ANADOLU ÜNİVERSİTESİ
Cilt: 25, Sayı: 1, Yıl: 2025
e-ISSN: 2667-8683
AÜSBD
Anadolu Üniversitesi Sosyal Bilimler Dergisi
Anadolu University Journal of Social Sciences

# Evaluating the Effective Architectural Factors Enhancing Sense of Vitality in Urban Spaces[1]

Navid KHALEGHIMOGHADDAM[2]

**Submitted by:** 23.09.2024 **Accepted by:**20.02.2025 **Article Type:** Research Article

## Abstract

*Urban spaces play a vital role in fostering social interactions among individuals, as they require both vitality and comfort for sustenance. These environments serve as a foundation for social and political engagement while facilitating the creation of memories and the expression of collective sentiments. The present study aims to investigate the effective relationship between architectural physical features and residents' sense of vitality, particularly in urban green areas. In this context, key variables that enhance users' sense of vitality are identified, and the relationship between these components and the sub-factors of architectural physical characteristics is analyzed through the case study of Konya Culture Park. A survey was conducted, with the statistical population determined using a purposive non-probability sampling method. The results indicate that physical factors, with a value of 0.87, surpass functional factors (0.83), social factors (0.79), and cognitive factors (0.76) in enhancing the sense of vitality among park users. Based on the findings, architects and urban planners should prioritize form, texture, diverse materials, water features such as fountains and ponds, landscaping, varied pathways, accessibility, and cleanliness as the most significant physical factors to improve citizens' sense of vitality.*

**Keywords:** *Architectural Factors, Sense of Vitality, Urban Parks, Public Spaces.*

1 For this study, an ethics committee decision was obtained from Konya Food and Agriculture University Ethics Committee with the date 04/09/2023 and decision number 2023/05-02.

2 Konya Food and Agriculture University, Faculty of Engineering and Architecture, Dept. of Interior Architecture, navid.khaleghi1363@gmail.com, ORCİD: 0000-0003-2505-207X

ANADOLU ÜNİVERSİTESİ

Cilt: 25, Sayı: 1, Yıl: 2025
e-ISSN: 2667-8683

AÜSBD
Anadolu Üniversitesi Sosyal Bilimler Dergisi
Anadolu University Journal of Social Sciences

# Kentsel Alanlarda Canlılık Hissini Artıran Etkili Mimari Faktörlerin Değerlendirilmesi[3]

Navid KHALEGHIMOGHADDAM[4]

**Başvuru Tarihi:** 23.09.2024 **Kabul Tarihi:** 20.02.2025 **Makale Türü:** Araştırma Makalesi

## Öz

*Kentsel alanlar, sosyal etkileşim için çok önemlidir çünkü insanlar hayatta kalmak için canlılık ve konfora ihtiyaç duyar. Kentsel alanların oluşumu toplumsal duyguların paylaşılmasına olanak tanır. Bu araştırma, mimarinin fiziksel özellikleri ile kentsel alanlarda yaşayan insanların canlılık hissi arasındaki etkili ilişkiyi incelemektedir. Bu bağlamda, kullanıcıların canlılık duygusunu artırmada etkili olan bileşenler belirlenmiştir ve Konya Kültür Parkı örneği üzerinden bu bileşenlerin mimarinin fiziksel boyutunu oluşturan alt faktörlerle ilişkisi incelenmiştir. Katılımcılar olasılıksız örnekleme yöntemi kullanılarak belirlenmiştir. Veriler anket kullanılarak toplanmıştır. Sonuçlar, park kullanıcılarının işlevsel faktörlerden (0.83), sosyal faktörlerden (0.79) ve bilişsel faktörlerden (0.76) daha fazla canlılık hissi geliştirdiğini göstermektedir. Bulgulara göre, mimarlar ve şehir planlamacıları, vatandaşların canlılık hissini geliştirmek için en önemli fiziksel faktörler olarak biçim, doku, farklı malzemeler, çeşmeler, göletler, bitkilendirme, farklı yürüyüş yolları, erişilebilirlik ve temizliğe odaklanmalıdır.*

**Anahtar Kelimeler:** Mimari faktörler, Canlılık hissi, Kentsel parklar, Kamusal alanlar.

## JEL Kodu: Z0

3 Bu çalışma için Konya Gıda ve Tarım Üniversitesi Etik Kurulu'ndan 04/09/2023 tarih ve 2023/05-02 karar numarası ile etik kurul kararı alınmıştır.

4 Konya Food and Agriculture University, Faculty of Engineering and Architecture, Dept. of Interior Architecture, navid.khaleghi1363@gmail.com, ORCİD: 0000-0003-2505-207X

## Introduction

Urban spaces, particularly urban green spaces, serve as vital arenas for the social engagement of residents, as they require vitality and comfort to thrive. These spaces offer a framework for social and political activities, as well as opportunities for memory creation and the expression of collective sentiments. However, the presence and activity of pedestrians in contemporary urban environments have diminished due to the proliferation of vehicles, leading to a decline in vitality (Khemri and Melis, 2020, p. 131). Urban parks are recognized as essential components of the urban landscape, capable of encouraging residents to remain in the city through thoughtful architectural design. City parks serve as important sources of relaxation and tranquillity amidst the hustle and bustle of metropolitan life. These green sanctuaries provide a refuge from daily stresses, inviting visitors to engage in leisurely walks or to unwind on park benches. Yet, within the simplicity of these activities lies an overlooked opportunity: the concept of vitality (Van den Berg et al., 2016, p. 13). The potential of urban parks to enhance holistic well-being is often eclipsed by larger recreational facilities and, as a result, tends to be underappreciated. Vitality in parks extends beyond physical activity; it embodies the notion of flourishing within interactive environments that foster social engagement, spiritual renewal, and cultural expression. While parks inherently offer space for relaxation and walking, the incorporation of intentional design elements can enhance their vitality, transforming them into vibrant centers where communities can flourish both spiritually and psychologically (Zhu et al., 2020, p. 2).

Numerous studies have been conducted to enhance vitality; however, the impact of physical, psychological, and beneficial architectural factors, as well as the prioritization of these components on the vitality of urban park residents, has received limited attention. For instance, Li et al. (2024) examined users' spatial perception and psychological experiences in green spaces, yet the interplay between physical and psychological factors remains inadequately explored. Zhang et al. (2024) investigated optimization strategies for the spatial vitality of commercial streets based on pedestrian routes, while Yuan and Chen (2021) analyzed factors influencing the vitality of streets in high-density residential areas using data from various sources. Revitalizing urban parks can be achieved by identifying and prioritizing the most effective architectural elements. Vitality and sociability reflect citizens' perceptions of place quality based on architectural components (Ren and Yang, 2023, p. 3), with users' environmental behavior serving as another criterion for assessing and evaluating the quality of architectural features in urban parks. In this regard, identifying architectural components that enhance citizen presence in urban spaces and improve the qualitative characteristics of these areas is fundamental to promoting citizen vitality, particularly in urban parks (Visser et al., 2023, p. 4).

The objective of this study is to identify and evaluate the characteristics that determine urban place vitality, with a specific emphasis on urban parks. These parks are significant spaces utilized by city dwellers for socialization, recreation, and interaction with nature. The physical, psychological, and social effects of these areas on users have not been sufficiently explored in existing literature. The originality of this study lies in its holistic approach, considering not only physical design elements but also the psychological and social dimensions associated with them. In this context, analyzing the characteristics of urban parks that foster social interactions, provide individual relaxation, and generally enhance user vitality is essential for both contributing to the literature and guiding applied design processes. Consequently, this study examines the relationship between the physical characteristics of architecture and residents' sense of vitality, particularly within urban green spaces. Effective variables that promote users' sense of vitality are identified, and the relationship between these components and the sub-factors of the physical aspects of architecture is analyzed using Konya Culture Park as a case study. To achieve this, relevant variables for the environmental vitality of urban areas are initially identified through qualitative methods that review prior research, forming a conceptual study model. The significance and impact of these pertinent components are subsequently analyzed statistically and through a questionnaire administered at Konya Culture Park.

# Theoretical Framework

## Urban public spaces

Public space refers to physical or virtual environments that are accessible to the public for communal use, facilitating interaction and engagement among individuals. These spaces are fundamental to democratic societies, fostering the convergence of diverse social groups. Physical public spaces encompass communal areas such as streets, squares, parks, and cafés, which serve as platforms for socialization, idea exchange, and interpersonal interactions (Mitchell, 1996). From a social and cultural perspective, public spaces also include activity centers like marketplaces, shopping districts, and fairgrounds.

With advancements in technology, digital public spaces have become integral to this concept, as social media platforms and online discussion forums have emerged as new venues for social dialogue. Digital public space encompasses interactions occurring via the internet and social media, where individuals can express their ideas, engage in discussions, and share information (Haas and Mehaffy, 2019). Numerous theories for analyzing urban spaces have been proposed by scholars and professionals in architecture and urban design, each addressing specific characteristics of urban environments, particularly urban parks (e.g., Jabareen and Eizenberg, 2021; Ibes, 2015; Gehl and Svarre, 2013; Bishop and Williams, 2012; Brown, 2008; Rofe, 1995). A diverse range of uses enhances the variety of activities and the demographic composition of residents throughout different times of the day, making diversity a prerequisite for vibrant urban places. However, diversity alone does not guarantee a lively and dynamic atmosphere; other critical components, such as parks, also play a significant role in cultivating a vibrant urban environment.

The fundamental elements of public space encompass accessibility, inclusivity, vitality, and sociality. These attributes facilitate both physical and social interactions, thereby reinforcing a sense of community. By embodying these characteristics, public spaces foster environments that shape the collective experience of cohabitation and enable individuals to articulate their shared identity (Juan et al., 2022). In this context, vitality serves as a critical characteristic that underpins the functionality of urban areas and social interactions, influencing both the physical and social dynamics of cities. The vitality of urban areas is directly linked to the accessibility of spaces, their appeal to diverse user groups, their suitability for various activities, and their capacity to foster socialization. These features allow individuals to engage with urban spaces more intensively and meaningfully, thereby enhancing the dynamic nature of urban life. Vibrant urban areas act as fertile grounds for creative activities and cultural interactions, where individuals convene and cultivate a sense of community. Consequently, the vitality of urban areas reflects not only the qualities of the physical space but also the essential role that space plays within the social context (Mouratidis and Poortinga, 2020).

According to Paumier (2007, p. 53), the characteristics that determine the vitality and success of an urban space include its location, which should attract a significant number of visitors. Proximity to retail outlets, cafés, and restaurants is also vital for stimulating foot traffic. The spatial proportions should facilitate communal enjoyment and social interaction. Furthermore, the architecture of an urban setting should enhance its capacity to attract and organize activity. Ruszczyk et al. (2023, p. 8) equate urban vitality with "quality of life," identifying appropriate seating, flexible use, comfort, and adaptability as essential components of high-quality urban design. Kushner (2020, p. 217) emphasizes that the diversity of uses and activities is a crucial prerequisite for the vitality of urban environments. According to Chen et al. (2016, pp. 1-5), engaging activities such as murals, skating, music performances, street theater, sports, cycling, walking, children's play areas, multi-purpose spaces for cultural and religious ceremonies or exhibitions, as well as newspaper and information kiosks and ATMs, are necessary for creating a vibrant atmosphere. Additionally, enhancing the aesthetic qualities of public squares through improved flooring and wall materials, the incorporation of water features, planting greenery to mitigate air pollution, providing various seating options, and ensuring adequate nighttime lighting is recommended (Mehta and Bosson, 2018, p. 4). Istrate and Chen (2022, p. 4) identify key elements for augmenting vitality as paving, seating, shade, lighting, signage, green spaces, furnishings such as statues and fountains, coordinated building façades, facilities, parking, accessibility, sanitation, and transportation.

## Vitailty in urban public spaces

Being in a crowd enables individuals to recognize the essence of humanity, with the vibrancy of a space largely stemming from the energized and joyful presence of its people. In this context, the social atmosphere of a city significantly enhances the leisure activities of its residents (Isabella et al., 2022, p. 2). Urban parks serve as venues where all citizens engage in collective life, learn to interact with one another, and strive to improve communal wellbeing; thus, vitality and liveliness are essential characteristics of urban spaces, particularly parks (Mushkani and Ono, 2021, pp. 2-3). Barber et al. (2021, p. 10) identify the diversity of materials, textures, and details, alongside the permeability of spaces, as critical elements for the vitality of urban public and green areas. Guo et al. (2021, pp. 1-2) contend that incorporating sociability considerations into the planning and design of spaces will foster a more active city. Consequently, no physical space can be deemed adequate from a human perspective if it does not align with the societal space defined by human activities and group interactions. The effectiveness of a public space today is assessed by the number of individuals utilizing it and the diversity of people engaged in these areas. A location can provide a range of opportunities for user activities that accommodate varying behaviors while addressing the needs of different user groups (Ramlee et al., 2018, p. 24). The city street, as a crucial site for community life, should be particularly dynamic. Introducing variations and changing the roles of a city street is vital for enhancing its dynamism. The street must be accessible to all demographics, including the elderly, children, women, and individuals with disabilities. Young people are particularly significant within these social groups, as they are prominently present in public spaces and influence urban social dynamics. A sense of social stability contributes to the vibrancy of urban areas. Conversely, the lack of safety for women in urban settings, such as residential neighborhoods, undermines the liveliness of these regions.

## Vitality dimensions

The interaction between the environment and humans is complex and multifaceted. The environment significantly influences human behavior. The connection between environmental factors and the livability of man-made spaces is established through spatial design, construction, remodeling, and maintenance. Livability is regarded as a critical characteristic of both small and large successful cities (Cowan, 2005, p. 187). The continuity of activities in an area can serve as an indicator of the space's vitality, measurable by its dynamism (Abdul Latip et al., 2012, pp. 148-150). Environmental vitality reflects the dynamism and vibrancy of individuals' daily lives in relation to their surroundings (Fang et al., 2021, p. 2). Incorporating spatial criteria in environmental design fosters the creation of attractive and user-friendly spaces. In line with this notion, Lynch (1984) and McGlynn (1985) identified permeability, legibility, flexibility, diversity, hierarchy, visual fit, continuity, and difference as essential criteria for assessing environmental vitality. Tzonis (2006) examines both the physical and geographical elements of this vitality. According to Relph (2022), the key physical attributes influencing the sense of vitality include size, scale, proportion, distance, texture, color, sound, smell, visual and functional diversity. Ujang (2012, p. 159) outlines various physical aspects affecting a place's vitality, including the sense of place, the variety of sensory stimuli, the development of public and private spaces, the sense of uniqueness and belonging, the sense of solidarity and security, alignment with mental images, place identity, and the ability to foster memories.

The liveliness of an environment is fundamentally derived from the meanings and attributes that individuals ascribe to a given space. Beyond mere physical interaction, the experience of vitality is rooted in a cognitive framework whereby individuals feel a sense of aliveness in response to the themes, people, objects, and concepts associated with a particular location. Consequently, individuals who lack a sense of vitality may struggle to engage meaningfully with a specific environment, as vitality represents the capacity of a space to evoke particular emotions, thereby shaping an individual's relationship with various concepts, people, and issues. In this context, space serves as a comprehensive term for analyzing actions and events (Prakash et al., 2015, p. 775). The physical characteristics of the environment enhance the sense of vitality by providing meaning and facilitating specific activities. To develop a profound understanding and appreciation of space, one must consider meanings, symbols, formal aesthetics, and spatial identification. Overall, an individual's

perception of vitality is influenced by their internal connections, thoughts, and environmental factors (Liu et al., 2023, p. 2).

Table 1 summarizes the identified concerns and key factors that emerged from a comprehensive review of the literature and previous research. These factors incorporate interdisciplinary perspectives and facilitate the identification of recurring themes and significant variables that shape public space and its impact on vitality:

Table 1

Summary of Identified Factors Influencing the Sense of Vitality in Public Spaces From Literarture (Author).

| **Studies Conducted on the Sense of Vitality in Public Spaces** | **Extracted Significant Variables Influencing the Sense of Vitality in Public Spaces** |
|---|---|
| Khemri and Melis (2020). | Memory and collective feelings, Social presence, Social activity. |
| Ujang (2012). | Memory and collective feelings, Sence of belonging, Sense of place, Mental image, Spatial identity, Security, Solidarity. |
| Mouratidis and Poortinga (2020). | Social presence, Social activity, Sense of community. |
| Juan et al. (2022). | Collective identity, Place meaning, Accessibility, Sense of community, Social interaction, Functional activity. |
| Liu et al. (2023). | Place meaning, Symbols, Formal aesthetic, Spatial identity, Functional activity. |
| Relph (2022). | Odor, Sound, Size, Texture, Detail, Color, Proportion, Distance. |
| Pauminer (2007). | Attractiveness, Proportion, Communal enjoyement, Shopes, Cofes, Restaurants, Temporary markets. |
| Mehta and Bosson (2018). | Aesthetic, Flooring, Material, Water feature, Fountain, Planting, Cleanliness (air pollotion), Various seating. |
| Ruszczyk et al. (2023). | Seating, Functional flexibility. |
| Van den Berg et al. (2016). | Walking, Sitting, Relaxation, Tranquility. |
| Istrate and Chen (2022). | Signs, Form, Flooring, Paving, Shade, Seating, Lighting, Furniture (statue, fountain), Parking, Accessibility, Cleanliness, Public transportation, Facilities, Parking, Transportation. |
| Barber et al. (2021). | Permeability and accessibility, Texture and details. |
| Ren and Yang (2023). | Sociability, Behavioral diversity. |
| Mitchell (1996). | Sociability, Social interaction. |
| Visser et al. (2023). | Social presence. |
| Mushkani and Ono (2021). | Collective life and social interaction. |
| Guo et al. (2021). | Sociability. |
| Ramlee et al. (2018). | Behavioral diversity. |
| Abdul Latip et al. (2012). | Continuity of activities. |
| Kushner (2020). | Functional activity, Functional diversity. |
| Chen et al. (2016). | Attractivness, Sport areas, Skating, Theater, Music, Cycling, Walking, Exhibition, Kiosk. |

According to Table 1, the principal architectural factors that enhance the sense of vitality in urban public spaces have been identified through a comprehensive review of relevant theories and literature. These factors were analyzed based on their recurring themes, interrelationships, and contributions to the overalexperience of vitality in urban environments. Consequently, the theoretical model of this study is structured around the key concepts and factors presented in Table 1, as shown in Figure 1. In this model, the extracted factors are categorized into four primary components—physical, cognitive, social, and functional—along with their corresponding subcomponents. This categorization aims to provide a structured and holistic framework for assessing urban vitality. The physical component encompasses tangible spatial attributes such as accessibility, shape, size, and texture, which directly impact user interaction with the space. The cognitive component includes perceptual and psychological aspects, such as sense of belonging, identity, and aesthetics, which influence how individuals interpret and emotionally connect with the urban environment. The social component pertains to interactions among individuals and groups in public spaces, highlighting the role of urban design in fostering social cohesion, sociability, and safety. Finally, the functional component addresses the practical and activity-related aspects of urban spaces, including land use diversity, activity planning, and flexibility, ensuring that spaces remain dynamic and responsive to user needs. These four categories are interconnected, as their subcomponents often overlap and reinforce one another. For instance, a well-designed urban park with diverse functions can attract residents and serve as a hub for social interaction, thereby enhancing perceived vitality while strengthening the identity of the place and promoting an authentic urban experience. By structuring the identified factors into these four overarching components, this study offers a systematic and multidimensional approach to understanding and evaluating the role of architectural features in enhancing vitality in urban public spaces.

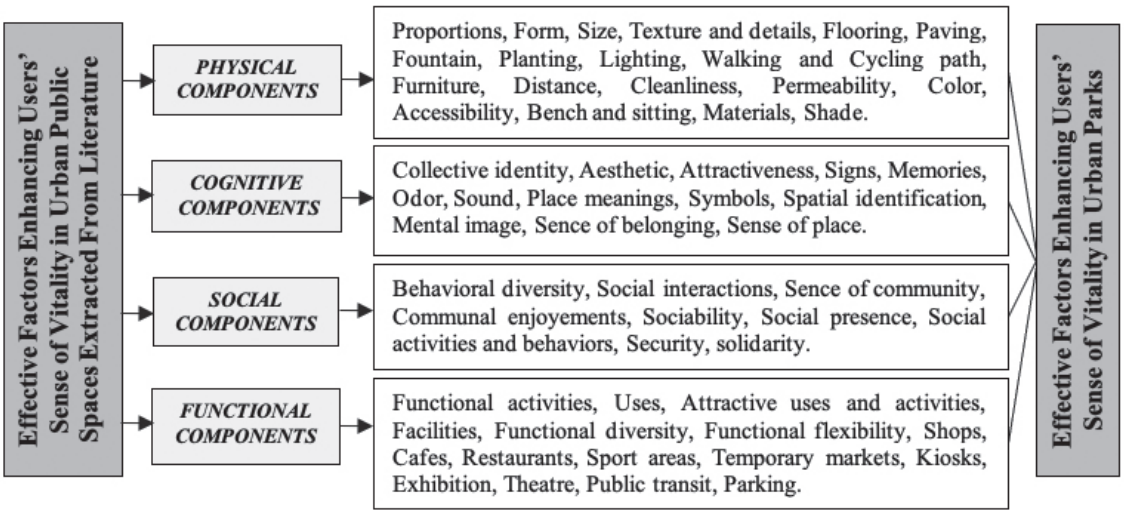


Figure 1. Factors Influencing Users' Sense of Vitality in Urban Public Spaces (Author, based on references cited in Table 1).

## Method

A mixed-methods approach was employed to conduct the current study. Initially, a purposive non-probability sampling method was utilized to select participants. This method was specifically chosen to facilitate the selection of individuals with firsthand experience and interaction with the study area. The focus of the study was to analyze the architectural and physical factors that enhance a sense of vitality in urban green spaces, necessitating the inclusion of participants who frequently engage with the park's facilities. Unlike probability sampling, purposive sampling prioritizes the relevance of respondents over representativeness. Given the

scope of this research, it was crucial to obtain insights from a knowledgeable subset of the population that interacts directly with the architectural elements under investigation. By concentrating on these participants, the study tried to provide a nuanced understanding of the relationship between architectural features and users' perceived sense of vitality. Furthermore, this approach aligns with the study's objectives, enabling an in-depth investigation of user-centered architectural factors in a specific context. This method is particularly suited for qualitative and mixed-methods research designs, where the emphasis is on depth of understanding rather than broad generalizability. In this context, three general phases were undertaken to assess the variables contributing to residents' sense of vitality in Konya Culture Park. In the first phase, to delineate the theoretical and conceptual framework of the study, a qualitative method was employed to review findings from previous studies on vitality, particularly in urban parks. Based on this review, the conceptual model of the study was developed by identifying and extracting the most effective features that foster a sense of vitality in urban environments. In the second phase, a qualitative analysis of the case study and users' spatial behavior was conducted using a field observation approach, guided by the conceptual framework. The purpose of this phase was to observe and determine users' environmental preferences, as well as to evaluate the functional and physical capacities of the case study in terms of user satisfaction. In the third phase, after coding the data gathered through observation, the elements prioritized by users and aligned with the conceptual framework were classified to formulate survey questions aimed at assessing and interpreting the citizens' sense of vitality within the case study spaces.

## Observation Experiment

The objective of observation was to analyze the relationship between the park's physical layout and the lifestyle of its residents, with a particular emphasis on user interactions within the park spaces. To achieve this, four primary steps were implemented:

- **Step 1, general appraisal,** consisted of three phases:

***A) Time and zoning:*** Observations were conducted at three distinct times throughout the day—morning, midday, and evening—to capture variations in user behavior and space utilization. The park was divided into nine distinct zones based on their functional and spatial features (e.g., seating areas, walking paths, playgrounds, and green spaces). Each zone was systematically analyzed to assess user engagement with the various spaces.

***B) Mapping and sketching:*** The researcher traversed all nine zones, dedicating a designated amount of time to each location. Key spatial elements such as benches, shaded areas, fountains, open fields, and walkways were meticulously documented. Specific locations were marked, and sketches were created directly on the maps to illustrate user distribution, movement patterns, interactions with different park elements, and to identify areas of activity and inactivity.

***C) Marking users' behavioral patterns and activity points:*** At this stage, observations focused on identifying specific behavioral patterns related to the functional use of each zone. The aim was to determine how park users interact with the space, which areas attract the most visitors, and whether factors such as seating, shade, or greenery influence spatial choices. Additionally, the analysis considered how different demographic groups (e.g., families, the elderly, children) utilize the space, taking into account both functional and activity patterns within the study area (see Figures 4 to 7).

Notes were taken to categorize observed behaviors, including walking (for leisure or transit), eating and drinking (alone or in groups), resting (lying down or leaning), standing (waiting or observing), and sitting (on benches or grass). For each activity, we documented the number of participants, their locations, and the duration of their engagement. Additionally, we recorded patterns of social interaction to evaluate the influence of design elements on fostering communal engagement. Special attention was given to

understanding how these behaviors correspond to specific areas of the park and how they are influenced by physical design features such as seating, shaded areas, green spaces, and pathways. The process also included tracking changes in spatial usage over time, facilitating a comprehensive understanding of how park spaces were utilized at different times of the day and how factors such as sunlight, temperature, and crowd density affected user preferences. Observations were conducted on a first-come basis, focusing on capturing spontaneous and natural interactions within the park.

- **Step 2, data collection and reliability:** A comprehensive observation checklist was utilized to collect data, categorizing key variables such as activity type (e.g., sitting, standing, walking, socializing), space type (e.g., open grassy area, paved path, seating area, shaded space), and the duration of time spent in each zone. Data were recorded in real time during observation periods, with each activity documented alongside the corresponding time, location, and number of participants. The researcher maintained a passive observer role to mitigate any influence of their presence on the natural behavior of park users. To enhance data reliability, each observation session was conducted on multiple days at consistent times. This redundancy was vital for capturing variations in park use potentially influenced by factors such as weather conditions, day of the week, or other variables. By systematically documenting these activities at different times throughout the day, the observation data offer valuable insights into how the park's architectural elements shape user experiences and how the spaces are utilized based on functional needs.

- **Step 3, data analysis:** The recorded information was systematically analyzed and classified using interpretive coding, based on frequency distribution and thematic categorization, aligned with the components outlined in the conceptual research model (Figure 1). This methodology enabled a focused exploration of the meanings and ideas that emerged from users' spatial preferences in relation to the physical, cognitive, social, and functional structures that enhance the vitality of the park environment. Initially, 39 codes were extracted from the observational data through a process of open coding, where each observed activity, interaction, or design feature was assigned a preliminary code. During this phase, the data were meticulously examined to identify key behaviors, environmental elements, and interactions present in the observations. Each code corresponded to a specific pattern of user activity, spatial preference, or physical attribute of the park. For example, activities such as sitting, walking, or resting received individual codes, while park features like shaded areas, seating, and green spaces were also assigned unique codes. These codes were instrumental in categorizing park users' behaviors and their interactions with the environment.

Once the initial set of codes (axial coding) was established, the data were reviewed to identify and eliminate overlaps or redundancies. In this context, the 39 codes were scrutinized for overlaps and redundancies by analyzing their frequency across multiple observation sessions. Codes that appeared in several zones and time windows were evaluated for thematic similarities. Similar codes were compared to determine whether they represented the same concept or necessitated further differentiation. The frequency with which a code was observed in all sessions, referred to as the code frequency (F), was calculated. Codes with low frequency (e.g., less than 20% of all observations) were assessed for significance. If a low-frequency code did not contribute to a primary theme or factor, it was either merged with a related code or excluded from further analysis. The Code Relevance Score (percentage occurrence of a code in the dataset) was calculated using the formula: Code Relevance Score = $f$ / F × 100%. Codes with a Code Relevance Score of less than 20% underwent qualitative examination; if they demonstrated strong conceptual significance, they were merged with similar codes rather than discarded.

After careful refinement, 31 distinct codes were identified. These refined codes were subsequently grouped based on their similarities and differences in accordance with the study's conceptual model, which examines how the physical design of the park influences users' experiences and their sense of vitality. Similar codes relating to spatial preferences, types of activities, and park features such as seating, pathways, and green space were categorized together. The mean score ($M=\sum(f\times w)/N$) for each observed factor was calculated by multiplying the weighted average ($w$ = weight assigned based on contextual meaning, e.g., duration, intensity, etc.) of the factor's occurrence in different observation sessions by the frequency of the observed

behavior or spatial interaction (f), divided by the total number of recorded observations (N). The statistical significance of each observed factor was assessed using a chi-square test for independence. Consequently, codes with $M \geq 0.827$ and $P < 0.05$ were retained and overlapping codes with similar behaviors were merged for clarity. Through this detailed analysis, 18 key factors were identified that were most significant in shaping the users' sense of vitality in the park. These factors, listed in Table 2, included a range of physical, social, cognitive and functional components that contributed to users' perceptions of the park's vitality. These 18 factors were then used as the basis for the survey questions to ensure that the survey captured the most important aspects of the park's vitality as revealed by the observational data. $P< 0.05$ were retained, and overlapping codes representing similar behaviors were merged for clarity. Through this detailed analysis, 18 key factors were identified that were most significant in shaping the users' sense of vitality in the park. These factors, listed in Table 2, included a range of physical, social, cognitive, and functional components that contributed to users' perceptions of the park's vitality. These 18 factors were then used as the basis for the survey questions to ensure that the survey captured the most important aspects of the park's vitality as revealed by the observational data.

## Survey Experiment

Based on interpretive coding conducted during the observation phase, 18 key components influencing the sense of vitality in Konya Culture Park were identified and assessed through a questionnaire comprising seven questions on physical components, three on cognitive components, three on social components, and five on functional components.

- **Survey validation and reliabilty analysis:** To validate the survey, two methods were employed: content validity and construct validity. This involved interviews with seven specialists, academics, and experts in the fields of architecture and urban planning, whose recommendations were incorporated into the survey's preparation and development. The Cronbach's alpha reliability coefficient was calculated at 0.867, indicating strong reliability. The questions were designed to explore how the identification of environmental factors influenced users' behavioral patterns, activities, and satisfaction; the extent to which the physical, functional, and social elements of the case study impacted the environment's vitality; and which components of the space's vitality were prioritized by users. Consequently, the survey consisted of 18 questions administered to participants during personal visits.

- **Question generation:** Questions 1-7 focused on the physical components of the park. The first question aimed to evaluate the impact of form and size: *The form and size of the buildings in the park encourage greater activity and presence*. The second question assessed the influence of texture and materials: *The textures and details in the materials, colors, and flooring attract me to the park*. The third question explored the significance of fountains and ponds: *The presence of a fountain or water feature in this park enhances my happiness and increases attendance*. The fourth question examined the effects of planting and walking paths: *Diverse and well-placed plantings and walking paths contribute vitality to the park*. The fifth question evaluated the role of lighting and its impact on security: *The illumination of walkways has improved safety during nighttime hours*. The sixth question addressed the importance of accessibility: *The variety of access routes to the park facilitates easy entry and exit, fostering a sense of security*. The seventh question measured the role of cleanliness: *The park's cleanliness has encouraged more visitors, and I appreciate this*.

In the evaluation of functional components, questions 8-12 addressed various aspects such as crossing, shopping, and sitting: *The spatial organization of the park is designed to provide a retreat from street intersections by creating inviting spaces for lingering, sitting, and enjoying showcases, thus attracting more attendees*. Service facilities were also examined: *The availability of amenities such as bank ATMs, kiosks, and public restrooms enhances comfort and convenience, motivating me to visit this park frequently*. The question of functional diversity was highlighted: *The presence of venues for cultural activities, including music ensembles,*

*theater performances, street exhibitions, juice shops, fast food outlets, and restaurants, significantly enriches the park's vibrancy and delights its visitors*. Public transportation accessibility was evaluated: *Easy access to public transportation facilities has increased the park's visitor numbers*. Lastly, parking facilities were assessed: *The availability of parking has positively impacted the number of people visiting the park*.

To evaluate the social components, questions 13-15 focused on variables such as behavioral diversity *("The variety of activities in the park has facilitated social interaction and the opportunity to meet new* people"), social interactions *("The presence of connected walking paths, multiple spatial openings, and open geometry in the area has enhanced the sense of social* security"), and social security *("The diverse functions and activities in this park play a crucial role in fostering community engagement and enhancing the sense of* safety").

Additionally, for the cognitive components, three questions (16-18) were designed to assess environmental aesthetics *("The presence of various green spaces, the visibility of park buildings among the trees, and the use of diverse materials have enriched the aesthetic appeal of the* park"), attractiveness and tranquility *("The spaces within this park are serene, providing an escape from daily stresses and promoting mental* focus"), and memory *("The park's environments evoke memories and inspire new* experiences").

- **Calculating sample size:** The sample size for this study was determined using the Cochran formula, a reputable statistical method for calculating sample sizes in cases where the population size is large or unspecified. This formula was selected for its effectiveness in ensuring representativeness and minimizing sampling error. The parameters included a confidence level of 95%, a margin of error of 5%, and a population proportion of 0.5, resulting in a required sample size of 284. To enhance the accuracy of the data, 300 questionnaires were distributed to account for potential non-responses or incomplete surveys. The target population comprised users of Konya Culture Park, specifically individuals with direct interactions with the park's architectural features. The validity of the survey was confirmed via a pilot study involving 36 participants, ensuring that the questions were clear, relevant, and aligned with the study's objectives. Following this, 148 men and 152 women (average age = 31.55 years) were randomly selected. The survey was conducted over a week at various times of the day, with data collection spanning five days and each survey taking 10-12 minutes to complete. Responses were measured using a Likert scale ranging from strongly agree to strongly disagree.

**-Data analysis:** Inferential statistics were employed to analyze the characteristics of the statistical population and the relationships among ideas and variables. The Cronbach's alpha test indicated that the questionnaire demonstrated a reliability coefficient of 0.867. To confirm the significance test of each design factor's contribution to vitality, confirmatory factor analysis was conducted. The t-value test was applied to evaluate the statistical significance of the factor loadings, which reflect the strength of the correlations between variables and factors. Factor loadings indicated by a t-value test of less than 1.96 (at a significance level of 0.05) denotes a significant relationship. In this study, several factor loadings were below 0.71, suggesting non-significant correlations with the corresponding factors. This indicates that these variables did not significantly contribute to the factors and may require further refinement. Consequently, the t-test facilitated the identification of the most significant variables influencing the sense of vitality in the park and provided insights into the essential architectural and functional features that enhance vitality in urban environments. Furthermore, confirmatory factor analysis was performed to validate the relationships among the identified components (physical, functional, social, and cognitive) and their impact on the sense of vitality in Konya Culture Park. This analysis tested the hypothesized factor structure and assessed the strength of the correlations between variables and factors.

The reliability of the factors influencing vitality was assessed through a confirmatory factor analysis, the results of which are presented in Table 3. The analysis focused on the factor loadings for variables associated with the physical, functional, social, and cognitive components of vitality. All factor loadings exceeded 0.30, indicating adequate reliability and contribution of the variables to their respective components. While factor loadings of 0.45 or higher are typically preferred for strong associations, loadings between 0.30 and

0.45 are considered acceptable in exploratory studies or when analyzing complex constructs in the social sciences, particularly with sufficiently large sample sizes (Hair et al., 2010). In this study, a threshold of 0.30 was deemed appropriate to identify meaningful relationships and to provide a comprehensive scope of analysis. This approach aligns with the recommendations of Tabachnick and Fidell (2013), who assert that factor loadings above 0.30 are acceptable in social and behavioral research, especially when the objective is to uncover preliminary patterns or relationships. Moreover, the decision to accept factor loadings above 0.30 was informed by the theoretical framework of this study, which underscores the multifaceted nature of vitality in urban environments. A broader threshold facilitated a more thorough examination of the nuanced interactions between architectural features and occupant vitality. The substantial sample size of 300 responses enhances the validity of the results, as it minimizes the likelihood of spurious relationships and bolsters the reliability of the factor analysis.

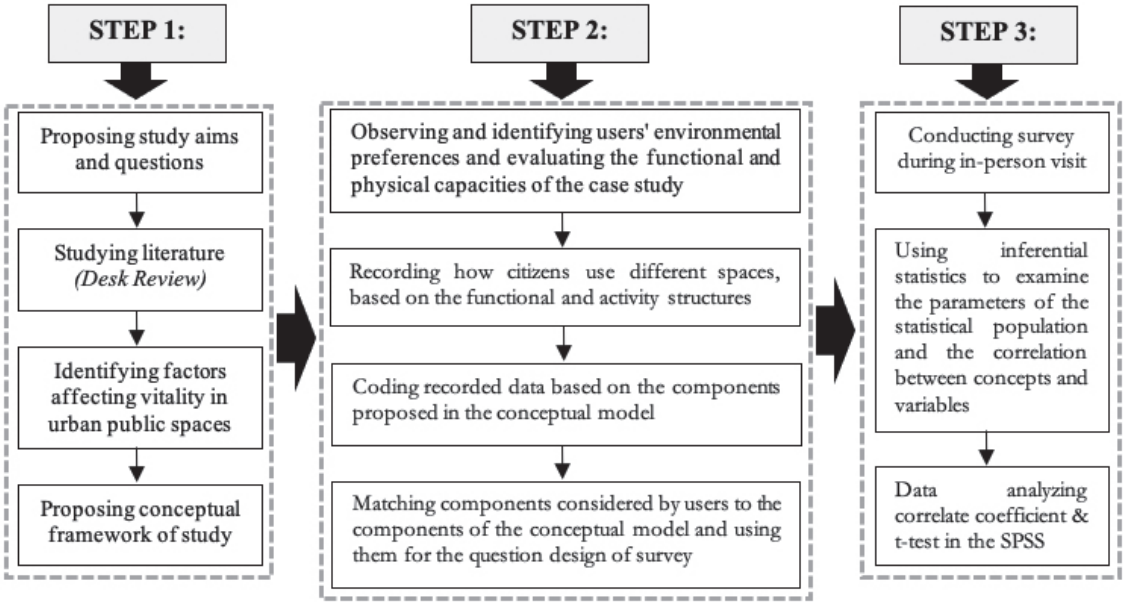


Figure 2. Research Conducting Process (Author).

## Study Area

The Konya Culture Park is situated in the city center, adjacent to Alaaddin Hill, which has its origins in the Seljuk period. This well-known urban space offers expansive green areas, pools, social spaces, a library, and proximity to significant historical structures, including mosques and madrasas. Organized by the Konya Municipality, the park was inaugurated in 2009 with a grand ceremony and has since evolved into a beautifully developed area. It is a popular destination, characterized by its large trees, water fountains, aesthetically pleasing pools, restaurants, cafeterias, tea gardens, playgrounds, relaxation rooms, a library, conference halls, and an amphitheater that hosts various activities during the summer months. Covering an area of 150,000 $m^2$, the park is accessible from all sides. In addition to its functional and spatial diversity, the park's proximity to historically significant urban elements such as the Karatay Madrassa, the Ince Minare Mosque, the Preceptory School, the Seljuk Forum, the Shams Tomb, the Iplikçi Mosque, and the Alaaddin Mosque enhances its importance as a vibrant hub for the city and a conducive environment for its citizens. Strategically located among these prominent historical sites, the park acts as a cultural oasis where history and modernity coexist, enriching the experience for all visitors.

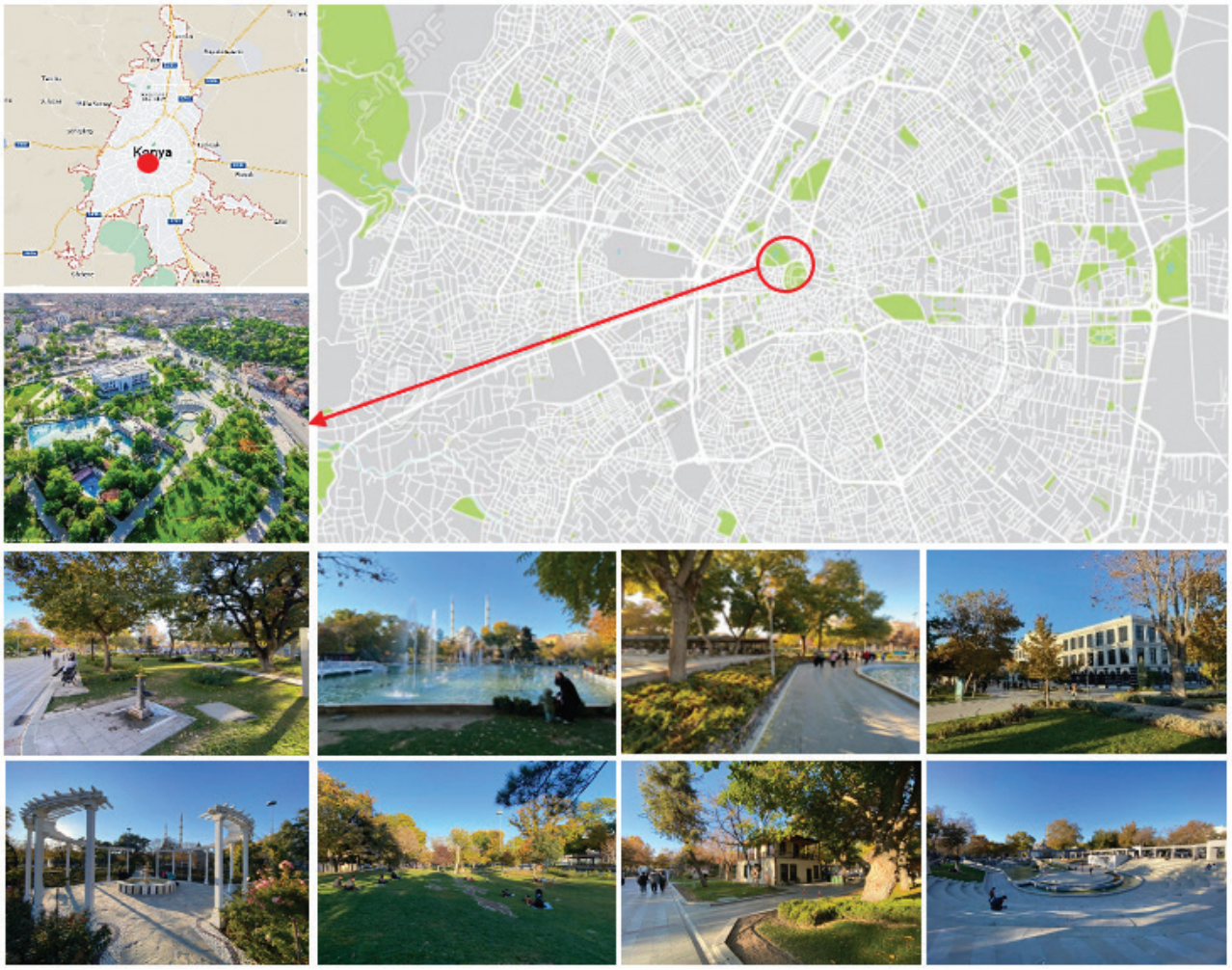


Figure 3. First Row: Location of Case Study within the City (Google Maps); Second and Third Rows: Photographs of the Case Study

## Findings

### Field study and observation findings

To evaluate the key variables that enhance users' sense of vitality in Konya Culture Park, we conducted a comprehensive assessment of users' environmental preferences and behaviors through field observations, aligned with the criteria established in the conceptual framework of the study. We investigated, reviewed, and analyzed the reasons for users' presence in various areas of the park. Ultimately, we identified the factors influencing the selection or avoidance of specific locations, as well as the results based on the established criteria. Given the park's size and its functional and physical characteristics, it was categorized into nine distinct zones for observational convenience (see Figure 4). User behavior and spatial preferences were systematically observed and recorded at different times across each zone. The zones are numbered 1 to 9, as depicted in the figure below. The density of black dots in each zone represents the number and volume of visits, in addition to user preferences.

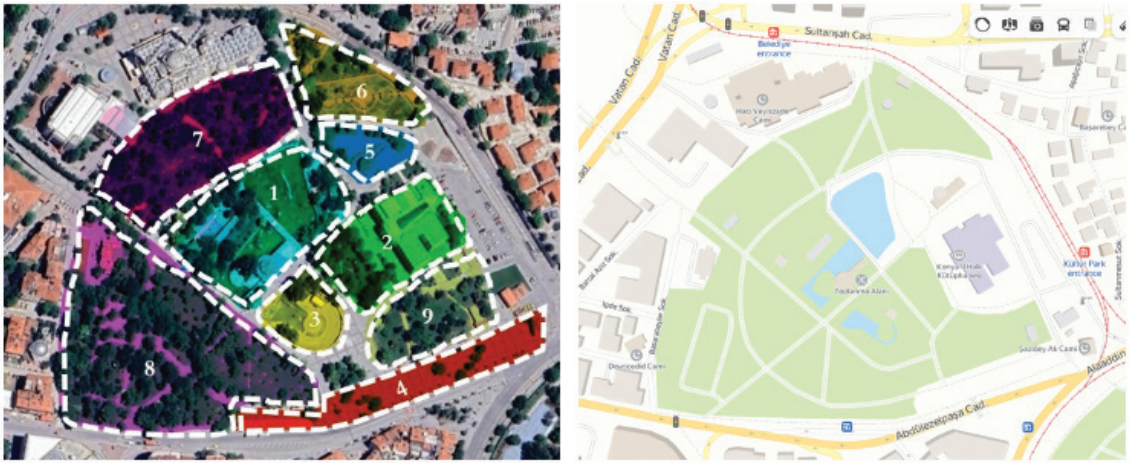


Figure 4. Zoning of Konya Culture Park (Left: Google Earth; Right: Google Maps).

The inclusion of amenities such as cafes, restaurants, ponds, fountains, green spaces adjacent to the restaurant, seating areas, and the promenade in Zone 1 has significantly revitalized the area and increased visitor numbers. To enhance this environment, the integration of architectural elements such as spatial and functional diversity, effective lighting, and a variety of pathways for seating and walking has fostered a sense of tranquility, security, and social interaction. In Zone 2, the strategic placement of the park library adjacent to the large pond and its proximity to green spaces and trees has encouraged many users to relax in the nearby green area after their studies. Moreover, the library's closeness to the café ensures that patrons' food and beverage needs are conveniently met. Consequently, this section of the park is vibrant and dynamic, with stationary areas like benches providing a sense of balance. Zone 3 features an open-air amphitheater with ample outdoor seating, as well as a central plaza designated for ceremonial performances and activities such as athletics, acrobatics, and skating for youths. The presence of a picturesque waterfall and the surrounding trees enhance the area's air quality and thermal comfort, contributing to the park's overall visual appeal.


Figure 5. The Locations of Zones 1, 2, and 3 at Konya Culture Park (Author).

Zone 4 has been identified as highly advantageous in terms of accessibility, geometry, and size, featuring comfortable walkways, diverse materials, vegetation, grass, trees, and seating. These attributes create ideal conditions for enjoying scenic views and landscapes. Moreover, the significant volume of activities along the street adjacent to Zone 4, the density of commercial enterprises in this area, the thoughtful landscaping, the proximity to the historic Aladdin Hill, the availability of bus and taxi stations, and the placement of café and restaurant tables on the sidewalk have all contributed to increased activity. This has resulted in enhancements to the physical and ecological quality of the sidewalk, an elevation in service levels, and a qualitative improvement of this axis in terms of physical space, aesthetic appeal, urban amenities, social connectivity, and overall vitality. Similarly, in Zones 2 and 3, the existence of a large open space for recreational and sports activities, green areas, shaded seating under trees, safe and adequate paving, and the presence of the municipal course building (Komek) have made Zone 5 physically and functionally appealing to a broad range of users.


Figure 6. The Location of Zones 4 and 5 within Konya Culture Park (Author).

The extensive range of playground equipment for children, along with the meticulously designed landscaping that includes diverse green areas and pergolas, enhances the appeal of Zone 6. The integration of both open and semi-open spaces, utilizing a variety of materials and designs, as well as the variety of walking and seating paths, contributes to the area's attractiveness. Furthermore, the presence of a historical tomb from the Seljuk period and its proximity to the tramway station have increased its popularity among residents. Zones 7, 8, and 9 feature high-quality elements, including a diverse array of plants, grass, trees, and seating arrangements, which not only improve the park's aesthetics but also promote safety and social interaction. These zones are easily accessible and incorporate essential features such as well-maintained walkways, varied materials, and appealing landscaping, all of which foster a positive living environment for residents. Collectively, these elements significantly influence environmental preferences, sociability, vitality, collective memory, sense of place, and community identity.


Figure 7. The Location of Zones 6, 7, 8, and 9 at Konya Culture Park (Author).

Table 2 presents the results of the coding and statistical validation of observed spatial behavior and user preferences in the assessment of park vitality. Following the data coding derived from observations, the 18 most highly rated elements, consistent with the conceptual framework of the study, were categorized into physical (7 variables), functional (5 variables), social (3 variables), and cognitive (3 variables) components. These categories served as the foundation for the survey questions aimed at evaluating and interpreting citizens' perceptions of vitality within the Konya Culture Park. In the realm of physical components, the presence of a fountain and pond ($M=1.642$, $P<0.05$), planting and walking paths ($M=1.497$, $P<0.05$), cleanliness ($M=1.435$, $P<0.05$), lighting and security ($M=1.003$, $P<0.05$), accessibility ($M=0.985$, $P<0.05$), form and size ($M=0.912$, $P<0.05$), and texture and details ($M=0.842$, $P<0.05$) received the highest scores as the most important variables for increasing the sense of vitality. Among the functional components, the highest-scoring variables included crossing, stopping, and sitting ($M=1.528$, $P<0.05$), service facilities ($M=1.452$, $P<0.05$), functional diversity ($M=1.131$, $P<0.05$), public transportation ($M=1.069$, $P<0.05$), and parking ($M=1.019$, $P<0.05$), all of which were deemed critical for increasing vitality from the respondents' perspective. In terms of social components, the variables of social security ($M=1.224$, $P<0.05$), social interactions ($M=0.952$, $P<0.05$), and behavioral diversity ($M=0.941$, $P<0.05$) received the highest ratings, highlighting their importance in fostering a sense of vitality. Finally, of the cognitive component, attractiveness and calm ($M=1.367$, $P<0.05$), memories ($M=1.000$, $P<0.05$), and aesthetic($M=0.957$, $P<0.05$) were evaluated as the most significant variables influencing the overall sense of vitality.

Table 2

Coding and Statistical Validation of Observed Spatial Behavior in Park VitalityAssessment (Author).

| Component | Observed Behaviors in Zones (Extracted Key Factors) | Code ID | Retained Code (Using,Preferences/ Satisfaction) | CRS | M | P | Thematic Category |
|---|---|---|---|---|---|---|---|
| **Physical:** Proportions, Form, Size, Texture and details, Flooring, Paving, Fountain, Planting, Lighting, Walking and Cycling path, Furniture, Distance, Cleanliness, Permeability, Color, Accessibility, Bench and sitting, Materials, Shade. **Functional:** Collective identity, Aesthetic, Attractiveness, Signs, Memories, Odor, Sound, Place meanings, Symbols, Spatial identification, Mental image, Sence of belonging, Sense of place. **Social:** Behavioral diversity, Social interactions, Sence of community, Communal enjoyements, Sociability, Social presence, Social activities and behaviors, Security, solidarity. **Cognitive:** Functional activities, Uses, Attractive uses and activities, Facilities, Functional diversity, Functional flexibility, Shops, Cafes, Restaurants, Sport areas, Temporary markets, Kiosks, Exhibition, Theatre, Public transit, Parking. | **Zone 1:** Various uses like cafes, restaurants, ponds, fountains, green areas, and seating places, resulted in an increase in the number of visitors. Spatial and functional diversity, lighting, various paths for seating and walking have increased calm, repose, security, and social interactions. **Zone 2:** The proximity of library to the huge pond and green spaces has led to relaxing after studying. The library's closeness to the cafe has ensured that customers' food and drink needs are met. This part of the park is quite busy and dynamic, with static areas such as benches providing some balance. **Zone 3:** There is a significant spatial preferences because of amphitheater, outdoor seating, and a plaza in the middle for ceremonial performances and occasional athletics and skating for youngsters. A waterfall and trees surrounding has cleaned the air and thermal comfort. **Zone 4:** This zone provideshas highly advantageous in terms of accessibility, geometry, size, comfortable walkways, various materials, plants, grass, trees and seating. The high volume of activities in the street adjacent to this zone, the proximity to the historic Aladdin Hill, bus and cab stations and the placement of benchs on the sidewalk have all contributed to an increase in activity, physical quality of the sidewalk, beauty, urban amenities, social connections. **Zone 5:** Large open space for play and sports activities, green areas and seating in the shade of trees, and adequate and safe paving in this area have contributed to making this zone physically and functionally attractive. **Zone 6:** Playground equipment for children, various green areas, open and semi-open spaces with different materials, the variety of walking and sitting paths, the proximity of this zone to the tramway station have contributed to its popularity among citizens. **Zone 7,8,9:** High-quality of plants, grass, trees and seating have beautified the park and promoted security and social interactions. Handy walkway, a diversity of materials and beautiful landscaping have a considerable impact on the formation of environmental preferences, sociability, vitality, collective memory, sense of place, and identity. | C1 | Fountain and pond | 58% | 1.642 | 0.001 | Physical |
| | | C2 | Planting and walking path | 74% | 1.497 | 0.000 | Physical |
| | | C3 | Recording memories | 66% | 1.000 | 0.001 | Cognitive |
| | | C4 | Functional diversity | 91% | 1.131 | 0.000 | Functional |
| | | C5 | Behavioral diversity | 63% | 0.941 | 0.000 | Social |
| | | C6 | Texture and details | 37% | 0.842 | 0.000 | Physical |
| | | C7 | Attractiveness and calm | 74% | 1.367 | 0.000 | Cognitive |
| | | C8 | Cleanliness | 39% | 1.435 | 0.000 | Physical |
| | | C9 | Form and size | 23% | 0.912 | 0.000 | Physical |
| | | C10 | Public transportation | 86% | 1.069 | 0.000 | Functional |
| | | C11 | Lighting and security | 72% | 1.003 | 0.001 | Physical |
| | | C12 | Crossing, stopping, sitting | 81% | 1.528 | 0.001 | Functional |
| | | C13 | Service facilities | 54% | 1.452 | 0.000 | Functional |
| | | C14 | Social interactions | 67% | 0.952 | 0.000 | Social |
| | | C15 | Environmental aesthetic | 49% | 0.957 | 0.001 | Cognitive |
| | | C16 | Social security | 58% | 1.224 | 0.001 | Social |
| | | C17 | Accessibility | 71% | 0.985 | 0.000 | Physical |
| | | C18 | Parking | 46% | 1.019 | 0.001 | Functional |

## Survey Findings

51% of respondents were young individuals aged 18 to 31, 34% were aged 32 to 54, and 15% were seniors over 55. Notably, 43.5% of participants identified as students, 29.5% as housewives, 19% as employees, and 8% as self-employed. Figure 8 illustrates the scores for each individual question, as well as the respondents' perceptions regarding the components of vitality and the value attributed to each component. To identify the most effective elements contributing to the sense of vitality in the Konya Culture Park, it was necessary to assess the reliability of the factor analysis questions. Consequently, the significance of each question in relation to the overall reliability of the scale was initially examined. In this context, items with coefficients of determination below 0.3 were excluded. The results of the reliability test, utilizing a confirmatory factor analysis approach, are presented in Table 3, detailing each factor that independently affects vitality. The factor loadings of each index were analyzed concerning their respective components. Table 3 displays the findings of the confirmatory factor analysis for factors associated with the physical, functional, social, and cognitive components of vitality. The factor loadings for all variables exceed 0.3, indicating adequate reliability.

Table 3

The Content and Factor Loadings of the Questions in Each Component (Author)

| Component | Variable | M | SD | t | Loading Factor | Prob. Level |
|---|---|---|---|---|---|---|
| **Physical** | Form and size | 4.84 | 0.63 | 16.72 | 0.402 | 0.001 |
| | Texture and details | 4.42 | 0.51 | 17.82 | 0.394 | 0.000 |
| | Fountain and pond | 5.21 | 0.68 | 17.29 | 0.697 | 0.000 |
| | Planting and walking path | 4.16 | 0.29 | 18.43 | 0.611 | 0.001 |
| | Lighting and security | 4.24 | 0.48 | 10.03 | 0.526 | 0.000 |
| | Accessibility | 4.17 | 0.67 | 17.82 | 0.432 | 0.000 |
| | Cleanliness | 4.92 | 0.57 | 20.21 | 0.587 | 0.000 |
| **Functional** | Crossing, stopping, sitting | 3.86 | 0.66 | 17.63 | 0.599 | 0.000 |
| | Service facilities | 3.01 | 0.22 | 17.28 | 0.411 | 0.000 |
| | Functional diversity | 4.01 | 0.63 | 18.67 | 0.610 | 0.000 |
| | Public transportation | 3.02 | 0.25 | 10.03 | 0.456 | 0.000 |
| | Parking | 3.09 | 0.68 | 17.45 | 0.397 | 0.000 |
| **Social** | Behavioral diversity | 3.94 | 0.63 | 13.89 | 0.507 | 0.001 |
| | Social interactions | 4.15 | 0.57 | 14.21 | 0.584 | 0.001 |
| | Social security | 4.04 | 0.66 | 14.08 | 0.603 | 0.000 |
| **Cognitive** | Environmental aesthetic | 3.67 | 0.27 | 15.54 | 0.416 | 0.000 |
| | Attractiveness and calm | 3.21 | 0.53 | 14.03 | 0.403 | 0.000 |
| | Memories | 3.78 | 0.29 | 11.29 | 0.412 | 0.000 |

In this context, the variables "fountain" and "pond" (M=5.21) with a factor loading of 0.697, as well as "cleanliness" (M=4.92) with a factor loading of 0.587, significantly influence the physical component. The variables exerting the highest effect on the functional components were "functional diversity" (M=4.01) with a factor loading of 0.610, and "crossing and sitting" (M=3.86) with a factor loading of 0.599. Additionally, the variable "memory" (M=3.78) and the variable "social interaction" (M=4.15) demonstrated the greatest impact on the social and cognitive components, respectively. Subsequently, internal consistency was assessed using Cronbach's alpha coefficient, which was found to be 0.812, indicating that the measurement instrument is highly reliable. A confirmatory factor analysis was conducted to validate the significance of each effective component's contribution to enhancing users' sense of vitality. The t-value test was employed to assess the significance of the correlations among the variables, with a significance threshold set at an alpha level of 0.05. The t-value test revealed that the number of factor loadings was below 0.71, indicating a non-significant correlation. Table 4 and Figure 8 present the results of the confirmatory factor analysis regarding the components influencing the sense of vitality in Konya Culture Park. Consequently, citizens perceive that the physical components (t=16.90), functional components (t=16.21), social components (t=14.06), and cognitive components (t=13.62) exert the most substantial impact on their sense of vitality within the park.

Table 4

Confirmatory Analysis of Factors Influencing Sense of Vitality in Koya Culture Park (Author).

| **Component** | **Cronbach's alpha** | **T Statistic** | **Loading Factor** | **Prob. Level** |
|---|---|---|---|---|
| **Physical** | 0.846 | 16.90 | 0.87 | 0.000 |
| **Functional** | 0.837 | 16.21 | 0.83 | 0.000 |
| **Social** | 0.819 | 14.06 | 0.79 | 0.000 |
| **Cognitive** | 0.814 | 13.62 | 0.76 | 0.000 |

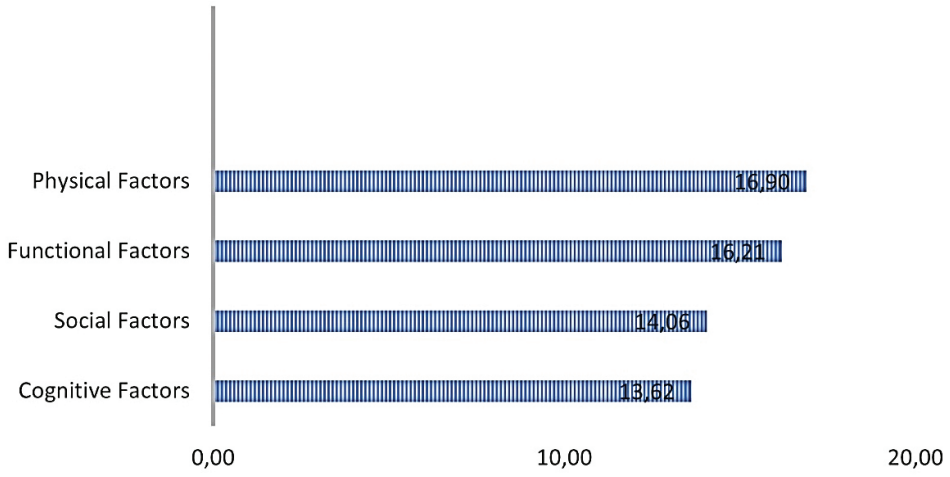


Figure 8. Impact Factors of Components Influencing the Sense of Vitality in Konya Culture Park (Author).

The t-statistics for each component (Physical: 16.90, Functional: 16.21, Social: 14.06, Cognitive: 13.62) were significantly high, indicating that the relationships observed in this study are not due to chance. With a probability of 0.000, these findings support the hypothesis that physical, functional, social, and cognitive aspects significantly impact the vitality of the park. These results align with the findings of Mehta and Bosson

(2018), which demonstrated strong correlations between physical attributes and the perceived quality of public spaces, as well as with those of Mouratidis and Poortinga (2020), who expanded the focus to include social and cognitive factors. Furthermore, the statistically significant findings corroborate the work of Liu et al. (2023), which highlighted that perceptions of vitality in urban parks are shaped not only by physical design but also by social interactions with the environment. These studies underscore the importance of considering a broad range of factors in park design, as their effects are measurable and significant, as evidenced by our results.

The high loading factors for each component (Physical: 0.87, Functional: 0.83, Social: 0.79, Cognitive: 0.76) confirm the strong influence of each factor on the park's vitality. These scores indicate that the interplay of physical design elements, functional facilities, social interactions, and cognitive experiences is essential for creating vibrant public spaces. Consequently, it can be argued that the interdependence of these factors fosters an environment that not only supports physical use but also facilitates social interactions and cognitive engagement, thereby enhancing the attractiveness and enjoyment of the space for users. However, this study demonstrates that functional aspects, such as service facilities, functional diversity, and the availability of public transportation, are equally critical to users' interactions with and utilization of the space. For example, the positive loading factor for functional diversity supports the notion that a diverse array of features in parks encourages longer and more frequent visits, as suggested by Kushner (2020) and Ramlee et al. (2018). Additionally, social factors, including social interactions and feelings of safety, were found to be significant in these results, reinforcing the argument by Williams and Hipp (2019) that public spaces are vital not only for physical recreation but also for fostering community cohesion. The cognitive benefits associated with environmental aesthetics and memories further indicate that individuals value spaces that provide psychological respite and emotional connections, as emphasized in the study by Khemri and Melis (2020).

## Discussion

The findings of this study reveal a strong correlation between the physical, functional, social, and cognitive aspects of park vitality and user experiences in urban public spaces. The analysis confirms the significance of these components and provides compelling evidence of their substantial contribution to the overall vitality of urban park environments. Based on the observational data and the classification table (Table 2), it can be concluded that there is a clear relationship between the physical characteristics of the park and the behaviors and preferences of its users. The shape and size of the spaces significantly influence user engagement; larger open areas are favored for sitting and relaxation, whereas narrower paths are predominantly utilized for walking. Furthermore, the availability of seating is a critical factor in extending the duration of visits, highlighting the necessity for increased seating options in various areas of the park to promote relaxation and social interaction.

The presence of shaded areas, particularly during midday, significantly influences the behavior of park visitors, who tend to spend more time in these areas to relax and shield themselves from the heat. Green spaces, plantings, and walkways are crucial elements that attract users to various activities, such as walking, resting, and socializing, underscoring the importance of incorporating these features into park design to enhance user satisfaction. Observations of social interactions within the park reveal that the type of space plays a significant role; larger, more open areas promote group activities, while more secluded or shaded spaces are preferred by individuals or small groups. This indicates that park design should strive for a balance between open, social spaces and quiet, private areas to accommodate diverse user preferences. Additionally, lighting and security are essential for ensuring safety and extending park usage into the evening. Adequate lighting enhances the inviting nature of spaces, encouraging longer visits, particularly during evening hours. Furthermore, cleanliness and maintenance directly affect the duration of users' stays, with well-maintained areas promoting extended use. Lastly, park accessibility and inclusive design are critical, ensuring that individuals with varying abilities can comfortably utilize the park. Accessible pathways and seating areas facilitate use by a broad spectrum of visitors, including those with mobility challenges and families with children.

The results of the survey indicate that the physical components of the park, particularly elements such as fountains and ponds, along with cleanliness, significantly influence users' feelings of well-being. These findings align with existing literature that underscores the importance of sensory experiences and environmental cleanliness in fostering positive experiences in urban parks (Mehta and Bosson, 2018; Istrate and Chen, 2022). The visual and auditory effects of water features, for instance, have long been recognized for their calming and invigorating

impact on visitors (Relph, 2022). Furthermore, this study emphasizes the significance of environmental comfort in enhancing urban vitality, as articulated by Liu et al. (2023), Ruszczyk (2023), and Van den Berg et al. (2016). Their research supports the notion that the aesthetic qualities, relaxation opportunities, tranquility, functional flexibility, and physical conditions of urban spaces directly influence users' psychological well-being and physical engagement, thereby contributing to the overall vitality of a park. The functional components that affect vitality—including functional diversity, intersection, and seating areas—align with urban design principles that advocate for multipurpose spaces to encourage diverse uses and enhance community engagement (Kushner, 2020; Ren and Yang, 2023; Chen et al., 2022). Functional diversity not only facilitates a range of recreational activities but also fosters social interactions and promotes inclusivity, essential for creating spaces that appeal to a broad demographic, as highlighted by Brown (2008) and Khemri and Melis (2020). The necessity for such functionality was further underscored by Ibes (2015), who argued that public spaces should be flexible and adaptable to the needs of various user groups. In this study, the combination of intersections and seating likely provides the necessary infrastructure for interaction and leisure, thereby fostering a stronger sense of place and social cohesion (Juan et al., 2022; Mushkani and Ono, 2021).

From a social perspective, the variable of social interaction had the impact on vitality in this study. This finding underscores the social role of parks as meeting places where individuals can interact, with one another, participate in community activities, and establish social networks. This aligns with previous research conducted by Mouratidis and Poortinga (2020) and Ramlee et al. (2018), which highlight the essential role of public spaces in fostering community ties and enhancing social capital. Additionally, the results indicate that the variable of memory reflects the cognitive component of vitality, emphasizing that spaces that invoke memories and a sense of history contribute to a deeper emotional connection with the environment (Jabareen and Eizenberg, 2021; Ujang, 2012). These memories create a collective identity within the community, further reinforcing the vitality of the space (Juan et al., 2022). The cognitive aspect, primarily influenced by memory, highlights the necessity of creating places that resonate with individuals' mental and emotional states. As noted by Prakash et al. (2015), cognitive vitality encompasses not only physical presence but also psychological engagement with a space. Thus, the connection between memory and vitality suggests that the park transcends being merely a physical space; it acts as a canvas for personal and collective memories that enhance its perceived vitality.

Conversely, the statistical analyses performed in this study, including confirmatory factor analysis (CFA) and the calculation of Cronbach's alpha coefficient, affirm the robustness of the results. The high factor loadings across all components indicate strong internal consistency, confirming that the selected variables are reliable indicators of park vitality. The t-value tests and confirmatory factor analysis results demonstrate that the physical, functional, social, and cognitive components significantly contribute to the perceived vitality of Konya Culture Park, aligning with the holistic urban design approach advocated by scholars such as Gehl (2013) and Lynch (1984). The findings of this study provide critical insights for urban planners and designers aiming to enhance the vitality of public spaces. A comprehensive integration of physical, functional, social, and cognitive elements is essential to create environments that are not only aesthetically appealing but also serve multiple purposes and foster meaningful social interactions. Furthermore, the significant influence of memory and social interaction on users' perceptions of vitality underscores the importance of designing urban spaces that promote community engagement and establish lasting emotional connections (Ramlee et al., 2018; Ren and Yang, 2023). Future research should explore the effects of seasonal variation, temporal changes in park use, and demographic diversity on vitality. Additionally, the study could be expanded to include comparative analyses with other urban parks to enhance understanding of the generalizability of these findings across different cultural and ecological contexts.

## Conclusion

In light of the increasing environmental concerns and urbanization, it is essential to identify the factors that enhance the environmental health of users. Accordingly, the present study aimed to determine the most effective elements that promote users' sense of vitality at Konya Culture Park. Additionally, it addressed a significant aspect of contemporary life: the interaction between individuals and their environment. The objective of this study was to illuminate the critical components that contribute to individuals' well-being and their connection to their surroundings, thereby playing a vital role in the development of healthier and more sustainable communities.

The findings indicate that the physical, functional, social, and cognitive components are instrumental in assessing users' sense of vitality. Specifically, physical elements such as fountains, ponds, cleanliness, form, size, texture, lighting, accessibility, greenery, and walkways emerged as paramount. By analyzing and categorizing criteria that are valuable to designers, the study identified factors that significantly influence user vitality. For instance, features such as fountains, ponds, and cleanliness were found to have a substantial impact on the physical component. Moreover, the study revealed that variables such as activity diversity and seating are critical for the functional component, while social interaction has the most significant effect on the social component. Additionally, the variable of memory was identified as having the greatest influence on the cognitive component. The results suggest that managers, architects, and urban planners should prioritize the design and placement of these elements in urban spaces, such as parks, to enhance users' sense of vitality.

It is noteworthy that urban green areas play a crucial role in enhancing overall well-being, fostering community cohesion, and facilitating social connections. This research identifies architectural components that contribute to vitality, offering valuable insights for urban design initiatives aimed at creating dynamic and engaging public spaces. By encouraging outdoor engagement, these areas promote social cohesion, stimulate conversation, and strengthen community ties. Moreover, vibrant green spaces enhance mental and emotional health by providing inclusive environments that cater to diverse social groups, thereby reinforcing the social fabric of urban regions. This study contributes to the evolving field of environmental psychology by elucidating the relationship between architectural elements and the vitality of urban green spaces. It enhances our understanding of how physical design influences individuals' perceptions, behaviors, and emotional well-being. The research may lead to the development of a theoretical framework that connects specific architectural features—such as pathways, seating, lighting, and landscaping—with the perceived vibrancy experienced by users in these spaces. Future studies could utilize this framework as a reference point. The findings are likely to foster interdisciplinary collaboration among environmental psychologists, urban planners, and architects, facilitating a more comprehensive exploration of the interplay between built environments and human well-being. Additionally, the insights gained can assist architects and urban planners in the design and renovation of urban green spaces by emphasizing architectural elements such as interactive zones, efficient spatial layouts, and the integration of natural features that effectively enhance vitality. Furthermore, city planners and municipal authorities may leverage these findings to inform policy-making and allocate resources for the development of urban parks and green spaces that prioritize social interaction, comfort, and vibrancy, ensuring accessibility for all.

Regarding research limitations, it is important to note that cultural, geographical, and climatic conditions play a significant role in shaping the architectural elements that influence vitality. Therefore, the generalizability of the study's findings may be constrained, as results from one country or city may not hold the same validity in other urban or social contexts. The concept of vitality is inherently subjective and can vary in perception based on factors such as age, cultural background, and personal preferences. While interviews and surveys can be employed to evaluate vitality, these methods may introduce personal bias and diverse interpretations that could impact data accuracy. Additionally, the study may not have fully accounted for the evolution of perceptions of vitality over time, influenced by factors such as changing social dynamics, seasonal variations, and the degradation of urban green spaces. As such, the findings are limited in their applicability to long-term scenarios, reflecting only the current context. Furthermore, although the study concentrated on architectural factors, it is essential to acknowledge that other non-architectural elements—such as social activities, local government policies, and environmental conditions—also significantly contribute to the vitality of urban green spaces.

## References

Abdul Latip, N. S., Shamsudin, S. and Liew, M. S. (2012). Functional dimension at Kuala Lumpur Waterfront. *Procedia-Social and Behavioral Sciences, 49*, 147-155. https://doi.org/10.1016/j.sbspro.2012.07.013

Barber, A., Haase, D. and Wolff, M. (2021). Permeability of the city – physical barriers of and in urban green spaces in the city of Halle, Germany. *Ecological Indicators, 125,* 1-12. https://doi.org/10.1016/j.ecolind.2021.107555

Bishop, P. and Williams, L. (2012). *The Temporary City*. London: Routledge: London.

Brown, G. (2008). A theory of urban park geography. *Journal of Leisure Research*, *40*(4), 589–607. https://doi.org/10.1080/00222216.2008.11950154

Chen, Y., Liu, T., Xie, X. and Marušić, B. G. (2016). What attracts people to visit community open spaces? A case study of the overseas Chinese Town community in Shenzhen, China. *International Journal of Environmental Research and Public Health, 13*(7), 1-17. https://doi.org/10.3390/ijerph13070644

Cowan, R. (2005). *The dictionary of urbanism*. New York: Streetwise Press.

Fang, C., He, S. and Wang, L. (2021). Spatial characterization of urban vitality and the association with various street network metrics from the multi-scalar perspective. *Frontiers in Public Health, 9*, 1-13. https://doi.org/10.3389/fpubh.2021.677910

Gehl, J. and Svarre, B. (2013). *How to Study Public Life*. Washington, DC: Island Press.

Guo, X., Chen, H. and Yang, X. (2021). An evaluation of street dynamic vitality and its influential factors based on multi-source big data. *ISPRS International Journal of Geo-Information, 10*(3), 1-19. https://doi.org/10.3390/ijgi10030143

Haas, T. and Mehaffy, M.W. (2019). Introduction: the future of public space. *Urban Design International, 24*, 1–3. https://doi.org/10.1057/s41289-018-0062-3

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2010). *Multivariate Data Analysis* (6th ed). New York: Pearson.

Ibes, D.C. (2015). A multi-dimensional classification and equity analysis of an urban park system: A novel methodology and case study application. *Landscape and Urban Planning, 137*, 122-137. https://doi.org/10.1016/j.landurbplan.2014.12.014

Isabella, D. M., Claudia, B., Giulia, C. M., Alessandro, C. and Alessandro, P. (2022). Citizens' use of public urban green spaces at the time of the COVID-19 pandemic in Italy. *Urban Forestry & Urban Greening, 77*, 1-11. https://doi.org/10.1016/j.ufug.2022.127739

Istrate, A. L. and Chen, F. (2022). Liveable streets in Shanghai: Definition, characteristics and design. *Progress in Planning, 158*, 1-38. https://doi.org/10.1016/j.progress.2021.100544

Jabareen, Y. and Eizenberg, E. (2021). Theorizing urban social spaces and their interrelations: New perspectives on urban sociology, politics, and planning. *Planning Theory*, *20*(3), 211-230. https://doi.org/10.1177/1473095220976942

Khemri, M. Y. and Melis, A. (2020). Sustaining the liveliness of public spaces in El Houma through placemaking. The case of Algiers. *The Journal of Public Space, 5*(1), 129-152. https://doi.org/10.32891/jps.v5i1.1254

Kushner, J. (2020). The life and death of great cities in the time of climate change and the Covid-19 Pandemic. *Journal of Comparative Urban Law and Policy, 4*(1), 130-220. https://doi.org/readingroom.law.gsu.edu/jculp/vol4/iss1/16

Li, X., Kozlowski, M., Salih, S.A. and Ismail, S.B. (2024), Evaluating the vitality of urban public spaces: perspectives on crowd activity and built environment. *Archnet-IJAR*: international Journal ofArchitectural Research. https://doi.org/10.1108/ARCH-01-2024-0009

Li, J., Dang, A. and Song, Y. (2022). Defining the ideal public space: A perspective from the publicness. Journal of Urban Management, 11(4), 479-487. https://doi.org/10.1016/j.jum.2022.08.005.

Liu, G., Lei, J., Qin, H., Niu, J., Chen, J., Lu, J. and Han, G. (2023). Impact of environmental comfort on urban vitality in small and medium-sized cities: A case study of Wuxi County in Chongqing, China. *Frontiers in Public Health*, *11,* 1-18. https://doi.org/10.3389/fpubh.2023.1131630

Lynch, K. (1984). *Good city form*. Cambridge: The MIT Press.

McGlynn, S. (1985). *Responsive environments*. London: Routledge.

Mehta, V. and Bosson, J.K. (2018). Revisiting lively street: Social interactions in public space. *Journal of Planning Education and Research, 41*(2), 160-172. https://doi.org/10.1177/0739456X18781453

Mitchell, D. (1996). Introduction: Public space and the city. *Urban Geography*, *17*(2), 127–131. https://doi.org/10.2747/0272-3638.17.2.127

Mouratidis, K. and Poortinga, W. (2020). Built environment, urban vitality and social cohesion: Do vibrant neighborhoods foster strong communities?. *Landscape and Urban Planning*, *204*, 1-9. https://doi.org/10.1016/j.landurbplan.2020.103951.

Mushkani, R. A. and Ono, H. (2021). The role of land use and vitality in fostering gender equality in urban public parks: The case of Kabul city, Afghanistan. *Habitat International, 118*, 1-12. https://doi.org/10.1016/j.habitatint.2021.102462

Prakash, R. S., Voss, M. W., Erickson, K. I. and Kramer, A. F. (2015). Physical activity and cognitive vitality. *Annual Review of Psychology, 66*, 769-797. https://doi.org/10.1146/annurev-psych-010814-015249

Paumier, C. (2007). *Creating a vibrant city center.* Washington D.C.: (ULI) Urban Land Institute.

Ramlee, M., Omar, D., Yunus, R. M. and Samadi, Z. (2018). Attributes of successful public spaces through users perception. *Asian Journal of Quality of Life, 3*(11), 21-28. https://doi.org/10.21834/ajqol.v3i11.118

Ren, Yi. and Yang, Q. (2023). Research on the factors influencing the perception of urban park recreational behavior based on the "Homo Urbanicus" Theory. *Sustainability, 15*(8), 1-20. https://doi.org/10.3390/su15086525

Rofe, Y. (1995). Space and community - The spatial foundations of urban neighborhoods: An evaluation of three theories of urban form and social structure and their relevance to the issue of neighborhoods. *Berkeley Planning Journal, 10*(1), 107-125. https://doi.org/10.5070/BP310113064

Ruszczyk, H. A., Halligey, A., Rahman, M. F. and Ahmed, I. (2023). Liveability and vitality: an exploration of small cities in Bangladesh. *Cities, 133,* 1-12. https://doi.org/10.1016/j.cities.2022.104150

Relph, E. (2022). *Place & placelessness (Research in planning and design),* London: SAGE Publications Ltd.

Tabachnick, B. G. and Fidell, L. S. (2013). *Using Multivariate Statistics (6th ed.).* Boston: MA: Pearson.

Tzonis, A. (2006). *Rethinking Design Methodology for Sustainable Social Quality*. Ong. (Ed.), in Tropical Sustainable Architecture: Social and environmental dimensions. Oxford: Architectural Press.

Ujang, N. (2012). Place attachment and continuity of urban identity. *Procedia-Social and Behavioral Sciences, 49*, 156-167. https://doi.org/10.1016/j.sbspro.2012.07.014

Van den Berg, M., Van Poppel, M., Van Kamp, I., Andrusaityte, S., Balseviciene, B., Cirach, M., Danileviciute, A., Ellis, N., Hurst, G., Masterson, D., Smith, G., Triguero-Mas, M., Uzdanaviciute, I., De Wit, P., Van Mechelen, W., Gidlow, C., Grazuleviciene, R., Nieuwenhuijsen, M. J., Kruize, H. and Maas, J. (2016). Visiting green space is associated with mental health and vitality: A cross-sectional study in four European cities. *Health & Place, 38,* 8-15. https://doi.org/10.1016/j.healthplace.2016.01.003

Visser, V., Van Popering-Verkerk, J., Ellen, M. and Van Buuren, A. (2023). Unleashing or domesticating the vitality of citizens' initiatives? The paradoxical relationship between governments and citizens' initiatives in the energy transition. *Cities, 137*, 1-10. https://doi.org/10.1016/j.cities.2023.104300

Williams, S. A., and Hipp, J. R. (2019). How great and how good?: Third places, neighbor interaction, and cohesion in the neighborhood context. *Social Science Research*. *77*, 68-78. https://doi.org/10.1016/j.ssresearch.2018.10.008

Yuan, M. and Chen, Y. (2021), Analysis of factors influencing street vitality in high-density residential areas based on multi-source data: a case study of Shanghai, *International Journal of High-Rise Buildings*, *10*(1), 1-8. https://doi.org/10.21022/IJHRB.2021.10.1.1.

Zhang, J., Zhou, W., Lian, H. and Hu, R. (2024). Research on optimization strategy of commercial street spatial vitality based on pedestrian trajectories. *Buildings, 14*(5), 1-21. https://doi.org/10.3390/buildings14051240

Zhu, J., Lu, H., Zheng, T., Rong, Y., Wang, C., Zhang, W., Yan, Y. and Tang, L. (2020). Vitality of urban parks and its influencing factors from the perspective of recreational service supply, demand, and spatial links. *International Journal of Environmental Research and Public Health, 17*(5), 1-17. https://doi.org/10.3390/ijerph17051615

There is no Conflict of Interest.

## Genişletilmiş Özet

### Amaç:

Kentsel yeşil alanlar, sosyal etkileşim için çok önemlidir çünkü insanlar hayatta kalmak için canlılık ve konfora ihtiyaç duymaktadır. Kentsel alanların oluşumu toplumsal duyguların paylaşılmasına olanak tanımaktadır. Bu araştırma, mimarinin fiziksel özellikleri ile kentsel yeşil alanlarda yaşayan insanların canlılık hissi arasındaki etkili ilişkiyi incelemektedir. Bu bağlamda, kullanıcıların canlılık duygusunu artırmada etkili olan bileşenler belirlenmiştir ve Konya Kültür Parkı örneği üzerinden bu bileşenlerin mimarinin fiziksel boyutunu oluşturan alt faktörlerle ilişkisi incelenmiştir.

### Tasarım ve Yöntem:

Bu çalışma, hibrit bir yaklaşımla gerçekleştirilmiştir. Bu bağlamda, kamusal alanlarda kullanıcıların canlılık duygusunu etkileyen faktörleri değerlendirmek için üç aşamalı bir yaklaşım kullanılmıştır. Birini aşama olarak çalışmanın teorik ve kavramsal temelini oluşturmak için, özellikle kent parklarında canlılık

üzerine araştırmanın ana konseptini ve sonuçlarını değerlendirmek üzere nitel bir yaklaşım kullanılmıştır. Çalışmanın teorik ve kavramsal temelini oluşturmak için öncelikle nitel bir yaklaşım ele alınmıştır. Özellikle, kent parklarında canlılık üzerine yapılan önceki araştırmalar incelenmiştir. Daha sonra, kamusal alanlarda canlılık hissini destekleyen etkili bileşenler belirlenip çalışmanın kavramsal modeli olarak sunulmuştur. İkinci aşamada, çalışmanın kavramsal çerçevesi göz önünde bulundurularak, saha gözlemi yöntemi kullanılarak vaka çalışması ve insanların mekânda nasıl davrandıkları nitel olarak incelenmiştir. Gözlem, vaka çalışmasının işlevsel ve aktivite kalıplarını dikkate alarak kullanıcıların çeşitli yerleri nasıl kullandıkları kaydedilmiştir. Kavramsal araştırma modelinde özetlenen bileşenlere uygun olarak, kaydedilen veriler yorumlayıcı kodlama kullanılarak kategorize edilmiştir. Yorumlayıcı kodlama tamamlandıktan sonra, kullanıcıların en önemli gördükleri ve çalışmanın kavramsal modelinde belirtilenlerle uyumlu olan bileşenler kategorize edilmiştir. Ayrıca, vatandaşların çalışma alanının canlılığını ölçme ve anlaması için anket soruları oluşturulmuştur. Üçüncü aşamada bir anket testi gerçekleştirilmiştir. Katılımcılara kişisel ziyaretlerinde 18 soru sorulmuştur. Cochran formülü kullanılarak 284 kişi katılıp verilerin daha doğru olması için 300 anket dağıtılmıştır. 36 kullanıcıdan oluşan bir deneysel örneklem, anketin geçerliliğini test etmiştir. Daha sonra, ortalama yaş 31,55 olan 148 erkek ve 152 kadın rastgele seçilmiştir. Anket çalışması bir hafta boyunca çeşitli saatlerde yapılmıştır. Veri toplama süreci beş gün zaman alıp her anketin doldurulması 10-12 dakika sürmüştür. Sorular Likert ölçeği kullanılarak derecelendirilmiştir. Bu ölçek, kesinlikle katılıyorum, katılıyorum, emin değilim, katılmıyorum, kesinlikle katılmıyorum seçeneklerden oluşturulmuştur. Anketin Cronbach alfa testi kullanılarak 0,867 güvenirlik düzeyine sahip olduğu tespit edilmiştir. Veriler ortalama değer, korelasyon katsayısı, standart sapma, tek örneklem t-testi ve SPSS kullanılarak analiz edilmiştir.

**Bulgular:**

Bulgular, kafeler, restoranlar ve yeşil alanlar gibi çeşitli olanakların bir araya getirilmesinin kullanıcı katılımını artırdığını ve kentsel alanları önemli ölçüde canlandırdığını göstermektedir. Kütüphane gibi işlevsel alanların, göletler, yeşil alanlar ve kafeler gibi fonksiyonel olanaklara yakın konumlandırılması, aktiviteyi ve sosyal etkileşimi teşvik ederek dinamik ve etkin şekilde kullanılan bir kamusal alan oluşumuna katkıda bulunmaktadır. Erişilebilirlik, geometri ve boyut, çeşitli yürüyüş yolları, oturma alanları, bitki örtüsü ile tarihi ve ticari alanlara yakınlık gibi unsurların iyileştirilmesi, kullanıcı aktivitelerinin artmasına, kaldırım kalitesinin yükselmesine ve kentsel olanakların gelişimine katkıda bulunarak sosyal bağlantıları ve canlılığı teşvik etmektedir. Ayrıca, bu tasarım öğeleri, çevresel tercihler, sosyallik, okunabilirlik, canlılık ve güçlü bir yer ile kimlik duygusuna katkıda bulunarak sakinler arasında kolektif bir hafızanın oluşumunu desteklemektedir.

Genel olarak, sonuçlar, kullanıcıların canlılık hissini değerlendirmede fiziksel, işlevsel, sosyal ve bilişsel unsurların önemli bir rol oynadığını ortaya koymuştur. Bu bağlamda, çeşmeler, göletler, temizlik, form, boyut, doku, aydınlatma, erişilebilirlik, yeşillik ve yürüyüş yolları en kritik fiziksel bileşenler arasında yer almaktadır. Tasarımcılar için faydalı olabilecek kriterler, kullanıcı canlılığı üzerinde önemli işlevi ve etkisi olan faktörler incelenerek kategorilere ayrılmıştır. Örneğin, bu çalışma, tasarımcılara göletler, çeşmeler ve temizlik gibi özelliklerin fiziksel bileşenler üzerinde kayda değer bir etkiye sahip olduğunu göstermiştir. Ek olarak, çalışma, aktivite çeşitliliği ve oturma gibi değişkenlerin işlevsel bileşen açısından önemli olduğunu, sosyal etkileşim değişkeninin sosyal bileşen üzerinde en büyük etkiye sahip olduğunu ve hafıza değişkeninin bilişsel bileşen üzerinde en büyük etkiye sahip olduğunu ortaya koymuştur. Çalışmanın bulguları, yöneticilere, mimarlara ve şehir plancılarına, parklar gibi kamusal kentsel alanların tasarımında ve bu öğelerin yerleşiminde özel bir özen göstermelerini önermektedir. Bu yaklaşım, kullanıcıların canlılık hissini artırmayı amaçlamaktadır.

**Sınırlılıklar:**

Kültürel, coğrafi ve iklimsel koşullar, canlılığı etkileyen mimari unsurları önemli ölçüde şekillendirmektedir. Bu nedenle, çalışmanın sonuçlarının genelleştirilebilirliği sınırlı olabilir. Bir ülke veya şehirden elde edilen bulgular, farklı şehirlerde veya sosyal bağlamlarda aynı geçerliliğe sahip olmayabilir. Canlılık kavramı doğası gereği özneldir ve bireyler bunu yaşlarına, kültürel kökenlerine veya kişisel tercihlerine göre farklı şekillerde

algılayabilir. Canlılığı değerlendirmek amacıyla görüşmeler veya anketler kullanılabilir, ancak bu yöntemler kişisel önyargılar ve yorumlamadaki farklılıklar nedeniyle verilerin doğruluğunu etkileyebilir. Çalışma, canlılık algılarının gelişen toplumsal dinamikler, mevsimsel değişiklikler ve kentsel yeşil alanların yıpranması gibi faktörler nedeniyle zaman içinde nasıl değişebileceğini tam anlamıyla hesaba katmamış olabilir. Bulgular, uzun vadeli kullanım açısından sınırlıdır çünkü yalnızca mevcut durumu temsil etmektedir. Ayrıca, çalışma mimari faktörlere odaklanmış olsa da, sosyal etkinlikler, yerel yönetim politikaları ve çevresel koşullar gibi mimari olmayan diğer unsurların da kentsel yeşil alanların canlılığı üzerinde önemli etkileri bulunmaktadır.

**Öneriler (Teorik, Uygulama ve Sosyal):**

Çevre psikologları, şehir plancıları ve mimarlar, inşa edilmiş çevreler ile insan refahı arasındaki ilişkiyi daha kapsamlı bir şekilde incelemek için işbirliği yapabilir. Çalışmanın bulguları, mimarlara ve şehir plancılara, etkileşimli alanlar, verimli mekânsal düzenler ve canlılığı artıran doğal kaynakların kullanımı gibi mimari unsurların önemini vurgulayarak kentsel yeşil alanların yaratılması ve yenilenmesi süreçlerinde rehberlik edebilir. Şehir plancıları ve belediye yetkilileri ise, sosyal etkileşime, konfora ve canlılığa öncelik veren ve bu alanların herkes tarafından erişilebilir olmasını sağlayan politikalar geliştirmek ve kaynaklar ayırmak için bu bulgulardan yararlanabilir. Ayrıca, çalışma, canlılık ve ekolojik sürdürülebilirliği teşvik eden tasarımları destekleyerek sürdürülebilir kalkınma çabalarına katkıda bulunabilir. Örneğin, yerel bitki örtüsünün ve enerji açısından verimli yapı malzemelerinin kullanımı, çevre sağlığını uzun vadede korumayı destekler.

Bu çalışmanın bulguları, halk sağlığı sonuçlarını iyileştirmek amacıyla zihinsel sağlığı destekleyen, stres seviyelerini azaltan ve fiziksel aktiviteyi teşvik eden yaşam alanlarının geliştirilmesine olanak tanıyabilir. Bu süreç, yeşil alanların canlılığını artıran mimari öğelerin belirlenmesiyle gerçekleştirilir. Sonuç olarak, yeşil alanlar daha fazla sosyal etkileşimi ve topluluk katılımını teşvik eder. Düzgün planlanmış kentsel yeşil alanlar, çevresindeki bölgenin kültürel ve sosyoekonomik kimliğini yansıtabilir ve sakinlerin gurur ve aidiyet duygusunu artırarak topluluğun genel kimliğini güçlendirebilir. Bu bulguların uygulanması, kentsel büyüme ve kent sakinlerinin yaşam kalitesi üzerinde önemli bir etki yaratabilir.

**Özgün Değer:**

Çok sayıda araştırma, kentsel yeşil alanların refah ve sürdürülebilirlik açısından ne denli önemli olduğunu ortaya koymuştur. Bu çalışma ise, mimari tasarım öğelerinin bu alanlarda bir canlılık duygusu yaratmasına odaklanmaktadır. Bu konu, fiziksel tasarım ile insan canlılığı arasındaki ilişkiyi araştırarak mevcut literatürdeki bir boşluğu doldurmakta ve kentsel yeşil alan tasarımına yeni bir bakış açısı kazandırmaktadır. Çalışma, yeşil alanların canlılığını yalnızca fiziksel aktivite veya ekolojik faydalarla değil, aynı zamanda duygusal ve zihinsel tepkilerle de ilişkilendirerek daha kapsamlı bir değerlendirme sunmaktadır.

Çalışma, metropol ortamlarındaki mimari değişkenleri inceleyerek, belirli coğrafi, kültürel veya iklimsel koşullar için özel tasarım içgörüleri sağlayabilir. Kentsel yeşil alanların dünya çapındaki çeşitliliğini göz önünde bulundurarak, bu bağlama özgü içgörüler benzersiz bir değer sunmaktadır. Çalışma, yeşil alanların canlılığını artıran temel mimari özellikleri belirleyerek mimarlar, şehir plancıları ve politika yapıcılara yardımcı olmaktadır. Hangi mimari özelliklerin canlılığı desteklediğini anlamak, hem sosyal hem de duygusal olarak tatmin edici ve ekolojik olarak sürdürülebilir yeşil alanlar oluşturmak için bir yol haritası sunmaktadır. Ayrıca, çalışma, kamusal alanlarda mimari tasarımın değerine ilişkin kanıtlar sağladığı için kentsel politika ve karar verme süreçlerini etkileme potansiyeline sahiptir. Belediyelerin ve hükümetlerin kaynakları daha verimli dağıtmasına yardımcı olabilir ve insan merkezli kentsel ortamları teşvik eden politikaların oluşturulmasına katkı sağlayabilir.