



Final Project 2

PMG 497

Project Template

Project title

The Impact of Park Development on Social Interaction Among Visitors in Jeddah: The Mediating Role of Visitor Experience

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Final Project - 2

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12/12/2025 – Third Trimester 2025

Acknowledgment

Dedication

Abstract

Purpose:

Methodology:

Findings:

Originality & Implication:

Keywords:

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1. Chapter 1: Introduction

1.1. Research Background

Public parks have long been recognized as essential components of urban life, serving social, environmental, and recreational functions that contribute significantly to the well-being of communities. Historically, the emergence of public parks in major global cities was closely tied to the industrial revolution, population growth, and increased awareness of the need for accessible natural spaces within dense urban environments (Francis et al., 2012). Over the decades, parks have evolved from simple green retreats into complex social infrastructures that promote interaction, strengthen community identity, and support healthy lifestyles (Gehl, 2011). This evolution reflects broader shifts in urban planning, where the design and development of public spaces are increasingly recognized as critical to sustainable and inclusive city environments.

Contemporary research across the fields of environmental psychology and urban design consistently highlights the importance of well-planned parks in influencing human behavior. Scholars note that the physical environment—specifically its design, layout, safety, amenities, and aesthetic qualities—plays a direct role in shaping how individuals interact with each other in public settings (Kaplan & Kaplan, 1989; Peters et al., 2010). In particular, parks provide a neutral and accessible social arena where residents of diverse backgrounds can gather, communicate, and engage in shared activities, thus promoting social cohesion and fostering a sense of belonging (Glover, 2011). These findings have led urban planners and policymakers worldwide to prioritize park development as a strategic investment in community well-being.

The relationship between park development and social interaction has received focused scholarly attention in recent years, especially as cities strive to address challenges related to urban density, social fragmentation, and reduced community engagement. Chen et al. (2023), for example, developed the Systematically Observing Social Interaction in Parks (SOSIP) protocol, demonstrating that specific environmental features—such as shaded areas, interconnected walking routes, and recreational spaces—significantly influence the levels and

types of social interaction occurring in parks. Their work provides empirical evidence that parks, when well-designed and properly maintained, can act as catalysts for meaningful social engagement, spanning from casual conversations to cooperative group activities.

In parallel with global urban trends, the Kingdom of Saudi Arabia has placed increasing emphasis on redesigning and revitalizing public spaces as part of the national transformation outlined in Saudi Vision 2030. The Vision explicitly highlights quality of life, community well-being, and environmental sustainability as foundational pillars for future development. Within this context, public park development is positioned as a major driver of social cohesion, tourism, cultural engagement, and improved living standards (SPA, 2025b). The Quality of Life Program further reinforces this direction by supporting projects that expand green spaces, enhance recreational environments, and increase opportunities for community participation.

The city of Jeddah, in particular, has undergone extensive urban modernization efforts that include large-scale park development initiatives. The most prominent of these is the Bahja project, launched by the Ministry of Municipal, Rural Affairs and Housing (MOMRAH). This project aims to transform underutilized and vacant land into vibrant urban parks that enhance social life, promote physical activity, and strengthen the emotional connection between residents and their environment (SPA, 2025a). According to governmental reports, more than 442 parks in Jeddah have been developed or upgraded under this initiative, including major destinations such as Prince Majid Park and Al-Sajaa Park, which now serve as hubs for family gatherings, cultural events, and community activities (SPA, 2025a).

These national and municipal efforts reflect a broader shift in Saudi Arabia toward creating healthier, more socially connected urban environments. The Bahja project, for instance, aims not only to improve environmental aesthetics but also to foster “humanized” cities—cities built around the social needs of residents, providing accessible, inclusive, and safe public environments where people can interact freely and meaningfully (MOMRAH, 2023). The project’s emphasis on cultural integration, recreational diversity, and environmental

enhancement illustrates a holistic approach to urban development that aligns closely with international best practices.

Despite these extensive governmental efforts, academic research examining the social impact of park development in Saudi Arabia remains limited. While global literature provides strong evidence of the relationship between environmental design and social behavior, few empirical studies have explored this connection within the Saudi context, particularly in rapidly evolving cities like Jeddah. This gap creates a compelling rationale for the present study, which seeks to understand how the development of public parks affects the level and quality of social interaction among visitors. By focusing on Jeddah—a city undergoing unprecedented urban transformation—this research aims to provide insights that contribute both to academic scholarship and practical urban planning efforts.

The selection of this research topic is rooted in the growing societal need for public spaces that support mental health, cultural identity, and community integration. In many urban areas, social isolation and the weakening of community ties have become pressing concerns, highlighting the importance of accessible environments that encourage interpersonal engagement. Parks offer such spaces, and studying their role in promoting social interaction is essential for understanding how environmental design influences human connection. Moreover, the rapid expansion of green spaces in Jeddah presents a timely opportunity to evaluate whether these developments are fulfilling their intended social purposes, thereby informing future planning and design decisions.

In summary, the research background establishes a clear context for investigating how public park development in Jeddah influences social interaction among visitors. It draws on global and local literature, national strategic initiatives, and recent urban development practices to position the study within both theoretical and practical frameworks. The findings of this study aim to address a critical knowledge gap while supporting the nation's ongoing efforts to enhance quality of life through sustainable and socially supportive public environments.

1.2. Research Problem

Understanding how public park development influences social interaction has become a significant area of interest in urban planning and environmental behavior research. While global studies highlight the role of park design, facilities, and environmental quality in shaping social engagement, there remains limited knowledge about how these dynamics unfold in rapidly transforming Middle Eastern contexts, particularly within Saudi Arabia. Despite major national initiatives—such as the Bahja project in Jeddah, which aims to create vibrant, socially supportive public spaces—few empirical studies have examined whether these developments effectively enhance social interaction among visitors (SPA, 2025a; MOMRAH, 2023). This gap between global knowledge and local evidence underscores the need for systematic investigation into how park development impacts social behavior in Saudi cities.

1.2.1. Theoretical Gaps

Although international literature widely affirms that park development contributes to stronger social interaction, existing theories and models have been primarily developed and tested in Western or East Asian urban contexts (Gehl, 2011; Francis et al., 2012; Chen et al., 2023). These frameworks emphasize the influence of environmental design on human behavior, yet they offer limited insight into how cultural, climatic, and social factors unique to the Gulf region may alter the relationship between park design and social engagement. Additionally, while the SOSIP framework (Chen et al., 2023) provides a structured approach for observing social interaction in parks, its application has not been extended to Middle Eastern cities, which differ significantly in user behavior patterns, family-centered social norms, and environmental conditions. Therefore, a theoretical gap exists in understanding whether globally developed models of social interaction in parks adequately explain social dynamics in the Saudi context.

Furthermore, there is a scarcity of conceptual frameworks that integrate Saudi Arabia's unique socio-cultural characteristics—such as strong family structures, gender norms, and

community-centered recreation—into analyses of public space behavior. Current theories do not sufficiently address how national initiatives, such as Vision 2030 and the Quality of Life Program, create new social expectations and opportunities within urban environments (SPA, 2025b). Thus, there is a need to expand theoretical understanding by empirically testing how park development influences social interaction within Saudi Arabia’s evolving urban landscape.

1.2.2. Practical Gaps

Despite large-scale governmental investment in developing and upgrading public parks—particularly in Jeddah—there is limited empirical evidence assessing the social outcomes of these projects. Governmental reports highlight improvements in aesthetics, accessibility, facilities, and recreational opportunities (SPA, 2025a; SPA, 2025b), yet they do not systematically evaluate whether these enhancements translate into increased or enhanced social interaction among visitors. As a result, policymakers and planners currently lack data-driven insights into how residents perceive park development and how such perceptions affect their social engagement.

At a practical level, urban planners face several unanswered questions:

- Do newly developed parks foster stronger social cohesion as intended?
- How do specific design features influence interaction among different user groups?
- Are park users experiencing greater connectedness, communication, and social participation following redevelopment efforts?

Additionally, with initiatives such as the creation of 7,000 parks and 1,500 urban interventions nationwide (MOMRAH, 2023), assessing the social impact of these developments becomes crucial for ensuring that investments yield meaningful community benefits. Without empirical evaluation, cities risk implementing park designs that may not fully support desired social outcomes, particularly in environments characterized by diverse user needs and cultural expectations.

Thus, there is a clear practical need for studies that measure visitor perceptions, interaction patterns, and the extent to which park development supports social engagement—particularly in Jeddah’s newly transformed urban spaces.

Based on the identified theoretical and practical gaps, the central research question guiding this study is:

To what extent does the development of public parks in Jeddah influence the level and nature of social interaction among park visitors?

1.3. Research Significance

Understanding the significance of this research is essential for situating its contribution within both academic scholarship and practical urban development efforts. As Saudi Arabia undergoes rapid transformation driven by Vision 2030 initiatives, the development of public parks has become a major strategic priority aimed at enhancing quality of life, strengthening community cohesion, and promoting healthier urban environments (SPA, 2025a; MOMRAH, 2023). Despite these large-scale interventions, little empirical evidence exists regarding how these newly developed parks influence social interaction among residents and visitors. This study therefore holds important value at both the theoretical and practical levels.

1.3.1. At the theoretical level

At the theoretical level, this study contributes to expanding the body of knowledge on environmental behavior and urban social dynamics by examining the relationship between park development and social interaction within a Middle Eastern context. Most existing theories—such as environmental affordance theory (Gibson, 1979), place-making theory (Project for Public Spaces, 2018), and the SOSIP framework (Chen et al., 2023)—have been developed and tested primarily in Western or East Asian cities. These theoretical models offer valuable insights into how physical environments shape social behavior, but their applicability to the socio-cultural and climatic conditions of Saudi Arabia has not been thoroughly examined.

This research addresses this gap by empirically testing the relevance of global theoretical frameworks within Jeddah’s evolving urban landscape. By doing so, it has the potential to refine, adapt, or extend existing theories to better capture the unique dynamics of social interaction in Saudi public parks. Moreover, the study contributes to the limited academic literature available on park usage and social behavior in Gulf countries, where rapid urban modernization has outpaced scholarly analysis (SPA, 2025b). The findings will therefore help establish a foundational understanding of how environmental design and public-space development influence human interaction in culturally specific settings.

In addition, the study offers theoretical value by integrating concepts from environmental psychology, urban planning, and social interaction studies into a cohesive framework that aligns with national development initiatives. This interdisciplinary approach deepens theoretical discussions about the role of public parks as social infrastructures and positions the study as a meaningful contribution to contemporary urban theory.

1.3.2. At the practical level

At the practical level, this study provides valuable insights for policymakers, urban planners, municipal authorities, and organizations involved in developing public spaces in Saudi Arabia. Government-led initiatives—such as the Bahja project and the broader Quality of Life Program—aim to transform public areas into vibrant, inclusive environments that enhance social cohesion and community well-being (SPA, 2025a; MOMRAH, 2023). However, despite the scale of these projects, there is a lack of empirical evaluation regarding how residents actually perceive park development and how these perceptions translate into social interaction.

This study helps bridge that gap by offering data-driven evidence on visitors’ experiences, preferences, and social behaviors within Jeddah’s newly developed parks. The findings can support decision-makers in assessing whether current design strategies effectively meet community needs and promote meaningful social engagement. Such insights are particularly important given the national goal of establishing thousands of parks and urban interventions across the Kingdom by 2030 (MOMRAH, 2023).

Practically, the study can guide municipalities in:

- Enhancing design features that foster positive social interaction.
- Identifying which park amenities contribute most to community engagement.
- Allocating resources toward development elements that have the strongest social impact.
- Improving maintenance, safety, and accessibility to support diverse user groups.
- Designing culturally relevant public spaces that reflect local social norms.

By offering evidence-based recommendations, the study directly supports Saudi Arabia's efforts to build socially vibrant cities, promote healthy lifestyles, and create environments that strengthen community bonds.

1.4. Research Questions

Based on the research problem and the identified theoretical and practical gaps, this study aims to explore how the development of public parks in Jeddah influences social interaction among park visitors. The following research questions guide the direction of the study.

Main Research Question:

RQ1: To what extent does the development of public parks in Jeddah influence the level and nature of social interaction among park visitors?

Sub-questions:

RQ1.1: How do visitors perceive the design, facilities, safety, and overall development of public parks in Jeddah?

RQ1.2: What are the levels and types of social interaction experienced by visitors within these parks?

RQ1.3: How does the perceived quality of park development relate to the frequency and depth of social interaction among visitors?

RQ1.4: Which aspects of park development (e.g., layout, amenities, comfort, maintenance) most strongly contribute to promoting social interaction?

RQ1.5: How do perceptions of safety and comfort within the park environment influence visitors' willingness to socially engage with others?

RQ1.6: Does the enhancement of visitor experience resulting from park development mediate the relationship between park features and social interaction?

1.5. Research Objectives

In alignment with the research problem and questions, this study aims to achieve a set of objectives that deepen understanding of how public park development influences social interaction among visitors in Jeddah. These objectives are designed to be specific, measurable, and directly linked to the intended contributions of the project.

Main Objective:

RO1: To examine the influence of public park development in Jeddah on the level and nature of social interaction among park visitors.

Sub-objectives:

RO1.1: To assess visitors' perceptions of park development, including design, facilities, safety, comfort, and overall environmental quality.

RO1.2: To measure the levels and types of social interaction experienced by visitors within public parks.

RO1.3: To analyze the relationship between perceived park development and the frequency and depth of social interaction.

RO1.4: To identify which specific park development features (e.g., layout, amenities, maintenance, shaded areas, green spaces) most strongly contribute to promoting social

interaction.

RO1.5: To evaluate the role of perceived safety and comfort in shaping visitors' willingness to engage socially in park environments.

RO1.6: To determine whether enhanced visitor experience mediates the relationship between park development and social interaction.

RO1.7: To contribute empirical evidence that informs urban planning, public park design, and community development strategies in Saudi Arabia.

1.6. Research Hypotheses

Based on the research objectives and supported by existing literature on urban park development and social behavior, the following hypotheses are proposed to guide the empirical investigation of this study.

Main Hypothesis:

H1: Public park development in Jeddah has a significant positive influence on the level and nature of social interaction among park visitors.

Sub-hypotheses:

H1.1: Visitors' perceptions of park design are positively associated with their level of social interaction within the park.

(Based on evidence that design features shape social behavior; Gehl, 2011; Chen et al., 2023)

H1.2: The availability and quality of park facilities (e.g., playgrounds, sports areas, seating,

shaded zones) significantly increase the frequency of social interaction among visitors.
(Aligned with findings from Francis et al., 2012)

H1.3: Perceived safety and comfort in the park environment positively influence visitors' willingness to engage in social interaction.
(Linked to environmental psychology principles; Kaplan & Kaplan, 1989)

H1.4: Park development features collectively predict higher levels of interaction with unfamiliar individuals (e.g., casual greetings, friendly encounters).
(Based on research on public parks as “social equalizers”; Glover, 2011)

H1.5: Enhanced visitor experience mediates the relationship between park development and social interaction.
(Reflecting literature showing that positive environmental perception shapes social behavior; Peters et al., 2010)

H1.6: Specific dimensions of park development (design, amenities, maintenance, environmental quality) have varying strengths of influence on different types of social interaction (e.g., solitary shifts, light interaction, cooperative activities).
(Supported by the SOSIP scale; Chen et al., 2023)

1.7. Research Model

The research model of this study is designed to illustrate the conceptual relationships between the independent variable—park development—and the dependent variable—social interaction—based on existing theoretical frameworks and empirical findings in urban planning and environmental behavior literature. This model provides a structured representation that guides the formulation of the research hypotheses, the design of the questionnaire, and the subsequent data analysis.

The model proposes that park development influences social interaction through several dimensions that shape visitor experiences within public parks. These dimensions include park design, availability of facilities, perceived safety and comfort, and environmental maintenance. According to prior research, these components collectively determine how individuals use public spaces and the extent to which they engage in interpersonal interactions (Gehl, 2011; Francis et al., 2012; Chen et al., 2023).

Furthermore, the model incorporates the mediating role of visitor experience, suggesting that positive perceptions of the park environment enhance the likelihood of social engagement. This aligns with environmental psychology theories asserting that individuals are more willing to interact socially in environments they perceive as welcoming, aesthetically pleasing, and supportive of diverse activities (Kaplan & Kaplan, 1989). Therefore, the model considers visitor experience as a mechanism through which park development may indirectly influence social interaction.

Conceptually, the research model is structured as follows:

- **Independent Variable (IV): Park Development**
 - Design and spatial layout
 - Facilities and recreational amenities
 - Safety and comfort

- Maintenance and environmental quality
- **Mediating Variable (MV): Visitor Experience**
 - Satisfaction with the park environment
 - Perceived comfort, accessibility, and attractiveness
- **Dependent Variable (DV): Social Interaction**
 - Frequency of interaction
 - Type and depth of interaction
 - Interaction with familiar and unfamiliar individuals

The model assumes that higher levels of park development will lead to more positive visitor experiences, which in turn will increase the level and quality of social interaction among visitors. These relationships form the basis of the hypotheses presented in Section 1.6 and provide a foundation for the analytical framework employed in this research.

Textual Representation of the Conceptual Model

To clearly depict the hypothesized relationships, the conceptual model can be represented as follows:

Park Development (IV) → influences → **Visitor Experience (Mediator)** → influences → **Social Interaction (DV)**

Additionally, the model assumes direct effects:

Park Development (IV) → directly influences → **Social Interaction (DV)**

This dual-path structure allows the study to examine both:

- **Direct effects** (IV → DV)
- **Indirect or mediated effects** (IV → MV → DV)

1.8. Scope of The Study

This study is conducted within the context of the city of Jeddah in the Kingdom of Saudi Arabia, a major urban center undergoing rapid development aligned with the national transformation goals of Vision 2030. Jeddah has recently witnessed extensive public park redevelopment efforts led by the Ministry of Municipal, Rural Affairs and Housing (MOMRAH) and the Jeddah Municipality, particularly through the Bahja project, which aims to convert unused open spaces into vibrant, multifunctional urban parks (SPA, 2025a; MOMRAH, 2023). These initiatives have resulted in the creation and enhancement of more than 442 public parks across the city, including neighborhood parks, major recreational destinations, and waterfront public spaces (SPA, 2025a).

The study focuses specifically on public parks within Jeddah that have been developed or upgraded as part of these government-led initiatives. These parks were selected as the study setting because they embody the city's broader strategic goals of improving quality of life, fostering social cohesion, and promoting healthier lifestyles. Parks such as Prince Majid Park, Al-Sajaa Park, and various neighborhood parks illustrate the shift toward creating accessible, safe, and socially engaging environments that support diverse community needs (SPA, 2025b).

From a conceptual perspective, the study is bounded by two primary variables: park development and social interaction. Park development is examined through visitors' perceptions of design, facilities, safety, comfort, and environmental maintenance. Social interaction is measured through self-reported experiences, including interaction frequency, interaction type, and engagement with familiar and unfamiliar individuals. The study does not include observational field methods; instead, it employs a structured self-administered questionnaire distributed to park visitors.

The study is also limited to the contemporary phase of urban development in Jeddah, reflecting initiatives implemented between 2023 and 2025 as documented in official government

sources (SPA, 2025a; SPA, 2025b; MOMRAH, 2023). This temporal boundary allows the research to capture current perceptions and interaction patterns associated with newly developed or revitalized parks.

Methodologically, the scope of the study is restricted to quantitative data collection and analysis. The research does not investigate long-term behavioral changes, architectural design technicalities, or comparative analyses across other Saudi cities. Instead, it focuses on understanding whether park development in Jeddah—as experienced by visitors—supports increased social interaction and contributes to the city’s broader objectives of enhancing community well-being.

In summary, the scope of the study is defined geographically by the public parks of Jeddah, conceptually by the relationship between park development and social interaction, temporally by recent urban development initiatives, and methodologically by the use of a structured questionnaire to gather insights from park visitors. This setting provides a relevant and timely context for examining the social impact of public park development in one of Saudi Arabia’s most dynamic and rapidly evolving cities.

1.9. The Project Structure

This graduation project is organized into five main chapters, each addressing a critical component of the research process and contributing to a comprehensive understanding of the study topic. The structure is designed to present the research logically and coherently, guiding the reader from the introductory concepts through the theoretical foundation, empirical investigation, and final conclusions.

Chapter 1: Introduction

This chapter provides an overview of the study, including the research background, problem statement, significance, research questions, objectives, hypotheses, conceptual model, and the overall scope of the study. It establishes the rationale for the research and outlines the key

components that frame the project.

Chapter 2: Literature Review

This chapter presents a critical review of existing academic literature related to the study's variables: park development and social interaction. It discusses theoretical foundations, key concepts, prior research findings, and the relationship between the variables under investigation. The chapter concludes by identifying research gaps that justify the need for the present study.

Chapter 3: Research Methodology

This chapter outlines the methodological framework employed in the study. It describes the research design, population and sampling procedures, data collection instrument, validity and reliability assessment, data collection process, analytical techniques, and ethical considerations. The chapter ensures transparency and replicability of the research process.

Chapter 4: Statistical Analysis and Findings Discussion

This chapter presents the results of the statistical analyses conducted on the collected data. It includes descriptive statistics, reliability testing, correlation analysis, regression models, and hypothesis testing. The findings are interpreted and discussed in light of the existing literature, linking empirical results to the theoretical framework and research objectives.

Chapter 5: Research Limitations, Recommendations, and Conclusion

The final chapter summarizes the key findings, discusses their implications for theory and practice, and highlights the contributions of the study. It also outlines the limitations encountered during the research and provides practical recommendations for policymakers, urban planners, and future researchers. The chapter concludes by emphasizing the overall significance of the study.

This structure is intended to guide the research process and ensure that all key aspects of the study are addressed in a systematic and academically rigorous manner.

Chapter 1: Introduction	
Chapter 2: Literature Review	
Chapter 3: Research Methodology	
Chapter 4: Statistical Analysis & Findings discussion	
Chapter 5: Research limitations, Recommendations & Conclusion	

2.Chapter 2: Literature Review

2.1. Introduction

Urban public parks play a fundamental role in shaping the social, environmental, and recreational dimensions of modern cities. Across the international literature, scholars emphasize that parks are not merely green spaces but essential social infrastructures that promote community well-being, enhance urban livability, and create opportunities for meaningful social interaction (Chen et al., 2023). As urbanization intensifies worldwide, the strategic development of public parks has become increasingly relevant to policymakers and urban planners seeking to cultivate healthier and more socially connected communities.

Existing research demonstrates that well-designed and well-maintained parks can significantly enhance the frequency and quality of social interactions among visitors. Empirical studies show that specific design elements—such as accessible pathways, shaded seating, recreational zones, and green landscapes—directly influence how individuals engage with their surroundings and with one another (Chen et al., 2023). These findings align with environmental psychology theories suggesting that physical environments shape human behavior, social opportunities, and patterns of interaction within shared spaces.

In Saudi Arabia, the importance of developing public parks has gained considerable attention within the national transformation agenda. Efforts led by the Ministry of Municipal, Rural Affairs and Housing (MOMRAH) and local municipalities are closely aligned with the goals of Saudi Vision 2030 and the Quality of Life Program, both of which prioritize the expansion of public green spaces and the enhancement of urban life. For example, in Jeddah, large-scale initiatives such as the “Bahja” project aim to convert underutilized open areas into vibrant, socially engaging urban environments that support physical activity, community well-being, and cultural expression. According to the Saudi Press Agency, the project focuses on humanizing urban spaces and strengthening the relationship between people and place by integrating social, recreational, cultural, and environmental elements into public parks (SPA, 2025a).

Government reports further highlight that more than 442 parks have been developed or upgraded across Jeddah, alongside multiple waterfront developments, sports facilities, and neighborhood recreational areas intended to enrich community life and promote social participation (SPA, 2025a). Additional sources emphasize the role of these parks in supporting tourism, enhancing quality of life, and providing safe and accessible environments for residents and visitors, particularly during major seasonal events (SPA, 2025b). At the national level, the Bahja project forms part of a broader strategy to develop 7,000 parks and 1,500 urban interventions across Saudi Arabia by 2030, fostering vibrant communities, encouraging social cohesion, and promoting environmental sustainability (MOMRAH, 2023).

Despite these significant national developments, academic research exploring the relationship between park development and social interaction within the Saudi context remains relatively limited. Most empirical studies in this domain originate from Western or East Asian cities, leaving a notable gap regarding how large-scale urban development initiatives—such as those implemented in Jeddah—shape social dynamics in public spaces. Addressing this gap is essential to understanding how parks function as catalysts for social engagement in rapidly modernizing Middle Eastern cities.

For this reason, the present study investigates how the development of public parks in Jeddah influences the level and nature of social interaction among visitors. By examining both the physical attributes of park environments and the social behaviors that emerge within them, this research contributes to the broader knowledge base on urban design, public space planning, and community well-being.

This chapter therefore provides a comprehensive review of the literature related to the study's two main variables: park development as the independent variable and social interaction as the dependent variable. It synthesizes theoretical frameworks, empirical findings, and relevant

governmental insights to establish a conceptual foundation for the research. The chapter concludes by identifying gaps within current scholarship and situating the present study as a timely and meaningful contribution to the field of urban planning and public space management in Saudi Arabia.

2.2. The Independent Variable: Park Development

Park development is a multidimensional concept that encompasses the planning, design, construction, enhancement, and maintenance of public green spaces. In the urban studies literature, park development is understood not only as the physical transformation of open areas but also as a strategic tool for improving environmental quality, promoting public health, and fostering community cohesion. Scholars define park development as the process of creating or upgrading recreational spaces to ensure accessibility, safety, aesthetic quality, and functional value for diverse user groups (Chen et al., 2023).

2.2.1 Conceptual Background

The concept of park development is deeply rooted in urban planning theories emphasizing the role of green spaces in supporting human well-being. Environmental psychology research suggests that well-designed parks positively influence emotional health, physical activity, and social connectedness, particularly when parks include elements such as shaded areas, walkable paths, seating zones, sports facilities, and aesthetically pleasing landscapes (Chen et al., 2023). These features not only attract visitors but also shape the types of activities and social behaviors that occur within the park environment.

From a design perspective, the development of public parks involves various dimensions, including accessibility, safety, comfort, environmental sustainability, and inclusivity. Parks that provide clearly marked pathways, shade, and lighting encourage visitors to move more freely and comfortably. Meanwhile, recreational amenities—such as children’s playgrounds, sports areas, and green lawns—create opportunities for physical activity and social engagement (Chen et al., 2023).

2.2.2 Park Development in the Saudi Context

In Saudi Arabia, park development has become a central component of national urban transformation efforts. Guided by Saudi Vision 2030 and the Quality of Life Program, government agencies have prioritized the expansion and enhancement of public recreational spaces as part of a broader strategy to elevate quality of life, support community well-being, and modernize urban environments. These initiatives aim to create vibrant, inclusive, and socially engaging public spaces across the Kingdom.

The city of Jeddah serves as a leading example of these efforts. Government reports highlight extensive work by the Jeddah Municipality to transform unused or underutilized spaces into dynamic, multifunctional parks that integrate natural, recreational, and cultural elements. The flagship “Bahja” project, launched in partnership with the Ministry of Municipal, Rural Affairs and Housing (MOMRAH), aims to humanize urban spaces by converting vacant areas into accessible, community-oriented parks (SPA, 2025a). The project focuses on enhancing the aesthetic quality of neighborhoods, revitalizing waterfronts, and improving pathways and public spaces to foster stronger bonds between people and place (SPA, 2025a).

Furthermore, municipal statistics indicate that more than 442 parks have been developed in Jeddah, accompanied by improved facilities such as walking tracks, gathering areas, and safe recreational environments that encourage physical activity and community participation (SPA, 2025a). Additional governmental insights reveal that public parks in Jeddah play a vital role in promoting tourism, offering residents and visitors safe and attractive spaces for leisure and relaxation, and supporting seasonal cultural activities (SPA, 2025b). The municipality has also launched digital tools—such as online park guides—to enhance accessibility and provide detailed information about park facilities and locations (SPA, 2025b).

Nationwide, the Bahja project forms part of a broader national objective to construct 7,000 parks and implement 1,500 urban interventions across Saudi Arabia by 2030 (MOMRAH, 2023). These efforts aim to cultivate joyful, healthy, and socially cohesive communities by expanding green spaces, enhancing urban environments, and enabling residents to experience nature and

community life more fully. The project's emphasis on developing inclusive spaces for children, families, and sports activities underscores its role in supporting social interaction and community engagement (MOMRAH, 2023).

2.2.3 Dimensions of Park Development

Building on global and Saudi literature, park development can be conceptualized through several interrelated dimensions:

- Design and Spatial Layout

Includes pathways, seating areas, lighting, shade, landscaping, and spatial organization that support movement, comfort, and visual appeal (Chen et al., 2023).

- Facilities and Amenities

Encompasses children's play areas, sports courts, exercise zones, green lawns, restrooms, and gathering spaces designed to accommodate diverse user needs (Chen et al., 2023; SPA, 2025a).

- Safety and Comfort

Refers to environmental features such as clear visibility, adequate lighting, safe walking surfaces, and clean surroundings that make the park welcoming and secure for visitors.

- Maintenance and Environmental Quality

Ongoing care, cleanliness, landscaping upkeep, and provision of sustainable elements such as recycling bins and water-efficient irrigation systems.

- Cultural, Social, and Recreational Integration

Governmental initiatives in Jeddah emphasize incorporating cultural identity, community events, sports activities, and gathering spaces that reinforce social cohesion (SPA, 2025a; SPA, 2025b).

2.2.4 Park Development as an Independent Variable

In the context of the current study, park development functions as the independent variable that influences visitors' social experiences. This variable is measured through visitors' perceptions of design quality, facility availability, comfort and safety, and overall environmental appeal. Empirical evidence suggests that these factors collectively shape patterns of social interaction by creating conducive environments for communication, shared activities, and spontaneous encounters (Chen et al., 2023).

Given the scale and strategic importance of park development efforts in Jeddah, examining this variable within the Saudi context provides valuable insights into how government-led urban initiatives contribute to community well-being and social engagement.

2.3. The Dependent Variable: Social Interaction

Social interaction is a central construct in the fields of sociology, environmental psychology, and urban studies, particularly in relation to how physical environments shape human behavior in public spaces. As a dependent variable in this study, social interaction refers to the verbal and non-verbal exchanges, shared activities, and interpersonal behaviors that occur among individuals within public park settings. These interactions may take the form of casual conversations, cooperative group activities, family engagement, or spontaneous encounters with unfamiliar individuals. Scholars widely agree that public spaces—especially parks—play a critical role in enabling these forms of social engagement (Gehl, 2011; Francis et al., 2012).

2.3.1 Conceptual Background of Social Interaction

Social interaction has been defined in sociological literature as the process through which individuals act and react in relation to others within a shared environment. Classic theories, such as symbolic interactionism, contend that social meaning is constructed through everyday encounters, and that physical environments strongly influence how individuals interpret and engage in these encounters (Blumer, 1969). Environmental psychology further suggests that natural and well-designed public spaces encourage prosocial behavior and foster stronger interpersonal connections (Kaplan & Kaplan, 1989).

Within urban parks, social interaction is often shaped by the physical environment, quality of facilities, density of users, and the activities available. Parks provide neutral, accessible spaces where people from diverse backgrounds can meet, communicate, and engage in recreation, which strengthens community cohesion and enhances psychological well-being (Peters et al., 2010). Research consistently highlights that parks serve as “social equalizers” by providing inclusive and open environments that encourage informal interaction and shared experiences (Glover, 2011).

2.3.2 Dimensions of Social Interaction

Empirical studies have identified several dimensions through which social interaction in parks can be understood and measured:

- Frequency of Interaction

How often individuals engage in conversations or shared activities during their visit.

- Type of Interaction

Ranges from solitary presence near others, to observing, to light conversation, and finally to cooperative group engagement. This progression aligns with the Social Interaction Scale (SIS), which categorizes interaction levels from solitary behavior to fully coordinated social activities

(Chen et al., 2023).

- Interaction with Familiar vs. Unfamiliar Individuals

Parks provide unique opportunities for “weak-tie” encounters—brief positive exchanges with strangers that strengthen community bonds (Sanders, 2014).

- Depth of Social Engagement

Includes emotional connectedness, sense of belonging, and perceived social support during the park visit.

- Activity-Based Interaction

Participation in sports, group walks, children’s play, or cultural events often increases the likelihood of deeper social engagement.

These dimensions reflect the complex ways in which social interaction emerges in shared environments and justify its examination as a multidimensional outcome variable.

2.3.3 Social Interaction in Public Parks: Insights from Previous Studies

A substantial body of literature confirms that parks serve as vital venues for social engagement. Studies show that individuals are more likely to interact socially in environments that are aesthetically pleasing, comfortable, accessible, and supportive of multiple types of activities (Peters et al., 2010; Glover, 2011). Moreover, design elements such as shaded seating, walkable paths, and organized recreational zones promote longer stays and more frequent interactions (Gehl, 2011).

Chen et al. (2023) introduced the Systematically Observing Social Interaction in Parks (SOSIP) protocol, which provides structured methods to assess interaction levels in parks. Their research found that certain spatial configurations—such as open central lawns, interconnected pathways,

and strategically placed seating—significantly increase opportunities for social interaction. This aligns directly with the present study’s interest in understanding perceptions of park development as predictors of social behavior.

In addition, literature suggests that parks with diverse amenities, such as playgrounds, sports courts, and shaded gathering areas, not only support physical activity but also enhance social relationships among families, friends, and community groups (Francis et al., 2012). These findings reinforce the view that social interaction is not solely a behavioral outcome but also an environmental response.

2.3.4 Social Interaction within the Saudi Arabian Context

While international research on social interaction in parks is extensive, studies in Saudi Arabia are emerging in response to major national urban development initiatives. Governmental reports highlight that recent park development efforts—particularly in Jeddah—aim to strengthen community ties and create environments that promote interaction, cultural expression, and shared experiences (SPA, 2025a). The Bahja project, in particular, emphasizes creating public spaces that enhance social cohesion and support recreational activities that bring people together (SPA, 2025a; MOMRAH, 2023).

Furthermore, neighborhood parks in Jeddah are described as key destinations where residents gather daily, interact socially, and engage in leisure activities within safe and well-equipped environments (SPA, 2025b). Such official reports underscore a strategic effort to design parks not only as recreational facilities but as social infrastructures that enhance belonging and community participation.

Despite these developments, empirical research on social interaction in Saudi parks remains limited, highlighting a gap that the current study seeks to address. By examining visitors’ perceptions and reported experiences, this research contributes valuable evidence to the

understanding of how park development influences social behavior in the Saudi context.

2.3.5 Social Interaction as a Dependent Variable

In this study, social interaction is treated as the dependent variable influenced by the quality of park development. The study measures social interaction through visitors' self-reported experiences—including interaction frequency, type of engagement, communication with familiar and unfamiliar individuals, and sense of social connectedness during their park visit. Following the theoretical and empirical insights above, this variable captures the extent to which the park environment facilitates opportunities for meaningful social engagement (Chen et al., 2023).

2.4. The relationship between the independent and the dependent variables

2.4 The Relationship Between the Independent and the Dependent Variables

The relationship between park development and social interaction has been widely examined in the fields of urban design, landscape architecture, and environmental psychology. A substantial body of research demonstrates that the physical characteristics of public parks—such as accessibility, aesthetic quality, functional amenities, and environmental safety—directly influence the frequency, type, and depth of social interactions that occur within them (Gehl, 2011; Francis et al., 2012). As public spaces, parks serve as platforms for community engagement, and their design and infrastructure determine the extent to which users feel encouraged to interact with others.

2.4.1 Influence of Park Design on Social Behavior

Urban design studies consistently show that well-developed parks facilitate higher levels of social interaction by creating inviting and comfortable environments. Features such as shaded seating areas, interconnected walking paths, open green lawns, and well-planned gathering spaces promote both spontaneous and intentional social encounters (Gehl, 2011). Chen et al. (2023) highlight that parks with diverse spatial configurations—such as mixed-use recreation zones—support different forms of social engagement ranging from light interaction to more coordinated group activities.

In particular, the Social Interaction Scale (SIS) and the SOSIP protocol demonstrate that specific design characteristics are associated with progressive levels of social engagement, from solitary behaviors to cooperative group activities (Chen et al., 2023). Parks that integrate multiple functional spaces—such as playgrounds, sports courts, and event areas—tend to foster higher levels of interaction, especially among families and community groups.

2.4.2 Role of Facilities, Comfort, and Safety

Research suggests that the availability and quality of park facilities have a significant influence on how individuals behave socially in outdoor public spaces. Parks equipped with recreational infrastructure—such as children’s play areas, sports facilities, shaded rest areas, and accessible paths—encourage prolonged visits and increased social engagement (Francis et al., 2012).

Additionally, environmental factors such as cleanliness, lighting, and perceived safety contribute to visitors’ willingness to remain in the park and interact with others.

Environmental psychology literature further supports this view, arguing that comfortable and aesthetically pleasing environments enhance social bonding and community cohesion by reducing social barriers and increasing visitors’ sense of belonging (Kaplan & Kaplan, 1989). These elements collectively increase the probability of interaction between both familiar and unfamiliar individuals.

2.4.3 Empirical Evidence Linking Park Development to Social Interaction

Empirical studies across various countries confirm the strong connection between park development and social interaction. Parks that are thoughtfully designed and well maintained tend to attract higher numbers of users, create opportunities for diverse activities, and promote a sense of community identity (Peters et al., 2010). Glover (2011) notes that public parks often act as “social equalizers” where individuals from different socioeconomic backgrounds can interact freely.

Chen et al. (2023) provide empirical evidence showing that certain spatial and environmental features significantly increase the likelihood of social engagement in parks. Their findings underscore the importance of viewing park development not merely as a physical transformation but as a social intervention aimed at enhancing community vitality.

2.4.4 Evidence from the Saudi Arabian Context

In Saudi Arabia, government-led initiatives provide real-world examples of how park development influences community behavior. The Bahja project, extensively implemented in Jeddah under the supervision of MOMRAH, aims to humanize urban spaces by transforming unused land into vibrant public parks designed to promote social cohesion, leisure, and cultural expression (SPA, 2025a). These parks incorporate features such as integrated walkways, shaded seating, sports facilities, and recreational zones—all of which are recognized in the literature as antecedents to social interaction.

Government reports emphasize that the newly developed parks—over 442 in Jeddah alone—serve as daily destinations where families, friends, and residents gather to socialize, participate in activities, and engage with the community (SPA, 2025a). Information from the Saudi Press Agency also highlights the role of parks in attracting visitors during major events and tourism seasons, reinforcing their capacity to facilitate interpersonal encounters within shared public

spaces (SPA, 2025b).

National-level initiatives further demonstrate the strategic intent behind urban park development. The Ministry's goal of completing 7,000 parks and 1,500 urban interventions by 2030 underscores a broader vision of creating socially vibrant communities that foster interaction and well-being (MOMRAH, 2023). These policy objectives align with international evidence linking green public spaces to improved social outcomes.

2.4.5 Conceptual Relationship in the Present Study

Based on the theoretical and empirical foundations discussed above, the present study conceptualizes the relationship between park development and social interaction as follows:

- Independent Variable (Park Development) influences
- Dependent Variable (Social Interaction) by shaping the environmental conditions that enable or constrain interpersonal engagement.

Park design, amenities, safety, accessibility, and environmental quality collectively create social opportunities within public parks. As parks become more developed, aesthetically appealing, and functionally supportive, the likelihood of social interaction increases—both in frequency and quality. These interactions may include casual conversations, shared recreational activities, participation in group events, or spontaneous encounters with unfamiliar individuals.

In line with environmental-behavior theories, the physical environment (park development) is viewed as a foundational determinant of social behavior, structuring how individuals experience public spaces and engage with others (Gehl, 2011; Kaplan & Kaplan, 1989). By investigating this relationship within the context of Jeddah's rapidly evolving park infrastructure, this study contributes to understanding how urban development initiatives support community cohesion in Saudi Arabia.

2.5. Conclusion

This chapter provided a comprehensive review of the existing literature on park development and social interaction, emphasizing their significance within the fields of urban planning, environmental psychology, and community development. The literature consistently highlights the importance of well-designed and well-maintained public parks as catalysts for enhancing community well-being, promoting social cohesion, and supporting diverse forms of social engagement (Gehl, 2011; Francis et al., 2012). Studies such as Chen et al. (2023) demonstrate that specific spatial and environmental features—such as interconnected pathways, shaded seating areas, recreational zones, and green landscapes—play a critical role in shaping patterns of social behavior and influencing the progression from solitary activities to cooperative group interactions.

The independent variable, park development, was examined through theoretical and empirical perspectives that underscore its multidimensional nature. Key dimensions such as design quality, facility availability, safety, comfort, and environmental maintenance contribute to creating inviting and socially supportive public spaces (Chen et al., 2023). Government initiatives in Saudi Arabia, particularly the Bahja project in Jeddah, further reinforce this theoretical perspective. These initiatives demonstrate practical examples of large-scale urban interventions aimed at improving quality of life and fostering social cohesion by transforming underutilized land into vibrant, multifunctional public parks (SPA, 2025a; SPA, 2025b; MOMRAH, 2023).

The dependent variable, social interaction, was reviewed as a multidimensional construct encompassing the frequency, type, depth, and context of interpersonal engagement within public spaces. Drawing on sociological and environmental behavior theories, the literature affirms that social interaction in parks is highly sensitive to environmental cues and is influenced by both design and user experience (Blumer, 1969; Kaplan & Kaplan, 1989). Public parks function as neutral, inclusive, and accessible settings where individuals from

diverse backgrounds can meet, communicate, and participate in shared activities, thereby strengthening community bonds (Glover, 2011; Peters et al., 2010).

Reviewing the relationship between the two variables revealed extensive empirical support for the claim that park development has a positive impact on social interaction. Studies across various contexts affirm that aesthetically pleasing, well-equipped, and comfortable park environments encourage longer stays, create opportunities for spontaneous encounters, and promote higher levels of interpersonal engagement (Gehl, 2011; Francis et al., 2012). Within the Saudi Arabian context, official reports indicate similar patterns: newly developed parks in Jeddah have become vibrant social hubs that attract families, residents, and visitors, reinforcing the role of park development in enhancing social cohesion (SPA, 2025a; SPA, 2025b).

Despite these insights, the literature reveals a clear gap in empirical research within Saudi Arabia, specifically regarding how recent large-scale park development initiatives influence visitors' social behavior. While governmental reports document physical enhancements and increased accessibility, few academic studies have systematically examined the social outcomes of these developments. This gap highlights the need for empirical research—such as the present study—to investigate how visitors perceive park development and how these perceptions relate to actual social interaction in public parks.

In conclusion, the literature supports the conceptual framework of this study, which posits that **park development (independent variable)** is a significant determinant of **social interaction (dependent variable)** within public green spaces. The chapter establishes the theoretical foundations and empirical context necessary for understanding this relationship and underscores the relevance of exploring it within Jeddah's rapidly modernizing urban landscape. The next chapter builds upon this foundation by outlining the research methodology, including the study design, population, sample, data collection instrument, and analytical procedures.

3. Chapter 3: Research Methodology

3.1. Introduction

This chapter outlines the methodological framework adopted to examine the extent to which public park development in Jeddah influences social interaction among park visitors. In alignment with the research problem, objectives, and hypotheses presented in earlier chapters, the methodology provides a systematic approach for collecting, measuring, and analyzing data relevant to the study's variables. A clear and well-structured methodology is essential for ensuring that the findings are reliable, valid, and capable of contributing meaningful insights to both theoretical understanding and practical urban planning efforts.

The chapter begins by presenting operational definitions of the study's variables—park development and social interaction—to ensure conceptual clarity and measurement consistency. It then introduces the research design using the “research onion” model, which outlines the philosophical stance, methodological choices, strategies, time horizon, and techniques applied in the study. This is followed by a detailed description of the research population, sampling methods, and sampling techniques used to identify and engage the participants.

Furthermore, the chapter explains the data collection method, which is based on a structured questionnaire distributed to visitors of selected public parks in Jeddah. The types of data collected and the statistical analysis procedures employed—such as descriptive statistics, reliability testing, correlation analysis, and multiple regression—are also presented. These analytical methods allow for empirical testing of the research hypotheses and provide evidence-based insights aligned with the study's theoretical framework.

Overall, the methodology adopted in this research is designed to ensure rigor, transparency, and alignment with the study's aim to evaluate the relationship between park development and social interaction. The subsequent sections elaborate on each methodological component in detail.

3.2. Operational definitions for research variables

Operational definitions provide clarity on how each variable in the study is measured, observed, and analyzed. These definitions ensure consistency in data collection and allow for meaningful interpretation of the statistical results. The study includes three main variables: park development (independent variable), social interaction (dependent variable), and visitor experience (mediating variable).

3.2.1 Park Development (Independent Variable)

Operational Definition: Park development refers to visitors' perceptions of the physical, functional, and environmental features of public parks in Jeddah. This variable is measured through a set of Likert-scale statements assessing park design, availability of facilities, safety and comfort, and environmental maintenance.

Measurement Dimensions:

1. Design and Layout
 - Pathways, seating arrangement, shading, accessibility, landscape layout.
2. Facilities and Amenities
 - Playgrounds, sports courts, green spaces, rest areas, recreational zones.
3. Safety and Comfort
 - Lighting, cleanliness, perceived security, crowd management, usability.
4. Maintenance and Environmental Quality
 - Landscaping, cleanliness, waste management, infrastructure upkeep.

Data Collection Method:

Participants respond to statements using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).

Rationale:

This operationalization is based on prior studies demonstrating that environmental design, amenities, and safety shape user behavior and social engagement in parks (Gehl, 2011; Francis et al., 2012; Chen et al., 2023).

3.2.2 Social Interaction (Dependent Variable)

Operational Definition: Social interaction refers to the extent and type of interpersonal engagement experienced by visitors within the park environment. It is measured through self-reported behaviors and experiences related to communication, shared activities, and interaction frequency.

Measurement Dimensions:

1. Frequency of Interaction
 - How often visitors engage with others (family, friends, strangers).
2. Type of Interaction
 - Levels ranging from solitary presence, casual greetings, conversations, to cooperative activities.
 - Derived from scales such as the Social Interaction Scale (SIS).
3. Interaction with Familiar Individuals
 - Engagement with family members or friends during the park visit.
4. Interaction with Unfamiliar Individuals
 - Spontaneous encounters, greetings, informal conversations, shared activities.
5. Depth of Engagement
 - Perceived quality of social connection, sense of belonging, community bonding.

Data Collection Method:

Measured using a five-point Likert scale assessing visitors' reported behaviors and perceptions regarding social activity in the park.

Rationale:

This operationalization reflects the conceptual foundations of the SOSIP protocol and previous studies linking environmental design to social behavior (Chen et al., 2023; Glover, 2011).

3.2.3 Visitor Experience (Mediating Variable)

Operational Definition: Visitor experience refers to the overall perception of satisfaction, enjoyment, comfort, and connection with the park environment. This variable assesses how park development influences users' emotional and cognitive responses, which may mediate the relationship between park development and social interaction.

Measurement Dimensions:

1. Satisfaction with Park Features
 - Perceived quality of design, amenities, and environment.
2. Comfort and Accessibility
 - Ease of movement, comfort of seating, shaded areas, temperature suitability.
3. Emotional Response
 - Feelings of enjoyment, relaxation, connection, and willingness to stay longer.

Data Collection Method:

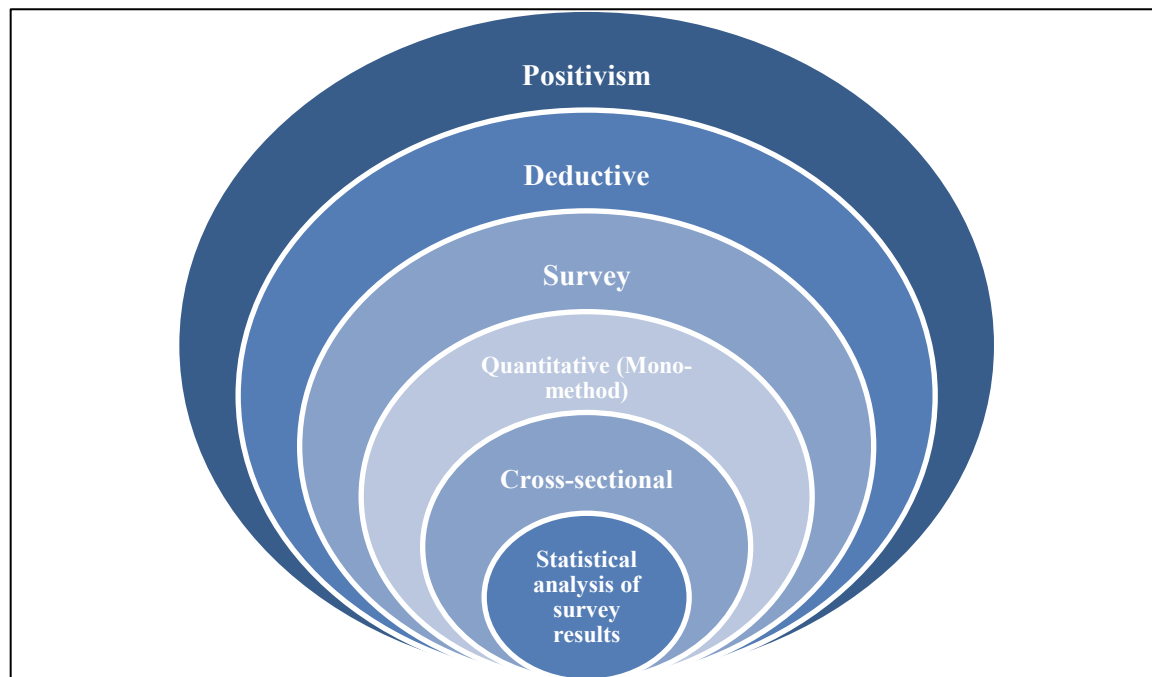
Measured using Likert-scale items capturing satisfaction, comfort, and affective responses.

Rationale:

Environmental psychology asserts that positive experiences in public spaces enhance social behavior and increase engagement (Kaplan & Kaplan, 1989; Peters et al., 2010).

3.3. Research design (research onion)

The research design provides the overall framework guiding how this study is conducted. Following the structure of the research onion (Saunders et al., 2019), this section describes the key methodological decisions regarding the research philosophy, approach, strategy, research choice, time horizon, and the data collection and analysis techniques adopted in the study. These decisions ensure that the methodology is aligned with the research problem, objectives, and hypotheses.



3.3.1 Research Philosophy: Positivism

This study adopts a positivist research philosophy, which assumes that reality can be objectively measured and that social phenomena can be studied using observable and quantifiable data. Positivism is appropriate for this research because the study aims to examine measurable relationships between park development and social interaction based on empirical

evidence collected from park visitors.

Under this philosophical stance, knowledge is generated through systematic observation, statistical analysis, and hypothesis testing—making positivism the most suitable paradigm for a quantitative study that seeks to establish causal or correlational relationships among variables.

3.3.2 Research Approach: Deductive

A deductive research approach is adopted, as the study begins with established theories and empirical findings related to park development and social behavior (e.g., Gehl, 2011; Francis et al., 2012; Chen et al., 2023). Based on these theories, the research develops hypotheses that are empirically tested using quantitative data.

The deductive approach is appropriate because:

- It moves from general theory to specific observations.
- It allows hypotheses to be tested statistically.
- It aligns with positivist principles and quantitative analysis.

Thus, the study follows the traditional deductive sequence: theory → hypotheses → data collection → statistical testing → conclusions.

3.3.3 Research Strategy: Survey

The chosen research strategy is a survey, which is well suited for collecting standardized data from a large number of respondents efficiently and objectively. A structured questionnaire is used to measure perceptions of park development, social interaction, and visitor experience.

Reasons for using a survey strategy include:

- It enables quantitative measurement of attitudes, perceptions, and behaviors.
- It facilitates hypothesis testing through statistical techniques.
- It allows for data collection from diverse park visitors in Jeddah.

The survey strategy is consistent with prior research on public space usage and social behavior, which often relies on self-reported data to understand interaction patterns.

3.3.4 Research Choice: Quantitative (Mono-method)

This study employs a quantitative mono-method research choice, meaning that data collection and analysis rely solely on numerical information obtained through the questionnaire.

The quantitative choice is justified because:

- The study aims to test relationships between variables (IV, DV, mediator).
- The data must be statistically analyzed to confirm or reject hypotheses.
- Quantitative approaches provide objectivity, reliability, and generalizability.

No qualitative data are included, as the focus is on measuring perceptions and behaviors numerically.

3.3.5 Time Horizon: Cross-sectional

The research adopts a cross-sectional time horizon, where data are collected at a single point in time rather than over an extended period.

This is appropriate because:

- The study aims to capture current perceptions of park development and social interaction in Jeddah.
- Cross-sectional studies are efficient, practical, and widely used in survey-based research.
- The research does not require tracking changes over time.

3.3.6 Data Collection and Analysis Techniques

Data Collection Techniques

- Instrument: A structured, self-administered questionnaire.
- Respondents: Visitors of selected public parks in Jeddah.
- Measurement Tools: Five-point Likert scales assessing perceptions of park development, social interaction, and visitor experience.

Data Analysis Techniques

Statistical analysis will be conducted using software such as SPSS. The techniques include:

1. Descriptive Statistics
 - Means, standard deviations, frequencies, demographic profiles.
2. Reliability Testing (Cronbach's Alpha)
 - Ensures internal consistency of measurement scales.
3. Correlation Analysis
 - Examines the strength and direction of relationships between variables.
4. Multiple Regression Analysis
 - Tests the effect of park development on social interaction.
5. Mediation Analysis (if applicable)

- Tests whether visitor experience mediates the relationship between IV and DV.

These techniques provide a robust empirical basis for evaluating the study's hypotheses and answering the research questions.

3.4. Research population & Sampling methods and technique

This section describes the population targeted in the study, the sampling methods used to select participants, and the techniques employed to determine an appropriate sample size. Since the research examines the influence of public park development on social interaction in Jeddah, the study population consists of visitors to selected public parks across the city. The sampling procedures aim to ensure that the collected data adequately represent individuals who regularly use these parks and interact within their environments. The following subsections outline the study population, sample size determination, and sampling techniques in detail.

3.4.1 Research Population

The research population refers to all individuals who visit public parks within the city of Jeddah, specifically those parks developed or enhanced under recent urban initiatives such as the Bahja project. These parks include major recreational destinations (e.g., Prince Majid Park), neighborhood parks, and waterfront public spaces. The population consists of diverse groups, including families, young adults, children, exercisers, tourists, and elderly visitors.

As the Jeddah Municipality reports that the city hosts more than 442 public parks distributed across various neighborhoods (SPA, 2025a), the number of potential visitors is substantial. Although the exact total number of park visitors is not officially enumerated, these parks attract thousands of users weekly, creating a large and heterogeneous population suitable for survey-based research. For classification purposes, the population can be grouped by age, gender, visit purpose (recreation, exercise, family activities), and frequency of park visits. These classifications help ensure a comprehensive representation of visitor experiences in the study.

3.4.2 Research Sample

The research sample consists of a subset of park visitors selected to represent the larger population. To determine an appropriate sample size, the widely accepted Krejcie & Morgan (1970) table for sample size determination was used. Since the total population size exceeds 100,000 visitors annually across the city's parks, the recommended sample size according to the

table is 384 participants for a 95% confidence level and a 5% margin of error.

Therefore, the study aims to collect responses from at least 384 park visitors, ensuring statistically reliable and generalizable findings. The sample will include a diverse representation of demographic groups such as age categories, gender, education levels, and visit purposes. This diversity strengthens the study's ability to analyze how park development influences social interaction across different user groups.

3.4.3 Sampling Method & Techniques

Given the open and public nature of park environments, this study adopts a non-probability sampling technique, which is common in social research involving public-space users. Within non-probability sampling, the method selected is convenience sampling.

Sampling Technique: Non-Probability Sampling

Non-probability sampling is appropriate because the total population of park visitors cannot be precisely enumerated, and visitors enter and leave continuously throughout the day. This makes random selection impractical.

Sampling Method: Convenience Sampling

Convenience sampling involves selecting participants who are easily accessible and willing to participate at the time of data collection. The method is suitable for several reasons:

- Park visitors are dispersed across large areas and arrive at varying times.
- The research requires in-person surveys from individuals present at the park during data collection periods.
- Convenience sampling enables efficient collection of data from a diverse range of respondents within a limited time frame.

Although non-probability sampling limits the ability to generalize findings to all park visitors with absolute statistical confidence, it is considered methodologically acceptable for studies conducted in public settings and aligns with the research strategy of using a quantitative survey.

3.5. Data collection method

This study relied on the survey method as the primary approach to collect quantitative data required to answer the research questions and test the research hypotheses. A structured, self-administered questionnaire was developed based on validated measurement constructs from prior literature and adapted to the context of public park usage in Jeddah. The instrument includes items designed to measure the independent variable (park development), the dependent variable (social interaction), and the mediating variable (visitor experience). All items were measured using a five-point Likert scale to capture respondents' perceptions with clarity and consistency. The following subsections detail the measurement instruments used for each variable.

3.5.1 The Independent Variable: Park Development

To measure the independent variable, Park Development, the researcher relied on a measurement scale adapted from environmental behavior and urban design studies, particularly the work of Chen et al. (2023) and Francis et al. (2012). The construct includes four dimensions reflecting key aspects of park development: (1) design and layout, (2) facilities and amenities, (3) safety and comfort, and (4) maintenance and environmental quality. The scale consists of 12 items distributed across these four dimensions.

- **Design and Layout** – 3 items
- **Facilities and Amenities** – 3 items
- **Safety and Comfort** – 3 items
- **Maintenance and Environmental Quality** – 3 items

A five-point Likert scale was used to measure all items, where:

1 = Strongly Disagree and **5 = Strongly Agree**.

This instrument allows respondents to evaluate their perceptions of park development features based on their actual experience in Jeddah's public parks.

3.5.2 The Dependent Variable: Social Interaction

To measure the dependent variable, Social Interaction, the researcher relied on a scale adapted from the Social Interaction Scale (SIS) and the SOSIP protocol developed by Chen et al. (2023). These tools are widely used to assess levels and types of social engagement within public spaces. The construct includes four dimensions that capture the nature and depth of social interaction experienced by visitors: (1) interaction frequency, (2) type of interaction, (3) interaction with familiar individuals, and (4) interaction with unfamiliar individuals. The measurement instrument consists of 10 items distributed across these dimensions.

- **Interaction Frequency** – 3 items
- **Type of Interaction** – 3 items
- **Interaction with Familiar Individuals** – 2 items
- **Interaction with Unfamiliar Individuals** – 2 items

All items use a five-point Likert scale, where:

1 = Strongly Disagree and **5 = Strongly Agree**.

This instrument captures how visitors engage socially during their time in public parks, allowing the study to analyze patterns of social behavior within the selected setting.

3.5.3 The Mediating Variable: Visitor Experience

To measure the mediating variable, Visitor Experience, the researcher adopted items adapted from environmental psychology literature, particularly the work of Kaplan & Kaplan (1989) and Peters et al. (2010), which emphasize the role of environmental perception in shaping user satisfaction and emotional responses in public spaces. The construct includes three dimensions that reflect how visitors perceive their overall experience in the park: (1) satisfaction with park features, (2) comfort and accessibility, and (3) emotional response. The measurement instrument consists of 9 items distributed across these dimensions.

- **Satisfaction with Park Features** – 3 items
- **Comfort and Accessibility** – 3 items
- **Emotional Response** – 3 items

All items were measured using a five-point Likert scale, where:

1 = Strongly Disagree and **5 = Strongly Agree**.

This instrument captures the cognitive and affective responses of park visitors, including their satisfaction with the park's design and amenities, perceived comfort, and emotional engagement during the visit. Measuring visitor experience as a mediating variable allows the study to assess whether perceptions of park development influence social interaction indirectly through enhanced visitor satisfaction and emotional connection with the environment.

3.6. Types of data

This study relies on both primary and secondary data to achieve its research objectives and provide a comprehensive understanding of the influence of park development on social interaction in Jeddah. Primary data are collected directly from respondents through the survey instrument, while secondary data are obtained from published sources that support the conceptual framework, contextual background, and theoretical foundation of the study. The following subsections explain the nature and role of each data type in this research.

3.6.1 Primary Data

Primary data refer to first-hand information collected directly from participants for the purpose of this study. In this research, primary data were gathered through a structured, self-administered questionnaire distributed to visitors of selected public parks in Jeddah. The questionnaire includes items measuring the independent variable (park development), the dependent variable (social interaction), and the mediating variable (visitor experience).

These data represent respondents' perceptions, attitudes, and behaviors and are essential for:

- Testing the research hypotheses
- Understanding the relationship between the variables
- Generating empirical evidence based on real visitor experiences

Primary data are quantitative in nature and were collected using a five-point Likert scale,

enabling statistical analysis and hypothesis testing.

3.6.2 Secondary Data

Secondary data refer to information gathered from existing sources that support and enrich the study's theoretical and contextual foundation. In this research, secondary data were obtained from:

- Peer-reviewed academic articles on park development, environmental psychology, and social interaction (e.g., Gehl, 2011; Francis et al., 2012; Chen et al., 2023)
- Governmental publications and official reports from the Saudi Press Agency (SPA, 2025a; SPA, 2025b)
- Reports from the Ministry of Municipal, Rural Affairs and Housing (MOMRAH, 2023) related to the Bahja project and public park initiatives
- Previous studies and conceptual frameworks such as the Social Interaction Scale (SIS) and the SOSIP protocol
- Literature used to justify the research problem, research gaps, and study setting

These secondary sources contribute to:

- Defining the research variables conceptually
- Identifying theoretical and practical gaps
- Supporting the rationale for the research model
- Providing contextual information about park development in Saudi Arabia

By integrating both primary and secondary data, the study ensures a comprehensive methodological foundation that supports accurate analysis and meaningful interpretation of results.

3.7. Statistical analysis procedures

After completing the data collection process, several statistical procedures were applied to analyze the quantitative data and test the research hypotheses. All analyses were conducted using the Statistical Package for the Social Sciences (SPSS) Version 26, which provides robust tools for descriptive and inferential analysis. The following methods and procedures were employed:

1. Data Screening and Preparation

- Checking for missing values, incomplete questionnaires, and data entry errors.
- Inspecting normality, outliers, and distribution of responses to ensure data quality before conducting inferential tests.

2. Descriptive Statistics (Sample Profile Analysis)

- Descriptive statistics were computed to summarize the demographic characteristics of the sample, including age, gender, education, frequency of park visits, and purpose of park visits.
- Measures such as frequencies, percentages, means, and standard deviations were used to present a clear profile of respondents.
- These descriptive insights help interpret visitor behavior patterns and contextualize subsequent analysis.

3. Reliability Testing (Cronbach's Alpha)

- Cronbach's Alpha was used to assess the internal consistency of the scales measuring:
 - Park Development (IV)
 - Social Interaction (DV)
 - Visitor Experience (Mediator)
- A reliability coefficient (α) of 0.70 or higher was considered acceptable for this study.
- This analysis ensures that the items within each scale are consistent and reliable.

4. Validity Testing (Exploratory Factor Analysis – EFA)

- Exploratory Factor Analysis (EFA) was performed to examine construct validity and verify whether the items for each variable load onto the intended dimensions.

- Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity were used to assess sampling adequacy and factorability.
- Factor loadings were evaluated to confirm that each item measures the intended construct.
- This step ensures the questionnaire items are valid for statistical testing.

5. Correlation Analysis (Pearson Correlation Coefficient)

- Pearson correlation tests were conducted to examine the strength and direction of relationships between:
 - Park Development (IV)
 - Social Interaction (DV)
 - Visitor Experience (Mediator)
- Correlation results help determine whether associations exist before testing causality through regression.

6. Regression Analysis

Multiple regression analysis was used to test the research hypotheses and assess the impact of park development on social interaction:

- **Simple Regression:**
Examined the direct effect of Park Development (IV) on Social Interaction (DV).
- **Multiple Regression:**
Assessed the influence of the dimensions of park development on social interaction.
- **Mediation Analysis (Baron & Kenny Method or PROCESS Macro):**
Evaluated whether Visitor Experience mediates the relationship between Park Development and Social Interaction.

Regression coefficients, p-values, R-squared values, and significance levels were analyzed to determine whether hypotheses are supported.

7. Interpretation and Reporting of Findings

- Statistical findings were interpreted in relation to the research questions and hypotheses.
- Results were compared to existing literature to provide theoretical and practical insights.
- Tables, charts, and statistical outputs were prepared to present findings in Chapter 4.

8. Summary of Analytical Procedures

- The overall data analysis process enabled the study to:
- Assess the reliability and validity of the measurement scales
- Examine relationships between variables
- Test the conceptual research model
- Draw meaningful conclusions based on quantitative evidence

3.8. Conclusion

This chapter presented the methodological framework adopted to investigate the influence of public park development on social interaction among visitors in Jeddah. It outlined the research philosophy, approach, strategy, and time horizon selected to ensure methodological rigor and alignment with the study's objectives. The chapter also clarified the operational definitions of the study variables—park development, social interaction, and visitor experience—providing a clear basis for measurement and analysis.

Furthermore, the population and sampling techniques were detailed to demonstrate how the study sample was selected using the Krejcie and Morgan (1970) table and a non-probability convenience sampling method suitable for public-space research. The data collection method was described through the use of a structured questionnaire designed to capture respondents' perceptions and behaviors across validated dimensions of the study variables.

Finally, the chapter outlined the analytical procedures used to assess data quality and test the research hypotheses, including descriptive statistics, reliability and validity tests, correlation analysis, multiple regression, and mediation analysis. These methods collectively provide a robust quantitative basis for examining the relationships outlined in the research model.

The next chapter presents the statistical analysis and findings derived from the collected data, offering empirical insights into how park development influences social interaction and whether visitor experience plays a mediating role in this relationship.

4. Chapter 4: Statistical Analysis & Findings discussion

4.1. Introduction

This chapter presents the statistical analysis and empirical findings of the study, based on the data collected from 122 visitors to public parks in Jeddah. The primary purpose of this chapter is to demonstrate how the quantitative data support the research questions and hypotheses that examined the influence of park development on social interaction, with visitor experience considered as a mediating variable. The analyses were conducted using the Statistical Package for the Social Sciences (SPSS), version 26.

The chapter begins with a description of the demographic characteristics of the sample, followed by the reliability results for the study instruments using Cronbach's Alpha. Descriptive statistics for the research variables are then presented to answer the research questions. The chapter subsequently reports the Pearson correlation analysis used to test the research hypotheses and identify the relationships among park development, social interaction, and visitor experience. Finally, the findings are discussed in light of the existing literature to highlight the study's theoretical and practical implications.

4.2. Sample profile (descriptive statistics for research sample)

This section presents the demographic characteristics of the respondents who participated in the study. A total of 122 park visitors completed the survey. The sample profile includes gender distribution, age categories, frequency of park visits, and the social context in which respondents usually visit public parks. These descriptive statistics help provide a clearer understanding of the respondents' background and support the interpretation of the subsequent analyses.

Gender Distribution

The results indicate that the sample is composed of both male and female participants, with females representing a larger proportion of respondents. This reflects the diverse nature of park visitors in Jeddah and provides balanced insights into user experiences across genders.

		Gender			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Male	44	36.1	36.1	36.1
	Female	78	63.9	63.9	100.0
	Total	122	100.0	100.0	

Table 4.1: Gender Distribution

Age Categories

The age distribution shows participation from all age groups, with the largest percentage falling within the age ranges of 18–29 and 30–39. This suggests that young adults and middle-aged individuals represent the primary users of public parks in the sample.

		Age category of respondent			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Under 18	15	12.3	12.3	12.3

18–29	38	31.1	31.1	43.4
30–39	42	34.4	34.4	77.9
40–49	20	16.4	16.4	94.3
50 or above	7	5.7	5.7	100.0
Total	122	100.0	100.0	

Table 4.2: Age Distribution

Frequency of Visiting Parks

Results reveal variation in how often respondents visit public parks. The majority reported visiting weekly or rarely, while smaller percentages indicated daily or monthly visits. This diversity in visit frequency enriches the analysis of how park development influences social interaction.

Frequency of visiting parks					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rarely	46	37.7	37.7	37.7
	Monthly	24	19.7	19.7	57.4
	Weekly	42	34.4	34.4	91.8
	Daily	10	8.2	8.2	100.0
	Total	122	100.0	100.0	

Table 4.3: Frequency of Park Visits

Companions During Park Visits

Most respondents reported visiting parks with family members, followed by friends. Only a small portion indicated visiting alone or with organized groups. This reflects the social nature of park usage in Jeddah and provides context for interpreting social interaction levels.

With whom the respondent usually visits the park					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Alone	7	5.7	5.7	5.7

With family	61	50.0	50.0	55.7
With friends	27	22.1	22.1	77.9
With both family and friends	26	21.3	21.3	99.2
With an organized group	1	.8	.8	100.0
Total	122	100.0	100.0	

Table 4.4: Park Visit Companions

Summary

Overall, the sample profile shows that the respondents represent a heterogeneous group in terms of gender, age, visit frequency, and companionship. This diversity enhances the reliability of the findings and supports generalization within the context of public park usage in Jeddah.

4.3. Validity & reliability tests for the questionnaires

This section presents the reliability and validity assessment of the research instruments used to measure the study variables: park development, social interaction, and visitor experience. Ensuring the internal consistency of the scales is essential for confirming that the questionnaire items accurately and consistently measure the intended constructs. Reliability was assessed using Cronbach's Alpha, one of the most widely accepted indicators of internal consistency in social sciences. A Cronbach's Alpha value of 0.70 or above is generally considered acceptable for research purposes.

Reliability of Park Development Scale

The reliability analysis for the Park Development scale, which consists of four items related to design quality, facilities, safety, and maintenance, produced a Cronbach's Alpha value of 0.806, indicating good internal consistency. This suggests that the items collectively measure the construct reliably and can be used for further analysis.

Reliability Statistics

Cronbach's Alpha	N of Items
.806	4

Table 4.5: Reliability Statistics for Park Development

Reliability of Social Interaction Scale

The Social Interaction scale, consisting of five items measuring frequency and types of interaction with others, also demonstrated strong reliability, with a Cronbach's Alpha value of 0.801. This indicates that the items are sufficiently correlated and represent the construct consistently across the sample.

Reliability Statistics	
Cronbach's Alpha	N of Items
.801	5

Table 4.6: Reliability Statistics for Social Interaction

Reliability of Visitor Experience Scale

The Visitor Experience scale, which includes eleven items capturing satisfaction, comfort, emotional response, and overall experience, yielded a Cronbach's Alpha value of 0.783. This value reflects acceptable internal consistency, confirming that the scale reliably assesses visitors' experiences in the parks.

Reliability Statistics	
Cronbach's Alpha	N of Items
.783	11

Table 4.7: Reliability Statistics for Visitor Experience

Summary of Reliability Results

Overall, all three scales exhibited Cronbach's Alpha values above the recommended

threshold of 0.70, demonstrating that the questionnaire items were internally consistent and suitable for use in subsequent statistical analyses. This confirms the reliability of the instrument and supports the validity of the findings in later sections of this chapter.

4.4. Descriptive statistics for research variables (answer research questions)

This section presents the descriptive statistics of the key research variables: park development, social interaction, and visitor experience. The analysis summarizes respondents' perceptions regarding the quality of park development, the levels of social interaction occurring within parks, and the overall visitor experience. These descriptive results provide initial insights that help answer the research questions and guide the interpretation of subsequent hypothesis testing.

Descriptive statistics include mean scores and standard deviations for each item within the three main constructs. Higher mean values indicate higher agreement or frequency, depending on the scale used.

4.4.1 Park Development

The results show that respondents generally hold positive perceptions of park development in Jeddah. Across all four items—ease of movement, availability of facilities, perceived comfort and safety, and the impact of development and maintenance—the mean scores were consistently high, ranging between 4.16 and 4.43. These findings suggest strong visitor satisfaction with the physical and environmental quality of the parks.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Park design ease of movement	122	1.00	5.00	4.1639	1.00709
Facilities encourage longer stay	122	1.00	5.00	4.1967	.99286

Perceived comfort and safety in the park	122	1.00	5.00	4.1967	.86854
Impact of park development and maintenance on experience	122	1.00	5.00	4.4344	.83307

Table 4.8: Descriptive Statistics for Park Development Items

These high mean values indicate that visitors perceive Jeddah's parks as well-designed, well-equipped, and well-maintained, reflecting the success of urban development initiatives in improving public spaces.

4.4.2 Social Interaction

Descriptive results for the social interaction items indicate moderate levels of interaction among park visitors. For example, the frequency of general social interaction during park visits recorded a mean of 2.74, reflecting relatively low to moderate interaction levels. Interaction with unfamiliar people had a mean of 3.12, while feelings of social connectedness and the park environment's encouragement of social interaction scored higher (means between 3.65 and 3.77).

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Frequency of general social interaction during visit	122	1.00	5.00	2.7459	1.15395
Feeling of social connectedness with companions	122	1.00	5.00	3.6475	.82243
Interaction with unfamiliar people	122	1.00	5.00	3.1230	1.08008
Park environment encouragement of social interaction	122	1.00	5.00	3.7787	.90465
Level of social interaction during visit	122	1.00	4.00	2.9098	.93600

Table 4.9: Descriptive Statistics for Social Interaction Items

These patterns suggest that while spontaneous or unplanned interactions may be limited, parks still foster a sense of belonging and connection among companions, and the environment encourages some degree of social engagement.

4.4.3 Visitor Experience

The results for visitor experience show generally favorable evaluations. Items related to comfort, satisfaction, and emotional response demonstrated mean values above 4.0 for most aspects. This indicates that respondents have positive overall experiences during their park visits, influenced by both environmental quality and social context.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Park design ease of movement	122	1.00	5.00	4.1639	1.00709
Facilities encourage longer stay	122	1.00	5.00	4.1967	.99286
Perceived comfort and safety in the park	122	1.00	5.00	4.1967	.86854
Impact of park development and maintenance on experience	122	1.00	5.00	4.4344	.83307
Frequency of general social interaction during visit	122	1.00	5.00	2.7459	1.15395
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Interaction with unfamiliar people	122	1.00	5.00	3.1230	1.08008
Park environment encouragement of social interaction	122	1.00	5.00	3.7787	.90465

Level of social interaction during visit	122	1.00	4.00	2.9098	.93600
Valid N (listwise)	122				

Table 4.10: Descriptive Statistics for Visitor Experience Items

These results suggest that well-designed and well-maintained parks contribute significantly to the quality of the visitor experience, supporting the idea that enhanced park environments lead to greater satisfaction and emotional well-being.

Summary of Descriptive Findings

Overall, the descriptive statistics indicate that:

- Visitors perceive park development very positively.
- Social interaction levels are moderate but supported by the park environment.
- Visitor experience is generally strong, suggesting that parks are fulfilling their role as recreational and social spaces.

These findings directly address the research questions by highlighting how visitors evaluate park development, how they interact socially in the park environment, and how their experiences shape these perceptions.

4.5. Testing Hypotheses & Findings Discussion

This section presents the results of testing the study hypotheses using Pearson correlation analysis, followed by a discussion of the findings in relation to previous literature. Pearson correlation was selected due to its suitability for examining linear relationships between continuous variables derived from Likert-scale responses.

The three main hypotheses examined the relationships among park development (PD_Total), social interaction (SI_Total), and visitor experience (VE_Total). The correlation results are summarized in the table below.

Correlations		PD_Total	SI_Total	VE_Total
PD_Total	Pearson Correlation	1	.344**	.726**
	Sig. (2-tailed)		.000	.000
	N	122	122	122
SI_Total	Pearson Correlation	.344**	1	.862**
	Sig. (2-tailed)	.000		.000
	N	122	122	122
VE_Total	Pearson Correlation	.726**	.862**	1
	Sig. (2-tailed)	.000	.000	
	N	122	122	122

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4.11: Correlation Matrix for Study Variables

Hypothesis 1:

H1: There is a positive and significant relationship between park development and social interaction among visitors.

The correlation results indicate a positive and statistically significant relationship between park development and social interaction ($r = 0.344$, $p < 0.01$). This finding suggests that improvements in park design, facilities, safety, and maintenance are associated with greater levels of social interaction among visitors.

- **Interpretation:** Respondents who evaluated the park's development more positively were more likely to engage socially or feel socially connected during their visit. Although the correlation is moderate, it demonstrates a meaningful influence.
- **Relation to Literature:** This finding aligns with studies such as Francis et al. (2012) and Gehl (2011), which argue that well-designed and accessible public spaces encourage social engagement and strengthen social cohesion. Similarly, Chen et al. (2023) found that enhanced park environments facilitate various forms of social interaction.
- **Conclusion:** The results support Hypothesis 1.

Hypothesis 2:

H2: There is a positive and significant relationship between park development and visitor experience.

A strong positive and significant correlation was found between park development and visitor experience ($r = 0.726$, $p < 0.01$). This high correlation indicates that well-developed parks contribute substantially to shaping visitors' satisfaction, comfort, and emotional responses.

- **Interpretation:** This suggests that improvements in layout, safety, and facility quality enhance how visitors evaluate their overall park experience. This is consistent with the expectation that physical design plays a fundamental role in creating enjoyable outdoor environments.
- **Relation to Literature:** These findings are consistent with Kaplan & Kaplan's (1989) environmental preference theory, which emphasizes the role of environmental quality in shaping user experiences. Similarly, Peters et al. (2010) and Nordh et al. (2011) demonstrated that higher-quality parks contribute to more positive visitor experiences.
- **Conclusion:** The results strongly support Hypothesis 2.

Hypothesis 3:

H3: There is a positive and significant relationship between visitor experience and social interaction.

The results revealed a strong positive and significant relationship between visitor experience and social interaction ($r = 0.862$, $p < 0.01$). This suggests that visitors who report more pleasant and engaging experiences in the park also tend to show higher levels of social interaction.

- **Interpretation:** A highly enjoyable environment may facilitate relaxation, openness, and willingness to interact with others. Emotional comfort, satisfaction, and perceived safety encourage visitors to engage more socially.
- **Relation to Literature:** This supports frameworks proposed by environmental psychology researchers, such as Whyte (1980), who argued that positive environmental features motivate people to stay longer and engage socially. Furthermore, the result aligns with findings from Chen et al. (2023), showing that enhanced visitor experience contributes to higher social interaction levels in public spaces.
- **Conclusion:** The results strongly support Hypothesis 3.

Discussion of Findings:

Overall, the findings demonstrate that park development plays a crucial role in shaping both visitor experience and social interaction in public parks in Jeddah. Notably:

- Park development has a moderate direct effect on social interaction.
- Park development has a strong effect on visitor experience.
- Visitor experience has a strong direct effect on social interaction.

This suggests that while design and development features directly enhance social engagement, their influence becomes even more significant when they improve the overall visitor experience.

Alignment with Urban Development Initiatives in Saudi Arabia

These findings complement national initiatives such as the Bahja Project by the Municipality of Jeddah, which aims to transform open spaces into vibrant recreational environments supporting community well-being. The results affirm that such development

efforts contribute not only to the physical enhancement of parks but also to improved social cohesion and public satisfaction.

Contribution to Literature

The study reinforces earlier research that public spaces act as catalysts for social interaction and community building. By providing empirical evidence within the Saudi context, the study contributes to understanding how park development and visitor experiences shape social behavior in rapidly urbanizing environments.

4.6. Conclusion

This chapter presented the statistical analyses and empirical findings of the study, which investigated the relationships among park development, visitor experience, and social interaction within public parks in Jeddah. The results began with an overview of the sample profile, which showed a diverse representation of age groups, genders, and visitation patterns among the 122 respondents. The reliability analysis confirmed that all three research scales—park development, social interaction, and visitor experience—demonstrated acceptable levels of internal consistency, supporting the use of the questionnaire for quantitative assessment.

Descriptive statistics revealed that respondents generally held positive perceptions of park development and reported strong visitor experiences, although levels of social interaction varied, with some dimensions showing moderate engagement. These descriptive insights provided initial answers to the research questions and offered a deeper understanding of how the public perceives park environments in Jeddah.

Hypothesis testing using Pearson correlation analysis showed significant positive relationships among all three variables. Park development was moderately linked to social interaction and strongly associated with visitor experience, while visitor experience demonstrated a substantial positive relationship with social interaction. These findings

indicate that improvements in park design, facilities, and maintenance not only enhance visitors' experiences but also facilitate greater social engagement within park settings.

In summary, the statistical results support the study's conceptual model and align with existing literature on public space design and environmental psychology. They highlight the important role of well-developed parks in fostering social cohesion and enhancing community well-being. These findings set the foundation for the next chapter, which discusses the study's limitations, practical recommendations, and overall conclusions.

5. Chapter five: Research limitations, Recommendations & Conclusion

5.1. Research Limitations & Future Research

5.2. Research Recommendations

5.3. Conclusion

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Appendix

Appendix 1: Visitor Questionnaire on Park Development and Social Interaction

Introduction:			
This questionnaire is part of an academic research study exploring how the development of public parks in Jeddah, Saudi Arabia, influences social interaction among visitors. Your participation is voluntary and anonymous. The questionnaire takes less than two minutes to complete.			
Please answer based on your current visit to this park.			
Section 1: Demographic Information			
Please select one answer for each question.			
1. Gender:	☐	Male	☐
			Female
2. Age Group: (Under 18, 18–29, 30–39, 40–49, 50 or above)			
3. Frequency of Visiting Parks: (Daily, Weekly, Monthly, Rarely)			
4. Usually, I am visiting this park: (Alone, With family, With friends, With both family and friends, With an organized group)			
Section 2: Park Development Dimension			
Please indicate your level of agreement with the following statements. (Strongly disagree, Disagree, Neutral, Agree, Strongly agree)			
1. The park's design (paths, seating, lighting, shade) makes it easy to move around.			
2. The available facilities (playgrounds, sports areas, green spaces) encourage me to spend more time in the park.			
3. The park provides a comfortable and safe environment for visitors.			
4. The park's development and maintenance improve the overall visitor experience.			
Section 3: Social Interaction Dimension			
1. During my visit usually, I interact (talk or engage) with others in the park. (Never, Rarely, Sometimes, Often, Very often)			
2. I feel socially connected to the people who were with me during this visit. (Strongly disagree, Disagree, Neutral, Agree, Strongly agree)			
3. I interacted with people I did not know before (e.g., greeting, asking for help). (Never, Rarely, Sometimes, Often, Very often)			
4. The park environment encourages social interaction among visitors. (Strongly disagree, Disagree, Neutral, Agree, Strongly agree)			
5. Most of my time in the park today was spent:			

- a. Alone and not interacting with others
- b. Near others but without talking
- c. In light interaction (simple conversation)
- d. In active social interaction (gathering or group activity)

End of Questionnaire

Thank you for your participation. Your responses will help support research on improving public park design and enhancing social interaction within the community.