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Exploring the Urban Structures: Identification and Comparison of Urban Forms in Present-Day Lahore City

Abstract

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**Keywords:** Lahore, Social Cohesion, Social Capital, Urban Forms, Urban Sustainability, Urban Typologies, Urbanization

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## Title

### Exploring the Urban Structures: Identification and Comparison of Urban Forms in Present-Day Lahore City

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#### Abstract

The paper explores Lahore's rapid urbanization and its effects on social cohesion and sustainability. Nearly 38% of Pakistan's population lives in cities, urban expansion has led to overcrowding, inadequate infrastructure, and declining living conditions. This study categorizes Lahore's urban forms based on physical traits like street layout and building density, analyzing their influence on residents' lifestyles and sustainability. The research highlights how Lahore's development has created isolated neighborhoods, reduced social interactions, and weakened social capital. It emphasizes the need for planners to create inclusive, community-driven spaces. By classifying different urban typologies and assessing their spatial, social, and economic characteristics, the study examines their impact on community sustainability. It focuses on the connection between urban planning and social cohesion, offering insights for future urban policies. Ultimately, the research aims to promote a more integrated and sustainable urban environment in Lahore, ensuring better living conditions and stronger community ties.

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#### Keywords:

Lahore, Social Cohesion, Social Capital, Urban Forms, Urban Sustainability, Urban Typologies, Urbanization

#### Introduction

The world has seen a reckless urbanization rate in the last few decades and currently, more than half of the population resides in urban areas globally. Asian cities are among the most rapidly growing cities and similarly, Pakistan is no stranger to this

phenomenon and observes the fastest-growing urban population in the region with around 38% of the urban population currently. By way of population, increase is more than the capacity of the large cities, the resultant shape of the city could be overcrowded with overly loaded roads and



infrastructure, insufficient housing and employment opportunities, deteriorating environment, and dilapidated living conditions.

In a country like Pakistan, urban communities prefer to leave the urban core as they grow denser and problematic. This leads to horizontal and peripheral expansion of the cities with the new neighborhoods developing in the surroundings of the cities. The phenomenon results in a multi-layered city that can be categorized into different urban forms based on physical features such as street layout and building density, open spaces, street width, etc. These different urban forms may offer a completely different lifestyle to their residents in relation to social, financially viable, and eco-friendly conditions resulting in different levels of sustainability. The modern peripheral development, on the one hand, provides huge benefits to the residents in terms of sufficient open spaces and circulation, but on the other, has challenged sustainability in terms of its social aspects.

The recent urbanization of Lahore might be linked to the city's deliberate growth as a center for social, professional, and educational activities. Lahore's reputation as Pakistan's cultural center and its assurances of a prosperous life for everyone who enters has contributed to its predicted but extraordinary population growth. This city's social fabric has changed. In order to accommodate this enormous influx and maintain Lahore's reputation as a city that changes with the times, several aspects of its urban and architectural development have been hurried.

The objective of any new housing project is to surpass its predecessor in terms of technology, structure, and logistics. This city has been divided into separate packets rather than being connected further, and even these packets were not created with the social capital backdrop in mind. In a way, Lahore's citizens have become more estranged from one another than they were when Pakistan first emerged.

### **Background and Importance of Urban Forms**

Modern cities have become axes of varied people, besides nuclei of fiscal and economic influence. People have migrated to Lahore for various reasons; it may be money that drew them in, the possibility

of boundless social life, or educational prospects. Though there is some overlap, as these individuals hail from places all over the nation, they're immensely dissimilar from each other. It is difficult for them to find common ground in everything from their language and accent to the food they consume to the clothes they wear. Due to these and many more complexities, the social fabric of such cities has vastly changed. The cities have attempted to accommodate these new inputs, however, though these cities have expanded geographically, they've shrunk socially. The network between people, an intricate web of social activity, has hence disappeared. To make these cities more people-friendly, it is required that urban planners and architects carefully monitor and analyze the behavior of these different people in this urban landscape, and design people-friendly spaces accordingly.

From the existence of socially vibrant localities within a city, it can be transformed into a sustainable community. Through values long forgotten for instance trust, brotherhood, and a sense of belonging, the communities can be transformed through social regeneration. A community that lacks these properties, and the avenues to develop these, can lead to isolation and loneliness among its inhabitants, even in a crowded metropolitan. The conundrum of a lively city would feel static to those who aren't familiar with it, and familiarity comes from relationships more than it does from maps and roads.

The role of urban planners, therefore, is to design and implement a residential community that promotes social cohesion. Without this, the concept of a community would be forever lost. Additionally, the Lahore city has become multicultural. In comparison to other big cities such as Islamabad, and Karachi, Lahore has seen the most influx; both statistically and culturally. Being the provincial capital, a lot of infrastructural and educational development has also been focused on Lahore, more so than in any other city or province of Pakistan, this makes the city an interesting case study on this subject.

The research intends to include the Metropolitan City of Lahore as the target study area and narrow down the investigation to selected urban areas with discrete urban forms based on the prescribed criteria.

The research broadly objects to investigating the relationship between urban planning and societal sustainability. Social cohesion is a significant gage of urban communal sustainability and is barely talked about in the urban planning and formation of urban forms in Lahore. Therefore, this research intends to evaluate and analyze the part of physical planning and features of the built-up fabric, layout, and design in forming socially consistent neighborhoods in the diverse city of Lahore.

### Research Questions and Objectives

This research explores the various typologies of urban forms in Lahore, focusing on their spatial, social, and economic characteristics. It aims to analyze how these forms differ across the city, offering a detailed classification and comparison. By examining the unique attributes of each urban form, the study seeks to uncover the complex interactions between socioeconomic dynamics and spatial structures. The primary goal is to identify and categorize these urban forms, enhancing the understanding of Lahore's urban landscape and providing a foundation for better planning and policy development.

### Literature Review:

#### Urban Form Typologies: Definitions and Frameworks

The phrase "form" describes what the senses immediately see. The existence of anything that distinguishes it from other subjects is indicated by the idea of form. Form is the conceptual central idea of anything that is situated in opposition to incidental characteristics. *The urban form refers to the physical patterns, layouts, and structures that make up an urban core (P. Sharma & Gupta)*. It can be used simply to describe the physical characteristics of an urban region, implying a set of features or characteristics associated with urban planning, transportation systems, and land use plans. According to Lynch, urban form is "*the spatial pattern of the large, inert, permanent*

*physical objects of the city*". Moreover, some definitions contain non-physical attributes. Commonly discussed qualities include size, form, scale, density, land uses, building types, street layouts, urban block design, and the distribution of green spaces.

### Approaches to Urban Form

Urban form can be analyzed through four major approaches, each offering unique insights into urban morphology:

#### Spatial Analytical Approach

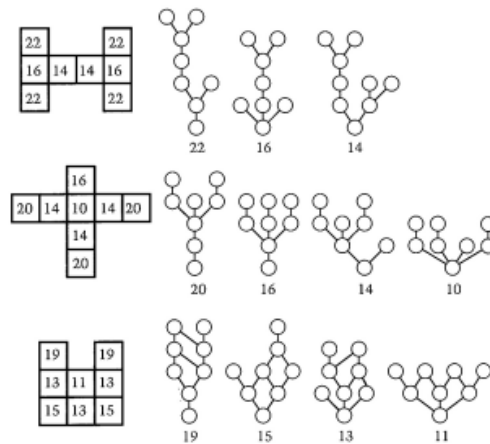
This approach, championed by Michael Batty and the Centre for Advanced Spatial Analysis, focuses on understanding cities as complex systems. It studies urban spatial structures and dynamics using tools including GIS, cellular automata, agent-based models, and geometric methodologies. Cities are viewed as evolving systems where patterns emerge from local activities, and models aim to distill the fundamental mechanisms behind city expansion rather than providing precise predictions. This approach emphasizes land use, population migration, and city dynamics, treating urban environments as challenges of ordered complexity.

#### Configurational Approach

The configurational approach, primarily developed through *space syntax* by Hillier, studies the spatial structure of cities to understand urban mobility and form. It analyzes spatial configurations like axial and convex mapping, which reflect human perception of space. The method examines how spatial layouts influence movement and land use while exploring the relationships between physical forms, usage, perception, and mobility. Tools like j-graphs abstractly represent connections and positions in a spatial configuration, illustrating the importance of spatial frameworks in urban morphology.

**Figure 1**

*J-Graph Examples Depicting Abstract Connections and Spatial Relationships*



Source: (Hillier, 1997)

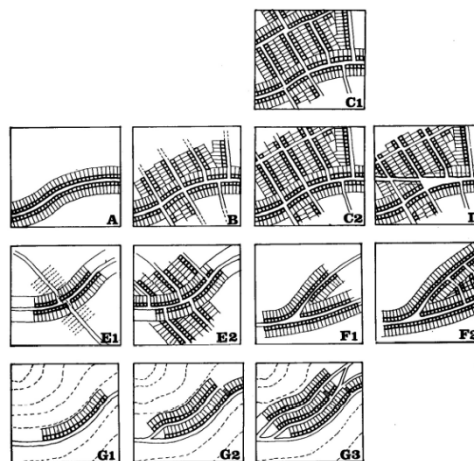
**Process Typological Approach**

Rooted in the work of Saverio Muratori and Gianfranco Caniggia, the process typological approach focuses on the historical processes shaping the built environment. This method studies urban form through the evolution of construction methods, materials, and architectural ideas. It examines urban tissue through dimensions such as physical form, function, construction

methods, and conceptual ideas. The hierarchical nature of forms and the transformation of buildings over time are key areas of study, highlighting the deep interconnection between architecture and urban morphology. Caniggia and Maffei claim that the physical shape, usage of function, building concept, form, and construction process are the different forms that make up the urban form. (*View of Aspects of Urban Form*, n.d.).

**Figure 2**

*Urban Tissue Formation in Various Generalized Scenarios*



Source:(*View of Aspects of Urban Form*, n.d.)

**Historio-Geographical Approach**

Developed by M. R. G. Conzen, this approach explores the spatial and temporal evolution of

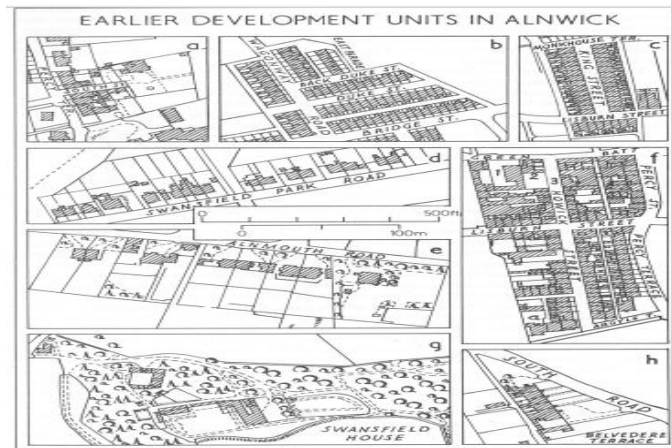
towns. It analyzes urban form through elements like site, function, townscape, social and economic contexts, and development. The town plan, land use patterns, and building fabric are the three

complexes that make up the townscape itself. Further breakdown of the town plan into street systems, plot patterns, and building arrangements provides a detailed understanding of urban morphology. This approach emphasizes the

historical and geographical dimensions of urban form, connecting past development processes to contemporary urban characteristics. The town design was further broken down into building patterns, plot patterns, and roadway systems.

**Figure 3**

*Plan Units Alnwick, Northumberland*



Source: (*View of Aspects of Urban Form*, [n.d.](#))

The morphology or structure of urban areas has been defined and conceptualized differently by a number of scientists and sociologists. Physical form, use, activities, mobility, control, perception, continuity and change, and movement or flow of material and information are the six essential components of urban form that Kevin Lynch defined.

### Urban Growth and Transformation in Developing Cities

In recent years, the urban form has undergone significant alteration, disregarding previous regulations and limitations. In addition to shattering previous city links and identities, these changes have affected the relationships between form and space, urban form and natural surroundings, culture and societal interactions, and more. Similar to town planning, several strategies that concentrate on the impact of culture and its many manifestations on urban shape have been developed as a consequence of the collective intelligence of a group of researchers. It will be very helpful to comprehend philosophical concepts, conventions, and laws as well as the design process and its ramifications in order to positively influence

the town's shape. (*International Journal of Research - S.N. Sharma - Google Books*, [n.d.](#)).

Significant social and economic change is taking place in the Middle East. Even while the specifics of each state's changes vary, they may all be categorized as town and industrial revolutions. However, the social and economic effects are only a part of a much greater process that civilizations go through as they transition from a preindustrial and pre-urban to a predominantly built-up, industrial economy-based culture. (Roberts, [1979](#)).

This procedure is divided into three stages, each of which includes aspects of urbanization and industrial sophistication at the same time. The close connections between industrialization and human influence may become apparent when it is understood that industrialization is a component of a process of human influence specialization. Over time, this process fosters mutual support between individual or group commercial sectors.

About 377 million Indians, out of a total population of 1210.2 million in 2011, reside in built-up urban areas, according to the Ministry of Urban Development (MOUD). The number of people living in inner-city communities has grown by around 91 million within the past ten years. The part of individuals residing in towns to the total



inhabitants of the state is only 31.6 percent. The percentage of Indians living in towns increased by 3.4 percent between 2001 and 2011. As to the first findings of the "Indian Census 2011," there has been a rise of 2774 towns over the course of the decade, comprising 2532 ballot towns and 242 constitutional towns. In metropolitan regions, the pace of population increase was about 32%. (*View of Aspects of Urban Form*, n.d.)

Nagpur has a 300-year history, and the city's growth was based on the historical foundation. Nagpur's model is classified as either monocentric, polycentric, or composite using Alain Bertaud's technique for analyzing a city's geographical organization. Here, the spatial organization of a town is described as the combination of two forms: (i) the way people move around the town during the day and (ii) the way they are distributed inside the town's-built area while they are at home. Thus, after projecting the two trends, demographic structure, and people movement pattern, the conceptual model for Nagpur city seems to be a composite model, a mono-polycentric model with a major epicenter and several sub-centers. (Kotharkar et al., 2014)

Lahore exhibits characteristics of both organic and planned urban forms. Organic urban form develops without a central plan, often resulting in a chaotic mix of structures that evolve over time based on necessity and availability of land ((PDF) *Analyzing the City Urban Form of Lahore, Pakistan through Its Evolution*, n.d.). In contrast, planned urban form involves systematic design and regulation, aiming for orderly development. Lahore's historical evolution reflects these two forms, with older areas showcasing organic growth while newer developments often attempt to incorporate planned elements (*Urban Form Definition & History - Lesson | Study.Com*, n.d.)

The city has historically favored horizontal expansion, leading to sprawling neighborhoods characterized by single-family homes and extensive green spaces. This model complicates service delivery and infrastructure development, as residents are spread out over larger areas (Kugelman, 2013). In contrast, vertical growth strategies that promote high-density living could alleviate some of these pressures by allowing for more efficient use of space and resources (Rana & Bhatti, 2017).

Considering its geographic location, Lahore, often labeled "the Paris of the East," has remained a popular travel destination, especially in recent years. Presently, Lahore is separated into three sections. The first is the historic Walled City, which has existed for more than a millennium and is surrounded by the Circular Road. The Civil Lines, a British-built section of Lahore, is the second area. The third is the expanded Lahore, which includes a number of new projects like "EME Colony, Bahria Town, Defence Housing Authorities, The Greens, Valencia Town," as well as many other areas created after the subcontinent was divided.

### Methodology

This research employs a comprehensive mixed-methods approach to explore the relationship between urban forms and social capital in Lahore, Pakistan. The methodology is intended to collect both quantitative and qualitative data, offering a comprehensive knowledge of how various urban designs affect citizens' social networks, trust, and sense of community.

### Research Approach and Design

In the direction of accomplishing the objectives of the study, the research strategy comprises a comprehensive methodology incorporating a mixed-methods approach. With together quantitative and qualitative techniques. Through the use of a cross-sectional research approach, the study makes it possible to gather data at one particular moment from many neighborhoods that reflect distinct urban forms. This design facilitates the comparison of social capital indicators between traditional and modern urban settings.

### Data Collection

The data required to examine the urban form of Lahore through three areas: the Walled City, Allama Iqbal Town, and Bahria Town, representing historical, planned, and peri-urban developments. Data sources include Landsat satellite imagery as well as master plans such as the Integrated Master Plan (2021) and field surveys gathered socio-economic, infrastructure, and land use data, offering a comprehensive understanding of urban dynamics.

A comparative analysis approach evaluates spatial growth, urban morphology, and socio-

economic impacts across these areas. With the help of GIS tools and relevant datasets integration, particularly temporal trends, this research further investigates urban expansion trends over a period of time, understanding preservation challenges and related planning outcomes.

**Urban Form Classification Criteria**

In order to investigate the prevailing various urban forms in Lahore, a critical review of the existing literature was done by considering physical form, street patterns, accessibility, population density, the historical context of the area, access to social infrastructure, and diverse existing land uses as key parameters. This review process enabled the researcher to shortlist five types of communities

living in Lahore which further narrowed down to three for a detailed comparative analysis. The below list comprises three selected communities: -

- A community living in a highly dense and historical neighborhood called Walled City
- A community living in a medium dense and typical neighborhood called Allama Iqbal Town and,
- A community living in comparatively low population density and a newly developed neighborhood called Bahria Town.

Above listed communities and related attributes of their urban forms including lifestyle, beliefs, and social influences were further compared in a chart to summarize the findings.

**Table 1**

*Attributes of Selected Urban Forms (Study Areas)*

Aspects	Indicators	Selected Neighborhood (Urban Forms)		
		Walled City	Iqbal Town	Bahria Town
Physical form/ morphology	Street patterns, block sizes, layout.	Conventional	Typical	Modern
Population density	People per unity area	High	Medium	Low
Spatial organization	Land Use mix including residential, commercial, recreational, etc.	High mix	High mix	High mix
Built Environment	Type of structures, height, design, and density of buildings,	Old buildings, high building density	Typical structures, medium building density	Typical and modern structures, low building density
Transportation infrastructure	Type and hierarchy of roads, street width, accessibility, and mobility.	Low accessibility	Medium accessibility	High accessibility
Social infrastructure	availability of social amenities and services such as schools, hospitals, parks, libraries, and community centers	Low	High	High

**Case Study: Lahore City:**

**Historical Overview of Lahore’s Urban Development**

Three pivotal eras; Mughal, colonial, and post-independence, have heavily influenced Lahore's urban development over time. With well-planned

layouts, a blend of Persian, Indian, and Islamic influences, and architectural wonders like the Lahore Fort and Badshahi Mosque, the city flourished as a cultural and administrative center throughout the Mughal dynasty (1524–752). In addition to expanding the city and improving public health, the colonial era (1858–1947) also

reinforced social divisions by creating segregated districts and introducing modern infrastructure like roads and railroads. Urban sprawl, informal settlements, and problems like traffic congestion resulted from the fast urbanization that followed independence in 1947 due to population increase and economic opportunity. New housing plans have been the emphasis of recent advances, frequently putting individual wants ahead of communal harmony.

### Identification of Urban Forms in Lahore

The city of Lahore, one of the most important cities in Pakistan, has a wide range of urban forms the fact that represents its cultural diversity, historical development, and current growth trends. The urban environment of the city may be generally divided into three types: hybrid suburban expansion, grid-based contemporary developments, and organic growth. Every form has unique properties and spatial arrangements.

Lahore's urban fabric offers an intriguing contrast between conventional and contemporary development techniques. With its winding lanes

and dense, mixed-use setting that developed over centuries, the Walled City of Lahore is the perfect example of organic growth. Its Mughal-era architecture and lively public areas highlight its cultural legacy. Allama Iqbal Town, on the other hand, is a prime example of grid-based contemporary development, providing well-planned layouts with the practical division of public, commercial, and residential areas, bolstered by strong utilities and infrastructure that improve the quality of life for locals. Bahria Town, on the other hand, exemplifies hybrid suburban expansion by combining planned residential clusters with landscaped parks and broader highways, fusing contemporary urban architecture with traditional community values.

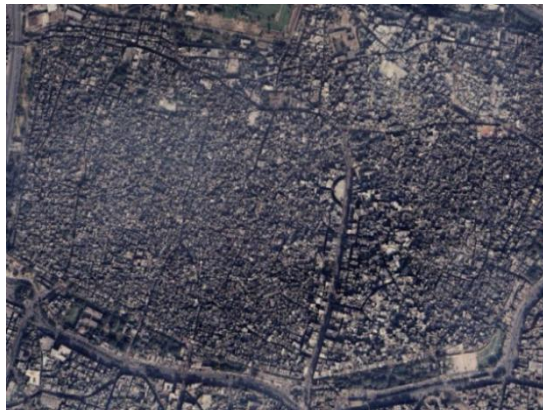
### Comparative Analysis of Urban Forms in Lahore

#### Typology and Characteristics Comparison

The region has a high population density because of its small size and historical significance, creating a vibrant but congested atmosphere.

### Figure 4

*Spatial Dynamics of the Walled City of Lahore*



The grid layout of Allama Iqbal Town, a planned residential community created in the middle of the 20th century, is highly regimented. Due to its moderate density, it may accommodate both business and residential uses. The density of the area is still lower than that of the Walled City,

despite an increase in buildings over time. In order to enhance the quality of life for its citizens, Allama Iqbal Town has parks and community facilities in addition to primarily residential land use with approved commercial zones.

**Figure 5**

*Urban Forms of Allama Iqbal Town, Lahore*



Bahria Town's wide avenues and generous layouts are an example of modern urban development. With unique zoning boundaries and a self-contained neighborhood, it encourages low to moderate density. Larger plots and loads of green space define the development, which promotes a

suburban lifestyle. Although Bahria Town's land use is predominantly residential, it also has a large amount of commercial space, recreational amenities, and other services, making it a contemporary, self-sufficient place to live.

**Figure 6**

*Spatial Development at Urban Fringes, Bahria Town*



**Table 2**

*Key Differences in Road Networks, Public Spaces, and Building Footprints*

Aspect	Walled City	Allama Iqbal Town	Bahria Town
Road Networks	Narrow, winding streets; limited access for vehicles; pedestrian-friendly	Wider roads; organized grid system; better traffic management	Wide boulevards; well-planned access roads; designed for vehicle flow
Public Spaces	Limited public parks; historical squares serve as gathering points	Parks and community centers are available but less extensive than Bahria Town	Extensive parks, and recreational facilities; designed for community engagement
Building Footprints	Compact buildings with minimal setbacks; multi-story structures common	Detached houses with gardens; more spacing between buildings	Larger plots; detached homes with significant green areas around them

## Social and Economic Implications of Different Urban Forms

The Walled City is a thriving center of traditional trade, with its winding lanes teeming with stores and marketplaces that rely heavily on foot traffic. Although the small area restricts the expansion of larger firms, this setting helps small businesses. Because of its older buildings and smaller living areas, housing in the Walled City is typically less expensive. Nevertheless, high population density, which frequently leads to overcrowding and lower living standards, is a price paid for this affordability. The Walled City's narrow streets make it difficult to move about since they prevent cars from entering. As a result, inhabitants mostly rely on walking or bicycling, which can be challenging for people with limited mobility.

The neighborhood has a well-balanced mix of commercial and residential buildings, as well as specific marketplaces that facilitate well-run businesses. It does not, however, draw as many

pedestrians as the crowded Walled City. Although housing in this neighborhood is more costly than in the Walled City due to its superior facilities and infrastructure, it is still less expensive than in Bahria Town. Although there are public transportation choices, they do not offer the best connectivity needed for smooth travel, and the grid plan improves vehicle flow and accessibility.

Bahria Town serves as a self-sustaining community that promotes local business growth by integrating commercial hubs into residential neighborhoods in a seamless manner. However, the community's intended layout could limit the variety of retail alternatives available. Because of the contemporary conveniences and roomy living arrangements, housing costs are significantly higher, making it less affordable for families with lower incomes. Bahria Town's well-planned infrastructure and broad roads improve mobility, but the scarcity of public transit makes people more dependent on their own cars.

**Table 3**

*Urban Forms Affect the Quality of Life and Access to Amenities*

Aspect	Walled City	Allama Iqbal Town	Bahria Town
Quality of Life	High density leads to overcrowding; limited green spaces; cultural vibrancy but challenges with sanitation and noise.	Moderate density promotes better living conditions; more green spaces and community facilities enhance quality of life.	High quality of life with spacious homes, modern amenities, and well-maintained public areas; perceived as a desirable living environment.
Access to Amenities	Close proximity to markets and cultural sites; limited access to modern amenities like parks and recreational facilities.	Access to parks, schools, healthcare facilities; better infrastructure than Walled City but less extensive than Bahria Town.	Extensive amenities including parks, shopping centers, schools, and healthcare facilities designed for convenience; cater primarily to higher-income groups.
Housing Affordability	Generally, more affordable housing options due to older structures; however, high density can lead to reduced living standards.	Relatively affordable compared to Bahria Town; housing prices are higher than in the Walled City due to better infrastructure.	Higher housing prices reflect modern amenities and spacious living conditions, limiting access for lower-income families.
Mobility	Narrow streets limit vehicle access; residents rely on walking or cycling, which can be a barrier for those with mobility issues.	Organized grid layout allows better vehicular movement; public transport options are available but not extensive.	Well-planned road networks facilitate easy movement; reliance on private vehicles is common due to limited public transport options.

## Discussion:

### Significance of Urban Form Typologies in Lahore's Development

The historical, cultural, and socio-economic evolution of Lahore city can be expressed by its typologies of existing urban forms. They present a thorough reflection of urban development under the prevailing policy in a certain period. Moreover, they are also playing a role in defining the characteristics of the physical and spatial domains of the city. Similarly, they are revealing associated challenges and priorities as well in various development stages.

In the same manner, the historical core of urban form in Walled City reflects the city's inherent cultural heritage and centuries-old urban ethnicities. The attributes of under discussion urban form mainly comprise its pedestrian-friendly narrow streets, spaces with mixed-use, and high population density reflecting an urban development where daily routine life was centered around compact contiguous development and community interactions. However, considerable challenges are posed by the transformation weights, counting with the need for upgraded infrastructure and urban facilities. The contemporary urban needs and their adaptation in Walled City's urban form initiate urban planning debates as a focal point in terms of keeping a balance, in parallel, to its historical identity.

On the other hand, with the aim of providing a planned neighborhood for the expanding middle-class population of Lahore city, the Allama Iqbal Town was developed during the mid-20th century. The subject town's planned development highlights a notable approach to urbanization with certain attributes as listed down: -

- Town layout follows grid-based pattern
- Moderate population density and,
- Integrated residential, commercial, and recreational zones

The urban form of the Allama Iqbal Town poses an increasing need for a planned and livable area with a balanced urban lifestyle. However, the uncontrolled urban expansion, maintenance of infrastructure, and growing population density exert notable pressure on this area to maintain as planned.

In addition, a paradigm shift in traditional urban development patterns may be observed in urban fringes of existing footprints as the spatial form of Bahria Town represents the modern typology with a luxury lifestyle. Its urban form follows certain attributes as listed below: -

- Wide boulevards of designated ROWs depicting car-dependent communities,
- Plots with large sizes showing low net residential density, and
- Self-sufficient distinct zoning

With the context of a high standard of living, it symbolizes an urban development to meet the needs of the well-off population segment. Moreover, contemporary urban planning with the preferences of convenience and luxury is offered through self-contained nature, provision of a range of amenities, designated commercial activity centers, and a variety of parks & playground spaces. Nevertheless, social inclusivity and equitable resource provisions for a small but high-income population group are the key critics of this particular urban form.

In order to address key urban challenges Lahore faces today including uncontrolled population growth, basic infrastructure needs, and disparities among various socio-economic groups, it is crucial to understand and investigate city-wide typologies. Investigations on urban forms and their responses to key urban challenges will help policymakers develop and execute sustainable development to accommodate population diversity.

### Challenges and Opportunities

With the diverse urban forms, Lahore is, at present, facing substantial urban challenges. Its core and historic urban areas are highly congested due to high vertical population density and originally planned pedestrian-friendly narrow street patterns cannot accommodate traffic demand. In parallel, the non-availability of integrated public transport in this culturally rich area compels its residents to own private vehicles which is the main cause of the vehicle ownership rise and consequently traffic jams with considerable environmental issues. Resultantly, the once-celebrated status as "The City of Gardens" is diminishing with a reduction in green spaces and quality of life. On the other hand, urban development with its particular challenges in the outskirts poses an unstoppable sprawl in a

haphazard manner. Due to this, integration among scattered communities is severely lacking, leading to challenges of agricultural droughts and the risk of urban flooding. The provision of an integrated public transport system along with land use reforms are crucial to cope the traffic congestion and related environmental issues besides effective urban sprawl management. Additionally, mega urban development projects with connected green spaces may offer sustainable growth to Lahore in order to ensure it evolves as a sustainable and livable city.

## **Conclusion:**

### **Summary of Findings**

The research explored the connections and associations among various urban forms that existed in Lahore city. The performed qualitative and quantitative analysis in its research framework revealed an in-depth understanding of how selected urban forms touch on social capital indicators among residents of certain neighborhoods.

The performed analysis explains that urban forms with modern characteristics pose the following attributes: -

- Traditional lifestyles,
- Mixed land uses, and
- Highly accessed public spaces

The analysis reveals that urban forms with traditional lifestyles and attributed to mixed land use patterns with a high level of public space accessibility depicting modern characteristics. In addition, there are statistically significant correlations exist between specific features of various urban forms. For instance, the presence of well-maintained open spaces was positively associated with stronger social networks, while higher building density was linked to lower levels of trust. These findings suggest urban design plays an important role in shaping social outcomes and thoughtful planning is crucial in relation to cohesive communities.

Overall, this empirical research provides evidence from a metropolis city with a higher pace of urbanization and contributes to the literature on urban planning. Urban planning strategies may further be informed with the insights gained from study areas not only in Pakistan but globally in

communities of rapid urbanization and social fragmentation.

### **Recommendations for Future Urban Planning**

A list of practical recommendations can be made to direct and indirect stakeholders of this study based on the inferences drawn in it. The relevant professionals may belong to the field of urban planning, technocrats, and developers of housing colonies and may consult these recommendations in order to enhance social capital through some tailored urban design.

### **Public Spaces Prioritization in Urban Design**

Public spaces should be created and maintained in a manner that their accessibility is of top priority for urban planners. In this regard, parks, plazas, and communal areas attributed as public spaces play an important role in building social ties and bonds by facilitating social interaction. These land uses should be planned in order to achieve inclusivity, and safety, and represent the needs of diverse groups.

### **Promote Mixed-Use Development**

There is a need to encourage functional mixed-use development, with a combination of residential, commercial, and recreational. By doing this, vibrant and responsive communities representing natural social interactions can be developed along with reduction in longer commuting time. The relevant policies should support/incentivize the integration of such developments in both new and existing urban areas.

### **Reconsider High-Density Housing Policies**

High-density housing solutions should be executed carefully and with thoughtful process although having the potential to address the land availability issues. The housing colonies with high-density housing undermine social cohesion and trust. There is a need to balance density and area percentages of public spaces should be adequate in order to promote social interaction.

### **Encourage Community Participation in Planning Processes**

The urban planning process can further involve local residents in order to better reflect the

community's needs. Participatory planning initiatives can help build social capital by developing a sense of ownership and obligation among residents. The concerned policymakers should create platforms to ensure meaningful and schematic community engagement while making informed decision-making processes.

### **Address Social Inequities in Urban Design**

Social inequities while doing urban planning should consciously be addressed in order to ensure sure accessibility of public spaces without bothering the income statuses of the residents. Special attention should be given to marginalized communities who may be disproportionately affected by poor urban design.

### **Foster Intergenerational and Intercultural Spaces**

There must be integrated communal spaces in various urban forms by encouraging interaction across different age groups and cultures. This can help bridge social divides and foster a more inclusive community. Planners should design neighborhoods that facilitate intergenerational living and intercultural exchanges, promoting a sense of unity in diversity.

### **Monitor and Evaluate Urban Design Impacts**

Regular monitoring and evaluation of urban developments are essential to ensure that they are meeting social sustainability goals. Urban planners and researchers should collaborate to assess the long-term influences of different city forms on social capital and adjust planning strategies accordingly.

### **Future Research Directions**

While this research offers a valuable understanding of the association between urban forms and social capital, future research could expand on these findings in several ways:

- Longitudinal studies could explore how social capital evolves over time in different urban settings.
- Comparative studies could examine similar issues in other cities in Pakistan or in other developing countries, providing a broader consideration of the interplay between urban design and social capital.
- Research could also investigate the role of digital spaces in complementing physical spaces in urban areas, particularly in the framework of social capital formation in modern, technology-driven societies.



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