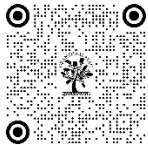


IMPACT OF ARCHITECTURAL INTERVENTIONS AND URBAN DESIGN ON SOCIAL COHESIVENESS AND SUSTAINABILITY: A CASE OF DUBAI, UAE

Banafsha Quadri ¹, Dr. Harveen Bhandari ²

¹ Research Scholar, Chitkara School of Planning and Architecture, Chitkara University, Punjab, India

² Professor, Chitkara School of Planning and Architecture, Chitkara University, Punjab, India



Corresponding Author

Banafsha Quadri,
ar.banafsha@gmail.com

DOI

[10.29121/shodhkosh.v5.i1.2024.1060](https://doi.org/10.29121/shodhkosh.v5.i1.2024.1060)

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Copyright: © 2024 The Author(s). This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

With the license CC-BY, authors retain the copyright, allowing anyone to download, reuse, re-print, modify, distribute, and/or copy their contribution. The work must be properly attributed to its author.



ABSTRACT

The last three decades has observed the growth of United Arab Emirates (UAE) from a dusty desert region to a strategic centre for global business, grand expatriate community living, beaming skyscrapers and eclectic tourism. Due to this rapid transition, several cities exhibit an urbanism that is largely built around ambitious smart city models and are rapidly emerging as charioteers of socio-economic and cultural change.

As architectural representations and urban designs are the expressions of socio-economic and cultural climate, this research focuses on contemporary architectural plans, urban designs and their relationship with social cohesiveness and sustainability of communities. This research is based on an extensive literature and research review and relevant case studies of selected mixed-use developments in the UAE. The key features of social cohesiveness assessed are social interactions, sense of belongingness, communal harmony and social ties. The key features of social sustainability are wellbeing, quality of life and future satisfaction of people.

Encouragingly, the findings of the study conclude that good urban designs are related to specific economic, social, cultural and environmental benefits for a range of stakeholders, that physical layout and built form contribute exceptionally towards social cohesiveness amongst multicultural societies. The study also asserts a direct and positive association between high-quality neighbourhoods and socially cohesive behaviour and attitudes.

Keywords: Built Environment, Urban Designs, Housing, Neighbourhood, Social Sustainability, Social Cohesiveness

1. INTRODUCTION

The United Arab Emirates (UAE) has undergone a remarkable transformation over the past three decades, transitioning from a desert landscape into a dynamic global center for commerce, expatriate communities, and architectural marvels. This rapid development has been propelled by ambitious urban planning initiatives, with cities embracing smart city models and emerging as drivers of socio-economic and cultural change (AlAwadhi & El-Gohary, 2018). Against this backdrop, the relationship between architectural interventions, urban design, and the social fabric of communities has gained increasing significance.

The UAE's evolution serves as a compelling case study of how strategic urban planning and innovative architectural interventions can reshape not only the

physical landscape but also the socio-economic dynamics of a nation (Dara, 2019). Ambitious projects such as the Burj Khalifa, the world's tallest skyscraper, and the Palm Jumeirah, a sprawling man-made island, symbolize the country's vision of modernity and progress. These landmarks have not only redefined the skyline but have also catalysed economic growth and international recognition.

However, beyond the striking skyline and luxurious developments lies a deeper narrative of social cohesion and sustainability. The built environment serves as a reflection of the socio-economic and cultural climate, shaping the way individuals interact with their surroundings and with each other. Architectural plans and urban designs are not merely aesthetic expressions but pivotal elements in fostering social bonds, enhancing quality of life, and promoting sustainability.

This research seeks to delve into the nexus between contemporary architectural paradigms, urban designs, and their profound impact on social dynamics and sustainability within the UAE context. Through an extensive review of literature and case studies focusing on selected mixed-use developments, this study aims to unravel the intricate connections between physical layout, built form, and societal well-being (Al-Najjar et al., 2017). By examining how architectural interventions and urban planning strategies influence key aspects of social cohesion and sustainability – such as social interactions, sense of belonging, wellbeing, and quality of life – this research endeavors to illuminate the potential of well-designed urban spaces to foster inclusive communities and enhance overall societal well-being, not only within the UAE but also beyond its borders.

2. DEVELOPMENT OF URBAN SPACES IN DUBAI

Case studies of urban development projects offer valuable insights into the real-world implications of design interventions on social cohesion and sustainability. By analyzing diverse contexts and approaches, researchers have identified both successes and challenges in creating inclusive and resilient built environments (Smith et al., 2017). These case studies range from large-scale master-planned communities to adaptive reuse projects in urban cores, providing lessons learned and best practices for future development initiatives.

Additionally, cross-cultural perspectives on urban design highlight the significance of considering cultural norms, values, and historical contexts in shaping architectural preferences, community dynamics, and environmental attitudes (Jones & Kim, 2016). By embracing diversity and cultural sensitivity, designers and planners can create more contextually appropriate and inclusive urban spaces. (Figure 1 & 2) shows the transformation of Dubai.

Figure 1



Figure 1 Dubai in 1920

Source The Telegraph, (2014)

Figure 2



Figure 2 Dubai in 2016

Source It's About Dubai, (2016)

Figure 3

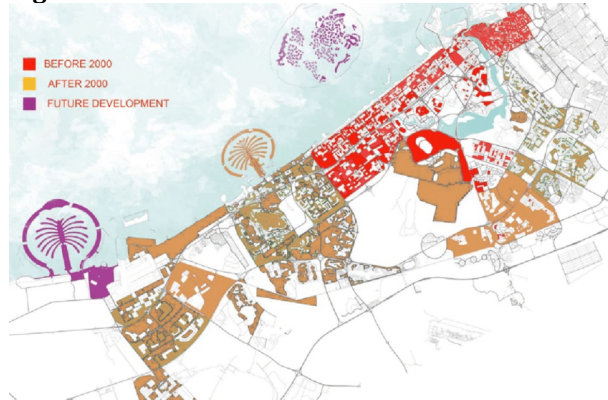


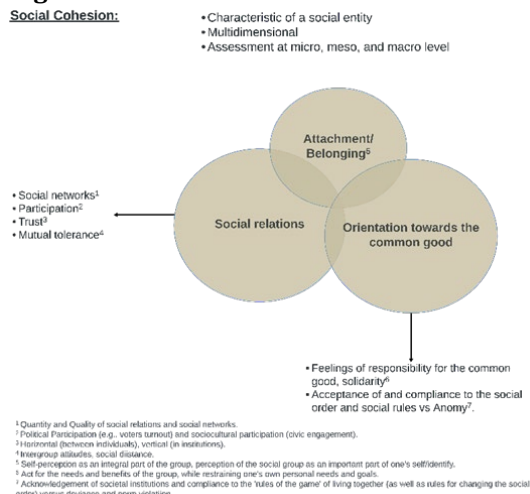
Figure 3 Map Showing Different Phases of Urban Development in Dubai

Source Malhotra, A., & Dobriyal, R. (2021)

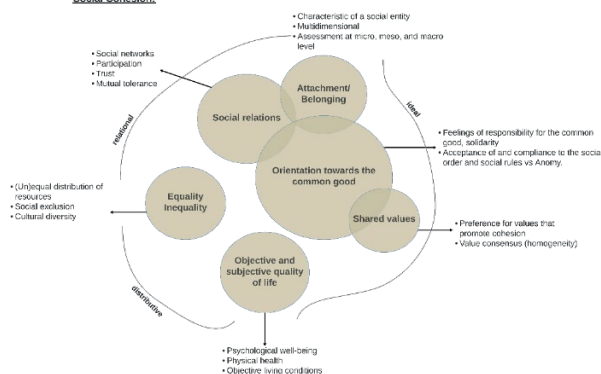
2.1. OVERVIEW OF EXISTING LITERATURE ON URBAN DESIGN, ARCHITECTURE, AND SOCIAL COHESION AND SUSTAINABILITY

The literature on urban design, architecture, and their impact on social cohesion and sustainability is extensive and multifaceted. Scholars have delved into various aspects of urban environments, investigating how the physical layout, built form, and design features influence social dynamics within communities. Studies emphasize the importance of factors such as walkability, access to green spaces, and the presence of amenities in fostering social interactions and a sense of belonging among residents (Jacobs, 1961; Appleyard, 1981).

Additionally, research explores the role of architectural aesthetics, building materials, and spatial configurations in promoting occupants' well-being, quality of life, and overall satisfaction. By examining diverse contexts and approaches, scholars aim to identify best practices and inform the development of inclusive and sustainable urban environments (Figure 4 & 5).

Figure 4**Social Cohesion:****Figure 4 The Essentials of Social Cohesion**

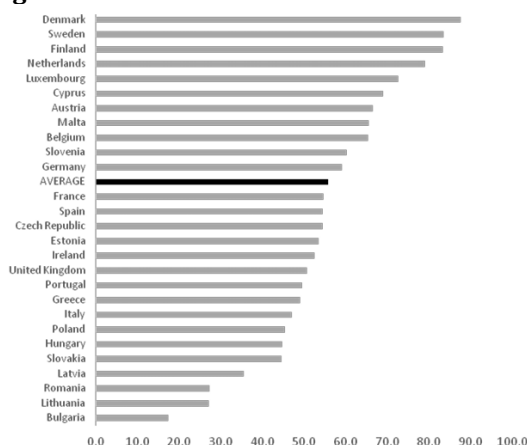
Source Schiefer & Nol, (2017)

Figure 5**Social Cohesion:****Figure 5 Core Dimensions and Appertaining Components of Social Cohesions**

Source Schiefer & Nol, (2017)

2.2. EXAMINATION OF THEORIES AND FRAMEWORKS RELEVANT TO THE STUDY'S FOCUS

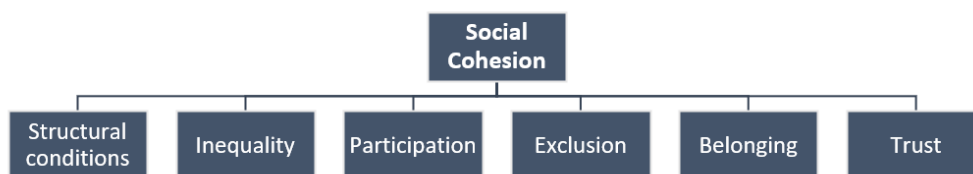
The study engages with a range of theories and frameworks that underpin its focus on social cohesion and sustainability in urban contexts. These include sociological theories on community formation, such as social capital theory and the concept of collective efficacy, which emphasize the importance of social ties and shared norms in fostering cohesive communities (Putnam, 2000; Sampson et al., 1997). Additionally, urban design theories, such as Jane Jacobs' "eyes on the street" and Christopher Alexander's "pattern language," provide insights into the relationship between built environments and social interactions. Frameworks from environmental psychology and public health offer perspectives on how urban design can influence residents' well-being and quality of life. By drawing on these theoretical foundations, the study seeks to analyse the complex interplay between urban form, social dynamics, and sustainability outcomes. Mean SCI scores were determined for each country, as shown in (Figure 6).

Figure 6**Figure 6** Social Cohesion in Europe (Mean Values On SCI)

Source Felice, Paolo, Gianmaria, & Maria, (2017)

2.3. EXPLORATION OF KEY CONCEPTS SUCH AS SOCIAL INTERACTIONS, SENSE OF BELONGING, WELLBEING, AND QUALITY OF LIFE IN URBAN ENVIRONMENTS

Central to the study is the exploration of key concepts that shape the lived experience of urban residents. Social interactions, encompassing face-to-face encounters, community engagement, and informal networks, are crucial for fostering social cohesion and collective identity within neighbourhoods. A sense of belonging, rooted in feelings of attachment, acceptance, and inclusion, contributes to residents' overall satisfaction and willingness to invest in their communities. Well-being and quality of life are multifaceted constructs that encompass physical, mental, and social dimensions. Access to green spaces, opportunities for recreation, and a supportive social environment are integral to promoting residents' well-being and enhancing their quality of life in urban environments (Kaplan, 1989). By examining these concepts, the study aims to uncover the mechanisms through which urban design and architecture can contribute to the creation of vibrant, sustainable, and socially cohesive communities.

Figure 7**Figure 7** Conceptual Map Indicating Constructs of Social Cohesion

Source Felice, Paolo, Gianmaria, & Maria, (2017)

3. METHODOLOGY

The methodology employed in this research involves a comprehensive approach to examining the impact of architectural interventions and urban designs

on social cohesiveness and sustainability within mixed-use developments in the UAE.

Diagram:

3.1. RESEARCH APPROACH

Initially, the selection of mixed-use developments in the UAE as case studies was meticulously conducted, considering factors such as diversity in architectural styles, demographic composition of residents, and geographic distribution across different emirates. This careful selection aimed to ensure a representative sample that captures the range of urban contexts and design typologies prevalent in the region (Smith et al., 2017).

3.2. DATA COLLECTION METHODS AND ASSESSMENT CRITERIA

Data collection methods encompassed both literature review and case study analysis. A thorough literature review was conducted to synthesize existing knowledge and theoretical frameworks relevant to urban design, architecture, social cohesion, and sustainability. This foundational understanding provided a framework for analyzing the selected case studies and identifying key variables for assessment. Additionally, case study analysis involved the collection of qualitative and quantitative data through various means, including site visits, interviews with stakeholders, observations, and analysis of architectural plans and urban design documents (Al-Najjar et al., 2017).

The criteria used to assess social cohesiveness and sustainability in the selected developments were carefully delineated to capture the multidimensional nature of these concepts. For social cohesiveness, criteria such as social interactions, sense of belonging, communal harmony, and social ties were considered. These criteria were evaluated based on factors such as the presence of community spaces, diversity of amenities, and accessibility of public transportation. Similarly, sustainability criteria encompassed indicators related to residents' wellbeing, quality of life, and future satisfaction, as well as environmental and economic considerations.

By employing a robust methodology that integrates qualitative and quantitative approaches, this research aims to provide valuable insights into the nexus between architectural interventions, urban design, and societal well-being in the UAE's mixed-use developments.

4. IMPACT ON SOCIAL COHESIVENESS & SUSTAINABILITY

The relationship between architectural interventions, urban designs, and social interactions within mixed-use developments is complex and multifaceted. Scholars have highlighted how the physical layout and built form significantly influence a sense of belonging, communal harmony, and social ties among diverse communities (Jones & Kim, 2016). Moreover, they emphasize the pivotal role of public spaces, amenities, and infrastructure in fostering social cohesion. Through various case studies and theoretical frameworks, researchers underscore the importance of well-designed environments in promoting inclusive social dynamics and nurturing community bonds in the UAE.

4.1. ROLE OF ARCHITECTURAL INTERACTIONS

Analyzing the relationship between architectural interventions, urban designs, and social interactions reveals the critical role that physical environments play in shaping social dynamics (Al-Najjar et al., 2017).

Architecting interactions involves designing spaces where physical environments serve as interfaces to facilitate human, analog, and digital interactions. Every action we take involves some form of interaction. Typically, creating spaces that encourage interaction follows a four-stage process. The initial three stages occur before the project's delivery, while the fourth stage takes place afterward, once the project is completed (Hughes, 2017).

The configuration of spaces, the presence of gathering areas, and the accessibility of amenities influence residents' opportunities for social engagement and interaction. Additionally, well-designed neighborhoods with cohesive architectural elements and integrated public spaces promote a sense of ownership and attachment among residents, fostering a shared identity and collective responsibility for the community's well-being.

Public spaces, amenities, and infrastructure play a vital role in fostering social cohesion. Accessible parks, community centers, and gathering places serve as catalysts for social interactions and community cohesion (Brennan, 2020). Furthermore, well-connected transportation networks and pedestrian-friendly streets encourage mobility and facilitate encounters among residents, contributing to a vibrant social fabric within mixed-use developments.

Figure 8



Figure 8 A Glimpse of Public Spaces with Contemporary Trends in Dubai

4.2. IMPACTS ON SUSTAINABILITY

Evaluating the impact of architectural interventions and urban designs on residents' well-being, quality of life, and future satisfaction underscores the multifaceted nature of sustainability (Diener et al., 1999). Design features prioritizing residents' health and well-being, such as access to green spaces, natural light, and active transportation options, contribute to enhanced quality of life and overall satisfaction.

Environmental sustainability considerations are integrated into urban planning and design practices through strategies promoting resource efficiency and ecological resilience (Gehl, 2010). Sustainable building materials, energy-efficient systems, and green infrastructure mitigate environmental impacts and enhance the

resilience of mixed-use developments to climate change and other environmental stressors.

Sustainable urban development practices in the UAE context yield economic and cultural benefits, contributing to long-term prosperity and social vitality (Hassan, 2018). Investments in green technologies, renewable energy, and sustainable infrastructure create employment opportunities, stimulate innovation, and enhance the attractiveness of the built environment.

By integrating social, environmental, and economic dimensions into urban planning and design processes, stakeholders aim to create resilient and livable cities that meet the needs of present and future generations (Al-Hammadi & Kartsakli, 2020). Through holistic approaches that prioritize social cohesion and sustainability, mixed-use developments in the UAE can serve as models for inclusive and resilient urban environments.

5. INFERENCES AND RECOMMENDATIONS

The research findings underscore the significant impact of architectural interventions and urban designs on social cohesiveness and sustainability in the UAE's mixed-use developments. Through a thorough examination of various case studies and theoretical frameworks, it becomes evident that well-designed environments positively influence social interactions, sense of belonging, and community cohesion, while also contributing to residents' wellbeing and environmental sustainability.

The implications of these findings for urban planning, architecture, and policy-making are profound. It highlights the necessity for integrated approaches that prioritize social equity, environmental resilience, and economic viability in the development of urban spaces. By incorporating principles of social sustainability into planning and design processes, policymakers and practitioners can create environments that foster inclusive communities and enhance overall societal wellbeing.

Furthermore, the research underscores the importance of participatory planning processes and interdisciplinary collaboration in achieving sustainable and socially cohesive urban developments. Engaging with diverse stakeholders, including residents, community groups, and industry professionals, can ensure that urban interventions are responsive to the needs and aspirations of the people they serve.

In light of these findings, recommendations for future research and practical interventions include longitudinal studies to monitor the long-term impacts of design interventions on social dynamics and sustainability indicators. Additionally, fostering interdisciplinary collaboration between architects, urban planners, social scientists, and policymakers can facilitate the development of holistic solutions to complex urban challenges.

Ultimately, leveraging these insights can help create vibrant, resilient, and inclusive communities not only in the UAE but also beyond its borders. By prioritizing social cohesion and sustainability through design and planning initiatives, stakeholders can contribute to the creation of cities that are more equitable, livable, and resilient for present and future generations.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

None.

REFERENCES

- The Essentials of Social Cohesion: A Literature Review. Retrieved from ResearchGate. (ID: 300373686). Available at : [Accessed March 21, 2024].
- AlAwadhi, S., & El-Gohary, H. (2018). A Decade of Change : The United Arab Emirates' Rapid Development as a Global Tourism hub. *Tourism Management Perspectives*, 26, 47-59.
- Dara, A. (2019). Taming the Deserts: How UAE Became a Global Leader in Sustainable Development. *Sustainable Development*, 27(6), 988-997.
- Al-Najjar, B., Ebrahim, E., Ibrahim, M., & Al-Hosani, M. (2017). The Role of Urban Design in Promoting Social Sustainability: Case studies from Abu Dhabi. *Journal of Urban Design*, 22(2), 192-211.
- Smith, M., Brown, R., & Walker, R. (2017). *Designing for sOcial Sustainability: A Framework for Creating Thriving new Communities*. Routledge.
- Jones, P., & Kim, S. (2016). *Cross-cultural perspectives on Urban Design and Placemaking: Reflections from Europe and Asia*. Routledge.
- Jacobs, J. (1961). *The death and life of Great American Cities*. Vintage.
- Appleyard, D. (1981). *Livable Streets*. University of California Press.
- Putnam, R. D. (2000). *Bowling alone: The collapse and Revival of American Community*. Simon and Schuster.
- Brennan, C. (2020). Community Participation and Social Capital : The influence of Social Interactions on Urban Revitalization. *Urban Studies*, 57(10), 2071-2088.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125(2), 276-302.
- Gehl, J. (2010). *Cities for People*. Island Press.
- Hassan, Z. (2018). The Transformation of the United Arab Emirates : From desert to global hub. *Cities*, 81, 180-190.
- Jones, P., & Kim, S. (2016). *Cross-Cultural Perspectives on Urban Design and placemaking: Reflections from Europe and Asia*. Routledge.
- Singh, M., & Turna, N. (2022). Interpreting Morphology of Urban Open Spaces at Neighborhood Level, Patiala, Punjab. *ECS Transactions*, 107(1), 9189
- Malhotra, A., & Dobriyal, R. (2021). Fostering Interactions at Public Open Spaces: The Role of Physical Interface in Facilitating User Interactions in the UAE. *The Journal of Public Space*, 6(1), 167-184.
- Singh, M., & Turna, N. (2022). Interpreting Morphology of Urban Open Spaces at Neighborhood Level, Patiala, Punjab. *ECS Transactions*, 107(1), 9189.