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The Death and Life of Urban Squares

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Abstract

Urban squares have historically played a central role in supporting civic life, social interaction, and everyday urban activities. However, many contemporary squares have gradually lost their social vitality despite their physical presence and strategic urban locations. This paper examines this condition through the concept of the "ghost square", defined as a public square that remains physically visible but fails to sustain continuous social occupation due to weak environmental comfort, poor spatial enclosure, inactive edges, and limited activity diversity. Using a qualitative comparative case study approach, the research analyzes four urban squares: Bryant Park in New York, Baladiya Square in Benghazi, Taksim Square in Istanbul, and Al-Kish Square in Benghazi. The analysis is based on evaluation criteria derived from urban design literature, including social vitality, human scale, seating availability, shading and vegetation, active urban edges, accessibility, and diversity of activities. The findings show that successful squares depend on the integration of spatial quality, microclimatic comfort, flexible use, and active management. In contrast, ghost squares emerge when formal design and visual appearance are prioritized over human behavior, environmental performance, and everyday use. The study contributes to public space research by framing ghost squares as a socio-environmental failure condition rather than merely underused urban spaces. It argues that revitalizing urban squares, particularly in hot-climate contexts, requires an integrated design approach that combines human-centered spatial planning, climate-responsive strategies, functional diversity, and long-term adaptive management.

Keywords: Ghost squares, Urban squares, Social vitality, Environmental comfort, Human-scale design, Hot-climate cities.

1. Introduction

Urban squares have historically functioned as central spaces for social interaction, civic life, and everyday urban activities. In traditional cities, these spaces supported commercial exchange, public gatherings, and collective identity, playing a major role in shaping urban life. However, many contemporary urban squares have gradually lost this social role despite their strategic locations and formal visual presence. Some public squares remain physically accessible yet

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socially underused, functioning more as transitional or symbolic spaces than active urban environments. This study conceptualizes such spaces through the term “ghost squares”, referring to urban squares that remain physically present but fail to sustain continuous social vitality. The emergence of ghost squares is often linked to weak environmental comfort, excessive spatial openness, inactive urban edges, limited activity diversity, and insufficient consideration of human behavior in the design process. Previous urban design research has emphasized the importance of human-scale design, environmental comfort, active edges, and mixed-use activities in creating successful public spaces (Jacobs, 1961; Whyte, 1980; Gehl, 2010). More recent studies have also highlighted the growing importance of climate-responsive urban design, particularly in hot-climate cities where thermal discomfort significantly influences outdoor social activity (Eryıldız & Eryıldız, 2025). Despite these contributions, many contemporary public spaces continue to struggle with weak social occupation and declining everyday use. In Benghazi, this issue is particularly visible in several contemporary squares affected by high temperatures, limited shading, and fragmented urban activity patterns. Therefore, this research investigates how spatial configuration, environmental comfort, and activity diversity influence the vitality of urban squares through a comparative qualitative analysis of four case studies: Bryant Park, Baladiya Square, Taksim Square, and Al-Kish Square. The study aims to identify the characteristics that distinguish vibrant public spaces from ghost squares and to contribute to a more integrated understanding of urban square performance in contemporary cities. The following conceptual framework illustrates the relationship between the literature review, evaluation criteria, methodology, and comparative analysis adopted in this study (fig. 1).

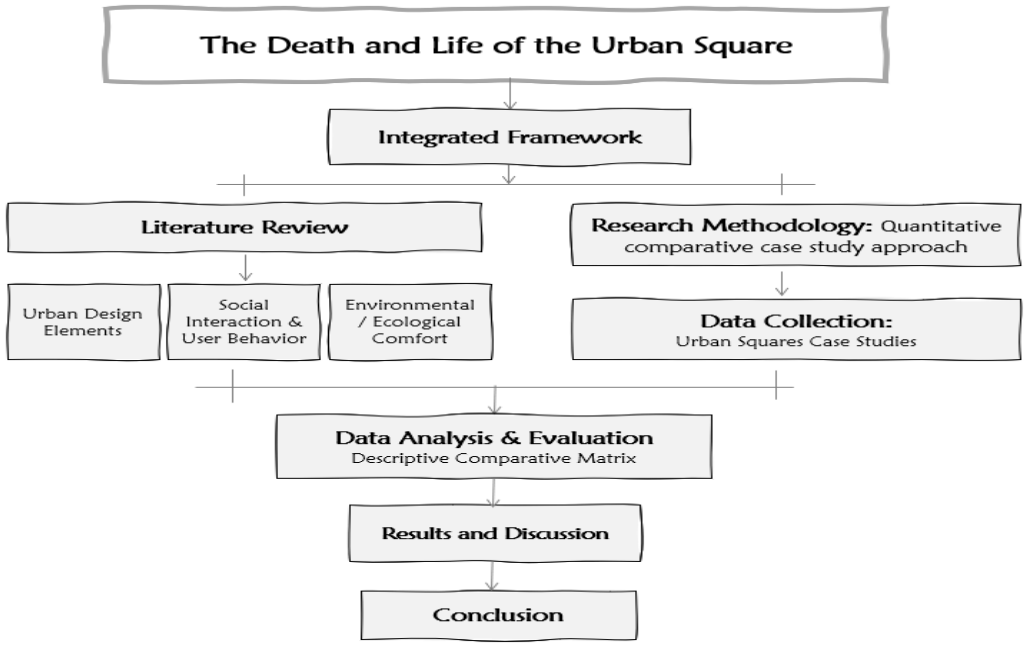

Figure 1. Conceptual Framework of the Study

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2. Literature Review

2.1 Urban Squares as Socio-Spatial Systems

Contemporary urban theory increasingly understands public spaces as socio-spatial systems rather than merely physical components of the built environment. Urban squares are not only open spatial voids, but also environments where social interaction, cultural meaning, political expression, and everyday urban practices intersect. In this context, Lefebvre (1991) argues that space is socially produced through the relationship between physical form, social practices, and lived experience. This perspective shifts the understanding of urban squares beyond purely formal or aesthetic considerations toward a broader interpretation of public space as a lived social environment. Accordingly, the success or failure of urban squares cannot be explained solely through physical design. Patterns of occupation, social behavior, cultural context, and environmental conditions all contribute to shaping public space performance (Madanipour, 2003). Public spaces therefore function as dynamic environments where social interaction and urban identity are continuously reproduced through everyday use. In parallel, contemporary place-making approaches emphasize the importance of community engagement, local identity, and adaptive programming in creating successful public spaces. Rather than treating design as a fixed physical outcome, place-making views urban squares as evolving environments that require continuous activation and management to sustain social vitality (Project for Public Spaces [PPS], 2008). This perspective highlights that spatial quality alone is insufficient without ongoing social and functional engagement. Recent urban design discussions also stress the growing importance of resilience and adaptability in public spaces. Rapid urbanization, climate change, and changing social behaviors require urban squares to function as flexible environments capable of accommodating different forms of use over time (Carmona, 2010). In this regard, successful urban squares are those that integrate spatial quality, environmental responsiveness, social inclusivity, and long-term management within a coherent urban framework.

2.2 Factors Influencing the Vitality of Urban Squares

Urban design research has extensively examined the factors that contribute to successful public spaces. A common understanding within the literature is that the vitality of urban squares depends on the interaction between spatial configuration, environmental comfort, and social activity (Jacobs, 1961). Vibrant public spaces typically support continuous pedestrian movement, diverse patterns of occupation, and opportunities for social interaction through mixed land uses, active urban edges, and pedestrian-oriented environments. Observational studies by Whyte (1980) demonstrated that small-scale design elements significantly influence user behavior in public plazas. Features such as accessible seating, shaded areas, food vendors, and visual connectivity encourage people to remain in public spaces for longer periods. Whyte also introduced the concept of “triangulation,” where external stimuli, including performances or social activities, stimulate interaction among strangers and increase social engagement within public spaces. Similarly, Gehl (2010) emphasized the importance of human-scale urban design in supporting everyday public life. Gehl categorizes activities in public spaces into necessary, optional, and social activities, arguing that improved environmental comfort and spatial quality

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encourage optional activities, which subsequently increase opportunities for social interaction. This relationship highlights the importance of designing urban squares around human behavior rather than purely formal or monumental considerations. Environmental comfort has also become a critical dimension in contemporary public space design, particularly in hot-climate cities. Climate-responsive urban design strategies, including vegetation, shading systems, water features, and climate-sensitive materials, play a major role in improving outdoor usability and extending the duration of stay in public spaces (Eryıldız & Eryıldız, 2025; Mehta, 2014). In environments characterized by excessive heat and solar exposure, the absence of microclimatic comfort often reduces pedestrian presence and weakens social vitality. In addition to physical and environmental factors, several scholars emphasize the importance of management, activity programming, and social meaning in sustaining successful urban squares. Carmona (2010) argues that well-performing public spaces depend not only on spatial quality, but also on long-term management and coordinated urban governance. Similarly, the concept of place attachment explains how repeated use, cultural identity, and collective memory strengthen emotional connections between users and public spaces, increasing the likelihood of continuous occupation and social engagement (Scannell & Gifford, 2010). These perspectives collectively suggest that the vitality of urban squares emerges through the integration of spatial design, environmental performance, social behavior, and urban management. Based on these contributions, this study adopts the following evaluation criteria:

- Social vitality
- Human scale
- Seating availability
- Shading and vegetation
- Active urban edges
- Accessibility and connectivity
- Diversity of activities

These indicators form the analytical framework used in the comparative evaluation of the selected case studies.

2.3 Towards the Concept of Ghost Squares

Despite extensive research on successful public spaces, limited attention has been given to urban squares that remain physically present yet fail to sustain continuous social occupation. Many contemporary squares appear visually prominent and formally complete, but demonstrate weak patterns of everyday use, limited duration of stay, and low levels of social interaction. In many cases, these spaces function primarily as transit areas, symbolic settings, or temporary event spaces rather than active environments of everyday public life. Within this context, this study introduces the concept of the “ghost square” to describe urban squares that maintain physical visibility and urban significance while lacking sustained social vitality. Unlike abandoned or inaccessible spaces, ghost squares often occupy strategic urban locations and may attract temporary use during specific events or evening periods. However, they fail to support continuous occupation due to the fragmentation between spatial form, environmental comfort,

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and human behavior. The emergence of ghost squares is frequently associated with several interconnected conditions, including excessive spatial openness, weak climatic comfort, limited shading, inactive urban edges, insufficient activity diversity, and the prioritization of visual form over everyday usability. In such environments, users tend to minimize the duration of stay, resulting in reduced social interaction and declining public attachment to the space. This concept provides a socio-environmental interpretation of underperforming urban squares by linking spatial design, environmental performance, and patterns of occupation within a single analytical framework. It also shifts the discussion beyond purely aesthetic evaluations of public spaces toward a more integrated understanding of urban vitality, particularly in hot-climate cities where environmental conditions strongly influence public life. The relationships between environmental comfort, spatial configuration, social interaction, and public attachment can be understood as a continuous socio-spatial process influencing the vitality of urban squares. Based on the previous discussion, Figure2 illustrates the conceptual pathway through which negative environmental and spatial conditions may gradually produce "ghost square" characteristics, while human-centered and climate-responsive design strategies contribute to sustained urban vitality.

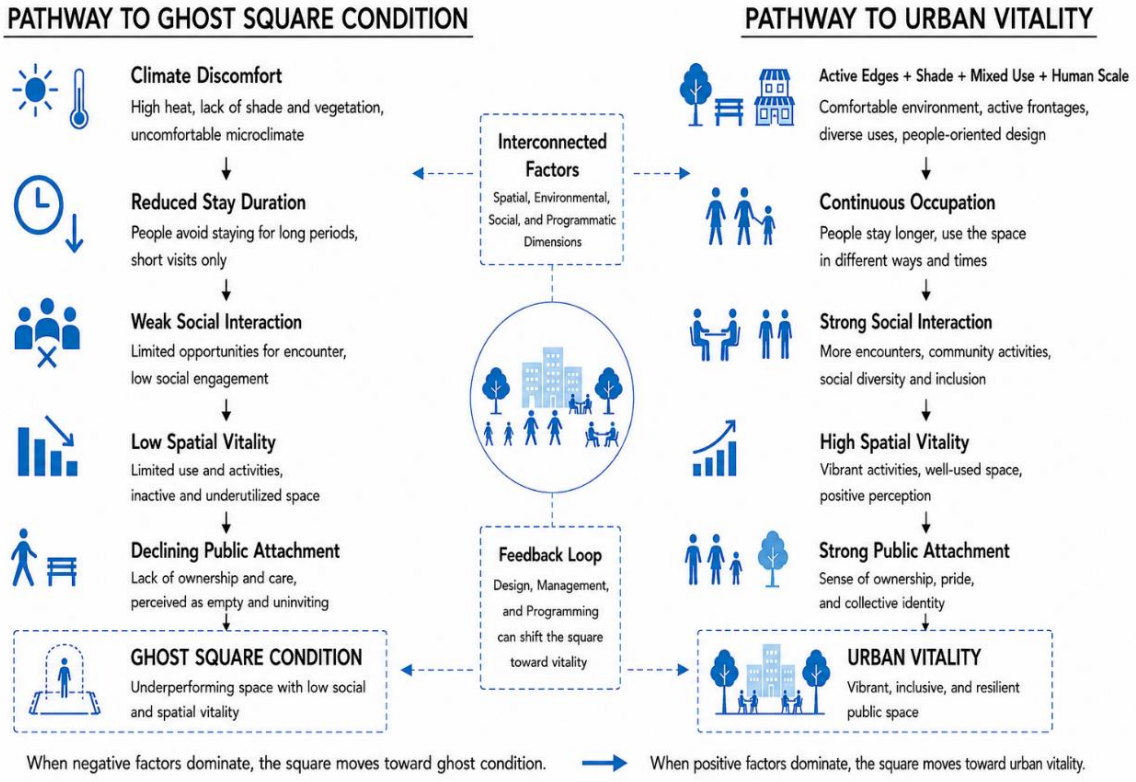

Figure 2. Ghost Square Formation Model: From Environmental and Spatial Factors to Urban Vitality

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The proposed model illustrates how ghost square conditions emerge through the interaction between environmental discomfort, weak spatial configuration, limited activity diversity, and declining public attachment. When climatic comfort, active urban edges, human-scale design, and social programming are absent, public occupation becomes temporary and socially fragmented, gradually reducing the vitality of the square. In contrast, urban vitality develops when environmental comfort, spatial quality, activity diversity, and adaptive management collectively support continuous social interaction and prolonged occupation. The model therefore conceptualizes urban squares as dynamic socio-environmental systems whose performance is shaped by the relationship between spatial form, environmental conditions, and human behavior.

3. Method

This study adopts a comparative qualitative case study approach to examine the socio-spatial performance of selected urban squares and to investigate the characteristics associated with vibrant public spaces and "ghost square" conditions. Four case studies representing different urban contexts, climatic conditions, and levels of social vitality were selected: Bryant Park (New York), Baladiya Square (Benghazi), Taksim Square (Istanbul), and Al-Kish Square (Benghazi). These cases reflect different relationships between spatial configuration, environmental comfort, symbolic function, and patterns of public occupation. The analytical framework of the study is derived from established urban design and public space literature, particularly the work of Jacobs (1961), Whyte (1980), Gehl (2010), Mehta (2014), and Carmona (2010). Based on these contributions, the selected squares were evaluated according to several criteria related to public space vitality, including social vitality, human scale, seating availability, shading and vegetation, active urban edges, accessibility and connectivity, and diversity of activities. A comparative descriptive matrix was developed to assess the performance of the selected squares according to these indicators. To facilitate comparison, each criterion was assigned a score ranging from 1 (very poor) to 5 (excellent). The scoring system does not aim to provide absolute quantitative measurements, but rather to identify recurring spatial and socio-environmental patterns influencing public space performance. The aggregated scores were subsequently translated into a comparative spatial performance diagram to provide a clearer visual interpretation of the qualitative findings.

3.1 Data Collection and Limitations

The study relies on a combination of secondary sources, documented case study analyses, visual materials, and observational insights. Due to practical limitations, direct field observations were limited, particularly for international case studies such as Bryant Park. Therefore, parts of the analysis depend on previously published literature, visual documentation, and existing empirical observations related to the selected public spaces. Although this approach allows for comparative analysis across different urban and cultural contexts, several limitations should be acknowledged. First, the qualitative scoring system involves a degree of interpretive subjectivity, as complex social and spatial conditions are simplified into comparative numerical values. Second, the availability and consistency of data vary between case studies, particularly between

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international examples and local cases in Benghazi. Finally, the study focuses primarily on spatial, environmental, and behavioral observations without incorporating extensive primary data such as user surveys or long-term behavioral mapping. Despite these limitations, the comparative framework provides a structured method for identifying recurring relationships between spatial configuration, environmental comfort, and social vitality. The methodology therefore supports the broader objective of understanding how socio-environmental factors contribute to the emergence of vibrant urban spaces or ghost square conditions.

4. Case Studies

The selected case studies represent different spatial, environmental, and socio-cultural conditions related to the performance of urban squares. The cases were chosen to provide a comparative understanding of how spatial configuration, environmental comfort, activity diversity, and urban context influence public space vitality. The study includes two internationally recognized public spaces, Bryant Park in New York and Taksim Square in Istanbul, in addition to two squares in Benghazi, Baladiya Square and Al-Kish Square, which reflect different historical and contemporary urban conditions within the Libyan context. The selected squares also represent varying levels of social occupation and environmental performance. Bryant Park is examined as an example of a highly active and successfully managed urban square characterized by strong human-scale design, diverse activities, and continuous public occupation. Baladiya Square represents a historical example of a socially vibrant civic space integrated within the traditional urban fabric of Benghazi. In contrast, Taksim Square illustrates the complexity of large symbolic public spaces where political and cultural significance coexist with limitations in environmental comfort and everyday usability. Finally, Al-Kish Square represents a contemporary example of a "ghost square" condition, where environmental discomfort, weak urban edges, and limited activity diversity reduce continuous social occupation despite the square's prominent coastal location. Through these case studies, the research investigates how the interaction between spatial design, environmental conditions, and patterns of public use shapes the vitality or decline of contemporary urban squares.

4.1. Bryant Park:

Bryant Park is located in Midtown Manhattan behind the New York Public Library in New York City. Originally established in the nineteenth century, the park underwent a major redesign in the early 1990s led by Hanna/Olin Ltd., transforming it into one of the most successful contemporary public spaces in the world. The redesign focused on improving visibility, pedestrian accessibility, seating flexibility, and environmental comfort through the integration of movable chairs, shaded areas, vegetation, and active surrounding edges (Whyte, 1980; Gehl, 2010; PPS, 2008). The success of Bryant Park extends beyond its physical design and is strongly connected to its management and programming strategies. The Park is operated through an active management model that continuously organizes cultural events, seasonal activities, markets, and recreational programs, ensuring sustained occupation throughout different times of the day and year.

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This combination of spatial quality and adaptive programming creates a dynamic urban environment that supports prolonged user stay and continuous social interaction. From a spatial perspective, Bryant Park demonstrates several characteristics associated with successful urban squares. The Park maintains a strong human-scale environment defined by active edges, clear visual enclosure, accessible circulation, and flexible seating arrangements. Environmental comfort is reinforced through dense vegetation, shaded areas, and microclimatic moderation, encouraging optional and social activities within the space. In addition, the integration of commercial and cultural functions along the park edges generates continuous pedestrian movement and strengthens the relationship between the square and the surrounding urban fabric. Within the context of this study, Bryant Park represents a highly successful example of an active urban square where spatial configuration, environmental comfort, management strategies, and activity diversity collectively contribute to sustained public vitality.

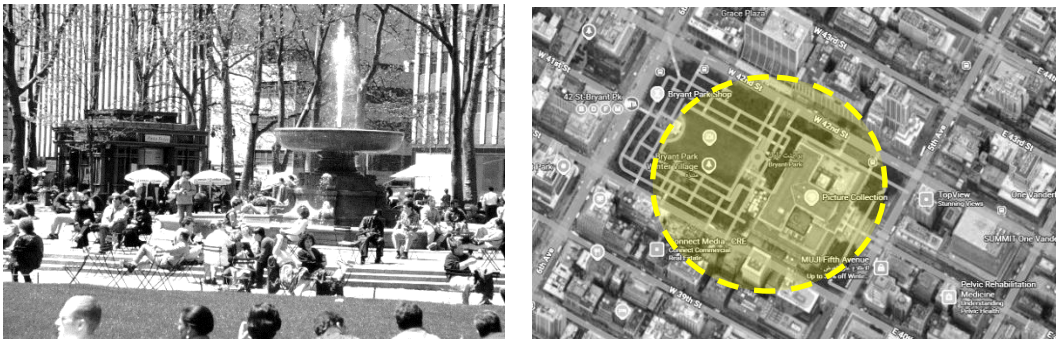

Figure 2: Bryant Park, NYC, USA

4.2. Baladiya Square:

Baladiya Square is located in the historic center of Benghazi near the municipal building and Al-Atiq Mosque. Developed during the Italian colonial period in the early twentieth century, the square historically functioned as one of the most active civic and commercial public spaces in the city. Its central location within the traditional urban fabric enabled strong interaction between religious, administrative, and commercial functions, generating continuous pedestrian movement and social activity (Lannaizy, 2022; Abdelzayed Valdeolmillos et al., 2024). Historically, the square played an important role in shaping public life in Benghazi. Markets, cafés, public institutions, and religious activities surrounding the square contributed to a vibrant urban environment characterized by strong social interaction and diverse patterns of occupation. The spatial enclosure created by the surrounding buildings reinforced the human-scale quality of the square and strengthened visual and functional connectivity with adjacent streets and urban activities. Despite the severe damage experienced during the 2011 conflict and the ongoing reconstruction process, Baladiya Square remains an important historical example of a socially vibrant urban square. The case illustrates how the integration of mixed-use functions, active urban edges, and strong spatial enclosure contributed to sustaining public life within the historic city center. At the same time, the decline of the square in recent decades reflects the broader socio-political and urban transformations that affected the historic fabric of Benghazi following

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periods of conflict and urban fragmentation. Within the context of this study, Baladiya Square represents a historical model of urban vitality where spatial configuration, functional diversity, and social integration collectively supported continuous public occupation and everyday civic interaction.

Figure 3: Baladiya Square, Benghazi, Libya

4.3. Taksim Square: Taksim Square is one of the most prominent public spaces in Istanbul and functions as a major transportation, cultural, and political center within the city. Its contemporary form emerged during the urban restructuring plans prepared by Henri Prost in the 1940s, which transformed the area into a large modern public square connected to major transportation networks and surrounding commercial districts (Sadri, 2017). The square holds strong symbolic and political significance within Turkish public life, functioning as a major site for national celebrations, public demonstrations, tourism activities, and collective gatherings. This symbolic dimension gives Taksim Square a distinct form of urban vitality associated with political visibility and collective identity rather than continuous everyday social occupation. Despite its strategic location and high accessibility, several spatial and environmental characteristics limit the square's everyday usability. The large open surfaces, limited shading, and fragmented pedestrian experience reduce environmental comfort and weaken opportunities for prolonged social stay. In addition, transportation infrastructure and traffic circulation dominate significant parts of the surrounding environment, reinforcing movement and transit functions more than stationary social activities. From a socio-spatial perspective, Taksim Square represents a complex urban condition where symbolic importance and public visibility coexist with limitations in human-scale comfort and environmental performance. Unlike highly active everyday public spaces such as Bryant Park, the vitality of Taksim Square is often event-based and temporally concentrated during political gatherings, celebrations, or tourism-related activities rather than sustained daily occupation. Within the framework of this study, Taksim Square illustrates the limitations of evaluating urban squares solely through conventional indicators of everyday social activity. The case demonstrates how symbolic and political functions can sustain a form of urban importance even when environmental comfort and continuous social occupation remain relatively weak.

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Figure 4: Taksim Square, Istanbul, Turkey

4.4. Al-Kish Square: Al-Kish Square is located along the waterfront of Benghazi and was developed as part of contemporary urban expansion projects in the city during the early 2000s. Despite its prominent coastal location and visual openness toward the Mediterranean Sea, the square demonstrates several spatial and environmental conditions that limit its everyday social performance. Large paved surfaces, limited vegetation, insufficient shading, and weak integration with surrounding urban functions reduce environmental comfort and discourage prolonged public occupation (Eryıldız & Eryıldız, 2025; Mehta, 2014).

The spatial configuration of the square prioritizes visual openness and formal appearance over human-scale comfort and everyday usability. The absence of strong commercial activities and active urban edges weakens pedestrian attraction and reduces continuous movement within the space. As a result, patterns of use are often limited to temporary events, evening periods, or seasonal gatherings rather than continuous daily activity. Environmental conditions also play a major role in shaping the performance of the square. High solar exposure, limited climatic protection, and the dominance of hardscape surfaces reduce thermal comfort, particularly during daytime hours. These conditions shorten the duration of stay and limit opportunities for optional and social activities, contributing to weak levels of social interaction within the space. Within the context of this study, Al-Kish Square represents a contemporary example of a “ghost square” condition, where physical visibility and symbolic urban presence are not matched by sustained social vitality. The case illustrates how the fragmentation between spatial design, environmental comfort, and activity diversity can produce public spaces that remain visually prominent yet socially underused.

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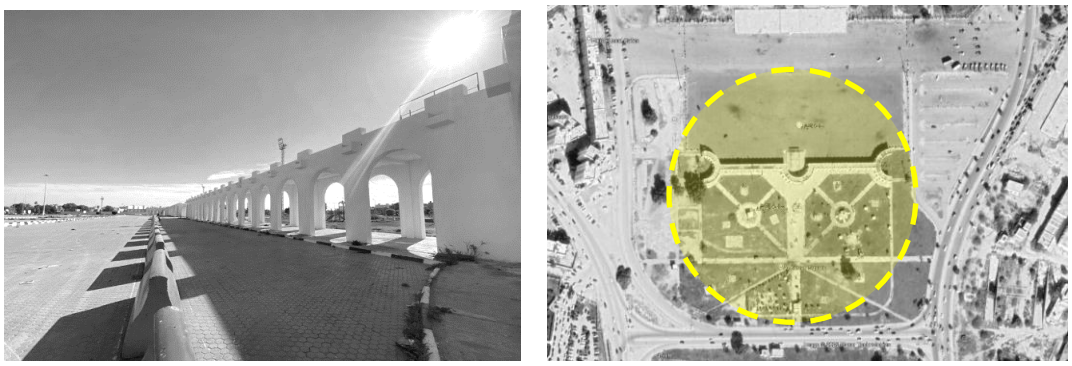

Figure 5: Al-Kish Square, Benghazi, Libya

5. Comparative Descriptive Matrix

The following matrix (Table 1) summarizes the comparative evaluation of the four squares based on criteria derived from the literature on public space design (Jacobs, 1961; Whyte, 1980; Gehl, 2010; Mehta, 2014). Each cell in the matrix reflects a concise cause-and-effect relationship, linking observed spatial conditions to their impact on user behavior and space performance.

Table 1. Comparative Evaluation of Urban Vitality and Ghost Square Characteristics in the Selected Squares

Evaluation Criteria	Bryant Park	Baladiya Square (Historical)	Taksim Square	Al-Kish Square
Square Image				
Social vitality	Continuous and diverse public activity supports prolonged occupation and strong social interaction	Historically vibrant civic and commercial activity generated continuous pedestrian movement and social engagement	Activity is concentrated around events, tourism, and transit movement, limiting continuous everyday occupation	Weak and intermittent activity patterns reduce continuous public presence and social interaction
Human scale	Well-defined enclosure and pedestrian-oriented proportions enhance comfort and visual connection	Human-scale spatial enclosure strengthened interaction within the historic urban fabric	Excessive openness reduces enclosure and weakens pedestrian comfort during everyday use	Over-scaled open surfaces create exposure and reduce the sense of spatial intimacy
Seating	Flexible movable	Limited formal seating	Mostly fixed and	Minimal and poorly

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Evaluation Criteria	Bryant Park	Baladiya Square (Historical)	Taksim Square	Al-Kish Square
availability	seating encourages user choice, adaptability, and prolonged stay	partially compensated by surrounding cafés and active edges	limited seating reduces flexibility and duration of stay	distributed seating limits comfort and weakens user engagement
Shading, vegetation, and environmental comfort	Dense vegetation and shaded areas improve thermal comfort and support long-duration occupation	Moderate climatic protection from surrounding buildings supports environmental comfort	Limited shading and large paved areas reduce microclimatic comfort	Lack of vegetation and shading increases thermal discomfort and discourages daytime use
Active urban edges	Strong commercial and cultural edges generate continuous pedestrian flow and activity	Mixed-use edges historically supported strong interaction and everyday urban vitality	Edges are fragmented by transportation infrastructure and uneven activity distribution	Weak surrounding functions reduce pedestrian attraction and continuous occupation
Accessibility and connectivity	Strong pedestrian accessibility and visibility reinforce continuous use	Good integration with surrounding streets supports pedestrian movement and connectivity	High accessibility supports movement and symbolic visibility more than stationary use	Accessible location but weak urban integration limits pedestrian continuity
Diversity of activities	Diverse recreational, cultural, and commercial activities sustain continuous public occupation	Historically supported religious, civic, commercial, and social activities	Activity diversity is limited mainly to events, tourism, and political gatherings	Limited activity diversity reduces opportunities for continuous social engagement
Management and adaptability	Active management and continuous programming reinforce long-term vitality	Historically supported through functional integration within the urban fabric	Symbolic importance sustains periodic occupation despite limited environmental adaptability	Weak programming and limited adaptive use reduce sustained public occupation
Ghost square condition	No significant ghost square characteristics	Historically active urban square with strong civic vitality	Partial ghost square tendencies during everyday use despite symbolic importance	Strong ghost square condition characterized by weak environmental comfort and limited social vitality

The comparative matrix demonstrates that the vitality of urban squares is shaped through the interaction between spatial configuration, environmental comfort, activity diversity, and patterns of social occupation rather than by a single design factor. The analysis also reveals that

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underperforming squares often exhibit characteristics associated with “ghost square” conditions, including weak climatic comfort, limited activity diversity, inactive edges, and reduced duration of stay. To facilitate comparison between the selected case studies, the qualitative findings of the matrix were translated into a comparative scoring framework and visualized in Figure 6. Scores ranging from 1 (very poor) to 5 (excellent) were assigned to each evaluation criterion in order to identify recurring socio-spatial and environmental patterns influencing public space performance. The aggregated results were then converted into percentage values to provide a clearer graphical representation of the relative levels of urban vitality and spatial performance observed across the selected squares.

Evaluation Criteria	Score
Social Vitality	5
Human Scale	5
Seating Availability	5
Shading & Vegetation	5
Active Edges	5
Accessibility & Connectivity	5
Diversity of Activities	5
Total Scores	35/35

Evaluation Criteria	Score
Social Vitality	4
Human Scale	4
Seating Availability	3
Shading & Vegetation	3
Active Edges	4
Accessibility & Connectivity	4
Diversity of Activities	4
Total Scores	26/35

Evaluation Criteria	Score
Social Vitality	3
Human Scale	3
Seating Availability	2
Shading & Vegetation	2
Active Edges	3
Accessibility & Connectivity	5
Diversity of Activities	3
Total Scores	21/35

Evaluation Criteria	Score
Social Vitality	2
Human Scale	2
Seating Availability	2
Shading & Vegetation	1
Active Edges	2
Accessibility & Connectivity	4
Diversity of Activities	2
Total Scores	15/35

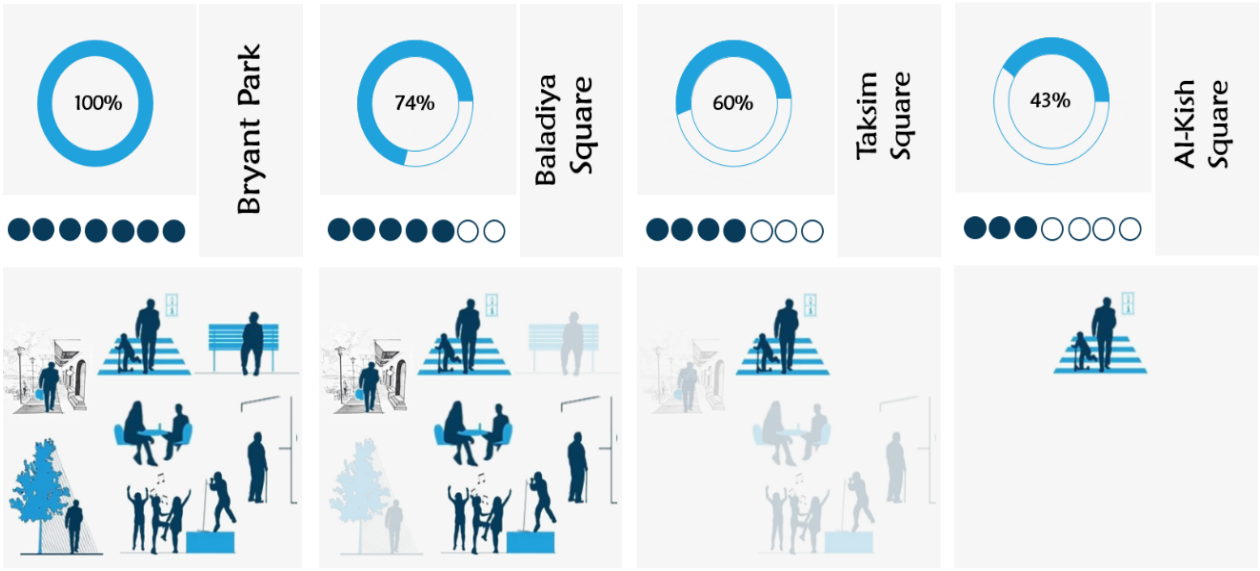

Figure 6. Comparative Urban Vitality Performance of the Selected Squares. Source: Author

6. Results and Discussion

The comparative analysis reveals significant differences in the socio-spatial and environmental performance of the selected urban squares. Bryant Park achieved the highest level of urban vitality due to the integration of human-scale design, environmental comfort, flexible seating, active urban edges, and continuous activity programming. These elements collectively encourage

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prolonged occupation, social interaction, and everyday public use, reflecting the principles identified by Whyte (1980) and Gehl (2010). The case demonstrates how spatial quality and adaptive management can reinforce one another to produce a continuously active public environment. Historically, Baladiya Square exhibited similar characteristics of urban vitality through the integration of religious, commercial, and civic functions within the historic urban fabric of Benghazi.

The spatial enclosure created by surrounding buildings, combined with mixed-use activities and pedestrian movement, supported continuous social interaction and collective urban life. Although the square has experienced decline due to conflict and urban transformation, its historical condition illustrates the importance of functional integration and human-scale spatial organization in sustaining public vitality. In contrast, Taksim Square represents a more complex urban condition where symbolic and political significance coexist with limitations in environmental comfort and everyday usability. While the square benefits from high accessibility and strong symbolic visibility, its large-scale openness, fragmented pedestrian experience, and limited climatic comfort reduce the duration of everyday occupation. Unlike Bryant Park, where vitality is generated through continuous social use, the vitality of Taksim Square is often event-based and temporally concentrated during demonstrations, celebrations, and tourism-related activities. This distinction demonstrates that symbolic importance alone does not necessarily guarantee sustained everyday public life.

Al-Kish Square represents the clearest example of a “ghost square” condition within the selected case studies. Despite its prominent waterfront location and visual openness, the square suffers from weak environmental comfort, inactive urban edges, limited activity diversity, and insufficient human-scale design. Large paved surfaces and limited shading significantly reduce outdoor usability, particularly during daytime hours in Benghazi’s hot climate. As a result, public occupation remains intermittent and temporally restricted, with limited opportunities for sustained social interaction. The case illustrates how the fragmentation between spatial form, environmental performance, and everyday urban activity can produce visually prominent yet socially underperforming public spaces. Overall, the findings indicate that the vitality of urban squares is not determined by formal appearance alone, but by the integration of spatial configuration, environmental comfort, activity diversity, and adaptive management. The analysis also suggests that ghost square conditions emerge when urban spaces prioritize monumentality and visual order over climatic responsiveness, human behavior, and everyday usability.

6.1. Critical Discussion

The findings of this study reveal several limitations in the direct application of conventional urban design theories to contemporary public spaces, particularly in hot-climate contexts. Classical frameworks proposed by Jacobs (1961), Whyte (1980), and Gehl (2010) successfully explain many characteristics associated with vibrant public life, including mixed-use activity,

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human-scale environments, and pedestrian interaction. However, many of these theories emerged from Western urban contexts characterized by moderate climates and different socio-cultural conditions. Their direct application to cities such as Benghazi may therefore overlook critical environmental constraints related to thermal comfort, solar exposure, and outdoor usability. The comparative analysis also demonstrates that urban vitality cannot be understood solely through daily patterns of occupation. Taksim Square, for example, maintains strong political and symbolic importance despite limitations in environmental comfort and everyday social use. This suggests that some public spaces derive vitality through collective identity, symbolic visibility, and exceptional events rather than continuous daily occupation. Consequently, evaluating public spaces exclusively through conventional indicators of pedestrian activity may oversimplify the complexity of contemporary urban squares.

At the same time, the study highlights the growing importance of socio-environmental integration in understanding public space performance. Successful urban squares are not defined only by physical design quality, but by the interaction between spatial configuration, climatic comfort, activity programming, management strategies, and patterns of social behavior. Within this framework, the concept of the "ghost square" provides a socio-environmental interpretation of underperforming public spaces by explaining how weak environmental comfort, inactive edges, and limited activity diversity collectively reduce public occupation and social vitality.
Several methodological limitations should also be acknowledged. The study relies primarily on qualitative comparative analysis supported by secondary sources, visual documentation, and observational insights. Although the scoring system provides a structured framework for comparison, it inevitably introduces a degree of interpretive subjectivity by simplifying complex urban conditions into numerical values. Future research could strengthen this approach through the integration of primary field observations, behavioral mapping, user surveys, and spatial analysis methods such as Space Syntax in order to produce more measurable and context-sensitive evaluations.

6.2. Design Implications and Recommendations

The findings of this study suggest that improving the vitality of urban squares requires moving beyond purely formal or aesthetic design approaches toward more integrated socio-environmental strategies. In hot-climate cities such as Benghazi, environmental comfort should become a primary design generator rather than a secondary consideration. The integration of vegetation, shaded pedestrian areas, climate-responsive materials, and microclimatic moderation strategies can significantly increase outdoor usability and extend the duration of public occupation. The study also demonstrates the importance of reinforcing human-scale spatial relationships within urban squares. Defined edges, visual enclosure, pedestrian-oriented circulation, and flexible spatial organization contribute to improving comfort, orientation, and social interaction. Large open surfaces lacking enclosure and climatic protection tend to weaken pedestrian engagement and increase ghost square tendencies.

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In addition, activity diversity and active urban edges play a central role in sustaining continuous public life. Mixed-use functions, cafés, cultural activities, and adaptable public programming generate continuous movement and encourage different forms of social occupation throughout the day. This highlights the importance of designing urban squares as flexible and evolving environments capable of accommodating everyday use, informal interaction, and collective events simultaneously. The research further emphasizes that long-term management and governance are essential components of successful public spaces. Cases such as Bryant Park illustrate how maintenance, security, adaptive programming, and institutional support contribute directly to sustaining urban vitality over time. Without continuous management and activation, even visually attractive public spaces may gradually experience decline and reduced public engagement. Overall, the study suggests that reducing ghost square conditions requires an integrated urban design approach that combines climatic responsiveness, human-scale planning, activity diversity, adaptive management, and socio-spatial inclusivity within a unified public space framework.

7. Conclusion

Urban squares continue to play a fundamental role in shaping collective urban life, social interaction, and public identity. However, the findings of this study demonstrate that the success of public spaces depends not simply on their physical presence or visual appearance, but on their capacity to sustain continuous social occupation through the integration of spatial quality, environmental comfort, activity diversity, and adaptive management.

The comparative analysis revealed clear differences between vibrant urban squares and spaces characterized by ghost square tendencies. Bryant Park represents a highly successful example where human-scale design, climatic comfort, flexible programming, and active management collectively support continuous public vitality. Historically, Baladiya Square demonstrated similar qualities through the integration of civic, religious, and commercial activities within the traditional urban fabric of Benghazi. In contrast, Al-Kish Square illustrates how weak environmental comfort, inactive urban edges, and limited activity diversity can produce socially underperforming public spaces despite strategic urban locations and formal visual presence. Taksim Square further demonstrates that symbolic and political importance may sustain a different form of urban significance that does not necessarily correspond to continuous everyday occupation. Within this context, the study introduced the concept of the “ghost square” as a socio-environmental interpretation of underperforming public spaces. The concept explains how fragmentation between spatial form, climatic responsiveness, and human behavior can reduce the vitality of contemporary urban squares and weaken their role within everyday urban life. Rather than viewing public space failure solely as a formal design problem, the study argues that ghost square conditions emerge through the interaction of environmental discomfort, weak social programming, inactive edges, and insufficient consideration of human-centered spatial use. Ultimately, transforming ghost squares into vibrant public environments requires a shift in urban design thinking from monumentality and visual order toward integrated socio-environmental performance. Future urban development projects, particularly in hot-climate cities such as

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Benghazi, should therefore prioritize climate-responsive design, human-scale planning, activity diversity, and long-term adaptive management in order to create more inclusive, resilient, and socially active public spaces.

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