumar & Sharma, 2022;). In the First Phase (1950–1970), the government acted as a direct "provider," launching schemes like the Subsidized Housing Scheme for Industrial Workers (1952) and the Slum Clearance and Improvement Scheme (1956) to address the massive post-Independence urban influx (Kumar & Sharma, 2022;). The Second Phase (1970–1980) marked a shift toward being a "limited provider" as officials realized the state could not house every citizen; this era introduced the "Sites and Services" (S&S) model, which provided serviced plots for incremental building and established HUDCO in 1970 to promote sustainable habitation (Kumar & Sharma, 2022; Coelho et al., 2020).

The Third Phase (1980–2000) was defined by a neoliberal turn where the state's role shifted to that of a "facilitator," prioritizing financial support and private sector involvement through the 74th Constitutional Amendment, which transferred housing responsibilities to Urban Local Bodies (Kumar & Sharma, 2022). In the Fourth Phase (2000–Present), this facilitator role has expanded to a massive scale, characterized by Public-Private Partnerships (PPP) and central missions like the Pradhan Mantri Awas Yojana (PMAY-Urban) which emphasize the construction of large-scale, high-density tenements (Kumar & Sharma, 2022; Raman, 2023). In Chennai, this transition is evidenced by a radical move away from the successful in-situ upgrading and S&S models of the 1980s toward the construction of over 50,000 peripheral tenements since 2000, which are predominantly sited on ecologically fragile marshlands and floodplains like the Pallikaranai marsh (Gajendran, 2015 Jain et al., 2017).

2.4 Comparative Case Study Analysis

A comparative analysis of three primary resettlement sites in Chennai—Perumbakkam, Kannagi Nagar, and Semmencherry—reveals recurring patterns of planning failure, where each site is defined by a unique "controlling factor" that undermines livability .

Case 1: Perumbakkam represents a catastrophic crisis of accessibility due to its location 25 to 30 kilometres from the city center (IRCDUC, 2021). Because 78.47% of people in Chennai's informal settlements walk to work, this spatial isolation severs the link to livelihoods, resulting in a documented 48% loss of employment among resettled families (IRCDUC, 2021 Coelho et al., 2020). Residents who remain employed face a significant financial burden, losing up to Rs 100 of their daily wages to expensive and time-consuming bus commutes (IRCDUC, 2021).

Case 2: Kannagi Nagar highlights the systemic failure of infrastructure and maintenance within the "integrated township" model (Ramya & Peter, 2014).

Despite housing a population of over 80,000, the settlement lacks a functional government healthcare center, forcing residents to spend over Rs 500 per month on private medical care (Ramya & Peter, 2014). Furthermore, the site receives only half of its required 55 lakh litres of daily water, and residents must frequently contend with contaminated supplies and persistent sewage stagnation between tenement blocks (Ramya & Peter, 2014 Arathi & Sivagami, 2020).

Case 3: Semmencherry illustrates the severe constraints of residential space, where standardised dwelling units measure as little as 160 to 220 square feet (IRCDUC, 2021). This "multi-purpose hall" model leads to extreme overcrowding for average families of four to seven members, destroying domestic privacy for women and adolescent girls and preventing the home-based enterprises that serve as vital anti-poverty instruments (Gajendran, 2015). These spatial issues are worsened by poor design which limits ventilation and natural light, particularly when external environmental stressors, such as the stench from stagnant waste, force residents to keep their only window closed (Jain et al., 2017).

Across all three cases, the study concludes that while the state may successfully meet its quantitative housing supply targets, the lack of spatial integration and livelihood connectivity fundamentally undermines the long-term socioeconomic sustainability of the settlements (Coelho et al., 2020). These findings confirm that housing must be treated as a networked system of the city rather than just an isolated building to ensure the true rehabilitation of the urban poor (Suresh et al., 2022).

2.5 Spatial Parameters of Sacred Experience

The research documents a significant loss of cultural and congregational space following resettlement, as state-built sites frequently fail to allocate specific space for community halls or places of worship (Housing and Land Rights Network [HLRN], 2014). In settlements like Kannagi Nagar and Savda Ghevra, the specific cultural and religious needs of diverse communities were not incorporated into the official site design, leading to a pervasive sense of "cultural inadequacy" (HLRN, 2014 Ramya & Peter, 2014 Bajpai & Gautam, 2018). Consequently, residents are often forced to build informal structures for prayer, such as temporary temples or mosques, which are then treated as illegal encroachments by authorities, resulting in police intervention and social friction (HLRN, 2014 Bajpai & Gautam, 2018). For instance, the Muthu Mariamman Temple, which served as a vital social anchor for three generations of residents, was demolished by the state during an eviction drive, causing profound psychological trauma to the community (Citizen consumer and civic Action Group [CAG], 2020 HLRN, 2014).

Furthermore, the random allocation of plots and flats scatters kinship groups that previously lived in cohesive "mohallas," thereby destroying the social networks required for community festivals and mutual security (HLRN, 2014 Bajpai & Gautam, 2018). This rearrangement of space turns shared open areas into bones of contention between different religious groups, leading to clashes that further undermine the social safety nets traditionally available to women and the elderly (HLRN, 2014 Bajpai & Gautam, 2018). Ultimately, the loss of these intangible cultural rites and rituals represents a significant stressor that prevents resettled populations from successfully absorbing into the social fabric of their new locale (Magudapathy & Krishnan, 2025).

2.6 Synthesis of Findings

The synthesis of existing literature identifies that housing performance is not a static measure of physical shelter but is instead governed by the interaction between spatial adequacy, economic connectivity, and infrastructure capacity (Information and Resource Centre for the Deprived Urban Communities [IRCDUC] & HLRN, 2017). Current government strategies in Chennai have shifted toward "peripheralization," moving thousands of families to isolated urban margins that trigger a "multifaceted dynamic of disconnection" from the city's economic and social core (Coelho et al., 2020). This shift creates a "crisis of social reproduction" because location-centric livelihoods are severed, resulting in documented employment losses of nearly 48% in sites like Perumbakkam (Gajendran, 2015 IRCDUC, 202).

Architecturally, the transition to vertical, high-density tenement blocks has proven problematic, as units are often too small (195–340 sq. ft.) and lack essential "spill-over" spaces for home-based enterprises, effectively reproducing slum-like congestion in a formal setting (Resilient Chennai, n.d. Raman, 2023). Furthermore, the siting of these mass projects on ecologically fragile marshlands has perversely increased the flood vulnerability of the poor, turning state-provided shelter into a long-term environmental hazard (Jain et al., 2017 Coelho, 2016). Ultimately, the

literature review confirms that housing must be reframed as a "networked urban condition" rather than an isolated building, requiring a paradigm shift toward flexible, participatory, and integrated planning to ensure the true rehabilitation of the urban poor (Suresh et al., 2022 Magudapathy & Krishnan, 2025).

3.Analytical Synthesis

3.1 Integrated Pattern Analysis

The comparative assessment of **Perumbakkam, Kannagi Nagar, and Semmencherry** reveals that housing performance is not determined by a single spatial deficiency but by the interaction between **location, infrastructure capacity, and dwelling design**. Although each case exhibits a dominant constraint—such as accessibility in Perumbakkam or infrastructure failure in Kannagi Nagar—these constraints are structurally interlinked. This multi-scalar pattern manifests as **peripheral relocation at the macro scale**, **infrastructure overload at the meso scale**, and **space inadequacy at the micro scale**. Consequently, this study concludes that resettlement housing functions as an **urban system** rather than an isolated residential product.

3.2 Structural Causation Framework

The synthesis identifies three primary structural planning drivers that dictate housing outcomes:

- **Peripheral Land-Based Relocation Model:** Resettlement sites are selected based on the availability of cheap land rather than urban integration, resulting in **long commuting distances**, economic disconnection, and reduced employment stability (Coelho et al., 2020). Thus, **spatial distance** translates directly into **livelihood vulnerability**, as seen in the 48% job loss rate in peripheral sites.
- **Density–Infrastructure Imbalance:** High-density housing blocks are introduced without proportional enhancement of **drainage systems, water supply, and waste management**. This mismatch creates persistent environmental stress, reduced safety, and declining service performance, confirming that **infrastructure capacity** is a critical determinant of livability ().
- **Standardised Dwelling Typology:** Uniform housing units, often in the **185–220 sq. ft. range**, restrict adaptability, ventilation, and functional flexibility. Overcrowding in these spaces reduces domestic productivity and comfort, which significantly undermines long-term residential satisfaction.

3.3 Interrelationship Model

The synthesis suggests a **cascading effect** where spatial planning decisions operate as structural determinants of daily life. A **peripheral location** leads to reduced mobility and job access, which triggers **economic instability** for the household. This instability creates an **overdependence on internal space**—as residents can no longer afford to engage with the wider city—leading to **overcrowding stress** and a terminal decline in perceived livability.

3.4 Theoretical Alignment

These findings align with **socio-spatial segregation theory**, which documents the "peripheralisation of poverty," and **urban systems theory**, which advocates for the integration of housing, transport, and employment (Coelho et al., 2020). This aligns with established **livability frameworks** that measure success through mobility, services, and environmental comfort. The empirical evidence supports the argument that resettlement housing performance depends on **systemic urban integration** rather than the provision of physical dwelling units alone.

3.5 Implications for Planning Logic

The analytical synthesis repositions the housing problem by advocating for a shift from the **current model of housing as shelter delivery** to a **required model of housing as integrated urban infrastructure** (). Therefore, future resettlement frameworks must prioritize the following four pillars of integration:

- **Transit Connectivity:** Ensuring settlements are linked to high-frequency urban corridors.
- **Livelihood Ecosystems:** Incorporating spaces for **Home Based Enterprises (HBEs)** and vending.
- **Infrastructure Scaling:** Aligning residential density with the actual capacity of local utility systems.
- **Adaptable Unit Design:** Developing flexible typologies that can accommodate extended family structures and incremental growth.

4. CONCLUSIONS

4.1 Summary of Research Findings

The research concludes that the success of resettlement housing is primarily dictated by **spatial integration**, as peripheral relocation fundamentally weakens resident access to the city's economic and social core . In **Perumbakkam**, the study identified a catastrophic crisis of accessibility due to its 25–30 km distance from the city centre, which resulted in a documented **48% loss of employment** among families who previously walked to their workplaces (IRCDUC, 2021). **Kannagi Nagar** serves as an example of infrastructure failure, where a population of 80,000 lacks a functional government healthcare centre and receives barely half of the required daily water supply (Ramya & Peter, 2014). In **Semmencherry**, the dominant issue is **spatial inadequacy**, with standardized units as small as 160–220 square feet causing extreme overcrowding and a total loss of domestic privacy for women and adolescent girls (HLRN, 2014). The study confirms that high-density vertical living without proportional infrastructure leads to rapid environmental stress and service overload, Reproducing the very unhygienic conditions the state intended to clear (Raman, 2023).

4.2 Interpretation of Spatial Transformation

Spatial transformation in Chennai is characterized by a "density paradox," where the city centre continues to add population despite extreme crowding, while the metropolitan area simultaneously expands in a low-density pattern on the periphery (Dowall & Monkkonen, 2008). This transformation involves a radical shift in policy from the in-situ upgrading models of the 1980s toward the mass construction of peripheral tenements post-2000 (Gajendran, 2015 Coelho et al., 2020). This "peripheralisation" severs the integral linkage between habitation and livelihood, transforming resettled residents into "metropolitan exiles" who are physically uprooted but still economically dependent on the urban core (Coelho et al., 2020). Furthermore, the interpretation reveals that building mass tenements on ecologically fragile wetlands like the Pallikaranai marsh has perversely increased the flood vulnerability of the poor, creating a cycle of environmental and service stress (Jain et al., 2017). Ultimately, residents experience housing as a networked urban condition where broken elevators or infrequent public transit act as immediate barriers to socioeconomic mobility (Suresh et al., 2022).

4.3 Contribution to Architectural Theory

This study contributes to architectural theory by reframing resettlement housing as an integrated socio-spatial system rather than a mere physical welfare provision or residential shell (Coelho et al., 2020). It introduces the concept of the "dynamic of disconnection," arguing that urban connectivity and infrastructure alignment are the primary determinants of livability, often outweighing the internal quality of the house itself (Coelho et al., 2020). By adopting the principle of "housing as a verb," the research posits that shelter should be viewed as an ongoing process of place-making rather than a static "noun" or finished product delivered by the state (Cohen, 2015). Methodologically, the study establishes a socio-architectural framework that combines livability parameter assessments with global benchmarks like the UN "test of adequacy" to evaluate local morphological performance (HLRN, 2014). This theoretical shift advocates for the "social function" of land, where marginalized communities are recognized as active citizens with a legitimate claim to inclusive urban space and participation (HLRN, 2014 Raman, 2023).

4.4 Implications for Architectural Practice

The practical implications of this research call for a paradigm shift from mass shelter delivery toward integrated urban system planning (Suresh et al., 2022). Architects are urged to design adaptable and expandable housing units that provide a minimum carpet area of 700 square feet to accommodate extended families and include "spill-over" spaces for home-based enterprises (Peter & HLRN, 2017). Practice must move away from rigid, one-size-fits-all vertical blocks toward the revival of the "Sites and Services" model, which allows for incremental building and fosters mixed-use, mixed-income neighborhoods (Resilient Chennai, n.d. Coelho et al., 2020). Planning must also prioritize infrastructure-based density, ensuring that the intensity of a settlement is dictated by the actual capacity and maintenance of its water, waste, and circulation systems (Suresh et al., 2022). Furthermore, practitioners should institutionalize participatory design processes, engaging residents in the creation of Detailed Project Reports (DPRs) to ensure that cultural and religious needs are incorporated into the built environment (Raman, 2023 Resilient Chennai, n.d.). Finally, urban-scale strategies like the "Supergrids" framework should be utilized to align housing with transit networks and ecological "slow lanes," transforming resettlement

colonies from isolated ghettos into vibrant public realms (Suresh et al., 2022).

4.5 Limitations of the Study

The research concludes that the success of resettlement housing is primarily dictated by spatial integration, as peripheral relocation fundamentally weakens resident access to the city's economic and social core . In Perumbakkam, the study identified a catastrophic crisis of accessibility due to its 25–30 km distance from the city centre, which resulted in a documented 48% loss of employment among families who previously walked to their workplaces (IRCDUC, 2021). Kannagi Nagar serves as an example of infrastructure failure, where a population of 80,000 lacks a functional government healthcare centre and receives barely half of the required daily water supply (Ramya & Peter, 2014). In Semmencherry, the dominant issue is spatial inadequacy, with standardized units as small as 160–220 square feet causing extreme overcrowding and a total loss of domestic privacy for women and adolescent girls (HLRN, 2014). The study confirms that high-density vertical living without proportional infrastructure leads to rapid environmental stress and service overload, Reproducing the very unhygienic conditions the state intended to clear (Raman, 2023).

4.6 Scope for Future Research

Spatial transformation in Chennai is characterized by a "density paradox," where the city centre continues to add population despite extreme crowding, while the metropolitan area simultaneously expands in a low-density pattern on the periphery (Dowall & Monkkonen, 2008). This transformation involves a radical shift in policy from the in-situ upgrading models of the 1980s toward the mass construction of peripheral tenements post-2000 (Gajendran, 2015 Coelho et al., 2020). This "peripheralisation" severs the integral linkage between habitation and livelihood, transforming resettled residents into "metropolitan exiles" who are physically uprooted but still economically dependent on the urban core (Coelho et al., 2020). Furthermore, the interpretation reveals that building mass tenements on ecologically fragile wetlands like the Pallikaranai marsh has perversely increased the flood vulnerability of the poor, creating a cycle of environmental and service stress (Jain et al., 2017). Ultimately, residents experience housing as a networked urban condition where broken elevators or infrequent public transit act as immediate barriers to socioeconomic mobility (Suresh et al., 2022).

4.7 Final Reflection

This study contributes to architectural theory by reframing resettlement housing as an integrated socio-spatial system rather than a mere physical welfare provision or residential shell (Coelho et al., 2020). It introduces the concept of the "dynamic of disconnection," arguing that urban connectivity and infrastructure alignment are the primary determinants of livability, often outweighing the internal quality of the house itself (Coelho et al., 2020). By adopting the principle of "housing as a verb," the research posits that shelter should be viewed as an ongoing process of place-making rather than a static "noun" or finished product delivered by the state (Cohen, 2015). Methodologically, the study establishes a socio-architectural framework that combines livability parameter assessments with global benchmarks like the UN "test of adequacy" to evaluate local morphological performance (HLRN, 2014). This theoretical shift advocates for the "social function" of land, where marginalized communities are recognized as active citizens with a legitimate claim to inclusive urban space and participation (HLRN, 2014 Raman, 2023).

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