Revitalizing Urban Social Fabric through Thoughtful Street and Built Edge Design

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Abstract

This paper explores the intrinsic role of streets and built edges as pivotal elements of the urban social fabric, using the informal settlements of Lucknow, India, as a focal case study. Amidst rapid urbanization and the burgeoning emphasis on efficiency-driven designs, the essence of streets as mere conduits for traffic is being re-evaluated. Streets, as demonstrated in Lucknow's dense neighbourhoods, emerge not only as physical spaces but as vibrant social arenas where community life flourishes. Through qualitative analysis and observational methods, this study delves into how the architectural and spatial configuration of streets and their immediate built edges foster or hinder social interactions, community bonding, and a sense of belonging among urban dwellers. The findings underscore the transformative potential of considering social interaction as a fundamental component of urban design. By juxtaposing the lively, interaction-rich environments of Lucknow's informal settlements with the often sterile, vehicle-dominated urban spaces of modern cities, the paper argues for a reconceptualization of urban planning paradigms. It advocates for design strategies that prioritize the creation and maintenance of social spaces, aiming to enhance the social sustainability of urban environments. This research contributes to the discourse on urban design by highlighting the importance of streets and built edges in cultivating a robust social fabric, essential for fostering community resilience, identity, and well-being in the face of changing urban landscapes.

1. Introduction

In the tapestry of urban development, the stitching that binds communities together is often found not in the grandeur of its buildings but in the spaces in between – the streets and built edges that weave through the city's heart. These elements, traditionally viewed as mere infrastructure, play a pivotal role in the social, cultural, and economic life of urban communities. This paper explores the fundamental premise that streets and built edges are not just physical entities but are imbued with the Potential to foster or fragment the social fabric of cities. Drawing on a detailed case study of Lucknow's informal settlements in India, this research delves into the nuanced relationship between urban design and social interaction, proposing a reimagined paradigm for urban planning that prioritizes social sustainability alongside functional efficiency. To navigate the complexities of urban design and social interaction, it is essential to clarify the key concepts underpinning this research. The social fabric of a community refers to the intricate network of relationships, interactions, and bonds that connect

individuals within a society, providing a sense of belonging, mutual support, and social cohesion. Urban design encompasses the process of shaping the physical setting for life in cities, towns, and villages, involving the arrangement and design of buildings, public spaces, transport systems, and services. Within this framework, streets are recognized not merely as pathways for vehicular and pedestrian traffic but as vital public spaces that facilitate social interaction, commerce, and cultural expression. The built edge, comprising the immediate physical boundary that lines the streets – including facades, frontages, and entryways – significantly influences the character of the street and its capacity to serve as a social space. The urgency to revaluate urban spaces arises from an acknowledgment of the growing disconnect in contemporary urban environments, where the efficiency of movement often overshadows the quality of social interaction. Amidst this backdrop, this paper positions itself within the broader discourse on creating more liveable, interactive urban environments. By examining the intersection of physical design and social life, the research contributes to an emerging narrative that advocates for a holistic approach to urban planning, where the cultivation of the social fabric is deemed as essential as infrastructural considerations.

Specifically, the research seeks to:

- Analyse the architectural and spatial characteristics of streets and built edges that promote or inhibit social interaction.
- Understand the implications of street and built edge design on community bonding, identity, and a sense of belonging.
- Offer insights into how urban planning and design can better support the development of vibrant, socially cohesive communities.

1.1 Theoretical Foundations of Urban Social Spaces

Sub Urban theorists have long grappled with the question of how physical spaces within cities contribute to the social life of their inhabitants. **Jacobs (1961) [2]** in "The Death and Life of Great American Cities" emphasizes the importance of vibrant streets and the diversity of uses as central to the health of urban communities. **Gehl (2010),** [1] in "Cities for People," further argues that the design of urban spaces should prioritize human scale and interaction, advocating for streets that serve as

lively, engaging public spaces rather than mere channels for traffic. These foundational texts lay the groundwork for understanding the integral role of physical design in urban social life.

Extending the discourse, scholars like **Mehta (2013)** [3] argue that streets are not only pathways for movement but are quintessential public spaces that offer a stage for social interaction, cultural expression, and economic exchange. Mehta's framework for evaluating the social life of streets encompasses their physical attributes, the activities they support, and the meanings they hold for people, highlighting how these elements interplay to enhance the social fabric. Similarly, Appleyard and **Lintell (1972)** [4] demonstrate in "The Environmental Quality of City Streets: The Residents' Viewpoint" how traffic volume inversely impacts social interactions in urban neighbourhoods, reinforcing the need for design that supports human connectivity.

The concept of the 'built edge' receives attention in urban design literature, particularly in how building facades and street interfaces contribute to or detract from the vitality of public spaces. **Cullen (1961), [5]** in "The Concise Townscape," introduces the idea of 'serial vision' — the experience of moving through urban space, which is profoundly shaped by the continuity and engagement of built edges. This perspective is crucial for understanding how the design of building fronts, including their accessibility and transparency, influences the social dynamics of the street.

Chatterjee (2019) investigates how the spatial configuration of sidewalks, street furniture, and building facades influences pedestrian behaviour and opportunities for casual encounters. This work builds on Gehl's principles, providing empirical evidence that supports the idea that well-designed public spaces act as catalysts for social engagement. The work on informal settlements has evolved, with scholars like **Roy (2009) and Simone (2004)** highlighting the role of informality in fostering adaptive and resilient urban spaces. Their research challenges traditional perceptions of informality as merely a deficiency or problem to be solved, instead proposing that informal urban practices can offer valuable lessons in creating flexible and responsive urban environments. This perspective underscores the importance of learning from the organic development patterns of informal settlements in

enhancing the social fabric of urban areas.
Turner's (1976) [6] work on self-help housing and the importance of user-led design in shaping communities underlines the significance of flexibility and personalization in creating spaces that foster social cohesion. **Roy (2005)** [7] further explores how informality in urban development can lead to vibrant, albeit complex, social and spatial arrangements that challenge conventional planning paradigms.

The concept of social sustainability emerges as a critical concern in recent urban planning literature, integrating the social dimension into sustainable development practices. Valance, Perkins, and **Dixon (2011)** [8] define social sustainability in the urban context as the creation of places that promote well-being, community, and a sense of place. **Moughtin (2003),** [9] in "Urban Design: Street and Square," emphasizes the role of public spaces in achieving social sustainability, advocating for designs that encourage interaction and inclusivity.

1.2 Bridging the Gap

Despite the wealth of research underscoring the importance of street design and built edges in urban social life, a gap remains in applying these insights to the planning and development of contemporary urban environments. The literature calls for a more integrated approach that considers the social implications of urban design decisions, advocating for a paradigm that places community and interaction at the forefront of the urban design process.

2. Method

This study investigates the impact of urban design on social interactions in Lucknow, India's informal settlements. Employing a qualitative approach, it combines observational techniques and semi-structured interviews to examine the socio-spatial dynamics of neighbourhoods. Lucknow was chosen for its diverse urban fabric, focusing on areas with informal development. Data were collected through field observations at various times and interviews with local stakeholders, emphasizing the physical and social aspects of street life. The research aims to understand how urban elements influence community life and social interactions.

2.1 Case Study - Lucknow

Lucknow, the capital city of Uttar Pradesh, India, is characterized by a rich tapestry of historical and cultural heritage juxtaposed with rapid urbanization

and growth. Within this urban mosaic, informal settlements emerge as vibrant but often overlooked components of the city's urban fabric. These areas, marked by self-constructed housing and organic development patterns, provide a unique lens through which to explore the interplay between urban design and social life. The informal settlements in Lucknow, such as those in the Badi Jugoli area, showcase a dense fabric of narrow streets, closely packed houses, and mixed-use spaces that defy conventional urban planning norms. Despite, or perhaps because of, their informality, these neighbourhoods exhibit a remarkable degree of social cohesion and vibrancy. Streets serve not only as thoroughfares but as extensions of living spaces, markets, playgrounds, and community centres. Observations in the field reveal that the physical layout of streets and the design of built edges significantly influence social interactions within the community. Streets in these areas are characterized by their irregular widths, often narrowing to pedestrian-only paths, creating intimate spaces that facilitate face-to-face interactions. The built edges, formed by the frontages of houses and shops, are closely integrated with the street, with many homes featuring open windows, verandas, or small stalls spilling out into the public space. This permeability between private and public zones encourages a constant exchange between inhabitants and the street life outside. Children play cricket in alleyways, women sit together on steps chatting in the afternoons, and vendors hawk their wares along the bustling street corners. These scenes underscore the streets' role as vital social arenas where community bonds are formed and reinforced. Notably, chowks (open spaces or squares) at street intersections become focal points for gatherings, celebrations, and informal meetings, highlighting the importance of such spaces in community life.

A key insight from the study of Lucknow's informal settlements is the role of informality in shaping responsive and adaptable urban spaces. Unlike planned developments, the organic growth of these areas has led to a built environment that closely aligns with the residents' social and economic needs. This informality has resulted in a fine-grained urban fabric that supports a rich tapestry of uses and activities, contributing to the areas' social sustainability. While the informal settlements of

Lucknow exhibit strong social cohesion, they also face challenges related to infrastructure, environmental conditions, and legal recognition. However, these areas offer valuable lessons for urban design and planning, particularly in fostering social interactions through thoughtful street and built edge design. The adaptability and resilience of these communities suggest that incorporating elements of informality and flexibility into urban planning could enhance the social fabric of urban environments more broadly.

2.2 Detailed Observations & Analysis

The streets of Lucknow's informal settlements are not just pathways but arenas of community life. One striking observation was the multifunctionality of these spaces, serving simultaneously as thoroughfares, marketplaces, play areas, and social gathering points. Unlike the segmented and mono-functional streets observed in more formally planned urban areas, these multifunctional streets facilitate a constant buzz of activity, reinforcing social ties. A specific example of spatial configuration fostering social interaction is the design of narrow, winding streets that naturally slow down vehicular traffic, making these areas predominantly pedestrian-friendly. This design encourages residents to use street spaces for leisure, socializing, and economic activities, as observed in the bustling street markets and informal gatherings that dot the landscape. The study closely analysed the role of built edges— the interface between private residences and public streets—in creating permeable, interactive spaces. Homes with doors and windows opening directly onto the street, often with steps or small porches, serve as transitional zones where private and public life blur. These features invite casual interactions among neighbours and passers-by, a phenomenon less prevalent in areas with high walls or gated boundaries. An illustrative case observed described how residents would often place chairs outside their homes in the evenings, engaging in conversations with neighbours and observing street life. This simple act, facilitated by the physical design of the built edge, exemplifies the subtle ways in which architecture can encourage a sense of community and belonging. Figure 1, 2 and 3 shows the Lucknow detailed observation.
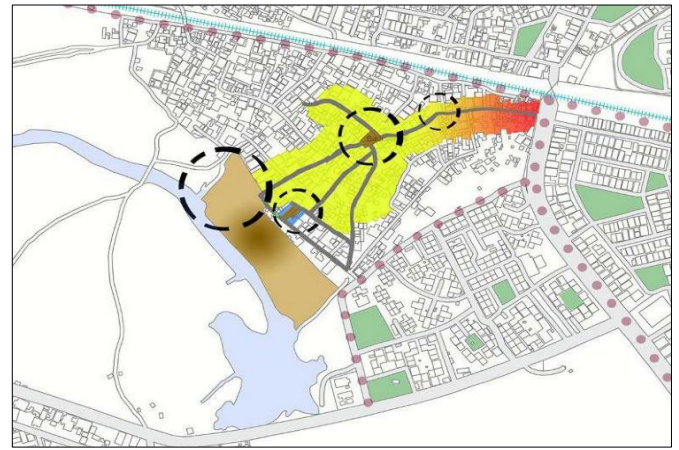

Figure 1 Nodes in Badi Jugoli
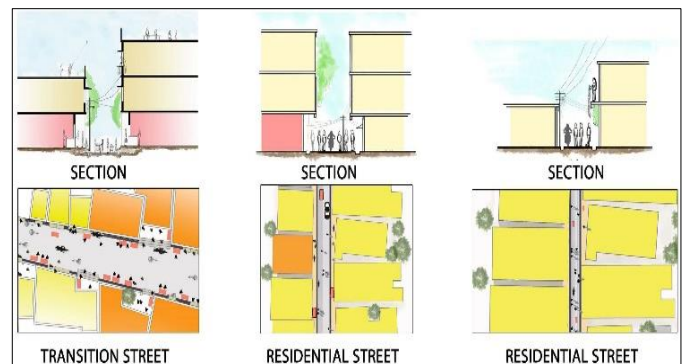

Figure 2 Co-Joined Space- Chowk

Figure 3 Spatial Analysis

The core of the findings revolves around the rich tapestry of community interactions observed within the streets of Lucknow's informal settlements. These interactions range from children's playgroups that spontaneously form in open areas to the informal gatherings of adults around tea stalls and local shops. Each interaction contributes to the overall sense of community, creating an environment where residents feel connected to their neighbourhood and each other. One poignant observation was the role of local festivals and celebrations, which often take over street spaces

and become community-wide events. The physical setup of the streets and built edges—particularly the open and accessible nature of homes and shops—facilitates the communal appropriation of these spaces, turning routine urban areas into venues for shared cultural expression. Figure 4 shows Site Pictures Proving the Case. The findings from Lucknow's informal settlements challenge conventional urban planning paradigms that prioritize efficiency and orderliness over social interaction and community life. The organic, albeit chaotic, layout of these neighbourhoods demonstrates how a flexible and responsive approach to urban design can yield spaces that are not only functional but deeply social. The analysis highlights the importance of considering the social implications of design decisions, particularly regarding street layout and built edge treatment. Urban planners and designers are thus encouraged to think beyond traditional norms, exploring ways to integrate the principles of social permeability and multifunctionality into urban development projects.
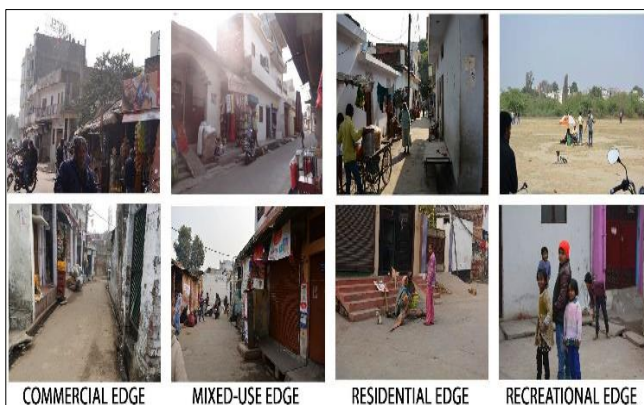

Figure 4 **Site Pictures Proving the Case**

3.   Results and Discussion
3.1 Results

The investigation into Lucknow's informal settlements unveiled a direct correlation between the design of streets and built edges and the proliferation of social interactions among the community members. Specifically, the research identified that the organic and narrow street layouts, characterized by their pedestrian-friendly nature, significantly contributed to a vibrant social life. These streets, serving multiple functions beyond mere passageways, became lively centres for commerce, recreation, and communal gatherings. The physical closeness of buildings, along with the presence of open windows, verandas, and storefronts that spill out onto the streets, created a seamless blend of public and private spaces. This architectural configuration fostered an environment where social interactions flourished, highlighting the critical role of urban design in enhancing community cohesion and social sustainability.

3.2 Discussion

The findings from Lucknow underscore the profound impact of urban design on fostering community interactions and social bonds. Contrasting the vitality found in informal settlements with the often sterile and vehicle-dominated landscapes of formally planned areas, this study suggests that the essence of urban liability extends beyond infrastructure efficiency to include the richness of social engagements. The research illuminates how the spatial dynamics of streets and built edges act as fundamental contributors to the social fabric of neighbourhoods, facilitating a sense of belonging, mutual support, and social cohesion. By promoting pedestrian-friendly environments and integrating mixed-use developments, urban spaces can become more inclusive, engaging, and supportive of social sustainability. This study advocates for a paradigm shift in urban planning that prioritizes social interactions as much as it does physical infrastructure.

Conclusion

The study calls for urban planners, designers, and policymakers to integrate principles of social sustainability into their projects, emphasizing the creation of spaces that promote community engagement and social cohesion. The research advocates for a shift towards designing urban environments that support social interaction, flexibility, and community life.

Key recommendations for creating vibrant, socially sustainable urban spaces include:

- Pedestrian-Friendly Layouts: Prioritize designs that make streets safe and inviting for pedestrians to promote social interactions. Traffic calming measures and wider sidewalks can enhance inclusivity.
- Mixed-Use Developments: Support mixed-use areas that blend residential, commercial, and recreational spaces to foster community connections and provide accessible conveniences.
- Green and Public Spaces: Embed parks and plazas in urban designs as communal areas for

social bonding and well-being, ensuring accessibility for all.

- Social Permeability: Design interfaces between private and public spaces to encourage interactions, utilizing open façades and community spaces that foster engagement.
- Informality: Incorporate the flexibility and resilience observed in informal settlements into formal planning to address diverse needs effectively.
- Participatory Design: Involve communities in the design process to ensure developments meet their needs and aspirations, leading to more sustainable urban solutions.
- Local Identity and Culture: Reflect the area's identity, heritage, and culture in urban spaces to promote a sense of pride and belonging among residents.

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