ISTANBUL TECHNICAL UNIVERSITY ★ GRADUATE SCHOOL

SUSTAINABLE PARK MODEL: A QUALITATIVE APPROACH IN SUSTAINABILITY ASSESSMENT OF PARKS

Ph.D. THESIS

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Department of Landscape Architecture

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SÜRDÜRÜLEBİLİR PARK MODELİ: PARKLARIN SÜRDÜRÜLEBİLİRLİKLERİNİN DEĞERLENDİRMESİ İÇİN NİTELİKSEL BİR YAKLAŞIM

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To those whose hearts beat for now and the future,

FOREWORD

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ABBREVIATIONS

ANOVA	: Analysis of variance
B	: Background
BE	: Behaviors & Experiences
FE	: Feelings & Emotions
GSAS	: Global Sustainability Assessment System
HDI	: Human Development Index
IUCN	: International Union for Conservation of Nature
K	: Knowledge
NEPA	: National Environment Policy Act
OV	: Opinions & Values
S	: Sensory
SDGs	: Sustainable Development Goals
SITE	: Sustainable Site Initiatives
SPSS	: Statistical Package for the Social Sciences
UN	: United Nations
WCED	: United Nations World Commission on Environment and Development
WSSD	: The World Summit on Sustainable Development
S.D.	: Standard deviation

SYMBOLS

R	: The Pearson correlation coefficient
Sig.	: The significance level
Df.	: The degrees of freedom
F.	: The ratio of two mean squares
t	: The t-test
B.	: The unstandardized beta
Beta (β)	: The standardized beta

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SUMMARY

Public open spaces evolving towards a more sustainable state contribute to the overall sustainability of an urbanized region over time. Sustainable parks, as integral parts of the urban environment, play a crucial role in sustainable development as they provide environmental, social, cultural, and economic benefits. The sustainabilization of parks is recognized as a complex process since it embraces different, however connected, aspects. To ensure parks' sustainability, sustainability assessment tools are of great importance as they emphasize delivering positive net sustainability gains now and into the future. Internationally recognized park sustainability assessment tools are benchmarks to guide sustainability-related actions and initiatives within parks. They concentrate primarily on the environmental and economic aspects of sustainability, and they endeavor to obtain information and quantitative data from authorities to evaluate the park concerning sustainability in these dimensions. In addition, within these tools, there are criteria and indicators which focus on social and cultural aspects.

The current park sustainability assessment tools are partially successful in guiding authorities and decision-makers concerning the latest sustainability implementations. However, notwithstanding their efforts to establish parks' sustainability vision, they do not follow a holistic approach; since they do not involve park users directly in the evaluation processes. That is to say, in these tools' perspective user-oriented approach to sustainability evaluation is not considered; thus, users' perceptions and preferences regarding the park are ignored.

Accordingly, this study aims to open discussions specifically on how to entail park users in the sustainability assessment of parks. Therefore, the study poses a model as a complementary tool to the current ones for seeking sustainability principles and transitioning towards sustainable states within parks. Indeed, the proposed sustainable park model is a qualitative approach to the sustainability assessment of parks that focuses on the importance of including people in sustainability evaluation. Furthermore, this model emphasizes the importance of sustainable practices by including park users' preferences and perceptions, which provide long-term benefits to the environment, the local community, and the economy.

Sustainability is a context-dependent and place-based phenomenon, and practices regarding sustainable placemaking are recognized as potential drivers in connecting people to places. Understanding the interrelationships between people and places is vital to realize social motivations and determining approaches toward sustainability. Moreover, sustainability is not merely about concrete/material aspects of a place; instead, it emphasizes immaterial aspects as well. Because places are not merely

geographical locations; rather, they are the manifestation of human-place interaction, which consists of human values, beliefs, and bonds that they are assigned to them. Parks as places are the product of both concrete and abstract/material and immaterial dimensions and processes; parks are dynamic and under the influence of human-place relational changes. Accordingly, while discussing sustainability transformation, both outer and inner dimensions need to be considered.

Sense of place is considered one of the inner dimensions of sustainability transformation. Sustainability is about fulfilling the needs and desires of people to ensure well-being and quality of life, which is feasible by meeting the people's biological, psychological, and cultural needs. Since creating a sense of place is contingent on meeting these needs, a sense of place becomes an indicator of sustainability. In addition, a sense of place is associated with the sense of belonging and participation towards a place. More explicitly, the sense of place is defined with indicators including place attachment, place identity, and place dependence; a place with its characteristics and components generates these clusters of ideas for its users. Accordingly, the study aims to explore the role of the sense of place in the context of sustainable park-making. Therefore, the study investigates the link between the sense of place and the park's physical landscape and provided services in the context of sustainable place-shaping. In this way, it better understands and integrates them into the sustainability transformation discourses. As a result, the study proposes a new conceptual framework for the evaluation of parks to be a base for sustainability transformation, which results in moving toward sustainable development of a host community.

To understand the level of sense of place regarding a park and the factors influential in its creation, the study designs a model which entails a qualitative approach based on the component-based process model. For this purpose, firstly, the study mainly focuses on constituting the components and explaining the processes of the model. The model consists of two sets: interview and sense of place measurement. The interview set reveals park users' perceptions and preferences regarding the park's physical landscape and provided services. This set comprises questions' dimensions, focuses, contexts, and contents hierarchically. The dimensions are selected based on human-place interaction dimensions, including behavioral, emotional, cognitive, and demographic. The questions are classified into five primary focus categories: behaviors & experiences, opinions & values, feelings & emotions, knowledge, sensory, and background. The study determines the contexts of the questions based on criteria and indicators demonstrated by current park sustainability assessment tools and literature on park sustainability subject; thus, the questions' contexts are user profile, usage modes, site, recreation, green space, water feature, movement and accessibility networks, urban furniture, service facilities, waste-clean environment, animal-inclusive, culture inspired, heritage preservation, participatory approach, education-oriented, emotional, and multisensory. The contents of the questions need to be determined based on the contexts and characteristics of the case under examination.

The second set of the study, titled as sense of place measurement, is devised based on four distinguished characteristics: polarity, directness, components, and dimensions. While discussing polarity, the second set uses semi-polar scaling, ranging from not having a sense of place to the positive pole. Regarding the dimension, it uses a multi-dimensional scale approach; thus, three dimensions of place attachment, place dependence, and place identity are considered, which are recognized as indicators of a sense of place. Each dimension has two components; correspondingly, the multi-component approach is also applied within the second set of the model. The components entail sentences aimed to be rated by the park's users to understand the level of each indicator of sense of place. In relation to the directness attribute, the indirect technique is selected since the components do not directly ask participants about their level of place identity, attachment, and dependence. Accordingly, by this set of components and processes, park users' levels of sense of place are measured.

To interpret the results, firstly, the data and information obtained from the interview set are thematically analyzed to drive sub-themes and themes for further discussion leading to implications and recommendations for the park. However, before sub-themes and themes generation, the users' views are labeled as positive, negative, impartial, and general. The two labels of positive and negative are considered determiners with respect to the sense of place level. With the help of SPSS, the positively and negatively labeled views are merged with the results of the sense of place measurement set. By doing so, the model investigates the relationship between positive and negative views and users' sense of place.

To show how to employ this model, Göztepe park, a community park located in Istanbul city, is used as a case; hence, the steps in data gathering and data analysis are illustrated. Accordingly, 118 people (60 female and 58 male Göztepe park' users) were interviewed, and their levels of sense of place were measured. The interview results are thematically analyzed, and a total of 129 opposing views are obtained, of which 37 views are positive while the rest are negative. Göztepe park users have a total of 2.61 out of 5, which indicates that users have a sense of place regarding the park. In general, regardless of age and gender, the SPSS results demonstrate that negative views have a negative effect on the level of sense of place while positive views positively influence it. With respect to the number of subthemes and themes, a total number of 24 subthemes and a total of 16 themes are derived, which are used as bases for the implications and recommendation part for Göztepe park sustainability. These sub-themes and themes are derived directly from park users' perceptions and preferences regarding the park's physical landscape and provided services; therefore, by considering them in actions and implementations within the park, users' sense of place levels will be positively influenced. Hence, it contributes to the park's sustainability.

In sum, the relationship between park users' perceptions and preferences and their sense of place levels is reciprocal, each influencing the other in a reinforcing manner. By understanding and addressing park users' perceptions and preferences and sense of place levels, parks would be more sustainable, livable, and supportive of human well-being. Accordingly, the proposed sustainable park model is a valuable tool for authorities and decision-makers to adapt park sustainability initiatives through this approach. This model emphasizes the importance of integrating people in sustainability evaluation to ensure that parks are managed in a socially responsible way. In addition, the sustainable park model highlights the importance of engaging and involving local communities in park planning, design, and management regarding sustainability, which helps to foster a sense of place and stewardship among the community, leading to greater participation and support for sustainability initiatives.

SÜRDÜRÜLEBİLİR PARK MODELİ: PARKLARIN SÜRDÜRÜLEBİLİRLİKLERİNİN DEĞERLENDİRMESİ İÇİN NİTELİKSEL BİR YAKLAŞIM

ÖZET

Sürdürülebilirlik bağlamında gelişmekte olan kamusal açık alanların zaman içinde kentleşmiş bir bölgenin genel sürdürülebilirliğine katkıda bulunduğu bilinmektedir. Kentsel çevrenin ayrılmaz bir parçası olan sürdürülebilir parklar, çevresel, sosyal, kültürel ve ekonomik faydalar sağladıkları için sürdürülebilir kalkınmada çok önemli bir rol üstlenmektedir. Parkların sürdürülebilir hale getirilmesi, birçok farklı etkene bağlı olduğundan karmaşık bir süreç olarak kabul edilmektedir. Parkların sürdürülebilirliğini sağlamanın bir yolu olarak, sürdürülebilirlik değerlendirme araçları, günümüzde ve gelecekte olumlu net sürdürülebilirlik kazanımları sağlamayı vurguladıkları için büyük önem taşımaktadır. Uluslararası kabul görmüş park sürdürülebilirlik değerlendirme araçları, parklardaki sürdürülebilirlikle ilgili eylemlere ve girişimlere rehberlik eden kriterler ve göstergelere sahiptir. Bu araçlar öncelikli olarak sürdürülebilirliğin çevresel ve ekonomik boyutlarına odaklanarak parkı bu boyutlarda değerlendirmek için yerel yönetimlerden bilgi ve nicel veriler elde etmeyi amaçlamaktadır. Bu boyutların yanı sıra, bu araçlar içerisinde sosyal ve kültürel boyutlara da odaklanan kriterler ve göstergeler yer almaktadır.

Mevcut park sürdürülebilirlik değerlendirme araçları, güncel sürdürülebilirlik uygulamalarına ilişkin olarak yetkililere ve nihai karar vericilere rehberlik etmede kısmen başarılıdır. Ancak parkların sürdürülebilirlik vizyonunu oluşturmaya yönelik çabalarına rağmen park kullanıcılarını doğrudan değerlendirme süreçlerine dahil etmedikleri için bütüncül bir yaklaşım izlenememektedir. Diğer bir deyişle, bu araçların konuya yaklaşımında, sürdürülebilirlik değerlendirmesi açısından kullanıcı odaklı bir yaklaşım dikkate alınmamaktadır; bu durum da kullanıcıların parka ilişkin algı ve tercihlerinin göz ardı edilmesine sebep olmaktadır.

Tüm bu nedenlerden dolayı, bu çalışma özellikle park kullanıcılarının parkların sürdürülebilirlik değerlendirmesine nasıl dahil edileceğine yönelik tartışmalar açılması amaçlanmaktadır. Bu çalışma, sürdürülebilirlik ilkeleri bağlamında- parklarda sürdürülebilirlik kavramının etkin kullanımı için mevcut park sürdürebilir araçlarına tamamlayıcı bir araç öneren bir model ortaya koymaktadır. Çalışmada önerilen sürdürülebilir park modeli, insanları sürdürülebilirlik değerlendirmesine dahil etmenin önemine odaklanarak parkların sürdürülebilirliklerinin değerlendirmesine niteliksel bir yaklaşım olarak kabul edilebilir. Ayrıca bu geliştirilen model, park kullanıcılarının tercihlerini ve algılarını dikkate alan sürdürülebilir uygulamaların, çevreye, yerel topluluğa ve ekonomiye uzun vadeli faydalar sağlayacağının önemini vurgulamaktadır.

Sürdürülebilirlik, bağlama bağlı ve yere dayalı bir olgudur ve sürdürülebilir bir mekân yaratmaya ilişkin uygulamalar, insanları mekâna bağlamada potansiyel itici güçler olarak kabul edilmektedir. İnsanlar ve mekân arasındaki karşılıklı ilişkileri anlamak, sosyal motivasyonları gerçekleştirmek ve sürdürülebilirliğe yönelik yaklaşımları belirlemek açısından büyük önem taşır. Üstelik sürdürülebilirlik, bir mekânın sadece somut/maddi yönleriyle ilgili değildir; bunun yerine maddi olmayan yönleri de ele almaktadır. Çünkü mekanlar sadece coğrafi konumlardan ibaret olmayıp bünyelerinde barındırdıkları insani değerler, inançlar ve bağlardan oluşan insan-mekân etkileşiminin sağlandığı alanlardır. Mekân olarak parklar, hem somut/maddi hem de soyut/maddi olmayan boyutların ve süreçlerin ürünüdür; parklar dinamik bir yapıya sahiptir ve insan-yer ilişkisindeki değişimlerin etkisi altındadır. Buna göre, sürdürülebilirlik dönüşümü tartışılırken hem dış hem de iç boyutların dikkate alınması gerekmektedir.

Yer duygusu, sürdürülebilirlik dönüşümünün içsel boyutlarından biri olarak kabul edilir. Çünkü sürdürülebilirlik, insanların biyolojik, psikolojik ve kültürel ihtiyaçlarının yerine getirilmesiyle, onların refahlarının ve yaşam kalitelerinin sağlanması ile ilgilidir. Yer duygusunun yaratılması bu ihtiyaçların karşılanmasına bağlı olduğundan, yer duygusu sürdürülebilirliğin bir göstergesi haline gelmektedir. Ayrıca yer duygusu, bir yere aidiyet ve katılım duygusuyla doğrudan ilişkilidir. Daha açık bir ifadeyle, yer duygusu, yer bağlılığı, yer kimliği ve yer bağımlılığı gibi göstergelerle tanımlanır; özellikleri ve bileşenleri ile bir yer, kullanıcıları için bu fikir kümelerini üretir.

Buna göre çalışma, sürdürülebilir park planlanması, tasarımı ve yönetimi bağlamında yer duygusunun rolünü keşfetmeyi amaçlamaktadır. Bu nedenle, çalışma, yer duygusu ile parkın fiziksel peyzajı ve park tarafından sunulan hizmet ve olanaklar arasındaki bağlantıyı sürdürülebilir yer şekillendirme bağlamında araştırmaktadır. Sonuç olarak, çalışma, parkların değerlendirilmesi için yeni bir kavramsal çerçeve önermektedir. Bu kavramsal çerçeve toplumların sürdürülebilir kalkınmasına doğru ilerlemeyle sonuçlanan parklar bazında sürdürülebilir dönüşüm için bir temel oluşturmayı hedeflemektedir.

Bir parka ilişkin yer duygusu düzeyini ve oluşumunda etkili olan faktörleri anlamak için çalışma, bileşen tabanlı süreç modeline dayalı nitel bir yaklaşımı içeren bir model ortaya koymaktadır. Bu amaçla çalışmada öncelikle modelin bileşenlerinin oluşturulması ve süreçlerinin açıklanması üzerinde durulmuştur. Model, görüşme ve yer duygusu ölçümü olmak üzere iki setten oluşmaktadır. Görüşme seti, park kullanıcılarının parkın fiziksel peyzajı ve sağlanan hizmet ve olanakları ile ilgili algılarını ve tercihlerini ortaya koymaktadır. Görüşme setinde yer alan sorular dört hiyerarşik kategoride yer almaktadır. Bu kategoriler soruların boyutları, odakları, bağlamları ve içeriklerini belirtmektedir.

Soru boyutları, davranışsal, duygusal, bilişsel ve demografik başlıklar dahil olmak üzere insan-yer etkileşimi boyutlarına göre seçilmiştir. Bu boyutlar altında, sorular beş ana odak kategorisine ayrılmıştır: davranışlar ve deneyimler, görüşler ve değerler, hisler ve duygular, bilgi, duyusal ve arka plan. Çalışma, park sürdürülebilirliği konusunda mevcut park sürdürülebilirlik değerlendirme araçları ve literatürde ortaya konulan kriter ve göstergelere dayalı olarak soruların bağlamlarını belirlemektedir. Kullanıcı profili, kullanım modu, alan, rekreasyon, yeşil alan, su elemanları, hareket ve erişilebilirlik ağları, kent mobilyaları, hizmet tesisleri ve hizmet olanakları, atık-temiz çevre, hayvanlar için kapsayıcılık, kültür odaklı, mirasın korunması, katılımcı yaklaşımı, eğitim odaklı, duygusal ve çok duyusal bağlamları modelin görüşme seti için seçilmiştir. Bu modele göre, soruların boyut, odak ve bağlamı sabittir ancak soruların içeriği bağlamlara ve incelenmekte olan örneğin özelliklerine göre tasarlanmalıdır.

Yer duygusu ölçümü olarak adlandırılan modelin ikinci seti, dört ayırt edici özelliğe göre belirlenir: kutupluluk, doğrudanlık, bileşenler ve boyutlar. Kutupluluğun tartışmasında ikinci sette yer duygusu olmamasından pozitif kutup arasında değişen yarı kutuplu ölçekleme kullanılır. Boyutla ilgili olarak, çok boyutlu bir ölçek yaklaşımı kullanır; bu nedenle, bir yer duygusunun göstergeleri olarak kabul edilen yer bağlılığı, yer bağımlılığı ve yer kimliğinin üç boyutu ele alınmaktadır. Her boyutun iki bileşeni vardır; buna uygun olarak, çok bileşenli yaklaşım, modelin ikinci seti içinde uygulanmaktadır. Bileşenler, parkın kullanıcıları tarafından, her bir yer duygusu göstergesinin düzeyini anlamak için derecelendirmeyi amaçlayan cümleleri içermektedir. Doğrudanlık özelliği ile ilgili olarak, bileşenler doğrudan katılımcılara kimlik, bağlanma ve bağımlılık düzeyleri hakkında direkt soru sormadığından, dolaylı teknik seçilir. Buna göre, bu bileşenler ve süreçler seti ile park kullanıcılarının yer duygusu seviyeleri ölçülür.

Sonuçların yorumlanması için öncelikle görüşme setinden elde edilen veriler ve bilgiler tematik olarak analiz edilerek alt temalar ve ardından temaları belirlenir. Böylelikle bu alt temalar ve temalar sayesinde ele alınan park için sürdürebilirlik bağlamında çıkarımlar ve önerilerin elde edilmesi sağlanır. Ancak alt temalar ve temalar oluşturulmadan önce kullanıcı yorumları olumlu, olumsuz, tarafsız ve genel olarak etiketlenmektedir. Olumlu ve olumsuz olmak üzere iki etiket, yer duygusu düzeyine göre belirleyici olarak kabul edilmektedir. SPSS yardımıyla olumlu ve olumsuz olarak etiketlenen yorumlar, yer duygusu ölçüm seti sonuçları ile birleştirilerek, olumlu ve olumsuz yorumlar ile kullanıcıların yer duygusu arasındaki ilişki ortaya konur.

Bu modelin uygulanabilirliğinin sağlanması için İstanbul'da bulunan bir halk parkı-Göztepe parkı örnek olarak seçilmiştir. Buna bağlı olarak, veri toplama ve veri analizindeki adımlar gösterilmektedir. Çalışmada 118 kişi (60 kadın ve 58 erkek Göztepe parkı kullanıcısı) ile görüşme yapılmış ve yer duygusu düzeyleri ölçülmüştür. Tematik analiz sonucuna göre 37'si olumlu, geri kalanı olumsuz olmak üzere toplam 129 kutupsal görüş elde edilmiştir. Göztepe Parkı kullanıcılarının yer duygusu ölçüldüğünde ise 5 üzerinden 2,61 puan aldıkları görülmektedir; bu da kullanıcıların parkla ilgili yer duygusuna sahip olduklarını göstermektedir. Genel olarak yaş ve cinsiyetten bağımsız olarak SPSS sonuçları, olumsuz yorumların yer duygusu düzeyi üzerinde olumsuz, olumlu yorumların ise olumlu yönde etkilediğini göstermektedir. Göztepe parkının sürdürülebilirliği için çıkarımlar ve öneriler kısmında temel olarak kullanılan toplam 24 alt tema ve toplam 16 tema türetilmiştir. Bu alt temalar ve temalar doğrudan park kullanıcılarının parkın fiziksel peyzajı ve sunulan hizmetlerle ilgili algı ve tercihlerinden türetilmiştir; bu nedenle park içi eylem ve uygulamaların da dikkate alınarak kullanıcıların yer duygusu düzeylerinin olumlu yönde etkilendiği, böylelikle parkın sürdürülebilirliğine katkı sağlandığı düşünülmektedir.

Özetle, park kullanıcılarının algıları ve tercihleri ile yer duygusu seviyeleri arasındaki ilişki karşılıklıdır. Park kullanıcılarının algılarını ve tercihlerini ve yer duygusu düzeylerini anlayarak ve ele alarak, parklar daha sürdürülebilir, yaşanabilir ve insan refahını destekleyici olacaktır. Buna göre, önerilen sürdürülebilir park modeli, park sürdürülebilirlik girişimlerini uyarlamak için yetkililer ve karar vericiler için kullanılabilecek özgün bir yaklaşıma sahiptir. Bu model, parkların sosyal açıdan sorumlu bir şekilde yönetilmesini sağlamak için kullanıcıları sürdürülebilirlik değerlendirmesine dahil etmenin önemini vurgulamaktadır. Ek olarak, sürdürülebilir park modeli, yerel toplulukları sürdürülebilirlikle ilgili park planlama, tasarım ve yönetimine dahil etmenin önemini vurgulamaktadır. Ayrıca, geliştirilen modelin sürdürülebilirlik girişimleri açısından daha fazla katılım ve desteğe yol açarak, yer duygusunun geliştirilmesine yardımcı olması ve toplumdaki sosyal uyum ve yönetimi teşvik etmesi öngörülmektedir.

1. INTRODUCTION

Open spaces or green spaces within the urban environment are identified as practical solutions that can relieve the current difficulties resulting from human development while providing a factual ground for the sustainable development of the host community. From the urban planning point of view, open spaces are parts of the urban landscape composed of various vegetation and function as living spaces. They are vital components within the city's lifeless body and determine its morphological structure. Open spaces, on the one hand, improve the environmental situation of cities by maintaining the balance between the natural and built environment, and on the other hand, provide suitable conditions for citizens to boost their quality of life since they are valuable in terms of environmental, social, cultural, and economic services. The importance of urban open spaces is so great that today, their existence in cities is considered one of the indicators of the sustainable development of communities. Both private and public open spaces as parts of the green infrastructure network of urban environments contribute to urban vitality, especially in increasingly urbanized societies. Among public open spaces, parks are recognized as critical public services and integral parts of the urban fabric that have strategic importance for people's well-being and quality of life.

Under the umbrella of sustainability, parks within urban environments offer critical environmental services such as biodiversity conservation, microclimate stabilization, and mitigation of urban built environment density. Besides environmental benefits, parks can provide sociocultural services, including community development and empowerment, social inclusion, civic engagement, social cohesion, sense of belonging, cultural vibrancy, and enhancing aesthetic appeal. Furthermore, either directly or indirectly, parks guarantee economic benefits too. In a direct way, the benefits involve strengthening the local economy through a rise in the monetary value of properties, municipality, and tourism revenue; in an indirect way, a decrease in health-related costs as a result of more physical activities and a reduction in environmental costs can be remarked on. In this sense, parks increase the chances of a sustainable local, regional, and global environment for the future, provided that parks themselves operate sustainably. Accordingly, considering the environmental durability, social vitality, cultural vibrancy, and economic dynamism of parks is of immense importance. Moreover, the appropriate adaptation of parks based on sustainability values influences the quality of parks which can significantly impact citizens' well-being. Consequently, comprehensively understanding and focusing on park sustainability helps benefit from this valuable source now and in the future.

As an inevitable stage in park sustainabilization, finding the extent to which parks are sustainable plays a crucial role in understanding the shortcomings and strengths of actions. In other words, assessments of parks based on appropriate criteria and indicators determine the current situation and their potential for reviewing and updating strategies for further proper implementations. Park sustainability assessment is an appraisal methodology that enables decision-makers to realize the effectiveness of strategies, actions, and implementations in creating sustainable parks.

Various benchmark tools function as frameworks demonstrating the domains that sustainability initiatives need to be applied within parks. These tools define sustainable parks by displaying the criteria and indicators based on pillars of sustainable development: environmental, social, cultural, and economic. The criteria and indicators with assigned points guide understanding the extent to which a park is sustainable in those domains. Indeed, these tools evaluate the sustainability of parks quantitatively. In addition, it is asserted that based on these tools, a park would be considered sustainable in case of reaching a reasonable number of scores. Therefore, a sustainable park is often treated as something to be attained simply by considering the results of the quantitative assessments.

There is a mounting interest in these park sustainability assessment tools because a park is supposedly considered sustainable when evaluated through the factors and parameters of these systems. However, questioning the authenticity of these tools and finding the answer to whether it is appropriate or sufficient to label a park as sustainable based on these systems' outcomes or not? Seems rational. Looking at this issue from a different perspective, these tools can be a shortcut to prove that authorities and decision-makers fulfill their sustainability commitment at all levels, from design to managerial. These tools evaluate parks based on authorities' information, and they do not directly integrate users into the evaluation process. Authorities and decision makers are the third parties regarding the parks' sustainability; indeed, the main actors within parks are people. Given the fact that parks are recognized as public spaces to satisfy people's needs by guaranteeing natural, economic, aesthetic, social, cultural, and health benefits (Wang et al., 2015; Chiesura, 2004; Wolch et al., 2014) that influence people's physical and mental development (Bedimo-Rung et al., 2005).

These tools might encourage the adoption of outwardly sustainable acts to increase profits. In other words, by solely pursuing the aim of reaching a particular score and asserting that the park is sustainable, they might falsely promote the activities construed as more environmentally friendly, socially responsible, and economic growth drivers than they are. Accordingly, the outcomes of the park evaluations can be used to mislead public opinion, which is recognized as greenwashing. While a societal system pretends to be green or act in a green way, this term is used to claim that the system is falsely considered green; it is a way to question the claimed environmentally friendly actions of individuals or organizations (Lippert, 2011). Accordingly, the sustainable park might be used as a label for a park that may not be truly sustainable.

Although these tools' role in trying to standardize or guide the sustainability actions and initiatives within the physical properties of parks by considering the latest sustainability planning, strategy, management, and implementation cannot be ignored, they are not comprehensive mediums to evaluate sustainability within parks. From these tools' perspective, the meaning of a sustainable park is limited to the quantitative appraisal of sustainability initiatives concerning physical features through obtaining information and data from authorities rather than the sustainability evaluation of a park through a qualitative approach in which park users contribute directly. As a result, park users who have a determining role in the efficiency of parks are excluded from the evaluation process, and their perceptions and preferences with respect to parks are not taken into account. A park cannot be conceived as sustainable without considering the sustainability concept as a totality in which people are the main actors; thus, solely utilizing these tools to guide the sustainability ambition in planning, design, implementation, post-implementation review, and management phases of parks might result in failure and inadequacies.

The interpretation of sustainability within parks through a qualitative approach in which people’s perceptions and preferences are centralized is closely tied up with investigating the degree to which users can benefit from this public space and its services. In other words, understanding the extent to which a park fulfills people's biological, psychological, and cultural needs. Indeed, meeting these needs results in people’s participation and generation of a sense of belonging towards the park and, subsequently, creating a sense of place. Therefore, measuring people's sense of place regarding a park and investigating factors influential in its creation are ways to understand the degree a park fulfills sustainability ambitions. Consequently, by highlighting the sense of place as a crucial indicator of sustainability, this study introduces a method for qualitative evaluation of park sustainability in which parks' users are involved in the sustainability assessment process. In this sense, the importance of the study lies in its holistic approach to park sustainability rather than solely relying on the quantitative assessment method of current sustainability assessment tools.

1.1 Aims and Objectives

The study aims to comprehensively review sustainability meaning within parks, focusing on parks’ role in bolstering human welfare and quality of life in urban environments. In addition, the study emphasizes the crucial role of sustainable parks in advancing sustainable development and tries to underline the essentiality of following sustainability principles within parks. It is crucial to indicate that following up on sustainability criteria and carrying out sustainable initiatives throughout parks is a complex and generally new field of research since sustainability itself is a comprehensive concept embracing different but connected aspects. Consequently, there is a need for a well-defined outline and definite meaning of sustainability within the park to understand how and by considering what characteristics a park can be sustainable. In this perspective, sustainability as an origin and sustainable development as a later established concept are discussed by investigating the true meaning and scope within the scholarly literature; this helps in understanding the relations of the sustainable development concept, its pillars, and its goals with parks. That is to say, one of the primary purposes of the study is to pose a coherent, sustainable park meaning.

Beyond discussions that mainly revolve around clarifying the significance of considering sustainability matters within the parks, the study aims to discuss park users' involvement in the sustainability assessment process. Accordingly, the study focused primarily on the ontological and epistemological dimensions of the users' role in the sustainability assessment of parks. It concentrates on the significance of including users' preferences and perceptions in park planning, design, and management. By incorporating community feedback and adjusting park features accordingly, parks will be the spaces that resonate with users and encourage sustainability. Thus, the study discusses the necessity of adopting a paradigm that encourages more user- and context-sensitive practices within the park, leading to sustainability. In other words, creating an environment meaningful for those who live in it is a manifestation of a sustainable park.

Since there is a strong correlation between the park users' perceptions and preferences regarding the park and their sense of place, the study emphasizes the concept of a sense of place as an essential indicator regarding park sustainability. Accordingly, this study aims to raise a discussion on correlating the sense of place with park sustainability and focus on indicating the sense of place concept as one of the significant drivers of sustainable development. Sense of place is influential in creating meaning for people and building bonds between users and the place, enhancing people's well-being and quality of life.

Such a user-oriented approach regarding sustainability evaluation is feasible through a qualitative method that is conducted with the direct participation of park users. For this reason, the study poses a component-based process model, namely the sustainable park model encompassing methods to measure park users' sense of place and determine parameters influential to its creation.

The proposed sustainable park model forms the core of a new epistemological framework of the human-environment relation regarding sustainability. Furthermore, the study indicates that a sustainable park model is an approach to sustainable park planning, design, and management. Thus, it will be a blueprint that authorities and decision-makers may use to develop their sustainability strategy and warrant further investigation in the park context; redesign, renovation, and rebuilding of parks. Accordingly, as a qualitative evaluation of park sustainability, the sustainable park model catalyzes further investigation in the park context and helps change parks' status to be sustainable.

In order to legitimize the sustainable park model as a qualitative approach concerning park sustainability, the study uses a park within Istanbul city. Parks as active green areas within Istanbul city have become more valuable in providing environmental, sociocultural, and economic benefits. Although the allocation of green areas in the form of parks within the housing and other city infrastructures needs to be considered, Istanbul has failed in this matter due to rapid development. Consequently, the number of green areas in the form of parks is limited depending on the size of the population. Based on reports from Istanbul municipality, the ratio of green area per capita is decreasing, so for each person living in Istanbul, only 6.4 square meters of green area is available. Consistent with The World Health Organization's (2012) recommendation concerning the ratio of green areas per capita needs to be a minimum of 9 square meters; however, the optimum ratio is 50 square meters per capita. Therefore, the green area per capita availability in Istanbul is far lower than the suggested minimum range. As a result, paying attention to parks' conditions within Istanbul city becomes essential and cannot be ignored. Albeit the quantity of parks within an urban environment is important, policymakers, urban planners, and landscape designers must also focus on their quality as well (Zhang et al., 2017).

Kadiköy district, one of the main districts of the Anatolian side of Istanbul, where the urban transformation process is experienced most intensely (Aydin Gök, 2021), is known as the city center for this part of the city. As in the whole of Istanbul and its districts, it is seen that the population has increased in the Kadiköy district as well through the years (Murat, 2007). The compactness in this part due to residential and commercial buildings, social and cultural facilities, and city infrastructure such as roads and highways, which are the main arteries of Istanbul, have resulted in the demolishment of green areas. Accordingly, the size of green areas and the number of parks is limited within this district. Göztepe park is one of the parks located in the Kadiköy district, which is categorized as a community park and, by encompassing a significant size of green space within the district's urban density, is an ideal area worthy of being preserved and improved. This park, with approximately 53000 square meters of green area, of which 39.882 square meters total is covered with lawn, is considered the lungs of this district.

Moreover, this park hosts various visitors from different neighborhoods, even other districts, because of its location, which is adjacent to Bağdat street, the commercial and business hub. According to Berkmen and Turgut (2019), Bağdat Street is defined as an important “identity place” and “prestige zone” for Istanbul throughout the historical process. Moreover, closeness to the coastline is another influential characteristic of Göztepe park in attracting users. In addition to its geographic location, Göztepe is a thematic park consisting of rose, tulip, and baroque gardens that attract various users. Recreational opportunities such as playgrounds and sports areas are also considered as the park’s attractions.

The fact that Göztepe park is a Green Flag Award winner in 2022 is a testament to its success in following sustainability criteria and achieving a high level of sustainability based on this park's sustainability assessment tools criteria and indicators. The Green Flag Award scheme is an internationally recognized standard that recognizes excellence in park management based on specific criteria related to sustainability, including environmental management, community involvement, and overall quality. Achieving this award requires that the park meets various sustainability standards, including sustainable practices in waste reduction, water conservation, energy efficiency, and biodiversity conservation. It also requires that the park has taken steps to involve and engage the community in park planning and management, promoting a sense of ownership and stewardship of the park. Beyond these criteria, the Green Flag Award also recognizes the park's overall quality based on factors such as cleanliness, accessibility, safety, and innovation. Based on this award, Göztepe park follows sustainability principles and provides a high-quality experience for visitors, enhancing its overall value to the community. As mentioned earlier, Green Flag evaluates parks based on data and information provided by authorities without directly integrating park users' perceptions and preferences.

As a result, this park is chosen to be examined qualitatively using the sustainable park model. Therefore, Göztepe park users participated in sustainability evaluation to understand the effectiveness of actions within the park and ultimately reach issues and implications to improve its condition. Thus, the study aims to reach the following targets within the case:

- The qualitative assessment of the park; conducting the interview to investigate parameters influential in Göztepe park users' perception and preferences,
- The measurement and analysis of the general sense of place level,
- The measurement and analysis of the various age groups' sense of place level,
- The analysis of entire data to specify the correlations; indication of potential contributors to the users' sense of place,
- The demonstration of implications and recommendations for sustainability-related implementations.

In this context, the study discusses the following questions, which are exceedingly important to be faced up to and answered, eventually leading to reaching the study's objectives and, subsequently, aims. Since sustainability is a broad concept, what is meant by park sustainability? How can a park operate sustainably? What is the sustainable park's role in advancing sustainable development? What are the sustainability criteria and indicators in current park sustainability assessment tools? How can people be involved in a park sustainability assessment? What is the sense of place, and how to describe its relationship with parks? How to explain a sense of place as an important indicator of park sustainability? What is the correlation between park users' perceptions and preferences and their level of sense of place? How to evaluate Göztepe park qualitatively by applying the sustainable park model within Göztepe park? What are the Göztepe park users' perceptions and preferences with respect to the park? What is the sense of place level for Göztepe park users? Finally, what are the actions and initiatives to accomplish park sustainability within Göztepe park according to the sustainable park model findings? To sum up, the main aims and objectives of the study are presented in the following diagram (Figure 1.1).

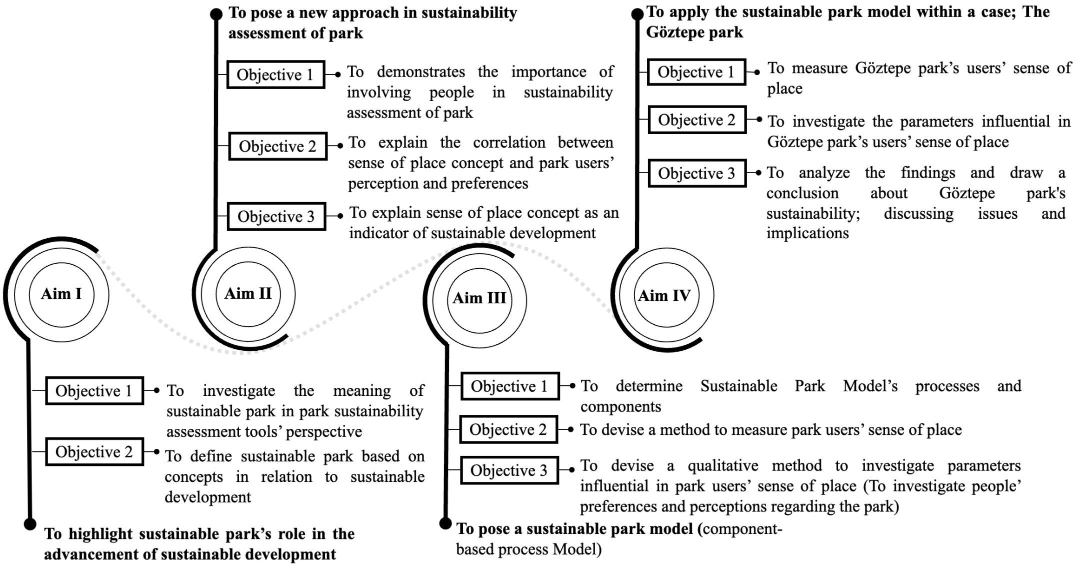

Figure 1.1 : The study's aims and objectives diagram.

1.2 Theoretical and Conceptual Framework

Even though sustainability is not a new idea, as it was the center of thought and methods to balance the consumption and reproduction of forest resources in the 17th century, its contemporary meaning and scope evolved during the second half of the 20th century with rising concerns about the earth's ability to sustain itself and the limits of solutions in maintaining human needs. In this context, the historian Arnold Joseph Toynbee (1947) stated that the twentieth century would neither be known by its chief characteristics, such as technological advancement nor as a period of political disputes and conflicts; however, it will be recalled as an era in which individuals strive to reach well-being for human society through thinking and adopting practices to accomplish this ambition. From this standpoint, Giddens (1999) believes that "At a certain point, however – very recently in historical terms – we started worrying less about what nature can do to us, and more about what we have done to nature. This marks the transition from the predominance of external risk to manufactured risk" (p. 26). The risk results from actions that technological inventions tend to respond to population growth and subsequent increasing demands for higher living standards (Giddens, 1999).

Concerning what Giddens called "manufactured risk," human beings have not faced it in the past, and there is no definite precaution or experience to deal with it (Williamson et al., 2002). As Jenks (1993) argues unequivocally, the difficulties and problems that the technocratic civilization causes will be ahead of the betterment of the earth. He continues that if solutions are applied unevenly and unsystematically, the problems will increase rapidly because humans become dominant, and the unfavorable prevailing conditions continue to exist. According to Harvey (1998), it is crucial to grab the idea that materially annihilation of planet earth is infeasible; however, human beings alter the materials of the environment in order to ensure comfort, even if these actions might not end in satisfactory results; indeed, it is essential to understand that these actions have consequences both beneficial and adverse for other inhabitants.

Revolving around the discussion to transform the current situation and improve conditions, in other words, sustain and extend them over the long term without limiting the development, a new concept has emerged that deals with development in a sustainable way and is known as a proper approach to address the "manufactured risk." The sustainable development concept gives insights into most aspects of the human world, from business to technology to the environment, design, and the social sciences. Indeed, it is considered an initial phase for the evolution and improvement of a strategic point of view regarding the contemporary explanation of sustainability.

> Humanity has the ability to make development sustainable – to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs . . . Sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs. (WCED, 1987, p.17)

This most quoted definition has played a catalytic role in promoting the subsequent adoption of the three overriding themes in human activities: consideration of the needs, development without destruction, and minding present and future generations. In this light, the three most significant objectives are listed as "safeguarding long-term ecological sustainability, satisfying basic human needs, and promoting inter-and intra-generational equity"; that is to say, sustainable development, first and foremost, is about fulfilling these objectives (Holden et al., 2014, p.131).

Additionally, the sustainable development concept is recognized initially by three economic, social, and environmental pillars. These three pillars are known as the "triple bottom line" concept introduced by Elkington (1997). In fact, the three pillars are interdependent, and in the long run non-can exist without the others (Morelli, 2011). Sustainable development paves the way to reach sustainability aims by encompassing a comprehensive approach and temporal processes (Shaker, 2015). In 2015, almost three decades after its first introduction, sustainable development goals, which are also known as Global Goals, a set of seventeen interconnected goals, were devised by The United Nations General Assembly to be a blueprint for achieving a better and more sustainable future all by the year 2030. The SDGs have a multidisciplinary approach to addressing interlinked issues and demanding interconnected governance responses (Stevens & Kanie, 2016).

Sustainable development is a multidimensional concept aimed equally environmental component in sustainable consumption of natural resources, protection of environment factors, health care for the population, the social side by equality, quality of life and stop poverty, economic by increasing sustainable (Teodorescu, 2015). “Married to the idea of development,” sustainability points to the modernist flow, but also, its focus on cultural heterogeneity is an obvious manifestation of the postmodern standpoints (Williamson et al., 2002). Accordingly, as both driver and enabler of human actions, culture plays a critical role in sustainable development; thus, it needs to be considered the fourth pillar of sustainable development.

According to Williamson et al. (2002), the definition of sustainable development comprises two key matters. Firstly, it holds the concept of needs in two ways. First, it underscores the consideration of the primary needs of human beings, including housing, food, and clothing, which are recognized as the necessities of life. It emphasizes the general aspect of the concept of need as providing comfort and wellness for human beings. Secondly, it accepts the concept of consistency concerning society’s demands and the environment’s ability to guarantee them. In this light, sustainable development is not merely about maintaining the situation constant but also enhancing the quality of life within the boundaries of ecosystem capacity.

Indeed, sustainable development determines the role of all kinds of organizations in limiting the boundaries of their actions on environments in order not to prevent their ability to meet present and future needs. Consequently, it demonstrates forward-looking approaches and principles that clarify the necessity for integration and coordination in development planning to provide an appropriate ground for environmental, social, economic, and cultural sustainability. Accordingly, sustainable development has become both a target and an approach for all agendas, and it is still high on the policy-making procedures on national and international scales. Thus, the sustainable development concept originated from the sustainability idea and has become the center of thoughts and actions on every scale, including global, regional, and local; consequently, various approaches have been taken to implement this concept in diverse fields. Bettencourt and Kaur (2011) stated that the "concept of sustainable development…now pervades the agendas of governments and corporations as well as the mission of education and research programs worldwide" (p. 19540). Lafferty (2004) describes it as "is now like 'democracy': it is universally desired, diversely understood, extremely difficult to achieve, and won't go away" (p. 26). Therefore, the sustainable development concept cannot be disregarded and excluded from all actions of man.

Unquestionably, sustainable development is still a significant concept three decades after the date it was coined with the publication of "Our Common Future," commonly referred to as the Brundtland Report. However, the concept must be clearly defined to become a helpful tool. Although the sustainability idea and a subsequent concept of sustainable development have been accepted in diverse areas of human activities, they have been exposed to various interpretations and critiques over time.

Harrington (2016) believes that, the literature on sustainability generally lacks an articulated compilation or synthesis of overarching principles useful to applied and basic efforts related to sustainability and sustainable development. Moreover, there are also indications regarding the problem in defining these two overriding concepts in other studies, including Moldan and Dahl (2007), who expressed that the problem as the lack of quantifiable definition, and Bell and Morse (2008), who stated that the attempts are "futile" in finding the proper explanation. Thus, notwithstanding the general and common meaning of sustainability being applied in every discipline, the lack of a clear definition of sustainable development results in ambiguousness and prevents reaching ambition. In other words, the reason behind concerns related to sustainability and the evidence supporting the idea is apparent. However, the lack of answers to how sustainability initiatives can be applied is undefined. Therefore, the concept must be adapted to the contemporary complexities and requirements of every area of human activity; thus, it is necessary to establish new principles and precisely define the implementation area. As a matter of fact, sustainability as the state and sustainable development as the process of reaching that state need to be explained in each area of human activity.

The quest for sustainability in every area of human activities to accomplish sustainable development objectives manifests itself within parks. Although parks' sustainability is a more recent field of study, there has been an increasing demand for transforming parks into a sustainable state, which indicates sustainability matters essentiality. In general, the definition of a sustainable park is denoted by park sustainability assessment tools. Park sustainability assessment tools clarify the subfields under the domains in which sustainability practices must be applied and elucidate the process. Meanwhile, the potential of sustainability assessment in urging organizational change toward sustainability has been pointed out by several authors (Lambrechts et al., 2013; Ramos & Pires, 2013). Alonso-Almeida et al. (2015) underlined the pivotal role of sustainability benchmark and ranking systems as a reporting tool that documents current sustainability practices and alludes to using the results in qualitative and quantitative methods in future sustainability implementation.

The Green Mark for parks based in Singapore is a park sustainability assessment tool that evaluates parks based on sustainability criteria; indeed, it operationalizes declarations and charters of sustainable development. Moreover, it is developed based on international park sustainability benchmarks, including Green Flag, and Sustainable Site Initiative (SITE) (Power & Sekar, 2011). The Green Mark for parks focuses on resource management, quality, and environmental outcomes of parks. Based on this benchmark, a sustainable park is defined as a recourse self-sufficient landscape that minimizes environmental impacts by devising policies for resource consumption and decreasing waste production. In addition, a sustainable park enables the ecological cycle to secure its endurance while providing grounds for securing the societal needs of communities within its economic boundaries (Power & Sekar, 2011). Green Mark for parks evaluates park sustainability based on six categories: "waste & material minimization, water efficiency, energy efficiency, park management, conservation & heritage, and other green features." Based in the United Kingdom, Green flag rates parks according to "a welcoming place healthy, safe and secure, well maintained and clean environmental management, biodiversity, landscape and heritage, community involvement, marketing, and communication management" categories. Sustainable site initiatives (SITE) is a sustainability performance benchmark and rating system based in the United States that with respect to "site context, pre-design assessment and planning, site design-water, site design- soil and vegetation, site design- material selection, site design- human health and well-being, construction, operations and maintenance, education and performance monitoring, innovation or exemplary performance" categories evaluate parks sustainability.

In addition to the tools above, the Global Sustainability Assessment System (GSAS) for Parks based in Qatar also evaluates parks based on seven categories, including "urban connectivity, site, energy, water, materials, cultural & economic value, management & operations." GSAS caters as a guideline for decisions and policymakers to implement sustainability criteria within parks to attain the targeted level.

All these tools are devised based on the definition of the sustainable development concept, its pillars, and goals. Indeed, the sustainability-related principles and concepts in literature manifest within these tools. However, they primarily emphasize environmental and economic sustainability and, secondarily, socio-cultural sustainability. Park sustainability assessment tools address the economic balance between the social and environmental services parks provide. They focus on the matter of properly functioning in alignment with the efficiency of available resources (Power & Sekar, 2011). They leverage the fact that the sustainability of social and environmental dimensions is strongly reliant on economic sustainability.

Accordingly, from park sustainability assessment tools perspective, park sustainability is contingent to applying the principles of following concepts: green space management (Smaniotto Costa et al., 2008; Pantaloni et al., 2022), energy management (Lee, 2014; Midilli et al., 2006), water management (Larsen & Gujer, 1997; Giupponi et al., 2006), waste management (Haggar, 2007), material management (Parkin et al., 2003), wildlife and habitat management (Kowarik et al., 2020) green transportation (Shah et al., 2021), participatory design approach (Smith & Iversen, 2018; DiSalvo et al., 2012), universal design (Kadir & Jamaludin, 2013; Vavik & Keitsch, 2010), inclusive design (Heylighen, 2008; Maisel et al., 2017), education-oriented design (Venkataraman, 2009), recreation management (Winter et al., 2019; Manning et al.,

2011) recreational facilities, and amenities (playground, sports facilities, service areas, urban furniture).

As the matter stands, current park sustainability assessment tools are primarily about the quantitative evaluation of physical entities of parks based on the concepts mentioned above. Although these tools' criteria and indicators are devised to increase sustainability awareness and knowledge, they operate one-dimensionally. That is to say, either the authorities apply for sustainability evaluation of parks to measure the park performance or utilize the benchmark as a sustainability initiative framework for sustainability planning and implementation. For this reason, these tools mainly accentuate the environmental and economic dimension of park sustainability because environmental and economic parameters are summarized in quantitative data and are eligible for quantitative discussions and conclusions.

People are one of the main reasons behind the park's existence; parks are considered public goods in the urban environment, so people are the main actors of the parks. While discussing park sustainability, users are the focal point. The socio-cultural sustainability of the park is contingent on people's experiences, perceptions, and patterns of use. Consequently, people need to participate in the evaluation process to understand the extent of park sustainability and reach issues and implications. Quantitative and qualitative evaluation methods are essential in labeling a park sustainable, as qualitative and quantitative methods complement sustainability discourses.

Qualitative methods are beneficial in offering a deep understanding of complex phenomena through precise descriptions. By utilizing the qualitative method, unique or unexpected issues and events can be pursued. Meanwhile, it enlightens people's experiences and interpretations of events from various backgrounds. In addition, it allows people to be part of the decision-making process. The qualitative method conducts preliminary explorations to develop or generate theories and test and legitimize hypotheses moving toward explanations. Hence, this study aims to establish a qualitative method for assessing the sustainability of parks.

For doing so, one of the major theoretical basis of this study is grounded on the following quote from the Brundtland Report; “Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life” (WCED, 1987, p. 44). In addition, the third goal of sustainable development, known as good health and well-being, confirms that people need higher living standards and welfare to meet their desires. While construing the mentioned explanations of sustainable development concerning a place, it is evident that the sustainability of a place is linked to satisfying users' desires, which is possible when people's biological, psychological, and cultural needs are provided.

Hannah Arendt stated that, there is an increasing gap between people and the built environment, resulting in problems that today's societies face (Arendt, 1958). That is to say, people's needs conflict with the built environment. Accordingly, the "loss of nearness" in Heidegger's words, or a "loss of intimacy" in Bognar's words, between individuals within a community and individuals within the world are inevitable (Bognar, 1985). Understanding individuals and built environment relationships has become important as it is a way to prevent the worsening of the human condition in mass societies (Bognar, 1985). In addition, scrutinizing the impacts of this relationship and offering solutions are recognized as ways to secure the well-being of individuals and increase people's quality of life, subsequently ensuring sustainability with respect to a place. The built environment needs to relate to the people who inhabit it; this connection is created when human needs are met.

Accordingly, the built environment must enable individuals to share "cultural peculiarities of thought and belief, perception, emotional reaction, and imagery" with others (Berlyne, 1971). Otherwise, there is a rapture between individuals and the place since they ought to establish a meaningful correlation for satisfactory inhabitation in a built environment. Both natural and built environments cannot be merely considered physical entities without noticing their interplay with human beings' senses, emotions, and beliefs (Pellitero, 2011). These reflections on the surrounding environment have a biological and psychological basis as "the sense of pattern," "appreciation of rhythm," "the recognition of balance," and "sensitivity to harmonic relationships" are carried by genes that are adapted to environmental conditions (Smith, 1980). Schama (1996) stated that the built environment also responds to human beings' cultural values as man's imagination shapes it. Apparently, to reach the satisfaction point in life, it is essential to maintain biological, psychological, and cultural needs; it is a way to feel close to the environment and strengthen the sense of belonging and participation in a place (Norberg-Schulz, 1979).

Norberg-Schulz (1979) believed that by generation of sense of belonging and participation towards a place brings character to it. “In general, a place is given as such a character or atmosphere. A place is, therefore, a qualitative, “total” phenomenon, which we cannot reduce to any of its properties, such as spatial relationships, without losing its concrete nature out of sight” (Norberg-Schulz, 1979, p. 414). Norberg-Schulz explicitly adopted a phenomenological and Heideggerian approach and stated that: “the spaces where life occurs are places…A place is a space which has a distinct character” (Norberg-Schulz, 1979, p. 5). The character here is interpreted as genius loci by Norberg-Schulz. Genius loci, the spirit of the place or sense of place, is a “distinctive character or atmosphere of a place with reference to the impression that it makes on the mind” (p. 414). The built environment components visualize genius loci as they give meaning to the places where human beings live (Norberg-Schulz, 1979). It should be noted that genius loci is the Latin definition of sense of place (Jackson, 1994). The character of the place, the spirit of the place, genius loci, and the sense of place have the same meaning and are often used interchangeably within literature (Jive´N & Larkham, 2003).

The significance of each component in the built environment depends not only on its relationship to other components but also on its relationship to people who come together in that environment (Appleton, 1975). Therefore, the meaning of the built environment is not limited to the formal representation of its components in an objective order but is conceived as a broader sense of place and time in accordance with human perception in relation to them. Norberg-Schulz (1979) argued that preventing losing the spirit of place is contingent on respecting it; if not, the built environment loses the qualities that provide people the sense of “belonging and participation,” resulting in deprivation of meaningful totality and loss of importance in protecting and cultivating the world. In other words, it is a probable “loss of place” (Costonis, 1989). Accordingly, human beings need meaningful places to live. It is the primary reason distinguishing them from other creatures “in being able to conceptualize and order environmental phenomena into a coherent pattern of images, expectations, and meanings," as it is a way of coping and dealing with the surrounding environment (O'Riordan, 1976).

In this context, a sense of place is described as "how different individuals and groups, within and between places, both interpret and develop meaningful attachments to those specific areas where they live out their lives" (Castree, 2003, p. 170).

> Sense of place refers to the emotive bonds and attachments people develop or experience in particular locations and environments, at scales ranging from the home to the nation. The sense of place is also used to describe the distinctiveness or unique character of particular localities and regions. Sense of place can refer to positive bonds of comfort, safety, and well-being engendered by place, home, and dwelling, as well as negative feelings of fear, dysphoria, and placelessness. (Foote & Azaryahu, 2009, p. 96)

A sense of place is a composition of social structures interplaying with the physical environment. Stedman (2002) defined a sense of place as a combination of meanings resulting in satisfaction with a particular place held by a group or individual within a community.

Sense of place is associated with behavioral, cognitive, and emotional components. These are also known as human-place interaction dimensions. According to Canter (1977), a place involves three interconnected dimensions: "form," "imagination," and "activities." The author believed that the quality of a place can be defined with these three dimensions. Montgomery (1998) listed these attributes as "activities," "physical setting," and "meaning." In the same manner, Punter (1991) defined the three components of the sense of place, including "form," "meaning," and "activities." Falahat (2006) developed the model of Punter (1991) and added another component named individual features; thus, the four components of physical features, individual features, activities, and meaning influence place identity and place dependence, hence the sense of place. Furthermore, Salama and Azzali (2015) distinguished the three attributes as functional, social, and perceptual. According to Hashemnezhad et al. (2013), the interaction between humans and the surrounding environment is defined via three behavioral, emotional, and cognitive aspects.

Table 1.1 : Human-place interaction dimensions.

Theorician	Human place interaction dimensions
Canter (1977)	Form
	Imagination
	Activities
Punter (1991)	Form
	Meaning
	Activities
Montgomery (1998)	Activities
	Physical setting
	Meaning
Falahat (2006)	Physical features
	Individual features
	Activities
	Meaning
Hashemnezhad et.al (2013)	Behavioral
	Emotional
	Cognitive
Salama and Azzali (2015)	Functional
	Social
	Perceptual

Sense of place is conjoined with three indicators: place identity, place attachment, and place dependence (Jorgensen & Stedman, 2001). In summary, place identity refers to those dimensions of self that define an individual's or community identity about the physical environment; while Place dependence is about the interrelation of people with a physical setting as a result of needs being provided by that place (Brown & Raymond, 2007). Place attachment is defined as a complex emotional bond and familiarity created from long-term experience and generation of meaning regarding a place (Tuan, 1974; Kaplan,1995; McCunn & Gifford, 2014).

In several studies, the sense of place has been used as a practical concept concerning parks (Bazrafshan et al., 2021; Sıvalıoğlu & Berköz, 2016; Farnum & Kruger, 2005; Mohanty & Chani, 2017). For instance, Sıvalıoğlu and Berköz (2016) investigate user satisfaction by emphasizing the role of place attachment for national park users within five different parks in Turkey. In contrast with the study done by Jorgensen and Stedman (2001), in which the authors denoted place attachment, place identity, and place dependence as indicators of the sense of place concept, Sıvalıoğlu and Berköz

(2016) claimed that place attachment has the same meaning as the sense of place. As a result, they used place identity, place dependence, place familiarity, and place affect while investigating users' satisfaction. However, Bazrafshan et al. (2021) conducted qualitative research to investigate the sense of place of Afghan immigrants and permanent Iranian residents towards a park based on three indicators of place attachment, place identity, and place dependence likewise, the research conducted by Jorgensen and Stedman (2001). On this account, this study uses Hashemnezhad et al. (2013) human-place interaction dimensions category and adds the demographic dimension as the fourth primary dimension. Moreover, the three indicators of the sense of place, namely place attachment, place identity, and place dependence, are used to measure park users' sense of place.

Since the study aims to determine how a place can ensure users' sense of place, the qualitative approach is specifically influential in gathering information about parameters influential in the sense of place creation. Therefore, this study uses Patton's (2001) qualitative approach, which is explicitly linked with human-place interaction dimensions, as the author listed behaviors & experiences, opinions & values, feelings & emotions, knowledge, sensory, and background as bases for conducting researches in which people are included.

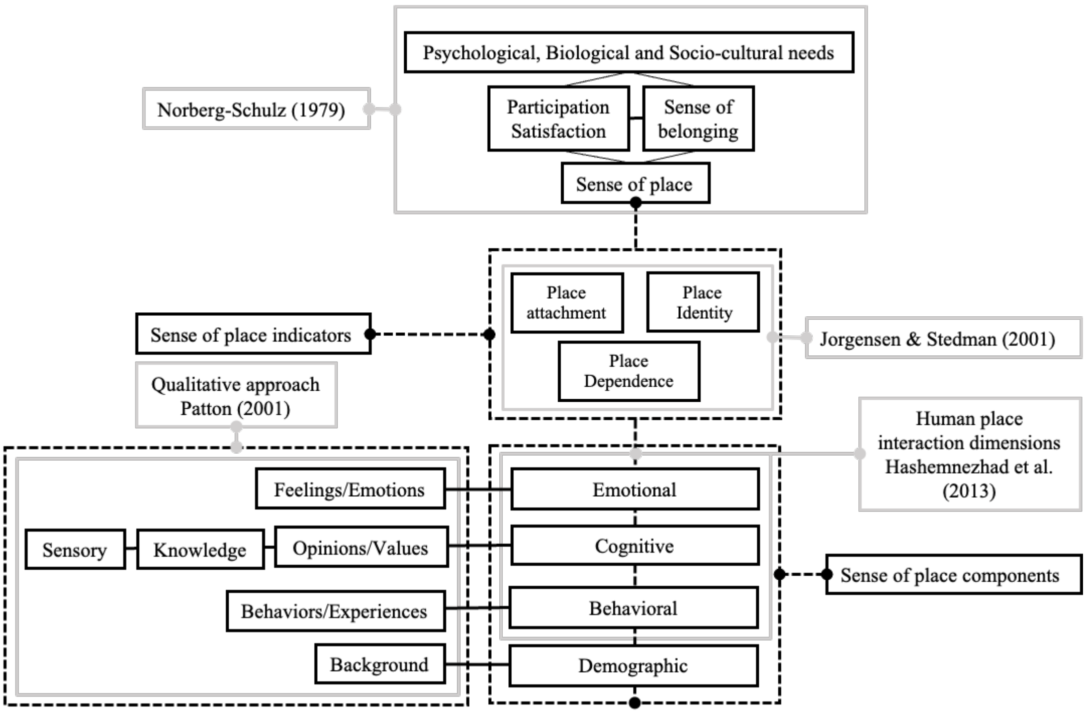

Figure 1.2 : Theoretical and conceptual framework diagram.

1.3 General Expectation

As a result of the contemporary sustainable development movement and the crucial role of parks in its advancement, authorities have begun to figure out and act upon their sustainability responsibilities in every corner of the world. They have commenced endeavoring to follow up on sustainability ideas in their strategies and trying to initiate actions to thwart the adverse impacts by implementing policies with respect to practices within parks to fulfill sustainability ambitions. However, the inadequacy of the cities in meeting the rapidly increasing population demands due to the pressure of environmental and economic restraints, as well as lack of competency in management, are known as obstacles in the way of following sustainability criteria within urban environments. Authorities confront various challenges and difficulties to which they each respond with various solutions and initiatives. However, the transition to a more sustainable scheme appears to be complex and demanding, but creating sustainable parks is worthwhile and will benefit the community now and in the future. Applying sustainability principles in parks helps reduce the cumulative effect of environmental, social, cultural, and economic problems, thereby preventing forthcoming degradation in these domains.

Park sustainability benchmark and assessment tools, which also function as rating systems, have the ability to urge parks to support natural resources and operate sustainably by protecting existing ecosystems and regenerating the ecological capacity that has been lost. Furthermore, these tools try to demonstrate the monetary value of environmental services as they display indicators for energy efficiency, water efficiency, monitoring, and controlling waste and materials; as a result, they guarantee economic benefits too (Power & Sekar, 2011). Additionally, they promote initiatives for social sustainability as they focus on the needs and desires of people within park boundaries since social sustainability is about guaranteeing the community's demands (Woodcraft et al., 2011).

Despite these tools' efforts to achieve the sustainability goal, they have failed to include park users, who have an important contribution to the fate of park sustainability. Therefore, various challenges and barriers influence the progress of parks in becoming sustainable; thus, addressing the matter of including users in the evaluation process facilitates progress. That is to say, authorities need an inclusive and comprehensive solution to evaluate sustainable activities within the park; a model to deal with different situations that are constantly changing. Hence, a conceptual model with clear visions and an elucidative process to utilize for future development and tackle all possible forces and impacts. Therefore, the significance of this study lies in its specific concern in posing the sustainable park model, which considers park users as the leading actors in guiding the sustainabilization process.

Regarding the sustainability performance complexity within parks, the sustainable park model will be a beneficial driving force or an action plan while developing strategies and responding to challenges in a timely manner. It also will be the base for later addition and alterations of information to produce and reproduce solutions and updates to obtain better results.

On the other hand, the presented sustainable park model will question the initiatives regarding securing the biological, psychological, and cultural needs of people considered vital in maintaining the connection between individuals and parks, leading to the creation of meaning and generation of a sense of place. That is to say, the process of park sustainabilization based on this model, along with applying principles in respect to criteria and factors of current park sustainability assessment tools, will smooth the way of integrating the sustainable development objectives in park operations. Hence, the park will meet the needs of individuals and society at large now and in the future.

As a practical implication, the proposed model will be a useful and reliable guide functioning as a checklist for authorities to understand deficiencies and shortcomings of actions for later modification and distinguish the domains with the potential to apply sustainability practices. Subsequently, this action enhances the knowledge regarding sustainable initiatives that can be a base for later sustainable park constructions. In terms of social implications, it is hoped that the findings from this study encourage substantial change in sustainability initiative implementations within parks. Moreover, it would be of use to authorities to consider sustainability as a comprehensive matter within parks and strengthen their position as leaders in developing the city or region where they operate in a greener and sustainable way. Moreover, from the perspective of knowledge transition, sustainability ideas can be transmitted from parks to the community to ensure affirmative action to fulfill the regional and global sustainable development target, which is another favorable social implication of this study.

Additionally, another aspect of this study is about encouraging competition among municipalities to develop best practices and strategies concerning the sustainability of parks and improving their current situation. Moreover, the collaboration of municipalities for exchanging knowledge and practices, especially among Istanbul parks, is one of the expectations of this study. It will incentivize change in other parks and help them initiate sustainable park projects to enhance and develop their sustainable scheme. The continuous and fruitful exchange will have straightforward approaches and outcomes, making solutions even more valuable. Indeed, the model promotes methods that comprise people as key elements in decision-making and encourages the idea of democracy and community empowerment.

Last but not least, the study suggests solutions for park enhancement by drawing conclusions based on issues and implications derived from the outcomes of the qualitative evaluation of Göztepe park. This reveals the dynamics pivotal in implementing sustainability policy and initiatives within Göztepe park to ensure users' needs.

1.4 Methodology/Methods

Since the primary concern of this study is posing a sustainable park model that is based on a qualitative approach, this dissertation challenges and rethinks the sustainabilization process of parks by addressing a holistic sustainability meaning and scope within parks. As a stepping stone, the study aims at understanding the relationship between sustainability idea, sustainable development concept, its pillars, and goals. An exploratory literature review helps to provide a broad approach to the subject matter and reveal the true meaning of sustainability. Indeed, it provides ground to reveal the relation between the sense of place and the sustainability idea.

Besides underlaying the importance of sustainable parks in advancing sustainable development, the study reviews prominent park sustainability assessment tools. The Global Sustainability Assessment System for Parks (GSAS) based in Qatar, the Sustainable Sites Initiative (SITE) based in the United States, the Green Mark for Parks based in Singapore, and the Green Flag based in the United Kingdom are examined to understand the meaning of sustainable park in these tools' perspective. Accordingly, an analytical review of various studies on the sustainability matter of parks, collecting and classifying the criteria and indicators, and examining interrelationships between different involved factors in this subject helps conceptualize the sustainable park model. In other words, defining sustainability-related concepts in the park context robusts the study's theoretical foundation.

In the subsequent phase of the study, a component-based process model is used to be the base for the sustainable park model. Since a component-based process model is a template involving components and process allows for tracking the sequences in qualitative assessment. In other words, the hierarchy of functions, components, responsibilities, and interrelations is described with this model's help. Accordingly, the component-based process model describes details and the steps necessary for organizing and executing qualitative research within a park. The model consists of two sets of components and processes: the first set, namely interview, and the second one, namely sense of place measurement. Each set consists of components, sub-components, and processes.

The interview is designed to understand the parameters influential in park users' sense of place. Indeed, the interview is designed to understand the interplay between users and the place components by investigating users' perceptions and preferences regarding them. The interview set consists of two parts: interview- design and interview- findings. The first part consists of four main components: dimensions, focuses, contexts, and contents, which help to design the questions and locate them into categories. As mentioned earlier, the dimensions are behavioral, emotional, cognitive, and demographic, while the focuses are behaviors & experiences, opinions & values, feelings & emotions, knowledge, sensory, and background. The contexts of questions are based on concepts derived from sustainable park meaning through literature and park sustainability assessment tools, which also specify the questions' content. The study uses the semi-structured interview style, which consists of open-ended questions. However, more specific and detailed questions are also asked based on the participants' responses.

The second principal part of the interview set, identified as interview- findings, consists of thematic analysis, which is recognized as systematically analyzing the findings of interviews. In general, thematic analysis is commonly used to analyze and synthesize data in qualitative research. The thematic analysis includes six steps: "Familiarizing yourself with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, producing the report/manuscript"

(Braun & Clarke, 2006). It must be noted that the study adds another step known as labeling, which pertains to labeling selected codes to distinguish them as positive, negative, impartial, and general. Accordingly, the study will use these seven steps to analyze data gathered from interviews leading to the discussion.

The second set of the model measures the sense of place of park users regarding the park. According to Shamai and Ilatov (2005), the scaling structure of the sense of place is characterized by four dimensions, including "polarity, directness, components, dimensions." By these four dimensions, the scaling approach of the model is determined. While discussing polarity, this model uses semi-polar scaling ranging from not having a sense of place to the positive pole. Accordingly, the scale range includes three scales, namely no sense of place, yes but a low sense of place, and yes and high sense of place.

Regarding the dimension, the model uses a multi-dimensional scale approach. The three dimensions of place attachment, place dependence, and place identity are considered important indicators of a sense of place. Each dimension has two components; correspondingly, the multi-component approach is also applied within the second set of the model. In relation to the directness attribute, the indirect technique is selected since the components are not directly asking participants about their level of attachment. However, the components are designed in the form of statements depending on the early study by Jorgensen and Stedman (2001) and Hammit et al. (2006). Respondents are requested to rate each component from 0 to 5; 0 indicates no relevance, and 5 indicates high relevance.

Göztepe park is selected as a case study to demonstrate the way to conduct the qualitative evaluation by applying the sustainable park model in a park. Göztepe park, located in the Caddebostan neighborhood of the Kadikoy district related to the Anatolian side of Istanbul, presents an ideal opportunity to be evaluated qualitatively with respect to sustainability. This park has been used since the late 1980s, with an area of approximately eight hectares. With the new regulations implemented in 2013, the park has become one of the public spaces used extensively by the people. Briefly, the park consists of the entrance area designed as a Baroque Garden, the rose garden with an ornamental pool, a central part associated with a dry pool where musical water shows are held, two children's playgrounds, a sports area equipped with exercise equipment, rest areas, plant and flower show areas, walking paths and a public restroom. There are fifteen entrances allocated to the park, three entrances from the north of the area, eight from the east, and two for each the west and the south directions. Seven tennis courts and some entrances are closed for use due to the current metro station construction site.

To determine the parameters related to park users' sense of place, 118 people, including 58 male and 60 female individuals, participated in the interview. They are selected randomly present in the case to be interviewed and observed for conducting the qualitative evaluation. It should be noted that, due to Göztepe park characteristics, the users are heterogeneous since people living in different districts with diverse socio-economic and socio-cultural characteristics are also among users. However, in this study, all participants live in the park's surrounding neighborhoods, including Göztepe, Caddebostan, Erenköy, and Fenerbahçe; thus, the interview was carried out with local people.

Additionally, the users' profiles are changing constantly due to urban transformation projects in this area. The areas close to Bağdat street have been intensively under the transformation and renewal process, where the renewed constructions have started to be resettled by new users (Berkmen & Turgut, 2019). Therefore, this issue can be remarked as one of the study's limitations as the constant changes in the demographic features of users affect their preferences and perception regarding the park and, ultimately their levels of the sense of place.

Concerning the users' profile, this study is conducted with the participation of people including adolescents, young adults, adults, middle-aged, and elderlies. Accordingly, children under the age of 12 years are not included. This is because obtaining information from children younger than four years needs a different approach. Moreover, children between 4 and 11 years old are the most challenging due to their linguistic and cognitive development. Therefore, unless the appropriate interview method is used, the findings' reliability and validity are not acknowledgeable because children at this age are prone to stimuli during the interview process, which can direct their answers in a different path. Furthermore, data collection from children of these ages needs particular consideration as their personal development varies regardless of chronological age (Kortesluoma et al., 2003).

The interviewing procedures are impartial and constitute general and detailed questions without polar or yes or no questions to minimize the risk of intrusion and manipulation, as it is essential not to influence participants' answers positively or negatively. Moreover, to find out the factors influential in creating a connection between people and the park and understand the meaning of the place for users, they are subjected to rate statements regarding place identity, place dependence, and place attachment to measure their sense of place regarding Göztepe park (Total number of 6 statements; two for each indicator). The data is entered, organized, and analyzed with SPSS software. Using SPSS to analyze the correlation between park users' positive and negative views with their sense of place level can provide valuable insights into the factors that influence park users' sense of place and help park planners and designers create more user-friendly environments.

The study reports and discusses the findings of the qualitative assessment in three sections. First, the interview findings are summarized based on question contexts. In this section, namely the discussion, interpretations, explications, and linkages with the literature's relevant research develop ideas and tentative theories. Later, based on the sub-themes and themes, recommendations and implications are presented. The second section explains the results of sense of place measurement. The third and last part reports the correlation between sense of place levels and interview results.

1.5 Research Structure

The study's main body consists of four chapters with interconnected phases and steps leading to accomplishing the study's aims and objectives. The first chapter, Sense of place: An Approach Toward Sustainable Development, consists of two phases. Phase 1A refers to investigating the meaning of sustainability and sustainable development concepts. In addition, the emergence of sustainable development is explained through a review of conferences and summits. Later, sustainable development is defined via interrelated concepts coined by Jabareen (2006). Within this part, the study adds eighth concept, placemaking concept to theoretical framework of sustainable development. Phase 1B includes discussions revolving around investigating the interrelation between the sense of place concept and sustainability; meantime, the sense of place and its indicators are explained. The study is conducted through three phases within the second chapter entitled Park in the Context of Sustainable Development. The importance of parks in advancing sustainable development is described by highlighting environmental, social, cultural, and economic benefits within phase 2A.

In addition, parks as an integral part of public spaces within the urban environment are defined through their typologies, including pocket park, neighborhood park, linear park, community park, district park, urban park and national or conservatory park. Typologies are attributed to specific characteristics such as area/size, service radius, user profile, visit length, typical density (Person per hec.), types of the surrounding environment, and types of amenities and facilities.

In phase 2B, the meaning of park sustainability is investigated by reviewing the current park sustainability assessment tool. Additionally, the sustainable park concept will be defined in a more detailed and precise manner through an in-depth literature review of its terminology and concepts relevant to it.

The third part of the study consists of two phases, mainly about devising the sustainable park model in which the components and process of the model are determined. The interview-design, within phase 3A, is devised upon the inferences of the previous chapters. Moreover, the data analysis process, which is thematic analysis, is also discussed in this phase. Throughout phase 3B, the scaling system of measuring the sense of place via rating, polarity, dimensions, and components is explained.

The study conducts the qualitative assessment of Göztepe park based on the sustainable park model within the fourth chapter of the study. In phase 4A, the study reviews Göztepe park and illustrates park characteristics via site plan and photographs. Throughout phase 4B, the interview and sense of place measurement results are reported and analyzed for later discussion and conclusion. Consequently, the study enlightens the factors that need to be considered within sustainability planning and implementation in Göztepe park.

Ultimately, the conclusion will be constructed on the analyses, interpretations, and discussions done throughout the study. This study will illuminate the essentiality of considering the qualitative assessment of park sustainability as complementary to quantitative appraisal. Park users need to be considered while discussing sustainability. Furthermore, the study emphasizes the role of authorities and decision-makers in following sustainability criteria as they must conduct an inclusive approach towards this matter. It also will provide the basis for further investigation in the park context to acquire enough information and boost knowledge regarding park sustainability.

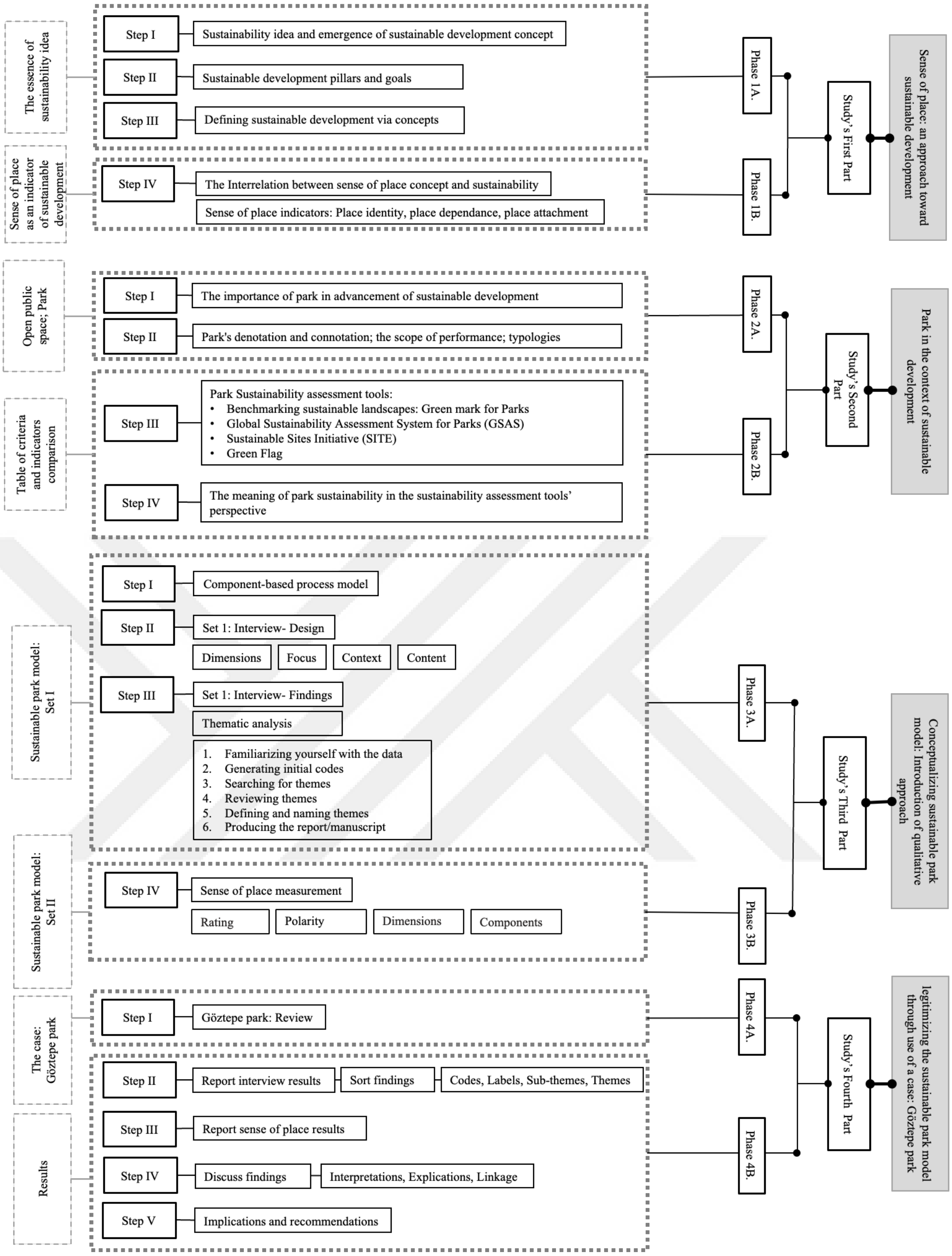

Figure 1.3 : Research structure diagram.

2. SENSE OF PLACE: AN APPROACH TOWARD SUSTAINABLE DEVELOPMENT

As the rate of change and complexity in many dimensions, such as the environment, society, and technology, is accelerating, the sustainability subject has become urgent (Stephens et al., 2008). As evidences show, it is evident that the future will not look like the past; hence, this indicates the burgeoning need for sustainability (Gilding, 2011). Therefore, the concept of sustainability is a centerpiece and has changed individuals' and organizations' relations with the surrounding environment and its embodied environmental, social, cultural, and economic aspects radically.

Initiating sustainable methods and adopting sustainable practices, even if these actions have noticeable or minor impacts, can influence remarkably in the long run. Individuals, groups, and communities' endeavors toward sustainability purposes have become a common value for many; this value is based on the world's current capability to offer both present and future generations the opportunity to benefit. People's attempt to signify this value in their policies, everyday activities and behaviors is an indicator of sustainability as a factual premise. Accordingly, to pursue an improved situation, humans ought to establish solutions and approaches and effectuating practices to dissolve the problematical actions.

In this sense, this study tries to reveal the importance of sense of place while discussing actions as response to improve parks conditions. Indeed, the study answers the question why the sense of place known as the connection between people and place is important in park sustainability discourses. Therefore, to enlighten the correlation between sustainability and sense of place concept, it is essential to display the sustainability idea background and steps in sustainable development concept emergence to comprehend the relations better. Accordingly, in the first part of this chapter, sustainability and its integration with development is discussed. Moreover, sustainability related concepts are underlined to develop theoretical basis for later discussions on the sense of place concept.

2.1 The Essence of Sustainability

According to the etymology of the word sustainability, sustainability consists of two words: to sustain and ability. The first part of the word is derived from the Latin word "sustinere"; -tenere, which refers to the verb hold. Sustainability means "a capacity to maintain some entity, outcome, or process over time" (Jenkins, 2009, p. 380). It has also been defined as maintaining, retaining, supporting, and enduring. Sustainability is the endurance of systems and processes (Parker, 2017). Concerning Parker's definition of sustainability, it is comprehendible that the broad meaning can extend to every system and be associated with processes that support lives. The sustainability meaning "can be placed analogously to all human activities and business processes. Thus, according to the general definition, each activity can be carried out in volume and variations without leading to self-destruction but allowing a long-term repetition and renewal" (Klarin, 2018, p.70).

The concept of sustainability as a contemporary buzzword became apparent by the National Environment Policy Act (NEPA) in 1969. It has been established with the vision of improving the welfare and quality of life and supporting actions to have a healthier living environment. In addition, it focuses on creating a balance between the natural environment and the needs of a human being and creating a stable condition, which does not jeopardize nature and does not forgo the needs of man now and in the future. Therefore, since a half-century ago, sustainability has been in the agenda of governmental and non-governmental organizations on local to global scales.

However, the idea of being responsible for preserving the source for future generations dates back to the mid-17th century with the emergence of two chief concepts: "bon ménage" and "bon usage", which mean good housekeeping and good use respectively, and later became the inspiration source for the terms "wise use" and "sustainable development" in the 20th century (Grober, 2007). The original version of the word sustainability made its debut in print in a comprehensive handbook of forestry in 1713, in which Hanns Carl von Carlowitz derived benefits from two sources: John Evelyn (1664) and Jean Baptiste Colbert (1669), as they dealt with the question of achieving conservation of timber in a way that there would be a continuous, constant, and sustained use. Accordingly, the origin of the word sustainable comes from the forestry sector (Wiersum, 1995). In fact, this word is derived from the German term "Nachhaltiger Ertrag" which means "sustained yield" (Wilderer, 2007); refers to the idea of equilibrium between the consumption and the reproduction of resources to avoid long-term depletion (Van Zon, 2002).

Duerr (1975) described sustainability by these words: “To fulfill our obligations to our descendants and to stabilize our communities, each generation should sustain its resources at a high level and hand them along undiminished. The sustained yield of timber is an aspect of man's most fundamental need: to sustain life itself” (p.36). Hawken (2007) stated that sustainability is about the balance between two complicated systems of the earth, including the human culture and the living world, which are currently in a disruptive relationship. Milne et al. (2006) denoted a straightforward explanation of sustainability, as authors believed that sustainability enhances the quality of human life by improving living standards while considering ecosystems' capability with quantifiable limits to support.

Sustainability encompasses the objective of pursuing a set of rules and seeking principles to “respect for nature, universal human rights, economic justice, and a culture of peace” (The Earth Charter Text, 2020, p.1). Sustainability implies the capacity to endure; it also intends proactive and responsible decision-making, initiatives, and innovation that reduce the adverse effect and keep the balance between ecological resilience, economic prosperity, political justice, and cultural vibrancy to provide a desirable planet for all species in the present and the future. In other words, sustainability is an integrated approach that considers ecological, social, cultural, and economic dimensions, recognizing that all must be considered together to find lasting prosperity.

Nowadays, usage of the contemporary meaning of sustainability has become widespread, not because it is a new idea but because of its essence, which points to the problems that the earth and its inhabitant’s encounter. It clarifies how individuals and a whole perspective community must think and find solutions for burning issues of the contemporary era. Thoroughly, it embraces all matters which human beings have faced through the course of history, which is an outcome of various discourse and movements such as environmentalism, conservationism, social justice, health, well-being, and wellness, as well as globalism. “Sustainability science has emerged as a conceptual and theoretical basis for a new planning paradigm” (Lehman, 2010, p.2).

2.2 Sustainable Development: The Integration of Sustainability and Development

By the end of the twentieth century, the discussions around environmental, socio-cultural, and socio-economic issues, which are profoundly rooted in equity and equality in the world, have engaged the minds of intellectuals and decision-makers to pave the way for the arrival of a new idea, known as sustainable development. According to Klarin (2018), the emergence and evolvement of the sustainable development concept is divided into three periods.

The first period covers the time span in which economic theories related to development emerged, pointing out that development is contingent on economic growth. During this period, The Club of Rome warned about the undesirable effects of economic development as a remarkable global issue. It should be noted that, during this period, in a book titled “Limits to Growth” (1972), the earth's capacity to provide for humans’ basic needs was discussed, and sustainable development was described implicitly almost 15 years before its emergence in 1987.

> It is possible to alter these growth trends and establish a condition of ecological and economic stability that is sustainable far into the future. The state of global equilibrium could be designed so that the basic material needs of each person on earth are satisfied and each person has an equal opportunity to realize his individual human potential. (Meadows, 1972, p.1)

The first period lasted till The Stockholm conference held in 1972, the first conference on the human environment which was devoted mainly to environmental problems. At this conference, several participants from various international organizations discussed the burning issues of the twentieth century. The Stockholm conference focused on the negative consequences of economic development and addressed the need for alteration in economic policies (Mebratu, 1998; Drexhage & Murphy, 2010). It adopted the Stockholm Declaration on the Human Environment (1972), which contains a set of common principles to inspire and guide the world's peoples in the preservation and enhancement of the human environment. Consequently, it contains forward-looking approaches and principles that clarify the necessity for integration and coordination in development planning to provide an appropriate ground for environmental protection. However, “the Stockholm conference was limited in its effectiveness because environmental protection and the need for development, especially in developing countries, were seen as competing needs and thus were dealt with in a separate, uncoordinated fashion" (Prizzia, 2007, p. 21).

The time span between 1972 and 1987 years are considered the second period in which development and environmental constraints were the burning topics. Accordingly, the term eco-development was introduced by the United Nations Environment Program (UNEP) in 1978 (Mebratu, 1998). Furthermore, the International Union for Conservation of Nature (IUCN) 1980 addressed the importance of respecting environmental issues and economic development simultaneously. These events led to the introduction of the definition of sustainable development by the United Nations World Commission on Environment and Development (WCED) in 1987 via "Our Common Future", better known as the Brundtland Report, which aimed to set an idea of a global change program to point a global concern regarding the adverse impacts of socio-economic development on the natural capital. The report addresses the increasing pressure between the environment and economy and recommends sustainable development as the only feasible approach to global political and ecological stability (Rees, 1989).

The commission successfully unified environmentalism with social and economic concerns on the world's development agenda and defined sustainable development explicitly by these words: "Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). There is also an additional definition for sustainable development presented in the Brundtland Report: "Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life" (WCED, 1987, p. 44).

In addition, WCED's vision was about long-term sustainable development, providing economic development according to environmental protection and conservation (WCED, 1987; Drexhage & Murphy, 2010). Based on this report, sustainable development principles need to be in line with human needs while considering natural resources. In fact, its fundamental objectives are to ensure human needs with a provision to improve living standards, increase the quality of life, and reach the desire for a better life. The report through sustainable development definition marked a new era of global thinking regarding setting socio-economic policies parallel to environmental management in all areas of human activities (Mebratu, 1998).

Moreover, in the Brundtland Report, the main pillars of sustainable development, including economic, social, and environmental protection, known as the initial phase for the evolution and the improvement of a strategic perspective concerning sustainability, have also been determined. The definition and pillars have played a catalytic role in promoting the subsequent adoption of two overriding concepts: giving priority to the world's poor and providing their basic needs, and determining the role of all kinds of organizations in limiting the boundaries of their actions on the environment in order not to prevent the ability of the environment to meet present and future needs (Bac, 2008). In an article titled "sustainable development concept and practice," the author defines sustainable development in these words: "Either that per capita utility or well-being_ is increasing over time with a free exchange or substitution between natural and man-made capital or that per capita utility or well-being is increasing over time subject to non-declining natural wealth" (Holmberg, 1992, p. 22). The term sustainable development has the same meaning as durable development which appeared in the late 1970s to conceptualize protecting the environment and its link to development. Shaker (2015) stated that the term sustainability is an objective of humanities toward human-ecosystem equilibrium (homeostasis), whereas sustainable development paves the way to reach sustainability aims by encompassing a holistic approach and temporal processes.

The third period refers to the period after the Brundtland report, which involved the events, summits, and conferences concentrating on setting details of sustainable development principles. The Earth Summit, which was held by the United Nations (UN) on the environment and development in Rio de Janeiro, Brazil, in 1992, hosted 178 countries and 1400 representatives from non-governmental organizations. The UN presented a strategic concept for shaping and saving the future of the blue planet (Grober, 2007). Agenda 21 is a non-binding action plan of the UN about sustainable development and is a product of the Rio de Janeiro Earth Summit. Agenda 21 is an official document indicating the commitment of the world's leaders to preparing the national sustainable development strategies for their countries. It aims to "halt and reverse the environmental damage to our planet and to promote environmentally sound and sustainable development in all countries on earth" (Krizek & Power, 1996, p. 11). It also includes agreed information regarding activities for achieving sustainable development for nearly every corner of the globe. The organized action plan of agenda

21 consists of four sections, including social and economic dimensions, conservation and management of resources for development, strengthening the role of major groups, and means of implementation.

Another international treaty, known as the Kyoto protocol, resulted from a conference held in Kyoto, Japan, in December 1997; the initiatives toward sustainable development are articulated in this protocol. Its primary purpose is the international agreement on reducing carbon dioxide emissions and diminishing greenhouse gas effects in the atmosphere. According to this agreement, the United States of America was committed to only stabilizing emissions and not taking actions toward cutting them; however, the European Union and other countries compiled cutting emissions down to 15 percent. Although industrialized countries indicated their intent to ratify the protocol on reducing greenhouse gas emissions, the negotiation was complicated enough, and details of rules for actions and the way of operations had not been explained precisely. Despite signing the protocol by eighty-four countries, unfortunately, their reluctance disallowed forward steps toward practical actions following the protocol. Contrary to the gratifying protocol essence, it has failed to be accomplished. Bac (2008) argues that the Kyoto Protocol is the most controversial international debate between "greens" and the "neo-liberals".

In September 2000, world leaders were brought together at the Millennium Summit held in New York in which they agreed on the Millennium Development Goals to be reached until 2015. The objectives of the millennium development summit are reachable, and according to Bac (2008), they are both "modest" and "ambitious". The Millennium Development Goals are indications of attention to the well-being and quality of life of people who live below the poverty line. It demonstrates the significance of allowing neglected people to access opportunities besides the importance of feeling safe and sound. "The Millennium Development Goals conceptualized the livelihoods of world poor in terms of access to opportunity and absence of insecurity and vulnerability" (Adger & Winkels, 2014, p. 194). The Millennium Development Goals concentrate on developing a balance among sustainable development pillars to make them tangible and feasible. For instance, it emphasizes crucial issues such as health and sanitary, environmental protection, considering the economic condition of poor people. In addition, in terms of socially developing, it offers advice regarding accessible education for everyone. Overall, it tries to integrate the principles of sustainable development into country policies.

In 2002 another summit called The World Summit on Sustainable Development (WSSD) was held in Johannesburg, South Africa, which was a significant step toward emphasizing the role of health and poverty challenges in sustainable development; beside it was an unprecedented opportunity to tighten the relationship between the United Nations, governments, business, and non-governmental organization. This does not necessarily mean environmental matters have been effectively sidelined; instead, it aimed to make health more central to sustainable development. The Johannesburg Declaration emphasizes "a collective responsibility to advance and strengthen the interdependent and mutually reinforcing pillars of sustainable development—economic development, social development and environmental protection at local, national, regional and global levels" (p. 1). The World Summit on Sustainable Development tried to complete the Millennium development goals by adding essential objectives mainly focusing on health matters, including the opportunity to reach basic sanitary, controlling dangerous chemicals, and halting the loss of biodiversity.

> It fills some gaps in the Agenda 21 and the Millennium Development Goals and addresses some newly emerging issues, including to halve the proportion of people without access to basic sanitation by 2015; to use and produce chemicals by 2020 in ways that do not lead to significant adverse effects on human health and the environment; to maintain or restore depleted fish stocks to levels that can produce the maximum sustainable yield on an urgent basis and where possible by 2015; and to achieve by 2010 a significant reduction in the current rate of loss of biological diversity (Nelson, 2017, p. 166).

Health is both the driver and outcome of sustainable development. Therefore, to reach the targets of sustainable development, health and its related matters must be considered as primary notions, and actions toward debilitating illness and poverty need to be taken. In other words, health issues hamper poverty alleviation and economic development. Furthermore, bearing in mind the relation between health and economic aspects, it is comprehendible that environmental problems such as environmental degradation, mismanagement of natural resources, and unhealthy consumption patterns and lifestyles also interact with health and, consequently, sustainable development. In this context, Asefa states that "progress in moving the concept [of sustainable development] toward a more productive exploration of the relationship between economic development and environmental quality" (Asefa, 2005, p. 1).

The most influential conferences and summits in the emergence of sustainable development concepts were underlined in this part. Their contents were summarized to give the impression of sustainability and its related concept of sustainable development, which play a crucial and influential role in the survival of human beings on planet earth. All the conferences from 1972 to 2002 were steps in the evolution of sustainable development concepts and were sources to help flourishing ideas related to sustainability practices. Although the primary standpoint was overall and just posed the idea of raising awareness of the threat to human survival, by passing the time and facing the seriousness of problems and obstacles, the ideas turned to plan and later practices in order to fulfill the ambition of sustainable development to prioritize improvements in the well-being of people now and in the future.

Consequently, sustainable development has become the center of thought and actions on every scale, including global, regional, and local, with various approaches to drive the idea into implementation. Nevertheless, it is still an enormous challenge to raise and maintain global awareness regarding sustainable development from a small scale of households to a broader extent. A challenge to tackle the industrial revolution effects, which Bac (2008) explains it as "a limitless human and environmental exploitation."

2.2.1 Sustainable development pillars

The sustainable development concept posits a triad of environmental, economic, and social facets. Indeed, it is associated with the three fundamental issues of sustainable development: economic growth, environmental protection, and social equality (Taylor, 2016). Based on this, it can be argued that the concept of sustainable development stands fundamentally on three conceptual pillars, namely "economic sustainability," "social sustainability," and "environmental sustainability" (Mensah, 2019).

The three-sphere framework of sustainability was initially proposed by the economist Rene Passet in 1979 who indicates that the pillars of sustainability are not mutually exclusive and can be mutually reinforcing. These three intersecting have also been worded as "ecology, economy, and equity". These three pillars are also called the "triple bottom line" by Elkington (1997). In fact, the three pillars are interdependent, and in the long run, non-can exists without the others (Morelli, 2011). Accordingly, the primary pathway to building sustainable development goes through economic feasibility, social efficiency, and environmental equity.

Moreover, to these three domains, The United Nations Agenda 21 specifies culture as the fourth domain of sustainable development. Following this matter, in a book entitled *Urban Sustainability in Theory and Practice: Circles of Sustainability*, the author stated that political and cultural domains also need to be considered pillars of sustainable development (James, 2014). Soini and Birkeland (2014) also emphasized culture as the pillar with similar importance to other three pillars. Hawkes (2001) also pointed out the essentiality of considering culture as the fourth fundamental component of sustainable development as it "enfolds every aspect of human intercourse" (p. 3).

Indeed, the kind of development that enables countries' progression, both economically and socially, without the annihilation of their natural resources is sustainable development. It encompasses socially just, ethically and morally acceptable, environmentally sound, and economically feasible (Klarin, 2018). However, environmental, social, and economic systems are complex, dynamic, heterogeneous, non-linear, and adaptive systems, but they are interdependent, and their activities affect each of the other domains. According to Prizzia (2007) "implementing the principles of equity and living within ecological limits can only be accomplished if social, political, and economic systems have the flexibility to be redirected toward sustainability as well as integrated with each other and the environment" (p. 21).

The environmental dimension of sustainable development is about maintaining ecological integrity which refers to the need for balanced ecological systems. Humans must utilize natural resources without disabling them to replenish. Since the natural environment endurance is considered both a target and driver of sustainable development. The rate of exploitation of renewable resources, air, soil, and water contaminations, as well as non-renewable resource consumption that extravagant use causes depletion, are concerns of environmental sustainability.

The economic dimension of sustainable development is directly linked with economic vitality. Sustainable development is feasible when there is a growing economy in which people are able to reach all kinds of services without difficulties. In economic sustainability, communities across the globe can maintain their independence; they can attain financial security and make the required resources accessible. It can be said that the economic target of sustainability is relatively related to securing sources of livelihood and often defined as green economy. In general, economic sustainability deals with practices that support long-term economic growth without negatively impacting the community's social, environmental, and cultural aspects.

The social pillar of sustainable development is a manifestation of issues related to the development of individuals and community by focusing on the health, life satisfaction, education, equality, and equity matters. The framework of social sustainability is defined within six faces including: “equity,” “diversity,” “interconnected/social cohesions,” “quality of life,” “democracy and governance,” and “maturity” (Anand & Sen, 1996); which are recognized as the primary needs of human beings. Therefore, social sustainability includes strategies that focus on reaching favorable conditions for human beings by securing individuals’ physical and psychological needs are considered to achieve welfare and well-being.

Although culture is recognized as the fourth pillar of sustainable development, it used to be considered a constituent of social sustainability (Soini & Birkeland, 2014). Culture is now accepted as a distinct and dynamic pillar with value and weighing akin to the other three pillars regarding effectiveness in sustainable development. Culture is defined as the “intellectual and creative products” of a society in one perspective and the other as the beliefs, practices, pattern of thoughts, values, and behaviors of the society. The second viewpoint is entangled with the idea of social cohesion as humans, through their cultural inputs interact with others and try to build up relationships (Barthel-Bouchier, 2013). Moreover, humans' understanding of economic, social, and environmental matters and establishing ideas and opinions about how to address them originated from culture and its domains (Duxbury & Gillette, 2007). Accordingly, achieving sustainable development is by mean of reaching cultural sustainability which addresses preservation of local culture by respecting diversities in beliefs, customs and practices as well as heritages conservation (Soini & Birkeland, 2014).

In general, sustainable development comprises principles under the umbrella of four pillars that spur economic and social advancement while protecting the environment and cultural values; consequently, economic, social, cultural, and environmental are intercorrelated systems that reinforce one another. Each pillar is a system compound of four components, namely environmental, social, cultural, and economic, that are mutually dependent; indeed, these components serve the central system. That is to say that, in case one component is missing, the others may be negatively affected; as a result, the system will face failure. For instance, the social pillar consists of social, economic, environmental, and cultural components; therefore, for social sustainability, economic, environmental, and cultural matters need to be considered. Because of this matter, the presence and effects of environmental, social, cultural, and economic factors in each pillar of sustainable development cannot be ignored. The diagram in figure 4 demonstrates the interrelation between sustainable development pillars and their components.

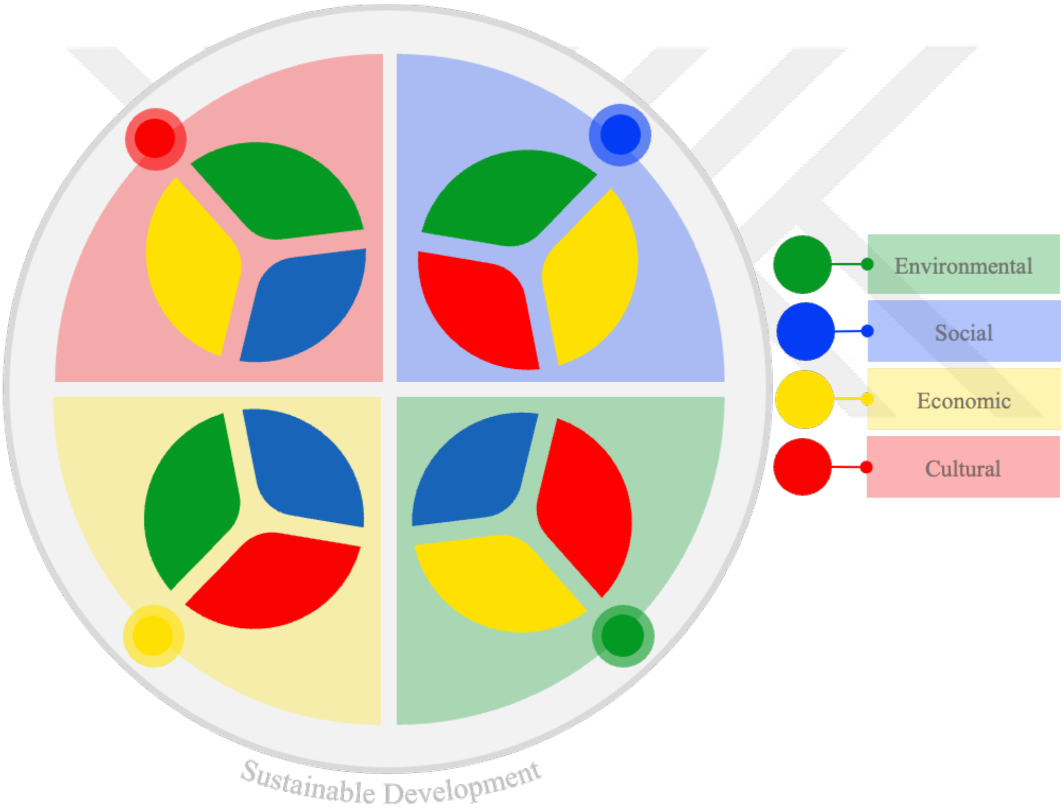

Figure 2.1 : The interrelation between sustainable development pillars.

2.2.2 Sustainable development goals

Almost three decades after the first introduction of the sustainable development concept, in 2015, sustainable development goals (SDGs), which are also known as Global Goals, a set of seventeen interconnected goals, were devised by The United Nations General Assembly to be a blueprint for achieving a better and more sustainable future all by the year 2030. Some SDGs build on preceding Millennium Development Goals, while others incorporate new ideas.

The goals are listed as follows: no poverty, zero hunger, good health and well-being, quality education, gender equality, clean water and sanitation, affordable and clean energy, decent work and economic growth, industry, innovation and infrastructure, reduced inequality, sustainable cities and communities, responsible consumption and production, climate action, life below water, life on land, peace, and justice strong institutions, partnerships for the goals (UN, 2015).

According to Hák et al. (2016), SDGs are built upon Millennium Development Goals, the outcome of the Millennium Summit held in New York in 2000. World leaders agreed on these goals, with which 2015 year being called a timeframe and the 1990 year as a benchmark. Although some SDGs are based on previously agreed goals, new goals were also added, which address different issues and are identified as complementary goals in reaching sustainable development ambition. SDGs concentrate on developing a balance among sustainable development pillars to make them tangible and feasible. Additionally, the goals urge nations to integrate the principles of sustainable development into countries' policies.

Indeed, the establishment of these goals is the result of thoughts in relation to the risky position of human survival in this Anthropocene epoch to consider and apply universally by all nations; moreover, their role in the creation of a global political vision regarding sustainably initiative is of paramount significance (Gaffney, 2014). The SDGs have a multidisciplinary approach to addressing interlinked issues and demanding interconnected governance responses (Stevens & Kanie, 2016). "The SDGs could go a long way to setting new societal norms. The goals may help create a fresh global narrative around a common future to mobilize collective action and help develop a shared understanding of interconnected risks and solutions" (Gaffney, 2014, p. 23).

The SDGs cover a broad range of issues from health, sanitary, and poverty alleviation to climate change mitigation and conservation of natural resources noticing all species' lives. It aims to help authorities and decision-makers from a national and governmental scale to small-scale institutions and organizations; subsequently, communities, groups, and individuals. The goals urge to be aware of the impacts of operations and uniformly address them; therefore, they point to the direction of future development of humanity and the earth by calling for the establishment of ways and methods to achieve this objective.

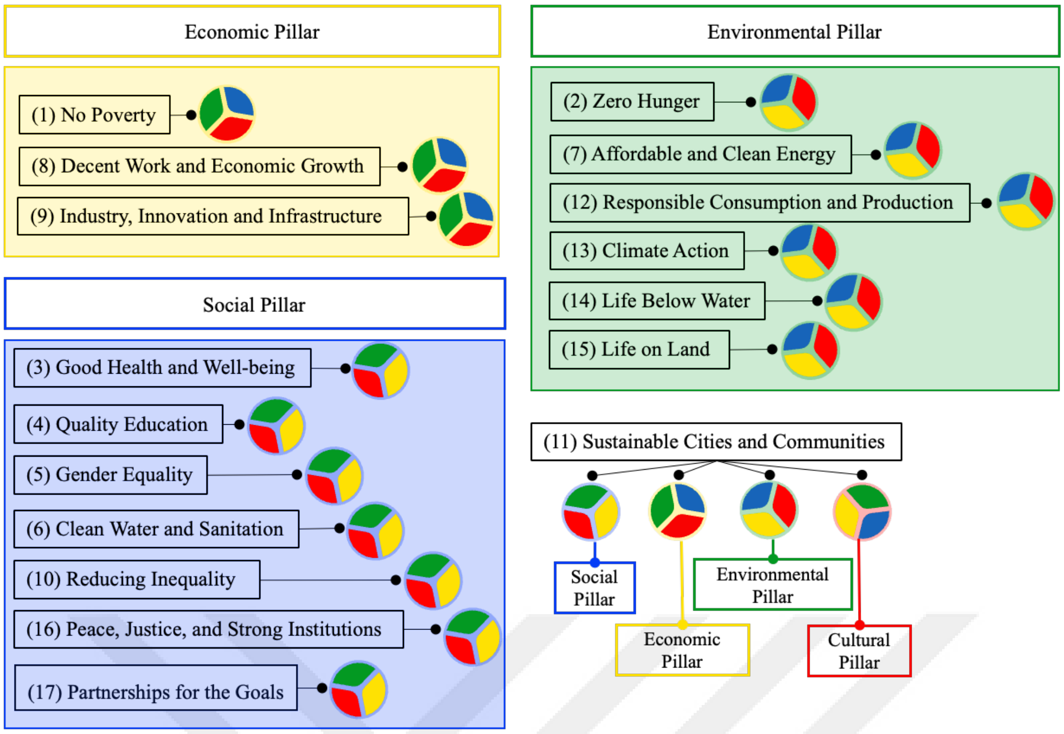

Figure 2.2 : The conformity of sustainable development goals with pillars.

2.3 Defining Sustainable Development Through Concepts

Jabareen (2006) pointed out the lack of an appropriate and comprehensive theoretical framework in relation to sustainable development, which disables comprehending its dimensions and eliminating its puzzlement. The definition of sustainable development is still vague, and it is obscure what needs to be sustained (Redclift, 1993; Mitlin & Satterthwaite, 1996). Moreover, the existing explanations of this concept in literature have failed to convey sufficient information to operational level (Villanueva, 1997). In addition, Berke and Conroy (2000) stated that the definitions cannot be translated into practices as there is no consensus on sustainable development meaning and scope. Van Rozema-Zeijl and Martens (2010) also stated that it is futile to define sustainable development via a single concept. Consequently, sustainable development needs to be explained by simultaneous discussion of various but interconnected ideas, opinions, and perspectives.

Jabareen (2006) reviewed multiple sources through literature defining sustainable development and classified similar themes and keywords. Later the author posed distinctive seven concepts and used them to synthesize a theoretical framework of sustainable development, including the concept of ethical paradox; the concept of natural capital stock; the concept of equity; the concept of eco-form; the concept of integrative management; the concept of utopianism; the concept of global political agenda.

By referring to the ethical paradox concepts, the author mentioned the existing paradox between the two constituent words of sustainable development: sustainable and development in respect to ethics. Since sustainability pertains to uphold, maintain, and sustain. At the same time, development implies intervention in the natural environment for exploitation resulting in exhaustion of natural resources; thus, it is a demonstration of paradox. In general, development is a process that consists of specific targets and goals and components, such as resources to be used in accomplishing the purpose (Lele, 1991). Thomas (2004) describes the development as encompassing favorable alterations with an upward trend that society experienced throughout the course of history and is still experiencing. On the other hand, development is considered a framework that involves plans, policies, implementations, and management conducted by organizations and institutions, either governmental or non-governmental (Sharpley, 2009).

Tezanos Vázquez and Sumner (2013) classified the main themes in the literature that describe development, including "development as structural transformation, human development, development of democracy and governance, and development as environmental sustainability." The most recognized development indicator is the Human Development Index (HDI) which involves distinguished categories such as socio-cultural, economic, environmental, and political development of specific realms (Willis, 2005)

The outcome of the development process tends to enhance the quality of life and stimulate economic independence (Remenyi, 2004). However, the main target of this process is to maintain the environment's ability to secure the health and well-being of individuals and ensure a ground to flourish for individuals based on their potential to have a creative and prosperous life. Accordingly, development is about improving environmental, social, and economic capital, which is in line with sustainability.

The two constituent words of sustainable development, development, and sustainability seem to be juxtaposed, as their effects contradict one another (Sharpley, 2000); However, neoclassical economists do not accept the paradox between them (Lele, 1991). Rajni Kothari (1992) argues, "Sustainability is an empty term because the current model of development destroys nature's wealth and hence is non-sustainable. And it is ecologically destructive because it is ethically vacuous, not impelled by basic values, and not anchored in concepts of rights and responsibilities'' (p. 27). Whereas development is not avoidable sustainable development concept with its perspective emerged to alleviate the mentioned paradox by indicating the kind of development that does not forgo the need of present and future generations, which deeply emphasizes sustaining and maintaining. Sachs (2010) stated that development could not be possible without sustainability, and sustainability is not feasible without development. Later, the two overriding approaches, including "light ecology" and "deep ecology," have become apparent as responses to the mentioned paradox (Jabareen, 2006).

The second concept, known as natural capital stock, relates to preserving all kinds of natural resources. Roseland (2000) categorized natural capital stock into three separate groups, including renewable resources, non-renewable recourses, and the capacity of the natural environment system to absorb pollution caused by human activities. Jabareen (2006) indicated that maintaining the natural capital continues is one of the most mentioned criteria regarding sustainability. Climate change and natural disasters which jeopardize human and other species' survival are the outcomes of pressure on the environment; thus, there is a need for the rational and efficient management of all sources to diminish the environmental impacts. Accordingly, long-term exploitation of resources for ensuring human needs will be possible; this responsible behavior regarding present and future generations to be able to secure their needs is within the scope of sustainable development (Klarin, 2018).

Although primarily sustainable development is interpreted from an environmental standpoint, it soon becomes prevalent in social and economic aspects. The concept of equity lies on the social pillar of sustainable development, which involves interconnected aspects including environmental, social, and economic justice, living standards, quality of life, wellness and well-being, participation, democracy empowerment of individuals and community, and freedom matters (Jabareen, 2006).

Generally, sustainable development deals with the issues of equity and equality and considers the well-being of all people in the present and future generations. While defining sustainable development with respect to equity, intergenerational and intragenerational matters are prevalent within sustainable development literature. That is to say, intragenerational equity refers to ensuring the well-being of all individuals of the present generation by guaranteeing fair treatment of all society members, whereas intergenerational equity is about the distribution of equity and providing conditions that assure the well-being of all people of the next generations. Indeed, "intergenerational equity is a notion that views the human community as a partnership among all generations" (Summers & Smith, 2014, p. 719).

Human well-being is described by four chief elements, namely human's basic needs, environmental and economic needs, as well as subjective well-being: happiness (Smith et al., 2013; Summers et al., 2012). Accordingly, sustainable development endeavors to reflect these four primary elements in the current generation and future generations. "Sustainable development provides a secure and satisfying material future for everyone, in a society that is equitable, caring, and attentive to basic human needs." (Rees, 1989, p. 2)

According to Jabareen (2006), eco-form refers to the necessity for the human habitat to be ecologically appropriate. The form and design of urban spaces and their components, such as infrastructures, buildings, and open areas, should function sustainably. Indeed, it represents the essentiality of the ecological design concept while discussing sustainable development. The ecological design concept adopts technological advancement for reaching the target of the desired state with respect to sustainability by employing alternative materials, renewable resources, conservation techniques, and recycling. Haughton (1999) stated that one of the most significant issues related to sustainable development is a discourse about sustainable habitats that urge people globally to redesign and re-arrange human habitat to address environmental problems.

In order to achieve sustainable development and move along sustainability ambition, there is a need for integrative management of environmental, social, and economic aspects (Jabareen, 2006). Integrative management addresses the importance of simultaneously considering three pillars of sustainable development. In fact, it is about the way of management that considers environmental protection to ensure the livability of human habitats while focusing on economic viability to alleviate poverty and providing basic needs of food, clothes, and shelter for everyone as well as providing ground for social development to improve people well-being and ensure them to reach their potentials.

To achieve sustainable development, there is a need to address two overriding concerns of poverty and environmental degradation, challenging all national and international agendas. Therefore, it is essential to figure out and merge the proper ways of managing economic and environmental dimensions. On the other hand, the concept of integrative management draws attention to all sectors, either governmental or private, to use combined approaches of three pillars to resolve contemporary problems with a short-term policy, planning, and management. Additionally, try not jeopardize the life of future generations with long-term policy, planning, and management.

The sustainable development concept can be considered an idealist approach regarding how the world needs to operate. The concept of utopianism indicates a society that functions sustainably, which refers to an ideal society on every scale, local, regional, and global. In the utopia of a sustainable society, environmental, economic, and social dimensions are in harmony as there is no environmental degradation, population burst, famine, and shortage of resources, there are not any kinds of pollution, and all individuals' basic needs are provided and absolute just prevails throughout it. "The power of utopian thinking, properly conceived as a vision of a new society that questions all the presuppositions of present-day society, is its inherent ability to see the future in terms of radically new forms and values" (Jabareen, 2006, p. 186).

The growing imbalance between human development and environmental constraints has revealed increasing environmental problems and predictable destructive impacts. Accordingly, this topic engaged the minds of decision-makers on a global scale and has become one of the main challenges to political agendas. Sustainable development had risen as a political manifestation embracing an ethical approach in all practical and theoretical implications, since it is an outcome of a global demand regarding sustainably operating systems on every scale from local to global. Jabareen (2006) contended that the political global agenda concept refers to contemporary sustainability discourse, which arises from global, political, and environmental matters. Indeed, the concept represents a need for actions regarding sustainability not only limited to a nation but concerns all nations around the world.

Klarin (2018) defined the sustainable development concept through three concepts, namely development, needs, and future generation. The author explained the concept of development as a process of social and economic development concerning environmental limitations; the concept of need emphasizes the importance of securing individuals' needs to provide well-being and quality of life by fair distribution of resources, while the concept of the future generation is about allowance to subsequent generations to secure their needs and maintain living standards.

“Sustainable development is a positive socio-economic change that does not undermine the ecological and social systems upon which communities and society are dependent. Its successful implementation requires integrated policy, planning, and social learning processes; its political viability depends on the full support of the people it affects through their government, their social institutions, and their private activities.” (Rees, 1989, p. 3)

According to the author, this practical definition of sustainable development on a society-wide basis addresses several crucial implications:

- Sustainable development is about reaching straightforward ecological, social, and economic targets.
- Sustainable development promotes the qualitative development of individuals and communities by putting pressure on ecological limits regarding material consumption.
- Sustainable development needs the intervention of governmental agencies and the support and collaboration of private sectors.
- Sustainable development requires political jurisdictions and the inclusion of policies at all spatial scales.
- Sustainable development relies on educational, planning, and political processes that are open and transparent to all.

Above all, the study tries to add the eighth concept to Jabareen’s (2006) seven concepts; therefore, the placemaking concept is also considered to be the one that explains the scope of sustainable development. The study aims to discuss the connection of the sense of place concept with sustainable development through placemaking concept's core meaning. Placemaking is an approach under umbrella of sustainable design; therefore, prior to placemaking, sustainable design as an origin concept needs to be elaborated.

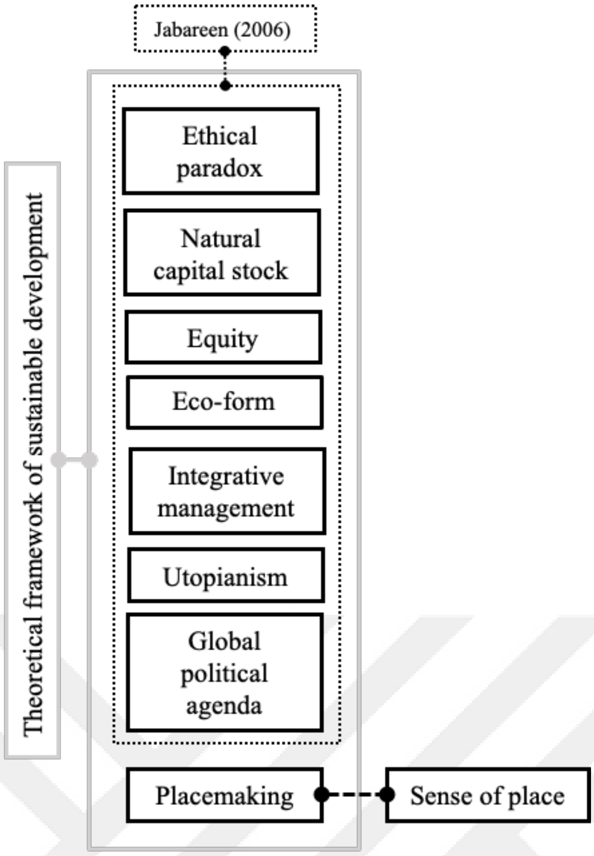

Figure 2.3 : Theoretical framework of sustainable development.

According to Greenwood (2004), sustainability is the ability of a system to be permanently maintained. Design as a system consists of components and processes, and sustainability concept is an approach that this system must be taken to operate practically and consider all pillars of sustainable development simultaneously. As the broadest and more inclusive definition, Tischner (2010) explained sustainable design as a concept that produces socially, environmentally, and economically beneficial solutions for societies. Meanwhile, it provides a ground for cultural sustainability as well.

Kim (1998) introduced three principles for sustainable design, including "Life Cycle Design," which conforms with the environmental pillar of sustainable development and pertains to preserving nature and mitigating the adverse impact of human activities on the environment. Furthermore, "Economy of Resources" compatible with the economic pillar is related to "reduction, reuse, and recycling of the natural resources" while "Humane Design" relevant to the social and cultural pillar is about the interaction of the human and surrounding environment.

This concept has evolved over the years; at first, it was about diminishing the negative impacts on the environment by the wise selection of materials in the design and implementation process, which is called eco-design and eco-efficient designs. This definition is in line with Jabareen (2006) eco-form concept. Later, sustainable design extended and became a concept to include social equity and social cohesion issues (Vezzoli & Manzini, 2008; Ceschin & Gaziulusoy, 2016; Charter & Tischner, 2001). However, Sirowy (2010) believed that the sustainable design regulations still address environmental issues revolving around the reductionism ideas and dismiss the other dimensions importance.

Williamson et al. (2002) stated that the discussion surrounding sustainability is generally about the environment in the contemporary era. The authors also stated that environmental issues become the core of sustainability discussion so that other factors such as socio-cultural, ethical, professional, and technological dimensions are pushed to the margins. Woodcraft et al. (2011) also pointed out although social sustainability is equally influential similar to environmental and economic sustainability, it has been unnoticed. As a result, users' perspective, which is the manifestation of their socio-cultural aspect, has been remarked as a secondary priority in sustainable design (Sirowy, 2010). The designers barely consider social concerns in relation to sustainable design as they tend to interpret sustainable design as environmentally conscious design.

In fact, the sustainable design concept is not impartial to the social and cultural stance of a community; therefore, it is a manifestation of a holistic method of design. Consequently, sustainable design needs a reconfiguration in its scope; it must reflect communities' social and cultural context rather than solely give prominence to environmental concerns and revolve around an environmental efficiency-oriented approach. In other words, the scope of sustainable design must be much more inclusive. Furthermore, all areas of human activities must be on the design agenda, and all actions should be objectively underlined and examined. Accordingly, particular actions, policies, and regulations have to be raised from this understanding (Williamson et al., 2002); otherwise, the concept of sustainability will not be fully perceived, and guides on sustainability may be counterproductive.

Since the sustainability approach evaluates people's needs and desires; thus, the design must consider users' perspective and cultural context (Sirowy, 2010). The author believed that considering users' perspectives in a design process is highlighted as a significant facet of social sustainability. Achieving social sustainability as one of the pillars of sustainable development is regarded as a creation of interrelation between public spaces and community members' phycological and physical needs. Consequently, achieved social sustainability increases individuals' living standards and ensures their well-being. Furthermore, Bjerknes and Bratteteig (1995) pointed out the political aspect of social sustainability, as it is a way to promote democracy and empowerment of people in a society.

Sustainable design is a socially responsive design that considers the interrelation of humans and the built environment by addressing needs; by doing so, it reflects individuals' behavioral pattern and beliefs within a society. Therefore, it focuses on enhancing the spatial qualities of all segments of society and creates a bond between people and the built environment. Moreover, the support of social and cultural factors creates a sense of belonging and establishes a harmonic living environment and flexible spatial relations. Indeed, enriching public spaces provides a ground for the community to engage, enhancing cultural values and generating identity. The socio-cultural factors of users are essential in the development of the design; that is to say, in order to people to accept the design, their socio-cultural dimensions need to be considered. Moalosi et al. (2008) provided a comparatively relevant description by opining that those designs originated from socio-cultural dimensions of people facilitating the individual's acceptance regarding the design as it has intrinsic and extrinsic meaning for users.

The design process must not be considered merely as a process leading to functional objectives; the design itself needs to have meaning for its users. In other words, its meaning is associated with user's self-image. Krippendorff (2004) contended that design activities ought to generate meaning for users. Accordingly, in the initial phase of the design process, deeper insight and analysis are needed to figure out the socio-cultural needs of users. Indeed, addressing culture as a criterion in the design process allows designers to develop meaning and value for their designs (Vezzoli C. et al., 2018). Thus, the high-quality experiences associated with value and meanings for users are achievable. Accordingly, the criteria and indicators related to human beings in relation to design require to be extended beyond the common physical and cognitive fit, so it should encompass needs, interests, desires, and aesthetic responses, which are under the umbrella of social and cultural aspects.

Placemaking, a concept associated with sustainable design, is a multidisciplinary approach to urban planning and design that emphasizes the creation of vibrant and inclusive public spaces. It seeks to enhance the quality of life for residents by fostering a sense of community, identity, and belonging. Placemaking aims to transform ordinary spaces into meaningful and engaging environments that promote social interaction, cultural expression, and economic vitality. Placemaking prioritizes the needs and experiences of people who will use the space. It aims to create environments that are accessible, comfortable, and enjoyable for a diverse range of users.

Jacobs (1961) posed a foundational critique of modern urban planning practices and advocates for community-driven approaches to create urban environment. The author emphasizes the importance of organic, diverse, and lively places which secure people quality of life and well-being. Accordingly, in the creation of places various dimensions of it, including social, cultural, and spatial aspects need to be considered simultaneously. Placemaking strategies encompass a range of principles, including community engagement, user-centered design, mixed-use development, and environmental sustainability (Wheeler & Beatley, 2014). These principles collectively aim to create public spaces that are accessible, adaptable, and reflective of cultural and historical identities.

Although the placemaking concept is established to serve the sustainability goal and is an indication of approaches for sustainable design, in various academic studies, scholars combined placemaking with sustainability terms and have developed the sustainable placemaking concept.

Sustainable placemaking is a consistent and universal concept that includes an integrated human-oriented approach and practices to transform or create new places to achieve sustainability goals. Sustainable placemaking is significant since its output are sustainable places which are integral parts of the urban environment and play a crucial role in sustainable development by providing environmental, social, cultural, and economic benefits. Sustainable placemaking is a shift from relying on the views of those in the profession to a more collaborative approach with local stakeholders (Strydom et al., 2018).

The approach of including people in the placemaking process is now manifest in diverse disciplines from social science to architecture and urban planning (Toolis, 2021; Ellery et al., 2020). Accordingly, sustainable placemaking is recognized as a potential driver in connecting people to places by creating quality places in which people have a positive sense of place (Ellery et al., 2020;). It aims at promoting community participation and inclusion by enhancing sense of community and civic engagement (Toolis, 2017) which is possible by recognizing the needs, capacities, and resources of local stakeholders. Accordingly, placemaking is a practical application of sustainable development principles at the local level, focusing on the design and activation of public spaces to promote sustainability.

In subsequent part, the study delves a bit deeper into the relationship between sense of place and placemaking to locate the sense of place concept as an influential factor in relation to sustainable development.

Concepts defining sustainable development	Ethical paradox	Natural capital stock	Equity	Eco-form	Integrative management	Utopianism	Global political agenda	Placemaking
Sustainable Development Goals/Sustainable Development Pillars		(7) Affordable and Clean Energy	(5) Gender Equality	(11) Sustainable Cities and Communities	(17) Partnerships for the Goals	(16) Peace, Justice, and Strong Institutions	(13) Climate Action	(11) Sustainable Cities and Communities
		(2) Zero Hunger	(10) Reducing Inequality		(1) No Poverty		(12) Responsible Consumption and Production	
		(14) Life Below Water	(4) Quality Education	(6) Clean Water and Sanitation	(8) Decent Work and Economic Growth	(12) Responsible Consumption and Production	(17) Partnerships for the Goals	(3) Good Health and Well-being
		(15) Life on Land	(3) Good Health and Well-being		(9) Industry, Innovation and Infrastructure			

Social Pillar Economic Pillar Environmental Pillar Cultural Pillar

Figure 2.4 : The conformity of concepts defining sustainable development with sustainable development goals and pillars.

2.4 Sense of Place: A Potential Driver of Placemaking

Until the 1970s, in studies on the relationship between man and the environment, the idea of place meaning for people and the concept of belonging to a place were not considered a principal factor regarding well-being and quality of life. However, since then, studies have been conducted regarding this matter. In various fields such as anthropology (Low, 1992), environmental psychology (Steele, 1981), geography (Tuan, 1974), sociology (Hummon, 1992), and landscape architecture (Jackson, 1994), the researchers tried to understand the relationship between place and human and its consequences on human behavior. In this regard, concepts such as place attachment

(Manzo, 2006; Low & Altman, 1992), social attachment, sense of place (Tuan, 1974), social cohesion (Uzzell et al., 2002) place dependence (Shumaker & Taylor, 1983), place identity (Proshansky, 1978), sense of belonging and rootedness (Tuan, 1980) topophilia (Tuan, 1974) community sentiment (Christenson, 1979) insideness (Low & Altman, 1992) introduced. All these concepts are under the umbrella of the meaning of the place; although there are overlaps between these concepts, they entail different matters. Meanwhile, a sense of place is recognized as the major theme behind all these concepts and ideas. Sense of place is a multifaceted and multi-disciplinary concept that has different definitions at different levels and is often considered positive and powerful. It is now well-established that the sense of place is a combination of qualities and characteristics related to environmental, social, cultural, and economic dimensions that brings meaning to a place (Sullivan et al., 2010).

A sense of place brings meaning to people as it encompasses the connection between people and places. The place meaning is associated with historical, cultural, social, ecological, and/or physical attributes. Sense of place is one of the critical factors in improving the quality of human environments. It plays a crucial role in forming interaction for users in the environment. The sense of place transforms a space into a place, creating a sense of belonging to the place and creating identity for people. Therefore, the sense of place is influenced by the quality of the place and the way it is designed.

A sense of place is essential for a place to be dynamic and lively (Low & Altman, 1992; Relph,1976; Tuan,1980; Manzo;2006). A sense of place brings respect to a place; a positive sense of place motivates people to connect with the place (Knapp, 2020); as a result, people try to maintain and sustain it; indeed, sense of place is socially constructed.

“The sense of place of a location is the collection of experiences and associations the location provokes in its users” (Saldanha, 2009, p. 236). Arefi (1999) described the sense of place as the structure of feeling and emotion toward a place. A sense of place can be “created by the pattern of reactions that a setting stimulates for a person” (Steele, 1981, p. 12). It is a complex concept of human feelings toward the environment, which emerges from people's adaptation to and use of place; In other words, it arises from the interaction of people with a place in daily life (Falahat, 2007). Based on Lynch's (1981) description, “Sense is the interaction between person and place...[and]...depends on spatial form and quality, culture, temperament, status, experience and current purpose of the observer" (p. 131). According to Norberg-Shulz (1979), "spaces, where life occurs, are places" (p. 5), and a sense of place is the result of relationships between actions, conceptions, and physical attributes. A sense of place is a dynamic link that a person develops due to attachment to the place, awareness of the place, belonging to the place, satisfaction with the place, and commitment to the place (Shamai, 1991; Kaltenborn, 1998). A sense of place is an attribute used to describe the distinctiveness or unique character of a place; it is a sense of place that distinguishes a place from one another (Foote & Azaryahu, 2009). Since it evokes human senses within quality that make places recognizable and distinguishable (Shamsuddin & Ujang, 2008). Sense of place refers to both positive and negative features regarding a place; in a positive pole, it demonstrates well-being and in a negative pole indicates placelessness. According to Jorgensen and Stedman (2001), the sense of place consists of place identity, place attachment, and place dependence.

Place identity is a concept which is coined by Proshansky (1978). According to Bernardo et al. (2012), three perspectives in literature explain place identity. According to the first viewpoint, place identity is individuals' perceptions of their identity about the physical environment (Proshansky et al., 1983). To authors, words place identity is "a sub-structure of the person's self-identity consisting of, broadly conceived, cognition about the physical world in which the individual lives" (Proshansky et al., 1983, p. 59). The authors believed that the development of self-identity is not merely based on personal and interpersonal relations within the social process but also entails a relationship to the physical environment; hence, the place becomes an integral part of the self-identity development process. Since the place is recognized as an essential component of self-identity development, its associated concept of place identity changes to some extent during human life because of alterations in physical and social environments. Proshansky et al. (1983) added that place identity falls within the social identity category that defines individuals' socialization with their physical environment.

Based on the second perspective, place identity is formed by the pattern of ideas, beliefs, feelings, values, and behavioral tendencies concerning the physical environment (Proshansky, 1978). And the third perspective, which is also the most common one, defines place identity as an emotional connection to a place (Bernardo et al., 2012). As one of the ways of communication between man and place, the place identity is more concerned with the mental and emotional satisfaction of human beings rather than physical needs. The place identity derives from individual and collective values and changes, deepens, and develops during the time (Relph, 1976).

Place attachment is a complex emotional connection between an individual or a community and a place (Low & Altman, 1992; Williams et al., 1992). Riley (1992) defined attachment as the “affective relationship between people and the landscape that goes beyond cognition, preference, or judgment” (p. 13). Place attachment also refers to the richness of meanings that is influenced by familiarity and continuity of visit to the place (McCunn & Gifford, 2014). Place attachment is created when individuals have long-term experiences in a place; within this process, the place finds great meaning for them (Tuan, 1974; Kaplan,1995). In this regard, Tuan (1980) refers to the rootedness idea, which means solidarity and union with the place. Tuan (1980) characterizes place rootedness as a solid and focused bond that “in its essence means being completely at home – that is, unreflectively secure and comfortable in a particular location” (p. 4). Place attachment “involves an interplay of effect and emotions, knowledge and beliefs, and behaviors and actions in reference to a place’ (Low & Altman, 1992, p. 5).

Place dependence is defined as the “occupant’s perceived strength of association between him or her- self and specific places” (Stokols & Shumaker, 1981, p. 457). In reference to Ujang (2012), place dependence is the functional attachment between people and place. Functional attachment happens when people feel satisfied within a place. Therefore, place dependence is created when the place provides functional needs (Stokols & Shumaker, 1981; Suntikul & Jachna, 2016) and behavioral objectives of users. Place dependence refers to the significant role of the place in ensuring quality by providing conditions that support particular purposes or desired activities (Williams & Vaske, 2003). Accordingly, the physical environment with its associated artificial and natural features plays a pivotal role in addressing people’s needs and desires, subsequently creating place dependence (Scannell & Gifford, 2010). The level of place dependence is parallel to the level of loyalty regarding a place (Ramkissoon, 2012). Indeed, place dependence is created when the place quality is in a state that meets people’s expectations. The facilities and amenities determine the place's quality that the place provides.

The sense of place, meaning, and scope differ within diverse disciplines. In environmental psychology and sociological fields, the perception and connection of people regarding the physical environment are associated with a sense of place (Stedman, 2002). In phenomenological studies, the sense of place means being connected to place through understanding symbols and everyday activities. This sense can be created in a person's residence and deepen and expand over time. The sense of place also affects people's values, attitudes, and social behavior (Relph, 1976). In human geography, the sense of place refers to the meaning that people generate regarding a place based on its valued characteristics (Tuan, 1990). Sense of place results in awareness regarding a place and the features that distinguish it from other places (Tuan, 1980). In health-related studies, the sense of place is described as an essential factor in people's mental health (Williams & Kitchen, 2012). The connection with the natural environment is one of the human biological needs (Maller et al., 2005). In relation to environmental management, a sense of place addresses the people's opinions for the environment and its management; for instance, urban planning, natural resource management, and land-use planning and management (Larson et al., 2013). In addition, in the social-ecological subject, a sense of place is a stimulator for stewardship and actions to preserve the environment; it is also demonstrated as a cognitive and emotional variable that indicates how people respond to social-ecological changes (Masterson et al., 2017). In topics focusing on heritage conservation, a sense of place is considered a reason to preserve historical and cultural places; accordingly, it is a sound basis for understanding the meanings of heritage spaces and explaining the appropriate attitude towards conservation measures (Yeung, 2013). In relevance to tourism development, a positive sense of place is recognized as a motivator regarding using a place; as in the tourism industry, users' experience, expectations, and satisfaction are essential, and these factors are directly related to the creation of a positive sense of place; as a result, sense of place is a driver for tourism development (Chen et al., 2021; Tsai, 2011). Sense of place not only contributes to tourism but is also affected by it (Chen et al., 2021).

The key to sustainable development is to realize people's relationship with the place. People relate to places by generating meaning for them. There is a consensus that place meanings contribute to community cohesion and, subsequently, sustainability (Chapin et al., 2012; Masterson et al., 2017). On the other hand, place meaning is considered a component of the sense of place (Masterson et al., 2017). The meaning and emotions that people assign to a place is a sense of place, and the identification of place meanings stems from the concept of sense of place (Stedman, 2003). The sense of place, formed based on the pleasant sense of harmony and familiarity with the physical environment, is formed following the perception of a place's meaning.

A sense of place attracts people to contribute to the place; a result of such a strong positive sense of place, especially if held by a substantial number of people, can be strong enough to influence the fate of these places on which the life or death of space depends on. This fundamental nature of the sense of place reveals the need to pay attention to it in all areas related to the planning and design of the physical environment. That is to say that considering the sense of place and its related attributes drives toward sustainable development.

Stedman (1999) argued that a sense of place is a potential indicator of community sustainability. Grenni et al. (2019) also pointed out the key role of a sense of place in sustainable place-shaping. It also facilitates or impedes transitions to sustainability. The authors discussed that sense of place as a combination of beliefs, thoughts, feelings, and values regarding a place can help in its sustainability. A sense of place has the ability to improve urban resilience by bolstering the connections between people and their surrounding physical environment (Kudryavtsev et al., 2012).

In reference to Tidball and Stedman (2013), a sense of place can be restorative with respect to the urban social system as it “represents an opportunity for positive dependence that underpins the emergence of virtuous cycles” (p. 297). Since a sense of place relies on the creation of a connection between community and place and causes identity, dependence, and attachment to a place, it revitalizes the urban area, which suffered from devastating adverse environmental problems and social disruption (Tidball and Krasny 2013; Stedman and Ingalls 2013). Stedman and Ingalls (2013) referred to a sense of place “as a powerful base for individual and collective action that repair and/or enhance valued attributes of place” (p. 297).

A sense of place would improve a sense of security and continuity in a transient, rapidly evolving society (Arjomand Kermani et al., 2016). In addition, physical and psychological benefits to people are the outcomes of a sense of place (Hausmann et al., 2015). Yuen (2005) contented that places that create a positive sense of place for people are healthy; as a result, people tend to use and be in connection with them.

Therefore, a place with a positive sense of place for its users encourages contribution; as the rate of contribution rises, people try to preserve the place more as awareness regarding the place is increased. Along with being a place for social interaction, they serve opportunities for urban dwellers within the urban environment as they are important for the citizens' well-being and quality of life (Ujang, 2012). Social interaction refers to the need of human beings to interact with others; thus, sustainable placemaking is an approach to arranging physical space allowing socialization of people. Davoodi et al. (2013) stated that a place with the ability to provide people a place to interact with others could boost social capital as it is the forerunner of sustainable development. Aydın (2010) stated that sustainable societies guarantee a higher standard of living. The higher quality of life is contingent on social spaces and the physical structure of settlements; the built environment needs to be formed with respect to societies' social and cultural framework. Social connection and emotional attachment to the place is another component of the sense of place in the emotional dimension. An individual's emotional attachment to his community depends on individual and intra-psychological processes and on external social processes that develop social cohesion (Brown et al., 2003). The social process of a society involves interactions, relationships, and shared activities among its members. Placemaking acknowledges and seeks to facilitate these processes by creating spaces that are conducive to social gathering, interaction, and community-building. In this sense, placemaking creates environments that resonate with people on emotional, cultural, and practical levels. Since placemaking is a collaborative process of designing and planning public spaces to promote people's health, happiness, and well-being. It involves creating environments that facilitate a strong sense of place. In summary, placemaking,

- enhances the quality of life in a community by creating vibrant, inclusive, and functional public spaces,
- stimulates economic activity and community development,
- strengthens social connections and community bonds.

Accordingly, the ultimate goal of placemaking is to cultivate a strong sense of place. When a place is well-designed and planned with the community's needs and desires in mind, it is more likely to evoke a sense of attachment, dependence, and identity among its residents. Sense of Place is also considered as an outcome of placemaking. A successful placemaking effort results in the development of a space or environment that has a distinct identity and character. This, in turn, contributes to the formation of a strong sense of place. When people feel a personal connection to a place, it means that placemaking has been effective. Sense of place and placemaking are intertwined concepts that work together to create environments that are not only functional and aesthetically pleasing but also foster social sustainability.

2.5 Placement of Sense of Place Concept Within Sustainable Park Model

Sustainability is acknowledged to be a place-based phenomenon therefore to be achieved it requires a profound understanding of the human–place relationship (Calvo & De Rosa, 2017). Recently, discussions on sustainability have begun to recognize the importance of the immaterial dimensions of human environments such as sense of place concept in the transition to a sustainable state. Horlings (2015) defined sense of place concept as the "inner dimension" of sustainability transformation.

Talmage et al. (2018) believed that sense of place concept is a social indicator which has significant impact on understanding the relationship between individuals/community and the surrounding built/natural environments. Consequently, place-based sustainability is associated with sense of place concept comes to the fore which concentrates on human-place relationships and interactions (Dempsey et al., 2011). Place-based sustainability emphasizes solutions generated based on local users' preferences and perceptions. Therefore place-based sustainability approaches generate a sense of belonging, and community attachment to a place consequently sense of place.

As it is elaborated earlier, sense of place is the generated emotion and meaning which individuals and communities attribute to specific physical locations or environments. The sense of place concept is a valuable approach for understanding the human relationship with natural and built environments. It is a complex and multidimensional concept that involves cultural, social, psychological, spiritual, and ecological factors.

Sense of place is closely related to sustainability. This is because a strong attachment and identification with a particular place can motivate individuals to take care of their environment and to promote sustainable behaviors. When individuals feel a sense of familiarity or attachment to their environment, they are more likely to understand the ecological processes and relationship between humans and nature.

Furthermore, a strong sense of place can lead to community-based conservation projects and promote social and cultural values that encourage sustainability. For example, a community that connects to a particular park within an urban environment may take measures to conserve the area while also passing on traditional values and ecological knowledge to future generations.

The qualitative approach used in this study contributes to a deeper understanding of the meanings underlying sense of place in relation to parks. This study, with its focus on sense of place as an indicator of park sustainability, explores the meaning of park for its users. Therefore, it incorporates park users' sense of place level into planning, design and management decisions which can enhance authorities, decision-makers and designers' abilities to boost communities' well-being and quality of life. These endeavors are considered as critical actions for long- term sustainability. Accordingly, the study used a tool to measure the park users' sense of place which will be discussed precisely in the fourth chapter of the study.

3. PARK IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

Sustainability becomes an obligation and cannot be neglected; the competition among organizations for superiority in this matter is seen evidently as they have tried to bring up sustainability principles in their boardrooms. As a primarily urban political unit, municipalities are among organizations that constantly make efforts to change the statutes of urban components to sustainable for achieving a sustainable city. To reach such a sustainability goal and move toward sustainable development, there is a need to monitor and control actions and implementations on sustainability principles within urban components such as buildings, infrastructures, and open areas based. As one of the influential types of open spaces, parks must be in accordance with sustainability principles to function at the optimum level while contributing to the sustainable development of a city. Accordingly, sustainability needs to be at the center of the discourse of policy and decision-makers to be effectively implemented within parks to enable them to be drivers for sustainable development.

In this context, there is a need to define parks in the context of sustainable development. In general, a sustainable park is a place that guarantees its future through an intra-generational approach; simultaneously, it protects its current situation through an intergenerational approach; hence, it ensures the need and necessities of present and future generations. However, this definition of a sustainable park is brief as it gives an overview of this concept. Still, the sustainable park with all its characteristics needs to be underlined to have a specific and detailed definition.

Accordingly, finding answers to the following questions helps accomplish this aim. By which characteristics is a park called sustainable? What are the factors affecting the sustainability of a park? How do sustainable development pillars, including environmental, social, cultural, and economic, manifest within a sustainable park? How can a park be a driver of sustainable development? Finally, how does a park function compatible with sustainable development goals?. Consequently, throughout this chapter the sustainable park is defined by investigating its meaning within park sustainability assessment tools and existing literature revolving around this subject.

3.1 Park: A Paradigm Shift Toward Sustainability

Due to the mounting urbanization which happened since the second half of the 19th century, the spatial organizations of the urban environments have been subject to alterations as a reaction to technological advancement and inventions. There has been an enormous burden on the environment on the local, regional, and global scale since the speed of urbanization is directly associated with increasing demands, growth of production and consumption of services, goods, and infrastructures.

The uncontrolled and unstable urban development process intensifies the demand for lands causes urban sprawl which is the main factor in the disappearance and degradation of urban green spaces (Botequilha Leitão & Ahern, 2002). The transcending of city's physical limits or, in other words, territorial expansion results in prevailing artificial environment and has strengthened their dominant unnatural image. Moreover, excessive land use results in landscape fragmentation, biodiversity loss, the creation of urban heat islands, which all exacerbate the dysfunctionality of ecosystems. Correspondingly, the adverse impacts on the health and well-being of people are inevitable (Tzoulas et al., 2007). The disorganized and unpleasant faces of cities and soulless and exhausted citizens are considered the crisis for the contemporary era, which is an outcome of the gradual rupture of humans from nature.

In this sense, new strategies with sustainability approach promote the presence of nature within contemporary cities; as the presence of nature in the form of greeneries diminishes the urban chaos. In recent decades, the revitalization of abandoned and empty urban areas through transitioning to green spaces and preserving the existing green areas have been recognized as the chief urban renewal strategies. The emergence of such strategies gives credit to the existence of the natural environment by the side of the built environment in cities. Enhancing the urban environmental amenities by the provision of parks as public goods facilitate life for citizens as they bring numerous benefits; hence, parks become the center of attention for the policymakers and planners (Warner & Hefetz, 2002; Jacobs, 1961). The creation of urban parks because of urban planning strategies leads to the harmonization of the built environment and the natural environment, which is actually a quest for sustainable development. Niewijk (1994) contended that natural resources that provide recreational activities are a public good that no market can compare to. Accordingly, parks prevent segregation of nature and built environment and bring chances for urban dwellers to be in contact with nature.

While discussing the necessity of being in contact with nature, it does not mean to be in touch with expanded vegetation areas such as forests, as they are pretty unlikely to be in cities proximity, indeed small size green areas, even with low density regardless of being public or private provide the environmental, social, cultural, and economic benefits. In general, green spaces are defined as spaces covered by vegetation serving in two ways: directly, which is about recreational benefits, and indirectly, which refers to ecological benefits that they provide for urban environment (Juaneé Cilliers, 2015). In sum, environmental benefits can be listed as biodiversity maintenance, mitigation of urban heat island effect and microclimate stability, pollution reduction and air quality enhancement, reduction of noise pollution. In respect to social benefits green spaces can improve social interactions by functioning as recreational and relaxing areas (Woolley, 2003). Reducing stress levels and increasing self-esteem are the benefits of being in touch with green areas (Cammack et al., 2002; Kaplan, 1973; Lewis, 1978).

Lynch et al (1995) held a simple and brief definition for the park as they defined it as a part of the land that is colored green by planners on maps. Since a park is a piece of land that includes various forms of vegetation including natural, semi-natural, or planted within or near cities to preserve natural habitats of plants and animal species. Moreover, they are equipped with facilities and amenities for public active and passive recreation. Hayward (1989) stated that park is the term used as a form of land use that addresses all population subdivisions (Hayward, 1989).

Parks, as one of the constituents of green infrastructure, have been recognized as remedies to adverse impacts and consequences of the urbanization process. Generally, green infrastructure is the concept that considers land use with respect to the natural environment; it contains cost-effective solutions and nature-based implementations that mitigate the impacts of grey infrastructures to balance the environment. Naumann et al. (2011) explained green infrastructure as an integrated network of natural and semi-natural areas that serves human well-being. Pitman et al. (2015) stated that green infrastructures within the framework of “ecosystem services” perform multiple functions at once. They provide a broad range of engineering, environmental and human services (Benedict & McMahon, 2006; Lafortezza et al., 2013). In general, the environmental benefits of green spaces such as parks are as follows:

Biodiversity maintenance (Farinha-Marques et al., 2011; Hodgkison et al., 2007); since green spaces can function as “wildlife corridors” or “urban forests”, they can preserve viable populations of species that would otherwise disappear from the built environment (Byrne & Sipe, 2010). Therefore, the more green spaces, the more living spaces with better situations will be. That is an excellent example of “the more, the merrier.”

Mitigation of urban heat island effect and microclimate stability (Alexandri & Jones, 2008; Akbari et al., 2001); as green spaces manage to lower temperatures within their vicinity by evaporative cooling and shading (Shashua-Bar & Hoffman, 2000; Skoulika et al., 2014; Bowler et al., 2010), the energy consumption of cooling will be diminished. According to several studies, the temperature of more dense urban green areas is lower than in non-green urban areas (Huang et al., 2008).

Pollution reduction and air quality enhancement (Bolund & Hunhammar, 1999) green spaces capture carbon dioxide from the atmosphere, which diminishes pollution and results in the improvement of air quality (Davies et al., 2011). They also positively influence global warming and help mitigate climate change (Paoletti et al., 2011). Also, soil contamination removal through the phytoremediation process is another example of the efficiency of green spaces (Reichenauer & Germida, 2008). In addition, green spaces enhance water quality, protect groundwater, and prevent water run-off and flooding.

Reduction of noise pollution (Watts et al., 2013; Veisten et al., 2012); green spaces provide a relaxing place for people to relieve their stress (Ulrich, 1981) since they are characterized by a pleasant acoustical environment with natural sounds (Van Kempen et al., 2014). In addition, they help absorb sounds and block the higher frequencies (Dimitrijević et al., 2017) and function as buffers against noise created in the urban environment (Veisten et al., 2012).

Lozano (1992) categorized open public spaces to three including plazas, streets, and parks. All sorts of open public spaces are the places for people interaction which happens in the form of recreational activities, cultural and social events, as well as political gatherings. Worpole (1997) stated that public spaces hold the key to community involvement. They are places to create positive social interaction and simultaneously strengthen community cohesion; thus, they are significant as a beneficial local source. In particular, parks provide social benefits for the societies as they bring life and character to the cities. That is to say, individuals or groups, regardless of the population characteristics such as sex, gender, race, social status, or income level, can participate in a variety of activities that a park provide. Therefore, parks are meant to be inclusive public spaces accessible for all. Furthermore, different recreational facilities and amenities within parks allow the presence of different groups of people with wide-ranging interests and tastes. Thompson (2002) stated that the significant role of park is in its essence, which is to provide a place for everyone, even a person aiming to be alone or strangers, to be anonymous among crowds.

Parks play a crucial role in generating a local sense of belonging (Low & Altman, 1992). They are recognized as drivers of individuals' satisfaction resulting in creation of the sense of attachment to the area they reside (de Haan & Zoomers, 2005). Kuo et al. (1998) indicated that the benefits of the park for people are in the way that they show a healthier pattern of social functioning resulting in a positive relationship with others. Indeed, parks are considered as places that form social capital for societies. Beatley (2010) stated that the closeness of people with nature strengthens the sense of community, solidarity, mutual respect, and understanding for individuals, besides developing a moral and ethical conscience. The author continues that nature is pivotal in human beings' development and helps creativity by securing those feelings that the built environment cannot offer; nature becomes an escape from monotonous everyday encounters with the built environment. Similarly, Moore (1989) indicated that parks are important factors in child development as they boost creativity.

In addition, it is well established that parks provide opportunities for environmental education, which entails learning through experience and acquiring knowledge in the environment, and developing a socially critical perspective that brings environmental awareness and calls for action on the environment (Fien, 1993; Payne, 2002).

In the context of social benefits of parks, several scholars have also studied their role in the creation of a sense of safety, and there is a consensus that the rate of social and physical incivilities such as vandalism, graffiti, noise even crime is dropped as a result of park presence within neighborhoods (Shepley et al., 2019).

Moreover, the natural spaces within the parks prevent mental and physical health issues (Van Den Berg et al., 2015). In general, urban green spaces are significant factors in promoting physical activities (Richardson et al., 2013). Their existence within walkable distance of living areas positively influences the life span of adults regardless of gender, age factors or individuals martial and socio-economic status (Takano et al., 2002). Lafortezza et al. (2009) described the phycological benefits of urban green spaces in the following words: “the intangible benefits associated with relaxation, calmness, the creation of a balanced feeling, reduction of anxiety, tension, depression, fatigue, and vigor”. The authors stated that green spaces function as “natural tranquilizers,” especially for urban dwellers, to relieve daily life fatigue. There are several studies that verified stress-reduction benefits of parks and believed that they improve human mental functioning (Hartig et al., 1991; Conway, 2000) since they are known as a source in establishing a sense of pleasure and enjoyment for the people by providing variety of recreational activities (McRobie, 2000).

Due to rapid decline in green areas within urban environments preserving the current ones are of paramount importance as they are considered as heritages. They are part of cultural ecosystems that give cultural services. Accordingly, besides environmental and social benefits, parks’ role in communities’ cultural vibrancy has been recognized.

Holding cultural events such as musical events, ceremonies, sports events, and celebrations is known as one of the primary reasons for park use in the past. Providing cultural opportunities in a park generate a new perception regarding it and it becomes a gathering and meeting area for people resulting in a dynamic and lively space (Gibson & Homan, 2004). Parks can be used for a broad spectrum of events and activities regarding public art. No matter with respect to form and scope, these art activities serve the common aim of enhancing aesthetic appeal and vibrancy.

Parks can be a house for strengthening relationships between communities and artists. Art activities are mediums for community involvement and meaningful social interaction (Kwan, 2015); therefore, they have paramount importance in park revitalization. Additionally, they help in the beautification of public spaces within cities. Public art displays in parks are tools to demonstrate local culture and encourage creativity and self-expression. Not only that, but also helps in the generation of political and social dialogues (Trienekens & Bos, 2014).

In addition, cultural activities in parks for ethnic diversities facilitate social cohesion and inclusiveness that attract more people. Parks are identified as places where people experience inter-cultural and multi-ethnic interactions which stimulate social cohesion (Peters et al., 2010). Ellis and Schwartz (2016) believed that cultural amenities contribute to communities' sense of place.

Parks are known as sources of economic benefits including increase in the monetary value of properties, growth in municipal revenues because of increased taxes. The presence of parks also boosts local tourism industry. In addition, parks produce significant monetary savings in respect to health-related issues as well as environmental costs.

3.2 Park's Denotation and Connotation; The Scope of Performance, Typologies

Parks within urban environments are classified into different typologies; each type has various opportunities and limitations. The classification is based on the following factors: size of the covered area; degrees of naturalness (natural, near-natural, semi-natural, altered, historical and cultural, relatively unnatural and artificial); the service radius; user profile; visit length; typical density; the characteristics surrounding area such as type of properties and urban tissue densification; sorts of facilities and amenities (activity types).

In the table below, park typologies are demonstrated. However, the characteristics of each typology are dependent on the environmental, social, cultural, historical, political, and economic conditions of the host environment. For instance, the size and service radius features are independent variables, while user profile, visit length, typical density, surrounding properties, type of offered activities, and degree of naturalness are dependent variables.

Characteristic		Area/ size	Service radius	User profile	Visit length	Typical densities (Peson per hectar)	Type of surrounding properties	Sorts of facilities and amenities
Park type	Pocket	<0.1 (ha)	400 m radius	Local visitor	10-60 minutes	<50	Mostly Residential	Benches, play ground
	Mini	<1 (ha)	400 m radius	Local visitor	10-120 minutes	<50	Mostly Residential	Benches, play ground, picnic and sport facilities
	Linear	30 m (Min Width)	Along the way	Local visitor	…..	……	….	parking , restrooms, benches and trails
	Neighborhood	0.11-4.9 (ha)	1500 m radius	Local visitor- Visitors from the same neighborhood	30- 90 minutes	40-100+	Mixed use	Benches, play ground, picnic and sport facilities, trails, Possibility of both active and passive recreation
	Community	5- 9.9 (ha)	1500-8000 m radius	Local vistor- Visitors from more than one neighborhood	30- 180 minutes	50-200+	Mixed use	Benches, play ground, restrooms, picnic and sport facilities, trails, Possibility of both active and passive recreation parking, small Shops, Street vendor
	District	10 (ha)- 24.9 (ha)	District wide	Local visitor- Tourists (Visitors from surrounding districts)	1- 5 hours	50-1000+	Mixed use	Various types of benches and sitting areas, multiple play ground, restrooms, picnic and major sports facilities sport facilities, biking and walking trails, Possibility of both active and passive recreation parking, small Shops, Street vendor
	Urban	25 (ha)- 30 (ha)	City wide	Tourist (Visitor from various districts)	2 hours untill the end of the day	>150+	Mixed use	Various types of recreational facilities, cultural and commercial areas
	National	25- 1000+	Country wide	Tourist (Visitor from various cities- Foreign visitors)	12 hours to 1 week	<10	…..	Natural resources- minimal intervention

Figure 3.1 : Park typologies.

3.2.1 Pocket park

As in contemporary cities, congested urban areas are prevalent, and allocation of green spaces to large areas is unlikely. Therefore, allocating small-sized open areas to parks seems a logical answer to the lack of open spaces within cities. In fact, a network of small parks can be a beneficial alternative to larger parks, as they serve opportunities for people to live or work near park areas, notwithstanding their limited and small size. These kinds of parks are called pocket parks, vest-pocket parks, or mini parks in literature. Although, in a study done by some authors, mini-park characteristics are varied to pocket parks (Sarhan et al., 2016) they are used interchangeably.

The greenery in pocket parks can regulate the micro-climate and function as the city's lungs by increasing the permeable and purifying levels of the urban atmosphere. Besides serving the environmental benefits, pocket parks simultaneously bring relief to high-density areas by functioning as relaxation and leisure zones for local people. Their potential to bring a sense of place for users and ensure users' well-being has been acknowledged. "Greens or quiet enclaves" are the terms used to describe pocket parks (Sinou & Kenton, 2013). Providing parks and recreational space for local residents in limited and accessible spaces increases the quality of the neighborhood and are meant to meet various age range of people's needs, including physical and psychological recreational needs. Cohen et al. (2014) studied the type of park use and park-based physical activities of pocket park's users and came to the following conclusion that pocket parks have an influential role in encouraging moderate to vigorous physical activities for people as they are attracting people by being safe areas; the authors also mentioned the cost-effectiveness of this type of park.

The use of abandoned spaces and transitioning them into green and open urban spaces recognized as pocket parks has played a significant role in improving local residents' quality. Pocket parks invite people to relax and get away from the hustle and bustle of everyday life.

They are small spaces surrounded by commercial or residential buildings and often function as a separator between these areas and the dense urban fabric. Activities in these parks include small social events; therefore, they are the places where people can interact, and vegetation, urban furniture, and recreational facilities are among the features they may have. Pocket parks are akin to large courtyards, and they are designed to promote togetherness and become familiar with one another’s culture. This common space is meant to be shared by various people.

One of the special and unique features of pocket parks is that they may be created in empty or abandoned spaces that also trigger the process of urban revitalization or even regeneration of a city, offering a new potential to accommodate. The process of planning and designing, and ultimately transitioning these areas that have already not functioning into pocket parks, is an acknowledged approach to contributing to scenery features of the urban landscape.

These parks are much easier to build than maintain because without efficient design, community support, and proper maintenance, they are subject to losing their function and converting to ineffectual spaces. These parks can also be the habitats of animals, especially birds in the city. Naturally, these parks are usually scattered and not connected to each other because they are often created separately in places where there is a design opportunity. These parks can be connected if they are located next to green paths or bike paths visible and usable by pedestrians. These parks should be in areas with high pedestrian traffic to remain safe and functional. Therefore, viewability and accessibility are key factors in planning and designing pocket parks. The design of the spaces in-between buildings needs to be considered as designing an outdoor room with varied, sometimes overlapping, but well–defined functions (Barton et al., 2021). Accordingly, it is important to consider the needs of users.

"The Pocket Parks can be an "oasis" for wildlife. They can be used as an area of support for birds, a reference point for their movements, at the same time, people can have the chance to enjoy the view of birds and their sounds, to feel in close contact with nature with the others although this nature is limited by the built volumes" (Whyte, 2001).

3.2.2 Linear park

After industrial revolutions, societies have faced the emergence of modernization and socio-political, socio-cultural, economic, and environmental alterations; therefore, cities were characterized by an important self-perpetuating process of urbanization. Industrialization triggered rural-to-urban migration and thus led to the rapid growth of cities. The speed and scale of urbanization bring challenges, including meeting accelerated demand for affordable housing, well-connected transport systems, other infrastructure, and basic services, which lead to the subsequent replacement of the natural environment with the built environment. The human-made environment provides the setting for activities; as a result, the grey infrastructures become dominant components of cities; nevertheless, their role in providing services for a living cannot be denied. These operations have caused a decrease in natural resources such as green spaces.

The emergence of automobiles has led to developments of industrial societies and accelerated the movement of people and goods; thus, the land use map based on vehicle moves resulted in the creation of urban elements such as highways leading to illogical spaces and even anti-spaces in urban environments. Therefore, many streets and highways were substituted with green spaces and walkways for car movements, and priority was given to car drivers rather than pedestrians. The urban green spaces that provide vital health services and environmental services have vanished, consequently bringing major difficulties for the environment and affecting the inhabitants. In addition, green spaces have been disabled from facilitating physical activities and promoting better mental health and well-being for people.

Urban settlers used to enjoy the city's atmosphere in the past without suffering from noise, air, and visual pollution, but they are now more involved in city turmoil. In contemporary urban environments, it is significant to preserve fragmented natural green spots resulting from expanding city structures existing among buildings, highways, and streets. On the other hand, the necessity of having social, attractive, and relaxing areas such as green walkways has risen day by day. Urban green walkways are vital components in the nourishment of the urban environment that provide both ecological and social services to improve the quality of life and help boost the well-being of urban settlers.

Walking is the most natural, oldest, and most necessary form of human displacement in the environment, simultaneously allowing seeing different places. This phenomenon has paramount importance regarding the perception of spatial identity, surrounding beauty, and enhancement of the sense of belonging to the environment.

Numerous studies focus on the positive role of walking in the mental and physical health of people (Hanson & Jones, 2015; Morgan et al., 2010). In addition, since walking as physical activity, regardless of being willingly or not, is integrated with the physical landscape and social surroundings, it refers to the mobilization aspect of the "therapeutic landscapes" concept that considers the link between well-being and landscape as a place (Doughty, 2013). The therapeutic landscapes concept entails the direct connection between settings and surrounding environments and the health and well-being of people (Gatrell, 2013).

The significance and role of pedestrians in the sustainable transport network has been studied by several scholars (Jou, 2011; Newman et al., 2008) the concept of sustainable transport includes the development of densities that could carry public transportation, walking, and cycling, which has a pivotal position in city sustainability and ultimately has positive influences on people's behavior, motives, and desires. In other words, walking as the healthiest, safest, and cleanest way of transportation is an essential element related to sustainable transport principles. It is also the best move concerning promoting equity and social justice among all people in the community (Salehi, 2007). Cities and towns of the contemporary era have been planned and designed in such a way that provides faster and better access for vehicles. This phenomenon has led to a strong dependence of urban life on cars which results in citizens' low physical activities and consequences such as for overweight, obesity, and depression; it negatively influences social interactions as well. Therefore, with integrated planning, the pedestrian zone should be implemented in cities. Accordingly, the design of the urban environment should be to establish facilities and services accessible to citizens so that they can walk, cycle to destinations, and be socially active. "In general, the contemporary ethos is to design pedestrian dominant rather than car-dominant environments: such approaches prioritize pedestrians without banishing the car" (Carmona, 2010). The author believes that permeability and access should be increased, particularly by foot. The design of urban spaces must aim to promote walking by all groups of people and avoid a car-dependent environment; otherwise, it reduces the built environment's potential to be sustainable. Since walking is considered a method of sustainable transportation and holds the key to reducing energy consumption, congestion of air, noise, and visual pollution.

Allocation of walkways combined with green areas in land use planning is the manifestation of the pedestrianism concept and pedestrian movement coined by several theoreticians starting in the early years of the 20th century and mostly in the second half of this century. The pedestrianism and the therapeutic landscapes concepts both have the chief leading role in the creation of linear parks that combine green areas with pedestrian pathways.

Linear or thin parks are parks designed as a strip along the length of the street, urban river, urban waterfronts, canal, railway, or at the edge of a city that conforms to a variety of active and passive recreation. The linear park's most conspicuous characteristic is that its length is far longer than its width; indeed, this kind of park is developed in a strip mode function as a promenade. These parks usually have the possibility of walking and cycling and establish sufficient connection with the adjacent residential, commercial areas, and workplaces. In addition, controlling surface runoff is another beneficial feature that these parks serve. The linear park also functions as a linkage between fragmented green spaces.

Recent studies have highlighted the importance of increasing green urban areas by creating a connection between fragmented green patches by means of green corridors that will enhance biodiversity within the urban landscape (Jongman, 2004). In other words, connections between urban woodlands, gardens, or other green spaces are recognized as a way to limit the negative effects of fragmentation (Turner, 1989). Because the fragmentation of the green space has adverse ecological impacts and brings grand challenges for environmental and socio-economic aspects (Botequilha Leitão & Ahern, 2002; Marulli & Mallarach, 2005). Habitat destruction, reduction in the richness of plants and animals' species, even their extinction, a threat to urban ecosystem health, and disruption of urban ecosystems are among the difficulties caused by green spaces fragmentation (Collinge, 1996; Kim & Pauleit, 2007). In the same way, the decline in the well-being of people is inevitable as it adversely simulates the quality of people’s living and working environments; hence, it seriously jeopardizes the achievement of sustainable development (Tian et al., 2011).

Also, through appropriate designs, linear parks can function as ecological corridors that improve city ventilation and prevent urban warming. It provides cooling through shading and enhances evapotranspiration, thus reducing the urban heat island effect. Indeed, urban green areas can positively influence human health and climate change adaptation (Jongman, 2004).

Although these parks may vary in width, mostly with minimum of thirty meters in width, they generally have rest areas, the main walkway, side walkways, and bike paths which connect the park components and all components to other structures within cities. Since the linear park is a part of the urban landscape and is associated with ecological and recreational systems, terms such as green infrastructure, greenways, green or landscape corridors, wildlife corridors, and rails to trails are used as its indications (Kullmann, 2011). Moreover, linear landscapes are integrated with urban design since they are recognized as drivers of the urban revitalization process that also connect recreational amenities to urban structures (Kullmann, 2011).

The ways to ensure the people’s needs in planning, design, implementation, and post-implementation process, such as management and maintenance of the park, may vary regarding users’ personal interests and expectations regarding a park. Additionally, diverse physical conditions of the environment and social, cultural, economic, and political characteristics of the host community are among paramount factors that may distinguish the ways to guarantee users' needs. However, the main and basic ones in respect to the linear park can be listed as follow: safe walking paths, consideration of users’ comfort and suitable places for walking and biking, shelter and seating areas, clean and attractive environment, access to public transportation, visual landscapes attractions in general aesthetic benefits for watching while walking, biking and resting, the possibility of establishing social interactions with others.

3.2.3 Neighborhood park

Due to the unplanned urban development starting in the second half of the twentieth century onwards, the high density of cities, which is the most severe impact of the urbanization process, has emerged. Urbanization is the main cause of environmental changes. It has caused the loss of beauty and spaciousness of nature in cities and causes socio-economic, cultural, and ecological problems that cause not only local difficulties but also regional and global challenges. Most importantly, the land-use change resulting from population growth and subsequent rising demands for housing and its related services, all known as grey infrastructure, is evident. The absence of appropriate management, which is accompanied by improper decision, planning, and design, has resulted in the uncontrollable physical development of cities following the substitution of green spaces with settings. Especially illogical land-use policies and regulations that affect agricultural lands result in a crisis in fulfilling humans' demands for staying in connection with natural environments. Moreover, a land-use change regarding agricultural lands has dire consequences such as compaction, nutrient degradation, loss of soil structure, and soil salinity following soil erosion originating loss of fertile land.

Urban green space reduction has negatively affected the urban constituents, but the most affected units are neighborhoods, the smallest constituents of cities. The neighborhood is recognized as a space of inhabitation where settlers’ cultural and social development occur within its boundaries. The gradual diminishment in the size of open spaces manifests itself with side effects on inhabitants' satisfaction concerning the living environment. They face alienation regarding the place and lose the sense of belonging, resulting in a lack of participation. Although the mentioned consequences are predictable in the case of neighborhood park absence, this does not necessarily mean that every neighborhood park successfully meets human needs and is qualified to prevent such problems. This situation applies to all park typologies regardless of their scope of performance or characteristics.

Accordingly, residential neighborhoods are congested with housing settlements; hence, to avoid the problems ahead and mitigate the current difficulties, the green spaces need to be distributed in-between residential building spaces. On the other hand, the continuous urban transformation has brought spatial, social, and cultural changes within the neighborhood context, and issues such as socio-spatial segregation have emerged. Hence, proper distribution of urban green spaces in all neighborhoods of cities establishes social equity for the fair access of all citizens to green spaces as green spaces have the ability to create social cohesion and strengthen community members’ bonds. Furthermore, appropriate allocation of lands to artificial green spaces or preservation of natural green spaces within neighborhoods are effective actions regarding continuous environmental, social, cultural, and economic efficiencies and psychological and physical health benefits for inhabitants.

The green spaces within urban neighborhoods that function as recreation areas and ecological buffer zones for plant and animal species to thrive are called neighborhood parks. A neighborhood refers to an area with a common border with other neighborhoods, albeit the term entails a broader meaning, especially in sociology, which pertains to the social rather than physical dimension. However, here the neighborhood means a space with a physical limit consisting of physical properties such as housing and public spaces serving inhabitants.

As Hester (1984) stated, a neighborhood park's key attribute entails recreational areas approximate to living areas, where people can spend their leisure time gathering, word, and conducting educational research. Chen et al. (2016) listed the benefits of neighborhood parks as follows: influence on the economic value of the surrounding area, particularly increased housing prices; children's development, passive and active sorts of recreation for a wide range of people, education opportunities, enhancement of physical health, cultural events, and community activities. In addition, enhancement of the visual landscape, prevention of anti-social behaviors, and biodiversity enhancement are other significant benefits of neighborhood parks (Cowan, 2021). Neighborhood parks guarantee the experience aspect of socializing and enable people to share interests and be in connection (Gehl & Svarre, 2013). Chapman (1999) defined a neighborhood park as a place with basic recreational facilities and amenities that ensure the people's needs regarding a neighborhood park without long-distance walking. The neighborhood park's recreation facilities mostly consist of sitting areas, greenery, jogging paths, small sports facilities, and playgrounds.

Gottdiener (1994) pointed out that the community needs a space conducive to social life to prosper and develop. Accordingly, the presence of green spaces in the form of neighborhood parks in an outdoor territory in the vicinity of living areas that serve people within walking and cycling distance of their home or workplace is crucial while planning, designing, and management of land use. Moreover, people tend to use neighborhood parks more than other types of open spaces, as they are in close proximity to the places where they live since they are open spaces where they can utilize active and passive recreation.

3.2.4 Community park

With the new urban development, there is an imbalance in terms of natural land patterns rate in relation to the built environment; thus, urban grey infrastructure networks prevail over ecological or green infrastructure networks. Accordingly, one of the basic and important tasks of urban and regional planners is optimal land allocation focusing on urban green spaces. One of the crucial actions regarding land use is allocating relatively large spaces at the common point area of several neighborhoods, which is also influential in lessening the burden of neighborhood parks regarding securing the recreational needs of residents and contributing to the community's environmental benefits.

The community park is a public open space that encompasses a wide land area. Its service radius is longer than a neighborhood park; in contrast to a neighborhood park, it serves the area more than the territory of a single neighborhood. However, it can be said that community parks address neighborhoods in their vicinity. Since their service radius is longer, they cover more areas. Additionally, they are planned and designed to satisfy the needs of families and users with a wide range of recreational facilities and amenities. As a result, they aim to ensure the community-based recreational needs and function more inclusively than a neighborhood park. Community Park facilities and amenities generally entail an area specializing for pets, extensive walking trails, sports fields, water elements, multiple playgrounds, often thematic, exercise stations, picnic pavilions and benches, and multiple unique and special amenities.

3.2.5 District park

Those types of parks are called District parks that occupy large areas of land and consist of multiple recreational facilities and amenities. Their scope of performance is limited to district wide. According to the urban planning definition of a district, it encompasses multiple neighborhoods; thus, despite community parks, district park provides environmental, social, cultural, economic, psychological, and physical benefits for inhabitants of that specific district. These parks have more comprehensive recreational facilities and amenities than parks serving a single neighborhood or several. Therefore, they ensure a wide diversity of people’s needs and have multipurpose recreational facilities, a wide range of passive and active recreation such as sitting areas, picnic areas, playgrounds, walking and biking paths, water elements, commercial facilities such as shops and restaurants and extensive sports facilities or tournament level fields.

3.2.6 Urban park

Urban parks address all citizens of a city; this definition is a straightforward definition of those parks that encompass an area of land with various local natural and planted vegetations and places of historical and cultural buildings, monuments, and various leisure-time physical activities associated with widely divergent needs and expectancies such as sports facilities, playgrounds. Urban parks are known for their role in hosting cultural and social events as their vast area offers numerous people to be part of the events. Furthermore, urban parks are mostly planned and designed to preserve unique and historic landscapes. The peripheral areas of urban parks are multi-function areas; commercial, educational, and residential buildings are throughout their surroundings. Furthermore, “aesthetic, historical and recreational values of urban parks increase the city's attractiveness and promote it as a tourist destination, thus generating employment and revenues” (Chiesura, 2004). Indeed, all the benefits that a park provides for society apply to all types of parks. However, the size, service radius, the condition of green spaces, plant diversity, the type, quantity, and quality of recreational facilities and amenities, park’s equipment and devices situation, the host city’s urban density situation, economic, social, cultural, environmental and geographic condition of the area where a park is located, management, maintenance, operations methods are among influential factors in parks’ scope of effectiveness.

3.2.7 National/conservatory park

“Large natural or near-natural areas protecting large-scale ecological processes with characteristic species and ecosystems, which also have environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities” (Dudley et al., 2008, p.2). In addition, the national parks are intact and protected against human exploitation of natural recourses. Indeed, for the proper protection of biodiversity, genetic resources, ecological integrity and landscapes, any human activity other than conservation measures is prohibited in these areas. National parks are parts of preserved areas by governments to maintain and protect their habitat as well as to create a safe and suitable environment for the growth of plant and animal species. Moreover, it is known as a way to prevent the extinction and destruction of humans and other creatures. These areas of nature include forests, pastures, plains, rivers, lakes, and mountains. National parks are suitable areas for educational, research and tourism activities. For this reason, national parks have stronger legal protection than other protected areas. They also refer to the protection of wildlife for future generations as national pride.

3.3 Sustainable Park Meaning in Park Sustainability Assessment Tools' Perspective

In this section of the study, the meaning of the sustainable park is scrutinized within the approach of internationally accepted park sustainability assessment tools. Therefore, Green Mark, Green Flag, Global Sustainability Assessment System (GSAS) for Parks, and The Sustainable Site Initiatives (SITE) are investigated to find out the reasons behind criteria and indicators devised for sustainability evaluation of parks.

As it is seen, both green and sustainable terms are used in the title of these tools. It is worth noting that although green and sustainability, especially in respect to parks, encompass the same scopes in studies, they differ to some extent. Based on the study done by Yanarella et al. (2009), who asserted that sustainability distinguishes itself from green in that, conceptually, the latter focuses on one of the pillars, namely environmental or economic, while sustainability balances on three pillars: environmental, social and economic known as "triple bottom line" (Elkington, 1997). The authors continued that the significant difference between these two terms lies in the scope and scale they operate, which does not necessarily mean that green operates on one pillar or dimension without considering the more extensive system (Yanarella et al., 2009). Accordingly, it is significant to figure out what scopes these tools operate within.

In general, there is an uncertainty about the sustainability meaning and scope portrayed by sustainability assessment tools, as they often highlight particular sustainability pillars (Huesemann, 2001). As a result, most of the sustainability assessment tools are criticized (Gibson, 2006). Some tools are not comprehensive because they have failed to consider all the issues related to sustainability. They face complexities in integrating sustainability domains, thus they are not fully established (Ramos & Caeiro, 2010; Singh et al., 2012). According to St Flour and Bokhoree (2021) it is necessary for tools to adapt a more comprehensive approach which involves all aspects of sustainability. It will be possible when all pillars of sustainability environmental, social, cultural, and economic are addressed. That is to say, the capability of tools to deal with different but connected aspects of sustainability is strongly dependent on its approach regarding these pillars. However, the role of sustainability assessment tools in generation and dissemination of latest sustainability knowledge cannot be ignored; even though not all aspects are considered, and the focus is mostly on one dimension more than the others.

3.3.1 Green mark

According to Power and Sekar (2011) the Centre for Urban Greenery and Ecology (CUGE) of NParks based in Singapore developed the Green Mark for a practicable framework for sustainability evaluation of parks. It is claimed that, the Green Mark aims to improve the parks' situation by integrating the triple bottom line of sustainability. It emphasizes that environmental, social, and economic aspects are linked with each other within park context. It is designed to be used not only for evaluation of parks in Singapore but also is able to be applied in parks in other countries. Raising public awareness regarding park sustainability, distinguishing appropriate and practical sustainability implementations within parks in all phases including design, management and maintenance are recognized as targets of Green Mark. Furthermore, it is asserted that, globally accepted methodologies and frameworks of park sustainability such as the ones SITE and Green Flag provides, have been used for establishment of its criteria and indicators.

Green Mark accredits sustainability initiatives based on criteria within two broad groups, namely "resource self-sufficiency and park quality" (Power & Sekar, 2011, p. 84). Since parks utilize natural resources to operate, maintaining economic vitality besides preventing environmental pollutions to guarantee clean and healthy environment for now and future generations become crucial. Accordingly, the resource self-sufficiency categorization addresses the management of materials, waste, water, and energy. On the other hand, the park quality group refers to the extent a park satisfy its users based on its attributed characteristics and functions. This categorization entails "conservation and heritage values, recreational opportunities, community engagement, environment education, park usage, operational standards and efficiencies" (Power & Sekar, 2011). Accordingly, under these two groups, Green Mark consists of total of 6 categories and 25 indicators.

Table 3.1 : Green mark criteria and indicators.

Criteria	Indicators
Waste & Material Minimization	1. Waste & Material Monitoring
	2. Onsite Waste Recycling
	3. provision of Recycling Facilities
	4. Waste Management Improvement plans
	5. Sustainable Construction
Water Efficiency	6. Water Monitoring
	7. Potable Water Reduction
	8. Water efficiency Improvement plans
Energy Efficiency	9. Energy efficiency Index
	10. Energy Monitoring
	11. Energy efficiency Improvement plans
Park Management	12. Accessibility
	13. Recreational opportunities
	14. Visitorship
	15. Community Involvement
	16. Park Management
Conservation & heritage	17. Monitoring of Flora & Fauna Species
	18. Number of exotic Species
	19. Greenery Provision
	20. Conservation & Restoration plans
Other Green Features	21. Carbon Accounting
	22. Fuel-efficient Park equipment
	23. Water sensitive urban design
	24. Rainwater harvesting
	25. Soil moisture capacitors monitoring system

3.3.2 Green flag

Green Flag is a park sustainability benchmark based in United Kingdom aims to standardize criteria and indicators of park sustainability. It focuses on providing healthy green areas for everyone to benefit through strengthening multi-cultural and social bonds, respecting the history and preserving national heritage in biodiversity, supporting management with new and beneficial practices. Green Flag consists of 8 categories with 27 indicators to evaluate park sustainability initiatives based on the three concepts of "the user, the site, and the management". The concept of the user pertains to the users' characteristics, needs and expectations. The concept of site considers park’s “landscape, biodiversity, social and physical settings” while the concept of management refers to the application of regulations and policies to preserve and maintain park as well as to ensure safety (Ellicott, 2016). It is claimed that this benchmark which addresses park authorities and decision makers is flexible enough to be applied in any park. In addition, Green Flag encourages collaboration between managers by sharing their short- and long-term plans regarding park management.

Table 3.2 : Green flag criteria and indicators.

Criteria	Indicators
A welcoming Place	1. Welcome
	2. Good and Safe Access
	3. Signage
	4. Equal Access for All
Healthy Safe and Secure	5. Appropriate Level of Quality Facilities and Activities
	6. Safe Equipment and Facilities
	7. Personal Security
	8. Control of Dogs/Dog Fouling
Well Maintained and Clean	9. Litter and Waste Management
	10. Horticultural Maintenance
	11. Arboricultural Maintenance
	12. Building and Infrastructure Maintenance
	13. Equipment Maintenance
Environmental Management	14. Managing Environmental Impact
	15. Waste Minimisation
	16. Chemical Use
	17. Peat Use
	18. Climate Change Adaption Strategies
Biodiversity, Landscape and Heritage	19. Management of Natural Features, Wild Fauna and Flora
	20. Conservation of Landscape Features
	21. Conservation of Buildings and Structures
Community Involvement	22. Community Involvement in Managment and Development
	23. Appropriate Provision for the Community
Marketing and Communication	24. Marketing and Promotion
	25. Appropriate Information Channels
	26. Appropriate Educational and Interpretational Information
Management	27. Implementation of Management Plan

3.3.3 Global sustainability assessment system (GSAS) for parks

Global Sustainability Assessment System (GSAS) based in Qatar aims at reducing the ecological impacts and limiting the natural resource consumption to create a sustainable built environment. This rating system functions as a park sustainability benchmark to balance needs and environmental conditions in local, regional, and global scale. For doing so, it involves an integrated approach to assessing the design, construction, operation, and management of parks by offering new practices. Moreover, it is claimed that GSAS is a comprehensive park sustainability rating system as it addresses the built environment from a macro level to a micro level, indicating a broad range of techniques, methods for implementation of sustainability principles and imperatives (Alhorr, 2019). Besides measuring sustainability initiatives within parks through a scoring system, GSAS presents a guideline with standardized criteria and indicators to be applied within a park environment. It displays necessary actions and approaches to sustainability within parks by seven different categories namely "Urban Connectivity, Site, Energy, Water, Materials, Cultural & Economic Value, Management & Operations" and their attributed 42 indicators (Alhorr, 2019).

Table 3.3 : GSAS criteria and indicators.

Criteria	Indicators	
Urban Connectivity	1. Proximity to Infrastructure	2. Neighborhood Connectivity
	3. Load on Local Traffic Conditions	4. Public Transportation
	5. Green Transportation	
Site	6. Land Preservation	7. Waterbody Preservation
	8. Biodiversity Preservation	9. Vegetation
	10. Drain & Stormwater Contamination	11. Desertification
	12. Heat Island Effect	13. Shading
	14. Accessibility	15. External Lighting
	16. Walkability	17. Bikeability
	18. Construction Practices	
Energy	19. Energy Use Performance	20. Primary Energy Performance
	21. CO2 Emissions	22. Energy Sub-Metering
	23. Renewable Energy	
Water	24. Water Demand Performance	25. Water Reuse Performance
	26. Water Sub-Metering	
Materials	27. Locally Sourced Materials	28. Materials Eco-Labeling
	29. Recycled Content of Materials	30. Materials Reuse
	31. Cut & Fill Optimization	32. Design for Disassembly
	33. Responsible Sourcing of Materials	
Cultural & Economic Value	34. Heritage & Cultural Identity	35. Support of National Economy
Management & Operations	36. Systems Commissioning	37. Waste Management
	38. Facility Management	39. Leak Detection Systems
	40. Safety & Security	41. Landscape Maintenance
	42. Sustainability Awareness	

3.3.4 The sustainable sites initiative (SITE)

The Sustainable Sites Initiative (SITE) designed to be a practical framework for sustainability related operations within landscapes with the purpose of emphasizing the role of lands as key components of the built environment which need to be planned, designed, developed, and maintained sustainably. SITE aims to prevent adverse impacts of human actions on landscapes to be in line with sustainable development goals. It focuses mainly on the role of sustainable landscape in mitigation of environmental degradations, and enhancement of local and regional economies. SITE also underlines sustainable landscape benefits for individuals and communities by entailing aspects related to social and cultural pillars. The SITE sets of criteria and indicators are devised to improve landscapes' ecological performances as their economic value is incredibly important. SITE address architects, landscape architects, urban planners, engineers, besides authorities and decision makers to be aware of the benefits which landscapes provide. Moreover, SITE urges them to protect, restore and improve ecosystem services by appropriate management methods presented within its indicators. SITE entails 10 categories including "site context, site design-water, site design - soil + vegetation, site design - materials selection, site design - human health + well-being, construction, operations + maintenance, education + performance monitoring, innovation or exemplary performance" and their total of 67 attributed indicators.

Table 3.4 : SITE criteria and indicators.

Criteria	Indicators	
Site Context	1. Limit development on farmland	2. Protect floodplain functions
	3. Conserve aquatic ecosystems	4. Conserve habitats for threatened and endangered species
	5. Redevelop degraded sites	6. Locate projects within existing developed areas
	7. Connect to multi-modal transit networks	
Pre-Design Assessment + Planning	8. Use an integrative design process	9. Conduct a pre-design site assessment
	10. Designate and communicate VSPZs	11. Engage users and stakeholders
Site Design - Water	12. Manage precipitation on site	13. Reduce water use for landscape irrigation
	14. Manage precipitation beyond baseline	15. Reduce outdoor water use
	16. Design functional stormwater features as amenities	17. Restore aquatic ecosystems
Site Design - Soil + Vegetation	18. Create and communicate a soil management plan	19. Control and manage invasive plants
	20. Use appropriate plants	21. Conserve healthy soils and appropriate vegetation
	22. Conserve special status vegetation	23. Conserve and use native plants
	24. Conserve and restore native plant communities	25. Optimize biomass
	26. Reduce urban heat island effects	27. Use vegetation to minimize building energy use
	28. Reduce the risk of catastrophic wildfire	
Site Design - Materials Selection	29. Eliminate the use of wood from threatened tree species	30. Maintain on-site structures and paving
	31. Design for adaptability and disassembly	32. Use salvaged materials and plants
	33. Use recycled content materials	34. Use regional materials
	35. Support responsible extraction of raw materials	36. Support transparency and safer chemistry
	37. Support sustainability in materials manufacturing	38. Support sustainability in plant production
Site Design - Human Health + Well-Being	39. Protect and maintain cultural and historic places	40. Provide optimum site accessibility, safety, and wayfinding
	41. Promote equitable site use	42. Support mental restoration
	43. Support physical activity	44. Support social connection
	45. Provide on-site food production	46. Reduce light pollution
	47. Encourage fuel efficient and multi-modal transportation	48. Minimize exposure to environmental tobacco smoke
	49. Support local economy	
Construction	50. Communicate and verify sustainable construction practices	51. Control and retain construction pollutants
	52. Restore soils disturbed during construction	53. Restore soils disturbed by previous development
	54. Divert construction and demolition materials from disposal	55. Divert reusable vegetation, rocks, and soil from disposal
	56. Protect air quality during construction	
Operations + Maintenance	57. Plan for sustainable site maintenance	58. Provide for storage and collection of recyclables
	59. Recycle organic matter	60. Minimize pesticide and fertilizer use
	61. Reduce outdoor energy consumption	62. Use renewable sources for landscape electricity needs
	63. Protect air quality during landscape maintenance	
Education + Performance Monitoring	64. Promote sustainability awareness and education	65. Develop and communicate a case study
	66. Plan to monitor and report site performance	
Innovation or Exemplary Performance	67. Innovation or exemplary performance	

3.4 Sustainability Assessment Tools' Environmental, Social, Cultural and, Economic Approaches

According to the criteria and indicators presented in Green Mark, Green Flag, GSAS and SITE, it is apparent that these tools follow environmental sustainability principles. Environmental sustainability, in its broadest sense, refers to natural resource conservation and subsequently protection of ecosystems. It addresses the ability of the ecosystem to function indefinitely without burden on resources. In fact, environmental sustainability in practice is a balance between environmental needs and development needs. In general, environmental sustainability consists of following matters:

- Ecosystems become compatible with the built environment,
- Ecosystems become able to adapt to present and future needs as well as forthcoming development purposes and provisions,
- Ecosystems become sufficiently adaptable to the changes especially in case of damages and need to be restored at the lowest cost.

However, environmental sustainability principles manifest within the following concepts: waste and material management, water management, green space management, energy management, green transportation, wildlife, and habitat management.

In recent decades, due to the population explosion, the importance of water management has been increased, as water is one of the basic survival needs. Water management is recognized as one of the main factors of sustainable development and is an efficient way to face water shortage and preserve fresh- water supplies (EL-Nwsany et al., 2019). Beside water management, waste and material management is also emphasized by park sustainability assessment tools. Because today's communities' consumption trend produces a substantial amount of waste which has an adverse impact on the environment besides the negative influence on the socio-economic aspect of society. In addition to the fact that sources are not infinite, it is a challenge for authorities to manage the generated massive waste in an efficient and environmentally responsible way (Zaman & Lehmann, 2011). Therefore, waste management is a critical factor in achieving sustainable development and needs to be considered by all community entities. It focuses on the collection, transfer, processing, recycling, and disposal of waste generated by human activities to ease the burden on landfills, conserve natural resources and save energy (Wan et al., 2019). Moreover, it reduces the negative impact on human health and preserves the visual quality of the environment (Popescu et al., 2016). Lehman defined sustainable waste management as a way to turn waste into a resource (Lehmann, 2010).

In sum green space management refers to strategies and actions to preserve, improve and develope green spaces to maximize environmental benefits such as biodiversity maintenance (Farinha- Marques et al., 2011; Hodgkison et al., 2007); Mitigation of urban heat island ef- fect and microclimate stability (Alexandri & Jones, 2008; Akbari et al., 2001); Pollution reduction and air quality enhancement (Bolund & Hunhammar, 1999; Konijnendijk et al., 2013; Setälä et al., 2013); Reduction of noise pollution (Watts et al., 2013; Veisten et al., 2012).

In sum, wildlife and habitat management refers to applying scientific and technical principles to protect the wildlife population and its habitat which is under pressure of human activities. The aim of wildlife management is to create a balance between the needs of humans and the needs of wildlife to implement sustainable exploitation.

In sum energy management refers to:

- Renewable resource usage, in other words, usage of alternative clean fuels instead of fossil fuels and coal as well as substituting conventional equipment with energy-efficient appliances, which are recognized as effective ways to reduce greenhouse emissions (Toman, 2001).
- Green buildings' element implementation (Brown & Southworth, 2008), forasmuch as the green building initiative urges energy efficient designs; they enable conditions for reduction of waste production, hazardous materials, and energy consumption (Alshuwaikhat & Abubakar, 2008). Mohammad alizadehkorde and Weaver (2018) also stated that actions regarding buildings' energy performance are recognized as a relatively immediate intervention that can be useful for universities to consume energy more sustainably.
- Smart building implementation, which is identified as "a building which controls its own environment" and characterized by benefits including "predictive maintenance," "energy-saving," "effective monitoring," "optimized site cleaning," and "redesigned space" (Rameshwar et al., 2020).

In sum green transportation refers to actions to minimize the impact of transportation on the environment as well as reduction of costs to have economic benefits. The transportation sector, via greenhouse gas emission, negatively impacts the environment and is known as one of the factors responsible for the increase in carbon footprint. Therefore, concerns about climate change have converged to generate an increasing interest in alternatives recognized as sustainable transportation. Green or sustainable transportation refers to certain systems that serve for sustainable development (Jha et al., 2014) by taking into account the triple bottom line: environmental, social, and economic. It is identified as the transition from “vehicle-oriented” to “people-oriented” (Zhang et al., 2010). Sustainable transportation preserves humans’ health and their environment in a way that economic progress will be continued, and community balance will be met. Accordingly, since parks sustainability assessment tools follow environmental sustainability principles, they address the above-mentioned concepts within their criteria.

Park sustainability assessment tools follow social sustainability principles as well. Social sustainability addresses healthy and livable communities that are equitable, diverse, and democratic which ensure human well-being and quality of life. Social sustainability emphasizes the ability of society to ensure equitable opportunities for all members; especially by focusing on vulnerable community members. According to social sustainability, society needs to accept, promote, and encourage diversity; in other words, individuals, groups, and communities must be recognized and respected regardless of sex, gender, race, ethnicity, beliefs, religion, disabilities, societal roles, and socioeconomic status. Moreover, the processes, systems, and structures within society need to be in a way that ensures interrelations, interactions, and connectedness among individuals; simply put, strengthening social cohesion.

Humans’ primary needs and living necessities must be provided by society including shelter, clothing, food, followed by economic independence, health, education, and safety. Albeit the needs of humans are not limited to these needs, indeed, the needs of people concerning their desire and demands for life satisfaction ought to be considered. Society is expected to rest upon democratic principles in a way that all community members contribute to the decision-making process of governance. Based on park sustainability assessment tools, applying social sustainability principles is possible by considering universal design concept, inclusive design concept, participatory design concept, education-oriented design concept and recreational design and management concept.

Cultural sustainability encompasses the ability to sustain and enhance values, beliefs, attitudes, as well as practices regarding customs and traditions. It aims to retain diverse cultural identities besides preserving cultural heritage. In park sustainability assessment tools perspective, the matter of heritage conservation has been emphasized. In respect to economic sustainability, these tools focus on bolstering local and national economy by promoting cost-efficient initiatives within parks. In addition, Green Mark, Green Flag, GSAS, and SITE tools criteria and indicators are devised in respect to sustainable development goals; the conformity of sustainability related concepts within these tools with SDGs is shown in the Table 3.5.

In sum, based on these tools a sustainable park uses sustainable management practices that minimize the impact on the environment, promote the conservation of the ecosystem, and support biodiversity. Regarding the social dimension sustainable park focuses on the social needs of the local community, visitors, and other stakeholders. A sustainable park must ensure that social benefits are maximized, such as providing safe and enjoyable recreational opportunities, promoting cultural and environmental education, and engaging with local communities. In respect to the economic dimension sustainable park focuses on the economic sustainability of the park, which includes minimization in expenses, generating revenue and contributing to the local economy.

According to these tools, sustainable park also plays a vital role in cultural sustainability as it involves recognizing and respecting the cultural traditions and practices of the local community, preserving significant landmarks and historic structures, and promoting local cultural events and festivals. In general, a sustainable park must be able to provide economic benefits while minimizing negative impacts on the environment and promote social and cultural sustainability.

Sustainable development Pillar		Environmental	
Sustainability related Concept		Waste and material management	Water management
Park Sustainability Assasment Tools	The Green mark for parks	Waste & Material Monitoring Onsite Waste Recycling provision of Recycling Facilities Waste Management Improvement plans Sustainable Construction	Water Monitoring potable Water Reduction Water efficiency Improvement plans Water sensitive urban design Rainwater harvesting
	Global Sustainability Assessment System (GSAS)	Locally Sourced Materials Materials Eco-Labeling Recycled Content of Materials Materials Reuse Cut & Fill Optimization Design for Disassembly Responsible Sourcing of Materials Waste Management Construction Practices	Waterbody Preservation Drain & Stormwater Contamination Water Demand Performance Water Reuse Performance Water Sub-Metering Leak Detection Systems
	Green flag	Waste Minimisation Litter and Waste Management Chemical Use	
	Sustainable site initiatives (SITE)	Recycle organic matter Minimize pesticide and fertilizer use Support transparency and safer chemistry Design for adaptability and disassembly Use salvaged materials and plants Use recycled content materials Use regional materials Maintain on-site structures and paving Support responsible extraction of raw materials Support sustainability in materials manufacturing Support sustainability in plant production Divert reusable vegetation, rocks, and soil from disposal Restore soils disturbed during construction Control and retain construction pollutants Communicate and verify sustainable construction practices Restore soils disturbed by previous development Divert construction and demolition materials from disposal Protect air quality during construction Provide for storage and collection of recyclables Protect air quality during landscape maintenance	Reduce water use for landscape irrigation Reduce outdoor water use Design functional stormwater features as amenities Restore aquatic ecosystems Protect floodplain functions Conserve aquatic ecosystems Manage precipitation beyond baseline Manage precipitation on site
Sustainable development Pillars		Environmental	
Sustainability related Concept		Green space management	Energy manegement
Park Sustainability Assasment Tools	The Green mark for parks	Greenery provision Soil moisture capacitors monitering system	Energy efficiency Index Energy Monitoring Energy efficiency Improvement plans Carbon Accounting Framework Fuel-efficient park equipment
	Global Sustainability Assessment System (GSAS)	Land Preservation Vegetation Desertification Landscape Maintenance	Heat Island Effect Energy Use Performance Primary Energy Performance CO2 Emissions Energy Sub-Metering Renewable Energy
	Green flag	Conservation of Landscape Features Horticultural Maintenance Arboricultural Maintenance	Climate Change Adaption Strategies Peat Use Managing Environmental Impact
	Sustainable site initiatives (SITE)	Control and manage invasive plants Create and communicate a soil management plan Use appropriate plants Limit development on farmland Designate and communicate VSPZs Redevelop degraded sites Locate projects within existing developed areas	Use renewable sources for landscape electricity needs Use vegetation to minimize building energy use Optimize biomass Reduce urban heat island effects Reduce outdoor energy consumption
Sustainable development Pillars		Environmental	
Sustainability related Concept		wildlife and habitat management	Green Transportaion
Park Sustainability Assasment Tools	The Green mark for parks	Monitering of Flora & Fauna Species number of exotic Species	
	Global Sustainability Assessment System (GSAS)	Biodiversity Preservation	Public Transportation Load on Local Traffic Conditions Green Transportation Neighborhood Connectivity Proximity to Infrastructure
	Green flag	Management of Natural Features, Wild Fauna and Flora	
	Sustainable site initiatives (SITE)	Conserve healthy soils and appropriate vegetation Conserve special status vegetation Conserve and use native plants Conserve and restore native plant communities Reduce the risk of catastrophic wildfire Eliminate the use of wood from threatened tree species Conserve habitats for threatened and endangered species	Connect to multi-modal transit networks Encourage fuel efficient and multi-modal transportation

Figure 3.2: Park sustainability assessment tools environmental approach.

Sustainable development Pillars		Cultural	Economic
Sustainability related Concept		Heritage conservation	Financial gain
Park Sustainability Assessment Tools	The Green mark for parks	Conservation & Restoration plans	
	Global Sustainability Assessment System (GSAS)	Heritage & Cultural Identity	Support of National Economy
	Green flag	Conservation of Buildings and Structures (heritage conservation)	Marketing and Promotion
	Sustainable site initiatives (SITE)	Protect and maintain cultural and historic places	Provide on-site food production Support local economy

Figure 3.3: Park sustainability assessment tools cultural and economic approach.

Sustainable development Pillars		Social	
Sustainability related Concept		Recreational design and management	Universal Design
Park Sustainability Assessment Tools	The Green mark for parks	Recreational opportunities	Accessibility
	Global Sustainability Assessment System (GSAS)	Bikeability Facility Management	Accessibility Walkability External Lighting Shading
	Green flag	Appropriate Provision of Quality Facilities and Activities Equipment Maintenance Building and Infrastructure Maintenance	Good and Safe Access Equal Access for All Signage Safe Equipment and Facilities
	Sustainable site initiatives (SITE)		Provide optimum site accessibility, safety, and wayfinding Promote equitable site use Reduce light pollution

Sustainable development Pillars		Social		
Sustainability related Concept		Inclusive design	Participatory design	Education-oriented design
Park Sustainability Assessment Tools	The Green mark for parks	Community Involvement Visitorship		
	Global Sustainability Assessment System (GSAS)	Safety & Security		Sustainability Awareness
	Green flag	Community Involvement in Management and Development Appropriate Provision for Community Welcome Personal Security Control of Dogs/Dog Fouling		Appropriate Information Channels Appropriate Educational and Interpretational Information
	Sustainable site initiatives (SITE)	Support mental restoration Conduct a pre-design site assessment Support physical activity Support social connection Minimize exposure to environmental tobacco smoke	Use an integrative design process Engage users and stakeholders	Promote sustainability awareness and education Develop and communicate a case study Plan to monitor and report site performance

Figure 3.4: Park sustainability assessment tools social approach.

Table 3.5 : The conformity of sustainable development goals and sustainability related concepts.

Sustainability related concepts within park sustainability assessment tools	Goals no.
Water management	Goal 6 Goal 12 Goal 14 Goal 15
Energy management	Goal 7 Goal 9 Goal 12 Goal 13
Green Transportation	Goal 3 Goal 11 Goal 10 Goal 7 Goal 13
Waste and material management	Goal 6 Goal 9 Goal 11 Goal 12
Green space management	Goal 3 Goal 13 Goal 15
Wildlife and habitat management	Goal 14 Goal 15
Recreational design and management	Goal 3 Goal 10
Inclusive design	Goal 10
Universal Design	Goal 10
Participatory design	Goal 17 Goal 16
Education-oriented design	Goal 4
Heritage conservation	Goal 11
Financial gain	Goal 8

3.5 Extraction of Contexts for Sustainable Park Model Interview Set

In the previous part of the study, the meaning of a sustainable park is defined by investigating the criteria and indicators posed by current park sustainability assessment tools. It can be understood that these tools examine the park's sustainability in various areas. For devising the sustainable park model, these areas are used as the basis for the contexts of the interview part of the qualitative assessment. In order to adapt these areas of inquiry for the interview and to be proper to be asked from park users, the study devised the following contexts: recreation, green space, water feature, movement and accessibility networks, urban furniture, service facilities, waste-clean environment, animal-inclusive, culture-inspired, heritage conservation, participatory approach, education-oriented, emotional and multisensory.

In general, park sustainability assessment tools focus on the parks' capacity to ensure healthy, safe, and secure recreational spaces which are well-maintained, suitably preserved, and fit for community use. From these tools' perspective, sustainable park functions to meet the societal needs of all community members resulting in social cohesion for community development. Naylor (1985) believed that the needs and preferences with respect to recreational spaces highly depend on physical and social contexts. Therefore, users' perceptions and preferences must be re-evaluated over time instead of only using the same standard and principles. Therefore, the standards and principles of recreational spaces must be revised based on sociophysical contexts. Accordingly, in the interview set of the sustainable park model, the context of recreation is chosen to be questioned by park users to understand their needs and preferences.

In addition, park sustainability assessment tools focus on green space management, consisting of a wide range of standards and actions to preserve green areas and maximize environmental benefits. Actions, including maintaining the current landscape quality to redeveloping degraded landscape features, are all indicators of a sustainable park based on these tools. In this direction, the green space context was chosen for the interview set in order to investigate the effects of green space management strategies and action plans carried out in parks on users' perceptions and preferences.

Park sustainability assessment tools emphasize the fundamental role of water management through devised indicators meant to be applied within parks. The main focus of park sustainability assessment tools is not only on preserving water resources, which includes actions and initiatives for water reuse and recycling, as well as initiating a movement toward a behavioral change in water consumption and outlining stormwater management. Water features in the park are classified into three categories biological, recreational, and decorative. Besides being effective placemaking attractions in a landscape, they are signature elements anchoring public spaces and improving the narrative of a place. Park sustainability assessment tools underline their importance in terms of ecological aspects as they question the sustainability of aesthetic water displays by their function in harvesting rainwater and cleaning stormwater runoff. Although park users may not be aware of the environmental sustainability initiatives carried out within parks' water features, their perceptions and preferences are equally important to finding feedback. Accordingly, the context of water features is added to investigate the perceptions and preferences of users concerning these components within the park.

The dominant role of humans in changing the natural environment has negative impacts on biodiversity through resource exploitation, pollution, and climate change. Urbanization profoundly alters the natural environment through landscape modification, resulting in habitat fragmentation and loss (Grimm et al., 2008). As a result, there is a remarkable decrease in the number and kind of species living in urban environments (Wilson, 1988). McKinney (2006) stated that biodiversity loss is inevitable due to rapid urbanization. Human actions bring adverse consequences because biodiversity loss jeopardizes human health and well-being (Sandifer et al., 2015). Moreover, it causes changes in the perception and willingness to the conservation of biodiversity of future generations (Apfelbeck et al., 2020).

As a matter of fact, urban spaces are recognized as significant habitats for various species despite the growing need for build-up areas due to urbanization pressure. Urban green spaces, including residential backyards and private gardens, vacant lots, green roofs, and parks, have the potential to be the habitat for a variety of species (Qiu et al., 2013). Accordingly, paying attention to biodiversity conservation within the urban environment and posing innovative ways to promote biodiversity is of paramount importance (Knapp et al., 2020; Qiu et al., 2013). In high-density urban areas, parks as open areas that are covered with vegetation are places where species are highly settled, and parks are the habitats of various species (Qiu et al., 2013). Therefore, biodiversity is an essential component of urban parks that helps increase the quality of life (Sandifer et al., 2015). Thereby, urban biodiversity management is a vital matter to ensure the health and well-being of citizens, nature conservation, and provide opportunities for nature experience. Biodiversity conservation has main phases, including identifying habitat zones, specifying species, planning for the development of the built environment without harm to biodiversity habitats (low-impact development), and community education (Apfelbeck et al., 2020). Community education facilitates the process of biodiversity preservation (Savard et al., 2000) as it reduces human-induced pressures. All these initiatives and actions are considered wildlife and habitat management which is one of the prime focuses of park sustainability assessment tools.

The animal-inclusive concept relates to wildlife and habitat management as it is crucial to creating sustainable and livable cities. According to this concept, parks need to be designed in a way that encourages the presence of wildlife. Animal inclusiveness can be achieved by including and preserving vegetation that provides shelter and nutrition for different species of animals. In addition, water features like ponds and streams can provide valuable habitats for aquatic animals. Moreover, the animal-inclusive concept refers to practices regarding people's education as it addresses educational materials, conducting guided tours, and organizing events that promote responsible behavior around wildlife. Moreover, the animal-inclusive concept includes actions concerning a pet-friendly environment, focusing on providing facilities and amenities for pets and their owners. In this line, the contexts of animal-inclusive are chosen for the interview set of the sustainable park model to obtain information regarding the effectiveness of practices on this subject matter from users' perspectives.

Park sustainability assessment tools encourage environmental awareness by considering actions and initiatives done within the park under the umbrella of the education-oriented concept. Environmental education about plants and animals within parks is vital for promoting conservation and raising environmental awareness. Parks are home to interactive exhibits and displays of local flora and fauna, and visitors can learn about them through various educational programs and activities. As a result, park users become aware of the importance of biodiversity and learn how they can help protect these species. Education-oriented actions and initiatives within parks include boosting users' knowledge through plant and animal information sheets, signage, and guidelines that can teach all users about ecological systems, wildlife behavior, and the impact of human activities on the natural world. Thus, the education-oriented concept is extracted as a context to be the basis for understanding how users are informed about animals and plants and how they are warned and guided regarding behaviors around wildlife within the park.

In the park sustainability assessment tools' perspective, a sustainable park pertains to devising appropriate waste recycling, reuse, and disposal policies and implementing the zero-waste concept within its boundaries. Regarding the qualitative assessment of park sustainability, the context of the waste-clean environment is selected for questioning from park users. In other words, the waste management strategies and action plans executed in parks are meant to be examined by parks' users.

Within the scope of human-centered design, universal design and inclusive design are design strategies that ensure the built environment is comfortable, accessible, inclusive, adaptable, and flexible for all people with different abilities at every stage of life (Ginnerup, 2009). These concepts are indications of new dilemmas within design practices as they consider diverse users, promote social equity, and encourage participation within a community. Accordingly, they are the manifestation of social sustainability. Indeed, these concepts ensure the current generation's needs by considering diversities and guaranteeing inclusivity for future generations (Kadir & Jamaludin, 2013). Park sustainability assessment tools consider universal design, barrier-free design, and inclusive design or design for all principles to ensure an accessible, safe, and comfortable environment within the parks. Based on these tools' perspective, sustainable parks are welcoming places where social interaction occurs by a wide range of demographic. Therefore, the accessibility and barrier-free movement within these parks are considered, and related principles and standards are correctly implemented to reduce limitations in the physical movement of people with disabilities. Furthermore, since the accessibility concept relates to respect for human rights, it entails the ability of all people to utilize the physical environment equally regardless of the differences such as age, gender, and range of physical, cognitive, and sensory abilities. Based on these proposed concepts within park sustainability assessment tools, the study tries to find out park users' preferences and perceptions regarding movement and accessibility networks, urban furniture, and service facilities provided by the park. By doing so, the qualitative assessment tool proposed by the study tries to question the effectiveness of actions regarding the mentioned concepts.

Another concept that park sustainability assessment tools have indicated is the participatory design which focuses on using an integrative design process and community involvement in the planning, design, management, and development of parks. Involving the local community in the park's design and management is critical to ensure that the park best reflects local needs and values. Engaging community members during the planning and decision-making can create a sense of ownership and foster a community-driven park management approach. Correspondingly, the context of the participatory approach concept is included in the design of the sustainable park model.

Additionally, under the umbrella of cultural sustainability, heritage preservation and culture-inspired are also under examination with respect to sustainability evaluation. Parks are often considered essential components of a country's natural heritage. They play an important role in protecting and conserving natural landscapes, biodiversity, and ecosystem services while providing recreational, educational, and cultural opportunities for the public. However, parks aren't only connected to natural heritage conservation; they are also connected to cultural heritage conservation. Therefore, park sustainability assessment tools evaluate parks through actions regarding heritage conservation within parks; since the conservation of cultural heritage in parks provides an opportunity for socio-cultural and economic benefits. As a result, the heritage conservation context is chosen to understand the park users' opinions regarding effective planning, design, and management practices. In addition, this context reveals to what extent people are aware of actions in protecting and conserving cultural heritage elements as it gives them a sense of pride and ownership in their cultural heritage. Designing and managing parks based on local culture can enhance the park's identity, foster community engagement, and preserve cultural heritage. It is essential first to understand the local community's cultural values, practices, and traditions. Research and consultation with relevant community members can provide valuable insights into the area's cultural identity. Parks can incorporate cultural elements such as traditional architecture, historical artifacts, and cultural landscapes. Integrating such elements can tell a story about the history and heritage of the local community and provide visitors with a sense of place. Offering cultural programming and events can also provide opportunities for the local community to showcase their traditions and practices, thus enriching visitor experiences. Therefore, culture-inspired context is driven by park sustainability assessment tools to understand the users' perceptions and preferences regarding this subject matter.

A sense of safety is crucial for the success of parks as public spaces. Park users need to feel comfortable and secure while enjoying the amenities and natural environments that parks offer. An enjoyable park experience requires a sense of reassurance and security among visitors. By implementing measures to promote safety, parks can enhance the public's experience and create a better sense of community. As a result, in addition to the contexts mentioned earlier, emotional context is also chosen for the sustainable park model interview set to understand the park's users' safety feelings with respect to the park. It should be noted that emotional context is within the emotional dimension of human-place interaction, which needs to be considered while discussing sustainability transformation or sustainable place-making processes since the interrelationships between humans and a place play a crucial role in the sustainability of the place.

Under the cognitive dimension of human-place interaction, a multisensory context is devised. This context helps to realize how users experience parks through their senses. Incorporating multisensory aspects into parks helps create a more engaging and rewarding experience for park users. In relation to visual perception, the scenery is one of the most apparent aspects of park design that can create a memorable experience for park visitors. A park's appeal can be amplified by the inclusion of aesthetically pleasing design elements, including urban furniture such as visual art and fountains, besides landscaping. In addition, the maintenance and clean environment are also significant in users' visual perception regarding the park. With respect to hearing perception, sound can also impact park users' experience. Natural sounds can be calming and reduce stress levels, which in turn can positively affect park users physically and mentally.

On the other hand, noise pollution has an adverse impact on visitors' experiences. Fragrances can also provide a memorable experience through which users associate parks with positive experiences. Planting flowers, trees, shrubs, and herbs can create a pleasant fragrance in the park. On the contrary, poor waste management, inadequate maintenance of water features and green areas, air pollution, and plants with unpleasant odors influence users' experiences negatively. Therefore, the smell perception of users needs to be considered while discussing sustainability evaluation within a park. Park users' experiences concerning the park are also accompanied by their tactile experience. The use of various materials and textures in urban furniture and pathways and the cleanliness of service facilities significantly influence users' experiences. The context extracted from park sustainability assessment tools will be placed within the sustainable park model in the following chapter. Indeed, these contexts are components of the model, and their relation to other components, such as question dimensions, focuses and will be explained.

4. CONCEPTUALIZING SUSTAINABLE PARK MODEL: INTRODUCTION OF QUALITATIVE APPROACH

The interrelation between sustainability and the sense of place concept was discussed precisely within chapter two. Thus, the sense of place concept and its three indicators, including place identity, place attachment, and place dependence, were determined to be used in the model's sense of place measurement set. In addition, the study investigated the meaning of sustainable park through criteria and indicators of current park sustainability assessment tools within the previous chapter. Accordingly, the contexts of the interview set of the model were devised. The study also explained the dimensions and focuses of the interview set within the first chapter. As dimensions are human-place interaction dimensions including behavioral, emotional, cognitive and demographic while focuses are chosen based on Patton (2001) qualitative approach, including behaviors & experiences, opinions & values, feelings & emotions, knowledge, sensory, and background.

In this light, based on the discussions in previous chapters, the study conceptualizes the sustainable park model within this chapter; firstly, the study defines the component-based process model, which is a template for the sustainable park model, and secondly explains and locates components and processes simultaneously. Therefore, this part of study aims to conceptualize the sustainable park model to pose a qualitative approach with the user-oriented perspective in sustainability evaluation of parks. Accordingly, the model questions the park's users' senses of place and the parameters influential in its creation.

4.1 Component-Based Process Model

The component-based process model is a template consisting of components, and the process allows for tracking the sequences and essential issues. In other words, this model describes the hierarchy of functions, components, responsibilities, and interrelations. A component-based process model defines a set of standards for component development, deployment, and evolution. In this study, the component-based process model describes details and the steps necessary for organizing and executing qualitative research within a park.

A component-based process model determines the standards and conventions codified for the development of components (Bachmann et al., 2000). It systematically specifies interaction and composition standards. Indeed, it describes ways to reach or create a component. In addition, it illustrates the manner of interaction among a set of components in a system (Councill & Heineman, 2001). Accordingly, a component model is a combination of a) a component standard that governs how to construct individual components and b) a composition standard that governs how to organize a set of components into an application and how those components globally communicate and interact with each other (Lüer & van der Hoek, 2002).

Lau and Wang (2007) define a component-based process model as a system consisting of the semantics of components to describe the components and what they are meant to be. It also includes the syntax of components to explain how they are defined, constructed, and represented. According to the authors, with entailing the composition of components, the model aims at defining how components are composed or assembled.

There are basic elements for component-based process model including interfaces, naming, meta data, customization, composition, evolution, and deployment (Weinreich & Sametinger, 2001). The interface is about specifying the component behavior and relationships; it defines the points that components interact with each other. Naming is about unique names and titles for components and interfaces, while Meta data is described as information about components and interfaces. Interoperability focuses on relationships among the different set of components and interfaces. Customization is related to customizing components with their related interface, and composition defines the rules and commands to combine components. The model ought to be in a way that supports the evolution of the components. Finally, deployment is an illustration of the whole components and interfaces systematically (Weinreich & Sametinger, 2001).

In this part, the study aims at designing the component-based process model for park qualitative evaluation. In fact, the model has been titled a sustainable park model because it aims to indicate the ways to evaluate a park qualitatively and overlap the results of the qualitative assessment with the outcomes of sense of place measurement to understand the shortcoming or strengths of the park for its users and correlate these finding with sustainability idea. To reach the mentioned aim, there are objectives listed as follows and considered for this part of the study.

1. Determine and describe the components,
2. Customizing the interfaces for components: Specifying components interrelations with each other/ Describing interfaces,
3. Explaining the interoperation among the sets of components and interfaces,
4. Indicating the rules for composition of components and interfaces,
5. Explaining the evolutionary process of components to reach specific goals,
6. Illustrating the deployment of whole components and interfaces in a systematic way.

The study's component-based process model consists of two separate sets including interview and sense of place measurement, therefore, in following parts each set and their components are discussed based on the objectives listed above.

4.2 Set I: Interview- Design

The interview set is the first set of the model, which consists of four interconnected components, including dimension, focus, context, and content. Each component, in a hierarchical manner, defines the sort and idea of the interview questions. In fact, by devising the components and the transitive relation between them, the study aims at demonstrating consistency with the theoretical framework of the study. Besides the above-mentioned four components, the analysis of interview outcomes is placed within the last part of this set, entitled thematic analysis.

4.2.1 Set I: interview: dimension and focus

The first set includes four dimensions of human-place interaction including cognitive, behavioral, emotional, and demographic. The cognitive dimension entails the spatial understanding of human beings from the environment based on beliefs, knowledge, attitudes, and perceptions. The behavioral dimension refers to human beings' associated actions and functional relationships with the surrounding environment. In contrast, the emotional dimension relates to the feelings and emotions that individuals experience, resulting in satisfaction and a sense of belonging regarding the place. Finally, the demographic dimension allows the realization of certain information about individuals and provides data necessary for understanding the various characteristics of a population; moreover, it helps in the determination of a representative sample of the target population for generalization purposes (Harper, 2018). As a result, while conducting research paying attention to demographic data becomes necessary. On the other hand, as the qualitative evaluation revolves around user-oriented and directly relates to people, the demographic data and information is considered one of the fundamental dimensions for this model.

It is understood that Patton’s proposal for qualitative evaluation is in line with human-place interaction dimensions; therefore, in this study, his proposed methodology is used. Patton's qualitative research approach is designed to provide a comprehensive and in-depth understanding of complex human experiences and phenomena. By emphasizing the importance of understanding people's perspectives and experiences in their own terms, and by valuing the development of a collaborative and respectful relationship with participants, this approach can support the creation of rich, nuanced, and culturally sensitive research findings.

Patton (2001) categorized facets, including Behaviors & Experiences, Opinions & Values, Feelings & Emotions, Knowledge, Sensory, and Background, as determining factors in qualitative assessments. The author stated that questions under these six categories could be asked on any given topic with the purpose of qualitative inquiry as these categories are based on human-related matters.

Accordingly, the Background focus is placed under the demographic dimension. The Behaviors & Experiences focus is located within the Behavioral dimension category. In addition, Opinions & Values, Knowledge, and Sensory focuses are under the Cognitive dimension category, while the Feelings/Emotions focus is attributed to the Emotional dimension. Each category is labeled by its initials so that (BE) as Behaviors & Experiences, (OV) as Opinions & Values, (FE) as Feelings & Emotions, (K) as Knowledge, (S) as Sensory, and (B) as Background.

4.2.2 Set I: interview: context and content

Within the demographic dimension-background focus category user profile and usage mode are the context devised for the interview set of the model. In general, the questions under demographic dimension-background focus category are labeled and numbered as B1 to B7.

Under user profile context category, the question contents such as gender and age are determined to be asked from park users. Common demographic questions such as age and gender identify characteristics of the person being interviewed. In addition, they are principal factors in relation to park use as well. According to a study focusing on the role of gender in respect to recreational activities within parks, it is concluded that male users are more willing to use parks than females (Evenson et al., 2016). Joseph and Maddock (2016) stated that although the number of female and male users are equal in some cases, the type of activities within parks are varied for both genders; that is to say, men are more actively engaged in parks than the opposite gender. McCormack et al. (2010) stated that this could result from female users' discouragement, such as safety issues and crime-related concerns (Wilbur et al., 2002; Cronan et al., 2008). Gender has influenced the perception of individuals regarding safety matters (Sutton & Farrall, 2004), and women are known as the gender with higher levels of fear (Hami et al., 2014). In addition, the economic condition of a neighborhood where a park is located is influential in the female presence in parks (Cohen et al., 2012). Parks in poor neighborhoods face problems such as higher crime rates, conflicts, and discrimination, resulting in less engagement, especially for women, due to their higher level of vulnerability (Stodolska et al., 2011; Foster & Giles-Corti, 2008). Moreover, gender inequality in some cultures is also recognized as a problem that negatively affects park usage by women. In a more recent review of a park, patterns of use among genders, authors stated that gender inequality causes the limit in accessing parks and the use pattern of facilities within a park (Bahriny & Bell, 2020).

Based on sustainability matter, parks are public places that must provide ground for encouraging physical activity for diverse populations; therefore, it is significant to plan, design, and manage the park to facilitate the contribution of women in parks (Cohen et al., 2012). Derose et al. (2018) stated that park design, programming, and policy interventions to consider these disparities play a crucial role within parks. The authors continued that gender is a determiner of park use trends; thus, a complete understanding of parks' potential to urge physical activity for each gender is of great importance.

The age of users also plays a crucial role in park users' preferences and pattern of use (Laatikainen et al., 2017; Ode Sang et al., 2016). Age is a determiner in the leisure behavior of participants. It also affects the usage opportunity; affordances. In addition, users of different age groups have various perceptions about a park's quality (Lindholst et al., 2015). As a result, outdoor public spaces need to consider all societal groups within a society to provide a welcoming environment. Considering different age groups means that there is a need for multifunctional places. Forasmuch, multifunctional public open areas are recognized as solutions for the urban environment with high density (Haaland and van den Bosch, 2015) which are known as factors increasing citizens' quality of life.

Several studies suggested that the urban open area management is influential in providing areas appropriate for particular age group's demands, such as children (Jansson et al., 2016) and elderlies (Arnberger & Eder, 2011), because they are known as the most frequent users of parks unlike adolescents and young adults (Veitch et al., 2017). In addition, Rutt and Gulsrud (2016) believed that the number of studies concentrating on adapting youngsters' and senior ones' interests and desires in parks is more than the ones focusing on an inclusive viewpoint regarding this matter and considering all user with different age groups.

On the other hand, Iso-Ahola et al. (1994) stated that individuals in their late adulthood participate less in outdoor active recreation activities due to physical limitations. In addition, it has been determined that older individuals have more barriers to park use than younger ones (McGuire et al., 1996; Scott & Jackson, 1996; Raymore & Scott, 1998). Due to difficulties associated with aging, such as increased physical restraints, the recreational activities that individuals actively participate, decrease; therefore, older individuals prefer more passive activities (Floyd et al., 2006). As a result, understanding similarities and differences in demands and preferences between various age groups can help better planning, design, and management of urban open areas, especially parks. Age and gender-related disparities in park use are essential and need to be addressed while discussing the qualitative assessment of parks.

The second context entitled usage mode entails question contents that aimed to elicit information about the park users' usage trends. The question contents are specified as follows: location of residence, duration of arrival to the park, duration of park use, Frequency and duration of visit (Cold and Warm seasons) and state of use. These questions are important to ask because travel distance and the time spend in a park are indicators in people preferences regarding a park (Tu et al., 2020; Hadavi et al., 2017). The location of residence question reveals the type of park by demonstrating the service radius of park.

State of use is also another important question to ask, as the presence of crime and perceptions of safety influence park use behavior among people (Weir et al., 2006). Problems associated with safety matters prevent people from visiting the park alone, particularly women or elderlies. Moreover, based on the recent research done by Cohen et al. (2019), there is inconsistency regarding park usage among men and women due to family-based responsibilities. The state of use for those with children is different from others, especially for women, as they are mostly caretakers. Moreover, seasonal and temporal weather variations influence the frequency and duration of the visit for people; therefore, weather condition is an influential factor in park preference and use.

According to Patton (2001) for understanding the individuals' experiences and behaviors regarding a place, the kind of activity and associated experiences need to be asked. The questions such as what kind of activities do you do…? What kind of experiences do you have...? (Patton, 2001) are main themes for questions within behavioral dimension- behaviors & experiences focus category. Within this category contexts including site, recreation, green space, water feature, movement and accessibility networks, urban furniture, service facilities, waste-clean environment, animal-inclusive are determined. Therefore, the following question contents are devised: Factors influential on park use, types of activity/s, experience with playground, experience with sports facility and equipment, experience with green areas, experience with water feature, experience with pathways, ramps and stairs, experience with seats, experience with the commercial facility and amenity, experience with restroom facility, experience with garbage cans, experience with pet-friendly environment. Accordingly, a total of 12 questions about users' behavior and experiences within a park are designed. These questions are labeled and numbered as BE1 to BE12.

Under the cognitive dimension the opinions & values focus category refers to cognitive and interpretive dimension of human place interaction. The questions such as what do you think…? What is your opinion…? are the kind of question need to be asked for this part of qualitative inquiry (Patton, 2001). Indeed, they aim at realizing individuals' opinions, judgments, and values respecting a particular matter. Therefore, the contexts including culture-inspired and heritage preservation are used to guide the question contents. The contents of the questions are about asking users' opinion about reflecting the local culture as well as their opinion about the future of park. Thus, the cognitive-opinions & values focus category entails 2 questions labeled and numbered as OV-1 and OV-2.

The cognitive dimension- knowledge focus category concentrates on obtaining information about the people's concrete and factual information respecting a matter; the laws, rules and regulations (Patton, 2001). The contexts chosen for this category are participatory approach and education-oriented. The question contents including knowledge about the participatory planning, design, and management of park, knowledge about park rules and regulations, knowledge about plant species, knowledge about animal species are devised for the interview. The questions are labeled as numbered as K1 to K4.

Another question focus titled as sensory experiences is placed within cognitive dimension too. According to Patton (2001) the questions in the sensory experience category need to be designed to find answers to what is seen, heard, touched, and smelled. Indeed, this category allows researchers to understand sensory experiences of respondents. Therefore, multi-sensory context distinguishes the question contents of this category. The question contents are touch perception, hearing perception, smell perception and visual perception. The questions in this category are labeled as SE1 to SE4.

The Feelings/Emotions category tries to elicit the feelings and emotions of people regarding a specific experience. For instance, question such as How do you feel…? What kind of feeling do you experience….? need to be asked (Patton, 2001). Accordingly, the Feelings & Emotions category which is under umbrella of the emotional dimension of human place interaction includes the emotional context and sense of safety content. The question is labeled as FE1. In this regard, a total of 30 questions are devised for the interview set of the model.

4.2.3 Set I: interview: thematic analysis

One approach to synthesizing findings and reviewing qualitative research systematically is known as thematic analysis. Thematic analysis is commonly used to analyze data in qualitative research (Boyatzis, 1998; Thomas & Harden, 2008). Almost all types of qualitative data obtained from interviews, focus groups, observations, and qualitative surveys can be subjected to the thematic analysis method (Braun & Clarke, 2013). Whether the data set is large, involves multiple participants, or small with few participants, this method can be employed to examine the data sets (Terry et al., 2017). Thematic analysis is about extracting the significant issues raised in the data.

Thematic analysis is an appropriate method for realizing experiences, behaviors, opinions, and knowledge across a data set (Braun and Clarke 2012). The authors believed that thematic analysis has the potential to be the sole analytic method in qualitative research and be the base method for other methods of data analysis in qualitative research. Kiger and Varpio (2020) argued that a distinctive characteristic of thematic analysis is its flexibility. The principles of thematic analysis, including data coding, theme construction, and report findings, are applicable within a wide range of theoretical and epistemological frameworks and a broad spectrum of research and design issues.

There has been a growing trend regarding using thematic analysis in qualitative studies in recent years. This method conveys explicit data description and helps to effective discussions, leading to clear and explicit conclusions. Thematic analysis is a rigorous and explicit systematic method that collects and merges the outcome of preliminary investigation to deliver reliable answers to particular research questions (Cooper, 2019; Petticrew & Roberts, 2005). Accordingly, the thematic analysis identifies relationships and patterns of the qualitative research datasets; thus, it contributes to a specific realm of knowledge by tracking down the research results within existing knowledge and trying to challenge it as far as is practicable.

Thematic analysis is a “method for identifying, analyzing and reporting patterns (themes) within data” (Braun & Clarke, 2006, p. 79). In fact, it describes data and provides ground for interpretation during the process of code selection and themes development (Braun & Clarke, 2006). Thematic analysis is a systematic process consisting of six steps namely: "Familiarizing yourself with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, producing the report/manuscript" (Braun & Clarke, 2006).

Prior to the data familiarization process, it is necessary to transcribe datasets first; indeed, it is a pre-step in which raw data and information provided by interviewees are prepared for subsequent steps of thematic analysis. In the first step of the thematic analysis, the datasets need to be read repeatedly to verify data accuracy and understanding. Throughout the data familiarization step, the existing theoretical background helps locating valuable information within data sets and highlight how these theories are echoed in the data. Braun and Clarke (2013), by denoting the term "analytical sensibility," tried to emphasize the capability of reading and interpreting data through the selected theoretical lenses.

The data needs to be organized via code selection during the second step. Based on the explanation that Braun and Clarke (2013) stated, "a code is a word or brief phrase that captures the essence of why you think a particular bit of data may be useful" (p. 207). Accordingly, coding refers to underlying all relevant pieces of data, such as items of interest, connections, and other initial ideas within the entire dataset to answer the research questions. Boyatzis (1998) defined a code as "the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon" (p. 63). The codes are of two sorts, including semantic and latent; the semantic codes entail more descriptive information rather than implying conceptual or theoretical background. In contrast, latent codes are meant to invoke implicit meanings within the data in the forms of theories and concepts; indeed, latent codes consist of theoretical terms (Braun et al., 2014). Attride-Stirling (2001) expressed a different viewpoint while discussing the code selection issue; according to the author, the coding framework is recognized as inductive when it reflects relevant matters within the datasets or deductive, conducted by particular theories or theoretical frameworks. In other words, semantic codes are the types that are emerged directly from datasets and have superficial meanings, while latent codes are driven by theoretical frameworks which have deeper meanings (Boyatzis, 1998; Braun & Clarke, 2006).

After the code generation, the next phase is organizing the related codes into categories based on themes. Braun and Clarke (2006) defined a theme as follows "theme captures something important about the data concerning the research question and represents some level of patterned responses or meaning within the data set" (p. 82). A theme is defined as a pattern "found in the information that at minimum describes and organizes possible observations and at maximum interprets aspects of phenomenon" (Boyatzis, 1998, p. 4). Themes reframe, reinterpret, and/or link elements of the data during thematic analysis (Kiger & Varpio, 2020). A theme is a "patterned response or meaning" (Braun and Clarke 2006, p. 82) derived from the data that generates an answer to the research questions. Nowell et al. (2017) stated that the theme, also called manifest, includes a broader spectrum of interpretation and integration of data. Similar to code selection, themes can also be semantic or latent; they may be generated in an inductive or deductive way (Braun & Clarke, 2006). Likewise, Varpio et al. (2019) stated that researchers use a deductive approach to identify themes when themes are relevant to their pre-existing theoretical background; whereas, in an inductive, the themes are selected based on the information obtained from data and may not necessarily reflect the interests and ideas of the researchers. The themes need to provide crucial points and insights to reach research objectives. For this purpose, during the phase of theme generation, searching for themes, reviewing themes, and defining and naming themes are three steps that help to coherent and precise theme identification. Indeed, theme generation is a recursive process in which there is a back-and-forth shift between the mentioned steps.

Therefore, before proceeding to the final step, there is a continuous flow among steps of thematic analysis, which involve the description of findings and interpretations of data. Although the selected codes and the selected themes, which organize codes, are pre-interpreted during previous stages, in the final step labeled as producing the report/manuscript, the codes and themes are reinterpreted, and findings need to be collated for ultimate discussion and conclusion.

The final report needs to acknowledge the merit and validity of the analysis. Moreover, "the report provides a concise, coherent, logical, non-repetitive, and interesting account of the story the data tell – within and across themes" (Braun & Clarke 2006, p.23). The essence of the point that why codes and themes are selected needs to be explained. They also need to explain why they are essential, and they help reach what objectives. In this sense, this method entails remarking and locating key concepts from studies and translating them into one another throughout research (Thomas & Harden, 2008).

In this proposed model, the approach for thematic analysis after early stage of sorting and familiarization of data consists of four main steps: code selection, code labeling, sub-theme generation and theme generation. After code selection process the generated codes need to be labeled as positive and negative in case the codes are in polar forms; otherwise, they are labeled as impartial or general. This helps for later comparison of interview data and sense of place measurement data. In fact, codes with positive pole are indication of positive effect on sense of place while the negative pole illuminates the reasons of low sense of place.

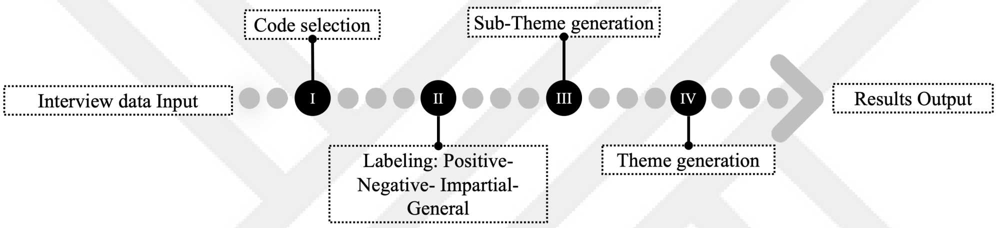

Figure 4.1: Interview data thematic analysis approach.

4.3 Set II: Sense of Place Measurement

Measuring the sense of place is conducted via a scaling approach. Shamai and Ilatov (2005), in a study titled "Measuring sense of place: methodological aspects," stated that the scale for the sense of place measurement is classified into four distinguished characteristics pertaining to the questions; "polarity, directness, components, dimensions" (p. 470).

The "Polarity" feature of the scaling approach regarding sense of place is about determining poles, whether positive or negative. There are three different sub-categories in this category, including "bipolar, unipolar, and semi-polar". The bi-polar approach is used when two opposite attitudes (negative and positive) are considered relevant to the sense of place. For instance, the study conducted by Shamai and Ilatov (2005), in which the scale is three-level, entails very negative connection/attachment, no connection/attachment, and very positive connection/attachment.

Conversely, the unipolar approach measures only positive or negative attitudes towards the sense of place. For example, the study was done by Shamai (2017) in which the author investigated the negative pole of sense of place. The third sub-category is the semi-polar approach which addresses the lack of sense of place on the positive pole. For example, Ralph (1976) proposed an ordinal scale to measure the sense of place by posing different ranks; the negative sense of place, including “alienation”, “homelessness”, “not belonging,” and the positive sense of place, namely “belonging to a place” and “deep and complete identity with a place” (pp. 51-55). Shamai & Kellerman (1985) suggested a four-level scale for measuring a sense of place, including “not having a sense of place, knowledge of the place, belonging to a place, and attachment to a place”. In addition, Shamai (1991) introduced the seven-level scale consists of “not having any sense of place, knowledge of being located in a place, belonging to a place, attachment to a place, identifying with the goals of the place, involvement in a place, sacrifice for a place”. Moreover, Shamai and Ilatov (2005) stated that Piveteau (1969) proposed three levels for the sense of place scale: no sense of place, yes, but a low sense of place and yes and high sense of place.

The second category, known as directness characteristic, is related to how questions are asked from respondents, whether the question directly asks about the place or it implies it indirectly. For instance, Shamai and Ilatov (2005) used direct techniques in their study as they asked questions directly, such as “what is your level of attachment towards…?”. On the contrary, in an indirect way, there are statements such as “The place is very special to me,” and participants will rate them accordingly, such as in the study conducted by Hammit et al. (2006). Also, an indirect scaling approach can be found in the work of Jorgensen and Stedman (2001).

The third attribute of the scaling approach refers to the number of components within a question; a question may have several components in which the scaling is identified as multi-components (Hammit et al., 2006; Jorgensen & Stedman, 2001; Shamai, 1991) or have a single component in which the scaling identified as uni-component (Piveteau,1969).

The last attribute of the scaling approach is the dimension in two types: unidimensional and multi-dimensional. A unidimensional scale usually unites diverse questions to create a single scale. In contrast, a multi-dimensional scale is based on sub-scales of various but correlated indicators of a sense of place. The multi-dimensional scale can divide the sense of place into its parts to broaden the spectrum of the empirical study of the sense of place concept and obtain better results (Shamai & Ilatov, 2005).

Jorgensen and Stedman (2001) used a multi-dimensional scale in their study; they identified three indicators of the sense of place, namely place attachment, place identity, and place dependence, and used sub-scales for each. Hammit et al. (2006) also used a multi-dimensional scale to address the sense of place, including five dimensions: place familiarity, place belongingness, place identity, place dependence, and place rootedness.

In accordance with four characteristics of the scaling method for a sense of place measurement, the scaling approach of the model is determined. While discussing polarity, this model, in its second set focusing on the sense of place measurement, uses semi-polar scaling ranging from not having a sense of place to the positive pole. Accordingly, the scale range includes three scales: no sense of place, yes but a low sense of place, and yes and high sense of place. Regarding the dimension, this study for its model uses a multi-dimensional scale approach, as the three dimensions of place attachment, place dependence, and place identity are considered important indicators of a sense of place. Each dimension has two components; correspondingly, the multi-component approach is also applied within the second set of model. In relation to the directness attribute, the indirect technique is selected since the components do not directly ask participants about their level of attachment. Yet, the components are designed in the forms of statements depending on the early study done by Jorgensen and Stedman (2001) and Hammit et al., (2006). Respondents are requested to rate each component from 0 to 5, with 0 indicating no relevance and 5 indicating high relevance.

Table 4.1 : Sense of place measurement dimensions and components.

Dimension	Component label	Component description
Place identity	IDENTITY1	Everything about this park is a reflection of me and this park reflects the type of person I am.
	IDENTITY2	I feel that I can really be myself at this park.
Place attachment	ATTACH1	I feel relaxed, happy and satisfied when I'm at this park.
	ATTACH2	This park is my favorite place to be and I really miss this park when I'm away from it for too long.
Place dependence	DEPEND 1	This park is a place for doing the things that I enjoy most doing in the park.
	DEPEND 2	For doing the things that I enjoy most, no other place can compare to this park.

4.4 The Interpretation Method of Set I And Set II Results

In the previous parts, the model components and processes are determined, and within this part, the study explains the method for interpreting the result through phases and steps. The first phase is about reporting and discussing the findings of the interview based on contexts including user profile, usage mode, site, recreation, green space, water feature, movement and accessibility networks, urban furniture, service facilities, waste-clean environment, animal-inclusive, culture-inspired, heritage conservation, participatory approach, education-oriented, emotional, and multisensory. Accordingly, in this part park users' views which are the demonstration of their perceptions and preferences regarding the park are reported and discussed. It should be noted that, within the first phase of interpretation the discussion consists of explications and linkages with the literature's relevant researches.

The second phase refers to understanding the correlation between park users' positive and negative views and their sense of place level. In case of a strong positive correlation between park users' positive views and sense of place level, it means that as the positive views of park users increase, their sense of place level also increases. On the other hand, if there is a strong negative correlation between park users' negative views and sense of place level, it means that as the negative views of park users increase, their sense of place level decreases.

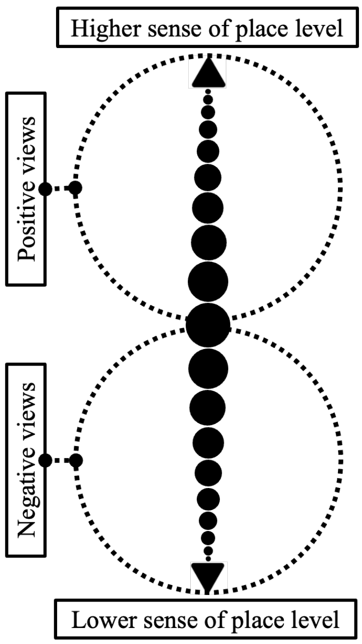

Figure 4.2 : The correlation diagram of sense of place level and positive and negative views.

The third phase is about listing recommendations and implications for the park under evaluation through use of generated sub-themes and themes. The aim of recommendations and implications is about actions regarding improving the park physical setting and provided services, in order to increase the users' satisfaction subsequently rise in their sense of place levels.

In addition, there are the preliminary phases which is recognized as data collection and organization as well as data entry into SPSS; these phases prepare data for interpretation of results. The following steps are under the umbrella of data collection and organization which were discussed within previous parts while devising components and processes of the model, yet they are summarized as follows:

Data collection and organization:

a. Data collection through the interview/in-person surveys (set I),
b. Data collection through the sense of place measurement/in-person surveys (set II),
c. Organizing data of set I,
d. Selecting codes for data of set I,
e. Labeling the codes as positive, negative, general, and impartial for data of set I,
f. Generating sub-themes for data of set I,
g. Developing themes for data of set I,
h. Organizing the data of set II based on each park user's place identity, place attachment, place dependence results,
i. Measuring the place identity for each individual: calculating the ratings given to the sentences of place identity (calculate the mean between the data),
j. Measuring the place attachment for each individual: calculating the ratings given to the sentences of place attachment for each individual (calculate the mean between the data),
k. Measuring the place dependence for each individual: calculating the ratings given to the sentences of place dependence for each individual (calculate the mean between the data),
l. Measuring the sense of place level for each individual: (calculate the mean between the data of place identity, place attachment, and place dependence),
m. Classify park's users based on age groups (B2-1 (ages 12 to 17), B2-2 (ages 18 to 24), B2-3 (ages 25 to 34), B2-4 (ages 35 to 44), B2-5 (ages 45 to 54), B2-6 (ages 55 to 64), B2-7 (ages 65 to 74), B2-8 (75 and above),

n. Measuring the total level of place identity for each age group (calculate the mean and standard deviation between the data of individuals in each group),
o. Measuring the total level of place attachment for each age group (calculate the mean and standard deviation between the data of individuals in each group),
p. Measuring the total level of place dependence for each age group (calculate the mean and standard deviation between the data of individuals in each group),
q. Measuring the sense of place level for each group: (calculate the mean and standard deviation between the data of each age group's place identity, place attachment, and place dependence).

The second phase before interpretation of results is using SPSS which is about understanding the correlation between park users' positive and negative views and their sense of place level. Therefore, the following steps to be taken:

Data entry into SPSS:

a. Entering the collected data of demographic dimension-background focus-user profile and usage mode contexts- gender, age, location of residence, duration of arrival, duration of use, frequency, and duration of visit (cold and warm seasons), state of use contents,
b. Entering the collected data of behavioral dimension- behaviors & experiences focus- site, recreation, green space, water feature, movement and accessibility networks, urban furniture, service facilities, waste-clean environment, animal-inclusive contexts, factors influential on park use types of activity/s experience with playground equipment experience with sports facility and equipment experience with green area experience with the water feature experience with pathways, ramps, stairs experience with seats experience with the commercial facility and amenity experience with restroom facility experience with garbage cans experience the pet-friendly environment contents,
c. Entering the collected data of cognitive dimension-opinions & values focus-culture-inspired and heritage conservation contexts, opinion about reflecting the local culture and opinion about the future of the park contents,
d. Entering the collected data of cognitive dimension- knowledge focus- participatory approach and education-oriented contexts, knowledge about the participatory planning, design, and management, knowledge about park rules and regulations, knowledge about plant species, and knowledge about animal species contents,

e. Entering the collected data of emotional dimension-feelings & emotions focus, sense of safety content,
f. Entering the collected data of sensory experiences focus, multisensory context, touch perception, hearing perception smell perception visual perception contents,
g. Entering the collected data into SPSS (each age group's number of positive and negative views),
h. Entering the collected data into SPSS (each age group's sense of place levels),
i. Defining variable properties: each participant's total of negative views as (x_1) and total of positive views as (x_2), the relationship between park users' views and the sense of place as (y),
j. Using regression model to predict the linear correlation between variable,
k. Using ANOVA to provide information about levels of variability within a regression model and form a basis for tests of significance,
l. Finding out the coefficient of variables.

Interpretation of results:

First phase-reporting and discussing the findings of interview:

a. Reporting and discussing the findings of user profile- usage mode, site, recreation, green space, water feature, movement and accessibility networks, urban furniture, service facilities, waste-clean environment, animal-inclusive, culture-inspired, heritage conservation, participatory approach, education-oriented, emotional, and multisensory (tables of positive and negative views which is consists of the frequency of each view, bar charts and photographs related to each context),
b. Reporting the total number of positive and negative views.

Second phase-the correlation of park users' sense of place level and positive and negative views:

a. Explaining the correlation of all park users' sense of place level and their positive and negative views,
b. Explaining the correlation of male park users' sense of place level and their positive and negative views,
c. Explaining the correlation of female park users' sense of place level and their positive and negative views,

d. Explaining the correlation of park users' sense of place level and their positive and negative views based on each age group.

Third phase-implications and recommendations based on sub-themes and themes:

a. Posing implications and recommendations for recreation-playground/sport facilities and amenities, green space, water feature, movement and accessibility networks, seats, service facilities-public toilets/food and beverage kiosk, waste-clean environment, animal-inclusive, culture-inspired (table of sub-themes and themes for each of these),
b. Posing supplementary recommendations.

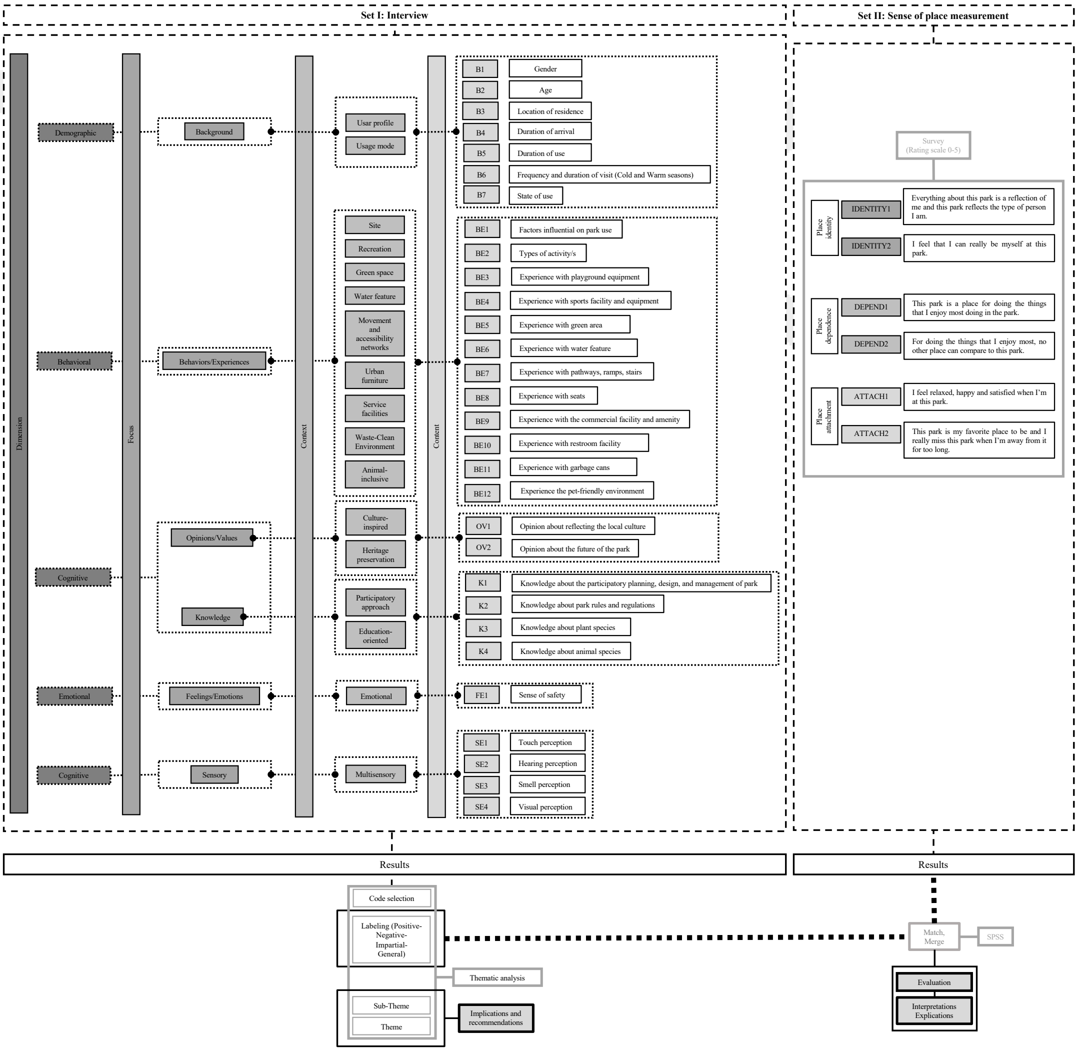

Figure 4.3 : Sustainable park model diagram.

5. LEGITIMIZING THE SUSTAINABLE PARK MODEL THROUGH USE OF A CASE: GÖZTEPE PARK

5.1 A Review of Göztepe Park

Istanbul faces mounting demands for the built environment (Eraydın et al., 2017). The city has a population of over fifteen million due to rural to urban migration between 1950-2000 (Edelman, 2021) as the primary factor and secondarily profit motive. Hence, the high-density issues diminish the number and size of open areas (Haaland & van den Bosch, 2015). Unfortunately, the distribution of green areas in the city is not homogenous. Türkoğlu (2020) contended that the urban plan of Istanbul could not be controlled and managed; the unplanned urban sprawl and low-quality building structures are the consequences. Accordingly, the retention of current parks and guaranteeing the equal and balanced distribution of green spaces have become a challenge for Istanbul.

Because of diminishes in green area per capita, air, noise, and visual pollution, the lack of outdoor recreation areas affect citizens' well-being and quality of life. Since open or green areas are considered fundamental indicators of green cities and are places that urge sustainable development, the decrease in open spaces becomes a challenge for Istanbul's sustainability plan. On the other hand, due to high urban density leading Istanbul to become a compact city, the open areas crucial in case of disasters are insufficient; thereby, because of earthquake probability, the need for open areas to function as emergency assembly points become more important than ever for Istanbul. Moreover, historical cities like Istanbul must adapt to changing conditions to meet urban needs. As a result, the urban development process challenges the cities in maintaining environmental, historical, cultural, and social values while simultaneously trying to balance economic growth, natural resources protection, and social development.

Consequently, protecting the existing green areas in the form of parks is of foremost importance for cities like Istanbul. Göztepe park is among green areas functioning as a public space within congested urban environment that need to be conserved.

Göztepe park is a community type of park located in the Caddebostan neighborhood of the Kadiköy district. For this reason, with its unique nature, the park functions as a rest stop for people of surrounding neighborhoods. Caddebostan has a population of approximately 21000. Most people in this neighborhood are middle-aged and elderly, so the percentage of young adults, adolescents, and children is around 19. The Göztepe neighborhood, located in the northern vicinity of the park, has a population of approximately 41000 people. It includes 51% middle-aged adults, 29% seniors, and 20% young people. Fenerbahçe neighborhood encompasses the west part of the Caddebostan, while the Erenköy neighborhood is located in the northeast part of the Caddebostan. The number of people living in Fenerbahçe and Erenköy is around 21000 and 35000, respectively. The age group distribution follows the same trend as Caddebostan and Göztepe neighborhoods. According to the age group distribution of the Kadiköy population, it is evident that the majority of people are over 65 years old.

The education level of people living in the Kadiköy district is relatively high. 47% of people graduated from a higher educational institution, while 46% have literacy. This is an indication of a rise in the overall education level. The education level of people is identified as s significant social indicator for landscape preferences; Dunlap (2000) believed that people with a higher level of education are more interested and show concerns about environmental issues. Kelly (1996) emphasized that education level is a more important indicator affecting participation in leisure activities than income or occupation. Individuals with a higher level of education might have knowledge and skills regarding outdoor recreational activities; hence it is easier for them to participate (Lee et al., 2001). In the study conducted by Alexandris and Carroll (1997), people with lower education levels might have difficulties engaging in outdoor recreational activities. In research done by Avci et al. (2021), the direct relationship between education level and physical level activity in parks is also pointed out. The authors believed that higher education is accompanied by higher use of sports equipment in the parks, as people with higher educational levels are more concerned about their health conditions.

In view of the fact that climate change has adverse effects on the urban environment and, subsequently, urban settlers are the most affected ones, the demands for parks within the urban environment have arisen (Bates & Santerre, 2001; ŁAszkiewicz et al., 2019). Since parks in an urban context with green area characteristics neutralize the negative consequences of climatic variations, alongside the ecological benefits of parks, the visual quality that parks provide via the composition of vegetation and the enclosure of green spaces positively influence people's choice of inhabitancy (Yao et al., 2011). Green spaces in the form of parks are considered local public goods similar to education and health facilities which cause an inclination to reside approximately in these areas for people (Saphores & Li, 2012). Based on several studies reports that focus on the positive effects of parks on individuals' preferences regarding housing, it concluded that demand-oriented planning of parks is in line with real estate market-oriented; therefore, the monetary value of housing is high where there are parks close to residential buildings (Crompton, 2001; Crompton & Nicholls, 2020; Daams et al., 2016). The value of properties of proximal parkland is directly relates to the degree of park's benefits provided for people; in some cases, the properties' monetary values have not increased due to disadvantageous locations affected by social or environmental dis-amenities (Kashian et al., 2018; Mahan et al., 2000; Sander et al., 2010).

Göztepe park, with its extensive vegetation cover, is one of the important reasons for the high monetary value of housing in the park surrounding areas; albeit there are other influential factors as well. In general, Kadiköy district's socio-economic level is high because of its physical characteristics, such as closeness to the European side of Istanbul, its historical background and historical monuments, educational institutions, social and cultural facilities, health facilities, public transportation facilities, the commercial zone for the Asian part of Istanbul.

Income level, education level, and occupation significantly affect participation in leisure activities (Lee et al., 2001). In general, most outdoor recreational activities depend on financial and cultural resources, and income and level of education affect participation in outdoor activities (Ghimire et al., 2014). Higher socio-economic status is recognized as an important factor regarding leisure-time physical activity. In particular, people with higher income tend to use some leisure time activities more than the opposite group, in a way that these activities are called "superior goods"

(Joassart-Marcelli, 2010). Although parks are places for all people with various socio-economic statuses, the demands regarding park usage have ascending trend among people with higher income and make it a superior good. Accordingly, people living in higher-income neighborhoods are likely to have access to more parks and green spaces than people living in lower incomes areas (Moore et al., 2008; Dahmann et al., 2010). Wolch et al. (2005) stated that park availability and accessibility are decreased in deprived neighborhoods. Disadvantaged and minority groups are more exposed to environmental problems such as noise and air pollution (Wolch et al., 2014). There is less opportunity to access and benefit from urban green areas such as a park in these conditions (Cook et al., 2019).

In a study done by Rigolon (2016), it is concluded that the lower socio-economic status, the smaller size, and the inferior quality of parks; affect participation adversely. It is conceivable that, besides the number of parks, the quality of facilities and amenities strongly correlates with park participation. There is also a significant link between occupation and participation in leisure activities. People's employment status determines the time they may spend in the park. Kelly (1996) emphasizes that income and occupation affect the opportunities and limitations of participation in leisure activities in outdoor public spaces. Based on the same viewpoint, income is the most critical indicator limiting park visits (Scott & Munson, 1994).

Figure 5.1 : Göztpe park 1972-1980.

The allocation of the vacant area to the park for functioning as a public space happened after the 1980s. The park was established in 1983 in honor of the 60th anniversary of the proclamation of the Turkish republic. As it is illustrated in Figure 5.2, in 2007 the park consisted of a rose garden, playground, football field, tennis courts, and exercise devices. In general, according to the aerial photograph of the park in 2007, the park consists of hardscape and grass areas with rarely mature trees.

In 2009, the northern part of the park was under redesigning processes in which green area zoning and pathways were implemented to complete the movement and accessibility network of the park. The process of redesigning the rest of the park was begun in the summer of 2012 and ended in the late summer of 2013. Indeed, the park has been under major alterations to attract more users; in consequence, the park turned into a thematic park in which the landscape design followed a baroque style which manifests in topiary and urban furniture. The football field was demolished, and instead, more tennis courts were added. A biological pond, water play areas, and other types of water features were also added. Two types of playgrounds are designed and implemented within the park for children's use while exercise devices are renewed. The movement and accessibility networks were developed and enhanced to facilitate park use. The rose garden located in the west part of Göztepe park, which was established in 2001, was enhanced as well. This garden, with an area of 4000 square meters, entails 117 various kinds of roses cultivated in Türkiye and other countries (Yücel & Kıvan, 2018). Almost 16.500 roses are exhibited within the rose garden with an area of 7850 square meters which also entails 175 square meters of the fountain pool. It was in 2017 that the metro construction site started to affect the landscape of the park, resulting in the tennis courts' demolishment, and since then, the construction has continued. The progress of the metro station construction site in Göztpe park between 2017-2022 years is demonstrated in Figure 5.3.

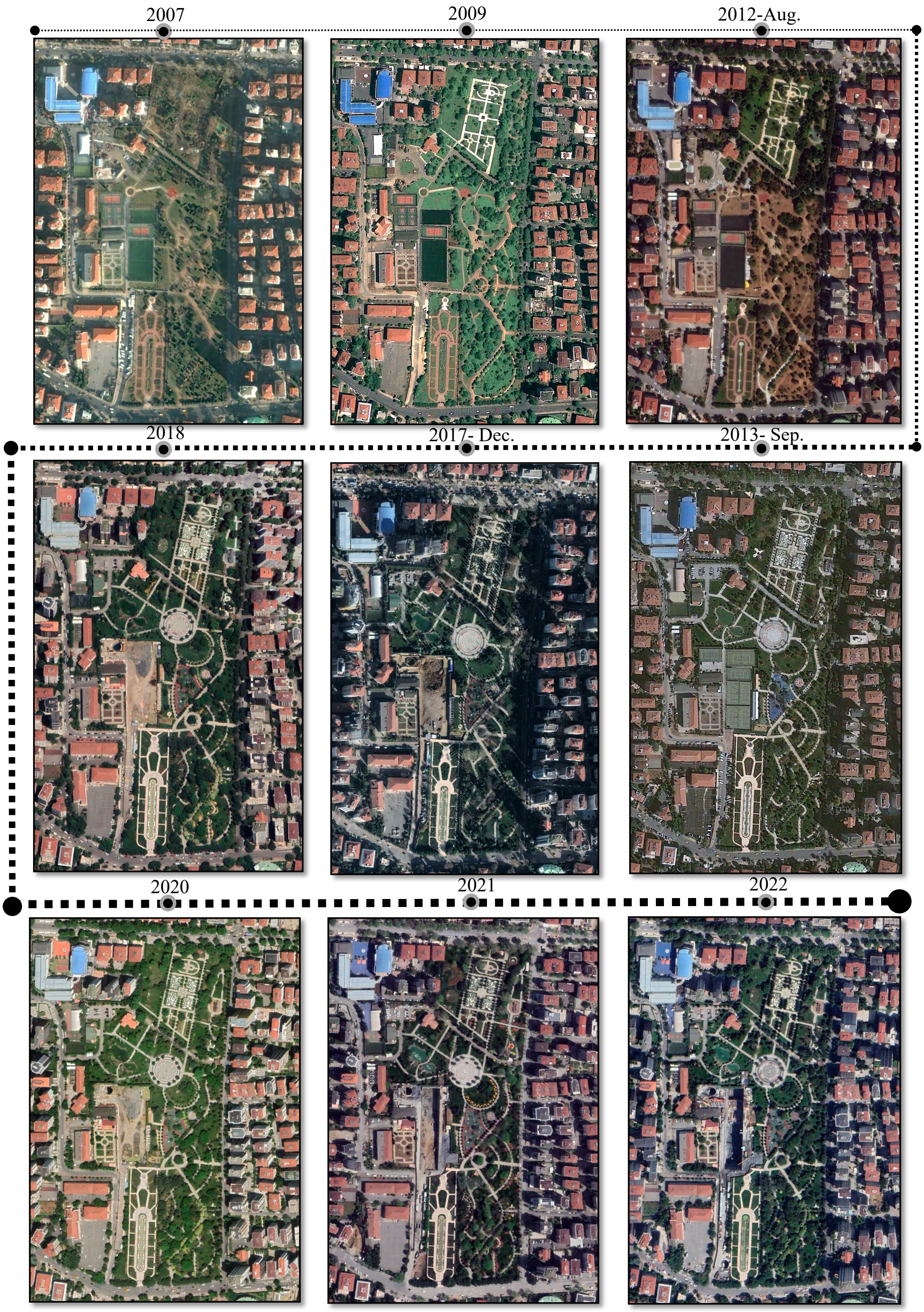

Figure 5.2 : Göztepe park arial photos years between 2007-2022.

Figure 5.3: Göztepe park metro station construction site between 2017-2022 years. (2022, August). Istanbul Metropolitan Municipality, Umraniye- Ataşehir - Göztepe Metro Line. https://uagmetro.ist/

Figure 5.4 : Göztepe park site plan.

Figure 5.5 : Göztepe park's rose garden. (2022, November) Green Flag Award Winner. https://www.greenflagaward.org/park-summary/?park=3607

Figure 5.6 : Göztepe park's baroque garden. (2022, November) Green Flag Award Winner. https://www.greenflagaward.org/park-summary/?park=3607

Figure 5.7 : Göztepe park's playground, exercise and water play area. (2022, November) Green Flag Award Winner. https://www.greenflagaward.org/park-summary/?park=3607

Figure 5.8 : Tulip season in Göztepe park. (2022, June). Istanbul municipality social facilities. https://tesislerimiz.ibb.istanbul/ibb-sosyal-tesislerinde-lale-zamani/

5.2 Results and Discussions

The interview process in Göztepe park begins with open-ended questions and continues with the sense of place measurement tool at the end. A total of 30 questions from the interview set and six from the sense of place measurement set are asked from Göztepe park users. Accordingly, the users are subjected to give answers to a total number of 36 different matters. Firstly, to determine the users' profiles and usage modes total of 7 questions are asked. The interview continues with 23 open-ended questions related to users' behaviors & experiences, opinions & values, feelings & emotions, knowledge, and sensory experiences. The interview process is finalized by asking users to rate 6 sentences regarding their place identity, place attachment, and place dependence.

It should be noted that in the preparation of the questionnaire regarding Göztepe park, a set of reference questions is devised which some questions are chosen from. Therefore, each questionnaire represents a set of questions that have been selected as a sample from the reference set. Using SPSS software, test validity is equal to 0.8.

Worth bearing in mind that, based on the points derived from the conversation with participants during the interview process, the photographs are taken from the park. Therefore, photograph-taking and interviews have happened simultaneously.

Table 5.1 : Interview questions.

Dimension	Focus	Context	No	Content
Demographic	Background (B)	User profile	B1	Gender
			B2	Age
			B3	Location of residence
		Usage mode	B4	Duration of arrival
			B5	Duration of use
			B6	Frequency and duration of visit (Cold and Warm seasons)
			B7	State of use
Behavioral	Behaviors & Experiences (BE)	Site	BE1	Factors influential on park use
		Recreation	BE2	Types of activity/s
			BE3	Experience with playground equipment
			BE4	Experience with sports facility and equipment
		Green space	BE5	Experience with green area
		Water feature	BE6	Experience with the water feature
		Movement and accessibility networks	BE7	Experience with pathways, ramps, stairs
		Urban furniture	BE8	Experience with seats
		Service facilities	BE9	Experience with the commercial facility and amenity
			BE10	Experience with restroom facility
		Waste-Clean environment	BE11	Experience with garbage cans
		Animal-inclusive	BE12	Experience the pet-friendly environment
Cognitive	Opinions & Values (OV)	Culture-inspired	OV1	Opinion about reflecting the local culture
		Heritage conservation	OV2	Opinion about the future of the park
	Knowledge (K)	Participatory approach	K1	Knowledge about the participatory planning, design, and management
		Education-oriented	K2	Knowledge about park rules and regulations
			K3	Knowledge about plant species
			K4	Knowledge about animal species
Emotional	Feelings & Emotions (FE)	Emotional	FE1	Sense of safety
Cognitive	Sensory experiences (SE)	Multisensory	SE1	Touch perception
			SE2	Hearing perception
			SE3	Smell perception
			SE4	Visual perception

5.2.1 Set I: interview- findings

The interview results are interpreted based on contexts including user profile, usage mode, site, recreation, green space, water feature, movement and accessibility networks, urban furniture, service facilities, waste-clean environment, animal-inclusive, culture-inspired, heritage preservation, participatory approach, education-oriented, emotional, and multisensory. It should be noted that, the N/A options labeled as impartial (I) are not demonstrated in tables and graphs.

5.2.1.1 User profile-usage mode

In account to the demographic data obtained from interview, out of 118 people, 58 men (49.2%) and 60 women (50.8%) participated in the evaluation process.

Table 5.2 : Gender.

No	Valid	Frequency	Percent	Cumulative Percent
B1-1	Male	58	49.2	49.2
B1-2	Female	60	50.8	100.0
	Total	118	100.0	

The age of participants is divided into 8 categories. Accordingly, 3 people (2.5%) are in the age group of 12-17 years, 11 people (9.3%) are in the age group of 18-24, 13 people (11%) are in the age group of 25-34, 24 people (20.3%) in the 35-44 category, 19 people (16.1%) in the 45-54 category, 21 people (17.8%) in the 55-64 category, 17 people (14.4%) in the 65-74 category and 10 people (8.5%) are in the category of 75 years and older.

Table 5.3 : Age.

No	Valid	Frequency	Percent	Cumulative Percent
B2-1	12-17 years old	3	2.5	2.5
B2-2	18-24 years old	11	9.3	11.9
B2-3	25-34 years old	13	11.0	22.9
B2-4	35-44 years old	24	20.3	43.2
B2-5	45-54 years old	19	16.1	59.3
B2-6	55-64 years old	21	17.8	77.1
B2-7	65-74 years old	17	14.4	91.5
B2-8	75 years or older	10	8.5	100.0
	Total	118	100.0	

According to the results of the location of residence question, park users are from four different neighborhoods, which happen to be the park's surrounding neighborhoods. 43 people (36.4%) live in Göztepe, 42 people (35.6%) live in Caddebostan, 21 people

(17.8%) live in Erenköy, and 12 people (10.2%) live in Fenerbahçe. Accordingly, most of the park users are from Caddebostan and Göztepe neighborhoods; however, there are people from other neighborhoods who prefer Göztepe park for recreational activities. Although the number of park users from the Erenköy and Fenerbahce neighborhoods are the least, respectively, it is an indication of the park's scope of service, which is more than one neighborhood.

Table 5.4 : Location of residence.

No	Valid	Frequency	Percent	Cumulative Percent
B3-1	Kadıköy-Göztepe	43	36.4	72.0
B3-2	Kadıköy-Caddebostan	42	35.6	35.6
B3-3	Kadıköy-Erenköy	21	17.8	100.0
B3-4	Kadıköy-Fenerbahçe	12	10.2	82.2
	Total	118	100.0	

The duration which the park was used for 8 people (6.8%) is less than 2 years, for 11 people (9.3%) is between 2 and 5, for 25 people (21.2%) is between 5 and 10, and for 74 people (62.7%) is more than 10 years. Accordingly, it can be comprehended that most people have used the park for more than ten years.

It takes at most 5 minutes for 10 people (8.5%) to arrive at the park. 33 people (28%) arrive at the park between 5 to 10 minutes, while it takes 10 to 20 minutes to reach the park for 66 people (55.9%). 9 people (7.6%) live in 20 to 40 minutes of walking distance to the park. It is clear that, most people spend 10 to 20 minutes walking to reach the park. As a result, the service radius is approximately 2000 meters.

Table 5.5 : Duration of arrival.

No	Valid	Frequency	Percent	Cumulative Percent
B4-1	Less than 5 min walk	10	8.5	8.5
B4-2	5-10 min	33	28.0	36.4
B4-3	10-20 min	66	55.9	92.4
B4-4	20- 40 min	9	7.6	100.0
	Total	118	100.0	

The duration of time which the park was used for 8 people (6.8%) was less than 2 years, for 11 people (9.3%) was between 2 and 5, for 25 people (21.2%) was between 5 and 10, and for 74 people (62.7%) was more than 10 years. Therefore, it shows that most people have used the park for more than 10 years.

Table 5.6 : Duration of use.

No	Valid	Frequency	Percent	Cumulative Percent
B5-1	Less than 2 years	8	6.8	6.8
B5-2	2-5 year	11	9.3	16.1
B5-3	5-10 year	25	21.2	37.3
B5-4	More than 10 years	74	62.7	100.0
	Total	118	100.0	

Seasonal and temporal variations influence the number of park users and the time they spend in it, depending on the park's region. While in Asia, the number of park visitors decreases in hot seasons such as summer (Ullah et al., 2019). In others, such as Europe, the use trend is the opposite as people visit parks more in summertime (Heikinheimo et al., 2020). However, the peak time for park visits in North America is in late fall (Song et al., 2020). Meanwhile, globally discussing, the major visits to parks in the urban environment are on weekends and public holidays, based on research done by Liang and Zhang (2021) and Ullah et al. (2020).

The frequency of visits in warm seasons is once or twice a week for most female users; however, most male users prefer to visit the park once or thrice a month. The frequency of visits for males and females who visit the park frequently almost follows the same trend during warm seasons, as they mostly use the park for dog walking, playground, or exercise. It should be noted that for some park users, the seasonal weather variations do not influence their visit frequency. However, males and females generally prefer to visit parks once or thrice times during cold seasons.

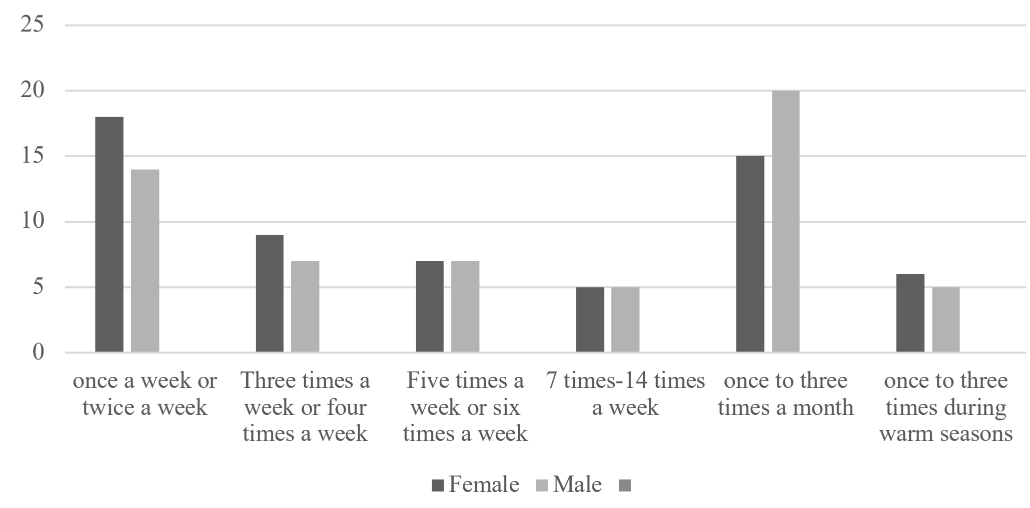

Figure 5.9 : Frequency of use in warm seasons.

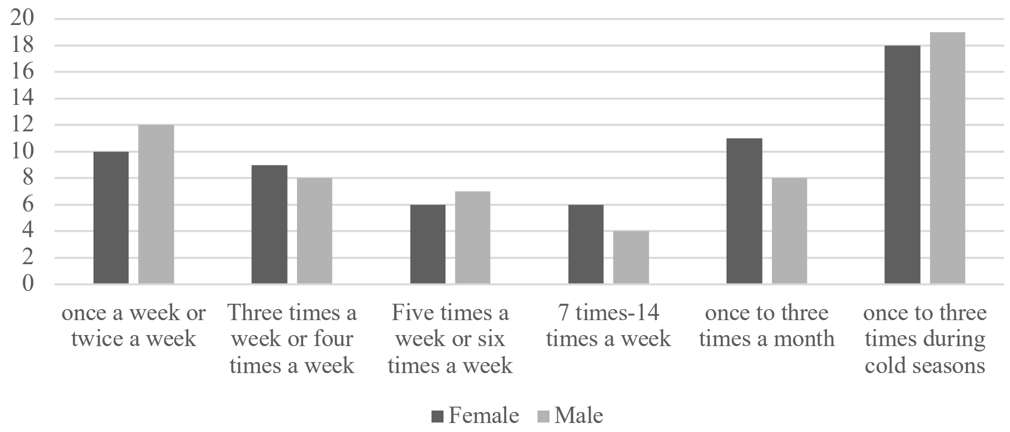

Figure 5.10 : Frequency of use in cold seasons.

The duration of park visits exponentially differs in warm and cold seasons for the majority of users. However, the weather condition does not affect the duration of park visit for the minority of users, as they visit the park for less than 15 minutes in both seasons. Most female participants prefer visiting the park for 1 to 2 hours during the warm season, while most male participants use the park for 15 to 60 minutes. A total number of 29 people visit the park for more than 2 hours; this number is less than 10 people during cold seasons. In these seasons, 74 people stay at the park between 15 to 60 minutes.

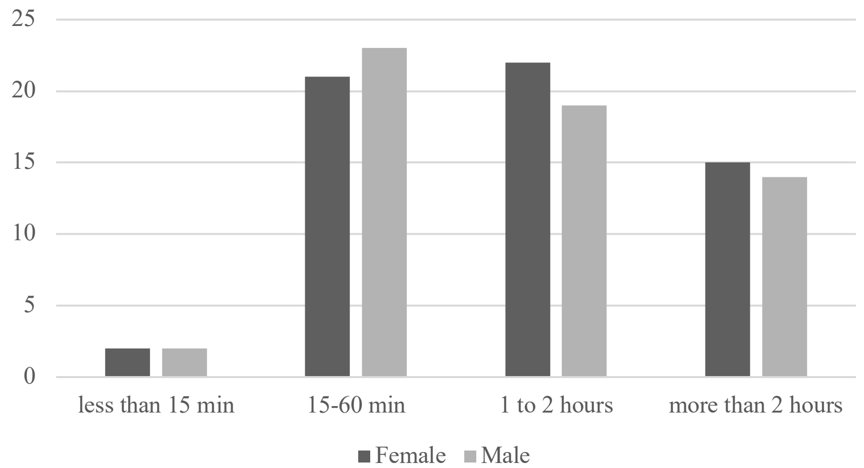

Figure 5.11 : The comparison of duration of visit in warm seasons.

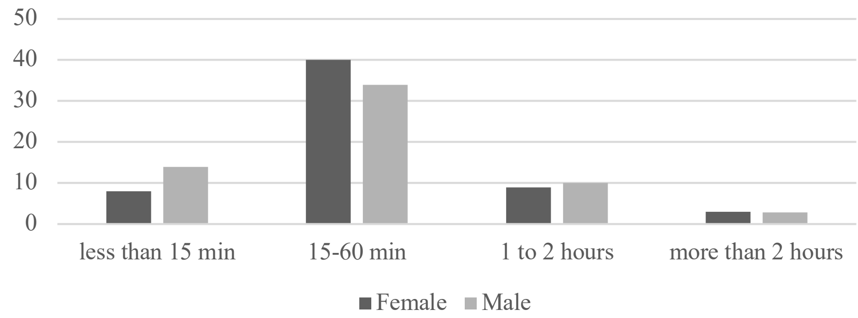

Figure 5.12 : The comparison of duration of visit in cold seasons.

In the studies conducted by Gobster (2002) and Tinsley et al. (2002), the relationship between distance to the park and the time spent by users is described. The authors stated that people who live near or adjacent to parks tend to use them frequently because of the shorter travel time compared to those who live in more distant locations. In the meantime, people who live farther away from parks rarely visit the park yet are likely to spend more time in the parks than those who live nearby.

Whether users visit the park alone or with companies is also essential while discussing the users' preferences regarding a park. People mostly prefer to visit parks with their friends or family members rather than alone; however, some individuals tend to engage in self-dependent leisure activities. In the case of Göztepe park, 41.4% of men visit the park alone, 37.9% with one or two companions, and 20.7% with more than three companions. In relation to female users, 50% of women use the park with one or two companions, 33.3% alone, and 16.7% with more than three companions.

Table 5.7 : State of use for male participants.

No	Valid	Frequency	Percent	Cumulative Percent
B7-1	Alone	24	41.4	41.4
B7-2	With 1 or two person/people	22	37.9	79.3
B7-3	With 3 or more people	12	20.7	100.0
	Total	58	100.0	

Table 5.8 : State of use for female participants.

No	Valid	Frequency	Percent	Cumulative Percent
B7-1	Alone	20	33.3	33.3
B7-2	With 1 or two person/people	30	50.0	83.3
B7-3	With 3 or more people	10	16.7	100.0
	Total	60	100.0	

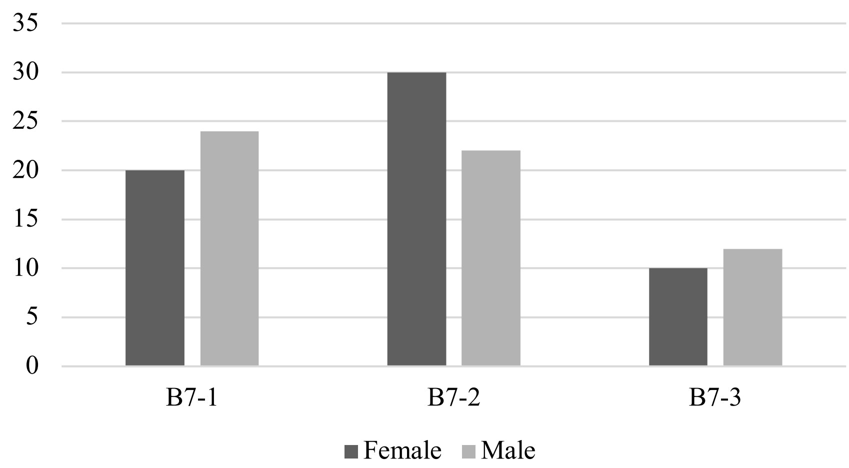

Figure 5.13 : The comparison between state of use results.

The graph in Figure 5.13 shows that men and women have similar behavior in using the park. In addition, based on the results of the Mann-Whitney test, the assumption of equality between the two groups of men and women is not rejected (Sig=0.684>0.05).

Table 5.9 : State of use test Statistics[a]

	State of use
Mann-Whitney U	1670.000
Wilcoxon W	3381.000
Z	-.407
Asymp. Sig. (2-tailed)	.684

a. Grouping Variable: Gender

5.2.1.2 Site

According to the results obtained from the interview, park users prefer Göztepe park for their recreational activities because of its location. Most importantly, the proximity to the residential areas is among the spatial characteristic that attracts people to park usage. In a recent study done by Tu et al. (2020), the authors studied the effect of travel distance on people's use patterns. They concluded that the longer travel distance has a restraining effect on people’s preferences for park use; the number of park visits decreased exponentially in case of long distances. The authors report that park visit frequency, travel mode, time spent in parks, and the type of activity vary with respect to the distance. Hadavi et al. (2017) also recognized the distance to a park as the most influential indicator of park utilization. Numerous studies indicated that parks that are approximate to living areas increase physical activity; the shorter distance to a park is positively associated with participation in parks and encourages more physical leisure activity within a park (Kaczynski et al., 2009; Sugiyama et al., 2010; Sugiyama et al., 2013; McCormack et al., 2010; Cohen et al., 2007)

As the graph in Figure 5.14 shows, in general, the proximity to the residential area has the highest score, and this park characteristic is influential for park preferences for both men and women users.

Table 5.10 : Factors influential on park use.

No	Valid	Frequency	Percent	Cumulative Percent
BE1-1G	Large area	43	11.9	16.0
BE1-2G	Vegetation cover abundance	25	6.9	25.4
BE1-3G	Proximity to the commercial artery	39	10.8	39.9
BE1-4G	Proximity to the residential area	64	17.7	63.8
BE1-5G	Walking pathways	28	7.8	74.3
BE1-6G	Adequate number of seats	15	4.2	79.9
BE1-7G	Sport facility and equipment	17	4.7	86.2
BE1-8G	Playground equipment	37	10.2	100.0
	Total	268	74.2	

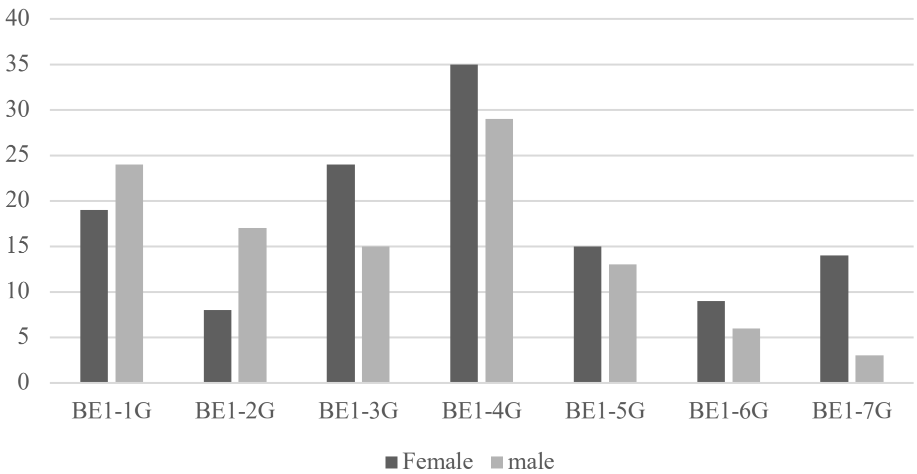

Figure 5.14 : The comparison between factors influential in park us for male and female participants.

The large area of the park and vegetation cover-abundance are among the park's physical characteristics influential in users' preferences. As a result of the large area, Göztpe park encompasses a wide range of vegetation and an area for various recreational activities. The density of parks' green areas affects people's perception regarding the surrounding environment because vegetation plays a significant role in people's inclination towards the natural environment over the built environment (Purcell & Lamb, 1998). In addition, the large area allows users to choose their own spot and escape the hustle and bustle of everyday urban life. Therefore, park size is one of the influential factors in choosing a park for physical and recreational activities (Giles-Corti et al., 2005).

However, the effects of the park's facilities and amenities on people's choices cannot be ignored. As Kaczynski et al. (2008) asserted, a park's size and travel distance are not definite determiners of people's park use. According to the authors, the park's facilities are considered more essential factors. This is Akin to the Göztepe park users' reasons for park use as they indicated that proximity to the commercial artery, walking pathways, adequate number of seats, sports facilities and equipment, and playground equipment, are features influential in their park choice.

5.2.1.3 Recreation

The interview results regarding the types of activity/activities of Göztepe park users suggest the diversity of recreational activities within the park; however, users visit the park for non-recreational reasons as well. Therefore, the respondents' answers are categorized into four, including active recreation (physical activity), passive recreation, passive recreation (socialization), and non-recreation (functional). Accordingly, the findings are as follows:

- Active recreational activities (physical activity) such as playing (sport and/or game), using playground equipment, recreational dog walking, walking/jogging or running, skating, running scooter, cycling, and using sports facilities and equipment.
- Passive recreational activities such as sitting/resting, smoking, reading, studying, and music listening.
- Passive recreational activities for socialization purposes, such as gathering with friends, picnics with family or friends, and attending social- cultural events.
- Non-recreational activity (functional) such as using the park as a passageway and functional dog walking.

Table 5.11 : Types of activities.

No	Valid	Frequency	Percent	Cumulative Percent
BE2-1G	Play (sport, game)	17	4.7	4.9
BE2-2G	Using playground equipment	41	11.4	16.9
BE2-3G	Recreational dog Walking	13	3.6	20.6
BE2-4G	Walking/jogging or running	50	13.9	35.2
BE2-5G	Skating	2	.6	35.8
BE2-6G	Running scooter	7	1.9	37.8
BE2-7G	Cycling	8	2.2	40.1
BE2-8G	Using sports facilities and equipment	20	5.5	45.9
BE2-9G	Seating	64	17.7	64.5
BE2-10G	Smoking	13	3.6	68.3
BE2-11G	Reading	7	1.9	70.3
BE2-12G	Studying	2	.6	70.9
BE2-13G	Music listening	9	2.5	73.5
BE2-14G	Gathering with friends	21	5.8	79.7
BE2-15G	Picnic with family or friends	12	3.3	83.1
BE2-16G	Attending social- cultural event	9	2.5	85.8
BE2-17G	Passageway	33	9.1	95.3
BE2-18G	Functional dog walking	16	4.4	100.0
	Total	344	95.3	

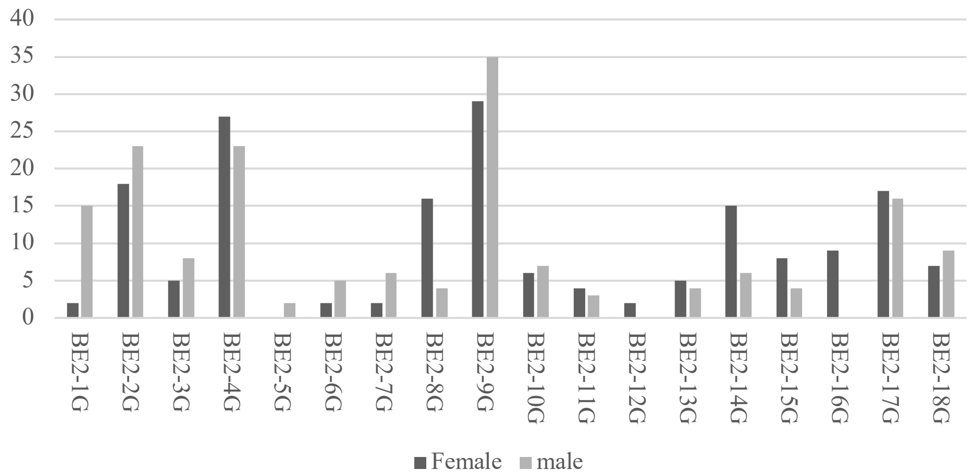

Figure 5.15 : Comparison of types of activities for all users.

Some studies noted that the participation and park use patterns vary among socio-demographic groups, and preferences for particular park characteristics and attributes are also heterogeneous (Kaczynski et al., 2011; Gobster, 2002). For example, Özgüner (2011) claimed that cultural differentiation is a pivotal factor in the attitude toward park usage. The author continues that people engage in a passive form of recreation in Türkiye, while in western countries, people prefer more energy-consuming leisure activities such as walking, dog walking, and exercising. However, in the case of Göztepe park, both types of recreational activities are seen. Consequently, the results revealed similarities with the universally known activities in parks around the world.

Due to the growing mental and physical health of urban dwellers, the demand for a sustainable pattern of healthy urban living has risen; therefore, because of this healthy lifestyle trend, the use of urban public spaces has increased considerably in recent decades (Bain et al., 2012; Capon, 2007). Physical activities are the most recommended solution for weight control and health benefits (Haskell et al., 2007). According to Handy et al. (2002) and Sallis et al. (2006), neighborhood characteristics play a significant role in people’s physical activity. The facilities and amenities a neighborhood provide for its residents are directly related to their preference for physical activity (Boardman et al., 2005).

Parks as green spaces within urban environments are recognized as the destination for doing physical activities, generally in sort of walking, jogging, or biking, because of their particular landscape features, including green areas, walking trails (Maller et al., 2005), and other components. Kaczynski et al. (2008) contended that park components are more critical than size and distance indicators for people's participation in a park. Akin to Kaczynski et al. (2008), Sugiyama et al. (2010) reported that the feature of a park plays a crucial role in people’s pattern of use; for instance, a well-designed park with various facilities and amenities may attract more users than those parks with fewer quality features that are in a shorter distance. Accordingly, the large area of Göztepe park provides the opportunity for people to play sports and/or games as well as gathering with family and friends for picnicking. In addition, with its playground equipment, the park is attractive for children as well. Although there are no skateboard parkour, bicycle, and scooter line among facilities, a few respondents mentioned skating, scooter running, and cycling among recreational activities within the park. Pathways for walking and sports facilities for exercising are other components people use. Walking is the most-rated recreational activity by Göztepe park users. Walking is recognized as a social activity (Darker et al., 2007), and except for appropriate and barrier-free pavements, it needs no other components.

Dog walking is another form of walking activity in which companion dogs are controlled and supervised by people while walking. The presence of pets beside owners in the form of dog walking activity within public areas dates back to the 19th century (Howell, 2015). Dog walking is recognized as an important imperative for people's everyday physical activity. So, it has been concluded that those who own dogs do more physical activity than those who do not. Dog walking activity is of two sorts, including functional and recreational; functional dog walking aims at covering the dog's vital needs. On the contrary, recreational dog walking meets the needs of the owner and dog simultaneously as the people enjoy the activity (Westgarth et al., 2020). In compliance with these definitions, it is understood that the Göztepe park users distinguish dog walking activity types while expressing their reason for a park visit.

In reference to park users' reasons for park use, it is apparent that Göztepe park function as a green passageway connecting separate areas on four sides of the park. However, the passageway in the north-south direction is used more by people as it connects Cemil Topuzlu and Bağdat street, the residential and commercial arteries. According to Peters et al. (2010), meeting and involving in discussions with strangers are not among the reason people use parks. In modern communities, people do not show interest in engaging in a conversation or activity with strangers as they prefer socializing with their own social group (Lofland, 1998). However, the tendency toward interacting with others within parks is observed; since social interaction results in the generation of a feeling of connection between people and the creation of a sense of belonging and social cohesion (Peters et al., 2010).

This matter is also observed in Göztepe park, as respondents do not mention interacting with strangers and meeting new people for park use. However, children tend to talk with their peers while playing in the park. Additionally, in the playing ground area, children's caretakers occasionally chat about common issues. Small talks are also observed among pet owners in case of pet conflict. Consequently, social interaction between strangers occurs passively within Göztepe park. Respondents express their tendency to have active social interaction with their families or friends, which occurs in the form of a gathering or picnic within the park as a public open space. However, based on users' experiences, active social interaction happens because of infrequent kermis held in the park.

Parks are inclusive spaces that respect diversity and provide facilities and amenities for community use. As a result, it is expected that parks are not only places for active forms of recreation but also passive ones due to diverse demands and interests. Rasidi et al. (2012) explained the park users' tendencies toward the passive form of recreation as a need for private outdoor leisure time. The author stated that individuals and groups need a space with an approximate diameter of 8 meters so they can have privacy. Seating/resting, reading, studying, and listening to music are among users' passive leisure experiences in Göztepe park. The number of respondents who prefer seating/ resting while using the park is high. Albeit other forms of passive recreation are also mentioned by much fewer users, they cannot be ignored. Smoking is also mentioned by some users as an activity while visiting the park. Accordingly, a park as a destination for recreational activities needs to facilitate both active and passive leisure experiences.

A substantial number of respondents reported that they visit the park for its playground equipment availability. The presence of two types of playgrounds, which are modern and new, are positive experiences that playground users indicated. However, lack of appropriate playground equipment for disabled children, a lack of adequate play equipment for all children (in crowded times), loose anchoring, deformation in flooring material, lack of sunshade structure, lack of age-inappropriate play equipment, lack of entertainment facilities and amenities for all users regardless of users' age are negative experiences addressed by users. Among the raised views, 79 are positive, and 173 are negative. The most indicated negative experience is the lack of entertainment facilities and amenities for all users (21.4%), while the sunshade structure indicated the least (2.7%).

Table 5.12 : Experience with playground equipment.

No	Valid	Frequency	Percent	Cumulative Percent
BE3-1N	Negative: Lack of appropriate playground equipment for disabled children	23	9.1	9.1
BE3-2N	Negative: Lack of adequate play equipment for all children (In crowded time)	24	9.5	18.2
BE3-3N	Negative: Loose anchoring	19	7.5	25.7
BE3-4N	Negative: Deformation in flooring material	30	11.9	37.6
BE3-5N	Negative: No sunshade structure	7	2.7	40.3
BE3-6N	Negative: Age-inappropriate	16	6.3	46.6
BE3-7P	Negative: Lack of entertainment facilities and amenities for all users	54	21.4	68.0
BE3-8P	Positive: Two types of playground equipment	35	13.8	82.8
BE3-9P	Positive: New and modern play equipment instead of traditional ones	44	17.4	100.0
	Total	252	100.0	

In relation to recreational opportunities within parks, children's playgrounds need to align with planning, design, management principles, and standards, as well as theories on children's needs (Hart, 2002). The provision of playgrounds depends on the characteristics such as location, size, and the play equipment type, which is meant initially to provide a ground for child development besides being a safe place protecting children from other unsuitable places.

Playground areas are integral components of urban parks as they serve children, one of the major groups within urban societies (Noschis, 1992). Children's perception and spatial preferences regarding the built environment and the influential role of playgrounds in child development have been the subjects of several studies (Noschis, 1992; Frost et al., 2004; Ünal, 2009). The positive effects of playgrounds on child development include enhancing children's cognitive abilities, social skills, and physical and psychological health. Furthermore, the presence of playgrounds in urban parks indicates a child-friendly urban environment concept that advocates the citizenship right of children, develops awareness, increases collective participation, and reduces violence against children (Bahrainy, 1998). Furthermore, it aims to improve urban area quality for children's personal growth, vitality, and creativity (Jansson et al., 2022). Accordingly, creating a child-friendly urban environment, where the characteristics of children and their needs are considered, is among notions of contemporary urban planning and landscape design (Gleeson & Sipe, 2012).

As a result, the availability of playground equipment suitable for children with disabilities (Moore et al., 2022; Ripat & Becker, 2012); age appropriateness of play equipment by considering different children age groups physical and mental abilities (Bowers & Gabbard, 2000); availability of innovative playgrounds appropriate for various needs and desires which are attractive and increase curiosity and creativity in children (Jansson, 2010; Talarowski et al., 2019); considering demographic data such as the number of children living in the service radius of park to supply adequate playground equipment and considering appropriate size of playground area (Çolakkadioğlu et al., 2017) to provide opportunity for children to use in crowded times without waiting time; timely repair and maintenance by including safety measures in playground area (Little & Eager, 2010); consideration of the thermal comfort zone in playground area (Kennedy et al., 2021) are among important factors while considering child-friendly environment.

In addition to a playground for children, the availability of play areas within urban parks for adults is also the subject of research. As reported by Pahtaja et al. (2006), the presence of play areas for adults enhances physical health and stimulates social interactions. Accordingly, designers within parks need to consider the design of a playground suitable for adults to provide an opportunity for partaking in physical activities (Mitchell, 2007). Furthermore, Talarowski et al. (2019) confirmed that the availability of playground equipment targeting adults and seniors within parks attracts more users and contributes to overall park participation.

Figure 5.16 : Playgrounds.

The interviewees reported the following concerning negative experiences: faulty exercise equipment (misfunctioning), inadequate exercise equipment, incomplete exercise equipment, size, location (close to playground area), demolishment of tennis courts, and lack of sports facilities for all users. Nevertheless, there is positive feedback regarding the exercise area, as some respondents find it satisfactory (3 users). Among the negative views, the lack of sports facilities for all users (45.4%) has the most votes, and the inadequacy of sports facilities and the location of exercise areas close to the playground area (5.1%) have the lowest votes. In comparing two groups of positive and negative views, negative views have more votes than positive ones.

Table 5.13 : Experience with sport facility and equipment.

No	Valid	Frequency	Percent	Cumulative Percent
BE4-1N	Negative: Faulty exercise equipment (misfunctioning)	12	10	10.0
BE4-2N	Negative: Inadequate exercise equipment	6	5.1	15.1
BE4-3N	Negative: Incomplete exercise equipment	8	6.7	21.8
BE4-4N	Negative: Size	7	5.8	27.6
BE4-5N	Negative: Location (Close to playground area)	6	5.1	32.7
BE4-6N	Negative: Demolishment of tennis courts	23	19.4	52.1
BE4-7N	Negative: Lack of sports facilities for all users	54	45.4	97.5
BE4-8P	Positive: Satisfactory exercise equipment	3	2.5	100.0
	Total	119	100	

In addition to playing areas, the availability of sports facilities and amenities intrigue people to use urban parks (Ayala-Azcárraga et al., 2019). Since sport and play within parks results in social interaction and create a bond between people, it helps build social cohesion (Peters et al., 2010). Exercise equipment placed within public areas, especially parks, attracts various people because they are beneficial for people's health and free of charge. Moreover, they are available for use without any time restriction. Therefore, park sports equipment can not only help the growth and development of public sports but can also be considered one of the most useful urban furniture that can help beautify the city.

However, the number of devices and the area used for exercise must be determined based on the number of people using the park. In addition, the area selection for sports facilities and amenities needs to be in a way that guarantees the safety of children. As respondents reported, the closeness of exercise devices to playground areas increases the risk of injuries in children as they unconsciously play with them.

The availability of various exercise devices appropriate for different body parts also needs to be considered within parks. In addition, installing age-appropriate devices with warning signs that target various age groups also prevents possible injuries. However, exercise equipment maintenance and the application of safety measures also need to be considered to increase their functionality. The availability of sports fields such as tennis courts, basketball, and volleyball fields attract people. Adolescents are especially attracted to well-maintained facilities that are economically reasonable (Ries et al., 2008). Roemmich et al. (2006) demonstrated that recreational facilities and amenities positively contribute to the level of physical activities performed by adolescents.

Figure 5.17 : Exercise devices area.

5.2.1.4 Green space

Based on research conducted by several scholars, interacting with nature is pleasant for people; hence park biodiversity, in general, natural elements stimulate people to use such areas (Irvine et al., 2013; Keniger et al., 2013; Bertram & Rehdanz, 2015). Furthermore, human-nature interaction positively influences physical and mental health; thus, it is important for human survival (Keniger et al., 2013). In addition, it helps enhance cognitive ability and generate social cohesion. Therefore, tendencies toward using parks because of their natural elements applies to Göztepe park as well; respondents reported the reason for Göztepe park use is because of its vegetation cover-abundance. Green areas' characteristics and components vary due to plants' structural features (Vieira et al., 2018); for instance, trees, shrubs, and/or herbaceous vegetation are various in different geographical locations. However, using a variety of native plants enhances the functionality of green areas within a park, attracting more users.

Although in the case of Göztepe park, users are satisfied with the green area size, plant density, and diversity, they also indicated negative experiences regarding green areas, including low maintenance of lawn grass, insufficient plant pruning, and the existence of insects. Similarly, in a study conducted by Talal and Santelmann (2020) revolving around the urban park users' perception concerning green areas, park visitors indicated the following matters: desire for more plants within the park, proper horticultural practices such as pruning for removal and reduction of plants' part that are harmful to plant growth and aesthetic reasons; appropriate invasive species management.

Timely pruning is one of the maintenance actions with respect to green areas that aims at keeping the tree size at the optimal level. In addition, pruning prevents excessive growth and high density of branches which cause discomfort for passers-by and limit the view line. Besides pruning, the maintenance of law grass is also essential for the quality of parks' green areas. Lawn grass is a part of parks' green areas that require more effort to stay healthy throughout the year. Especially in the Mediterranean climate, lawn grass needs moisture, and it takes time and energy to take care of. Therefore, lawn mowing must be done throughout the year to preserve their structure.

The stability of ecosystems is based on the natural relationships between organisms and their physical environment. The boundaries of species' presence are determined based on geographical, ecological, and biological limits. Due to human activities, whether intentional or unintentional, some species propagate beyond their natural and normal distribution range. Despite some species that are not a threat to biodiversity, others disturb the new habitat by surviving, reproducing, and spreading; consequently, these species are recognized as invasive species, including pests or a weed. Invasive species can cause damage to humans and natural habitats and cause a disturbance in natural ecosystem function; therefore, they are considered an important threat to biodiversity (Wilcove et al., 1998). Consequently, invasive species management help to control pest and weed throughout the green areas of parks. Pest control for plant protection in the maintenance of parks' green spaces includes the use of biological treatment methods that are environmentally stable and do not affect the habitats of animals.

Table 5.14 : Experience with green area.

No	Valid	Frequency	Percent	Cumulative Percent
BE5-1N	Negative: Low maintenance of lawn	44	12.2	28.9
BE5-2N	Negative: Insufficient plant pruning	14	3.9	38.2
BE5-3N	Negative: Existence of insects	8	2.2	43.4
BE5-4P	Positive: Vegetation diversity and abundance	86	23.8	100.0
	Total	152	42.1	

Figure 5.18 : Green spaces.

5.2.1.5 Water feature

Water is not only used to meet the needs of drinking, washing, or watering; indeed, water, with its various capabilities such as bringing life, freshness, brightness, purity, stillness, peace, and movement, creates different feelings in the human soul. So, it has a profound impact on human spirituality. For this reason, water has been used in various forms within human-made environments. For example, booth (1989) stated that water features in an urban environment with both recreational and ecological purposes benefit human well-being.

Water is one of the main elements in creating relaxing and pleasant spaces, and it has been used within urban environments to alleviate the negative impact of urbanization.

Water features are inseparable design elements in both design fields because of their aesthetic and functional characteristics (Tarım, 2017). Indeed, the presence of water features as the complementary component of green spaces is considered a nature-based solution. In other words, green spaces and water features are considered environmental amenities. Water features as an integral part of urban's blue-green infrastructure provide substantial benefits, including mitigation of urban heat islands, which helps cool the environment and results in economic efficiency in the long run; reduction of air pollution; enhancement of visual quality of the urban environment; restorative environment for people's mental health resulting in human well-being.

Water features are one of the important components of parks, and their contribution to landscape beautification has been recognized by scholars (Moughtin, 2003; Whyte, 2007). Park water features can be categorized into biological, recreational, and decorative categories. Tarım (2017) recognized water features as part of urban furniture and classified them as follows: fountains, decorative pools, flowerpot water gardens, sprinkler landscapes, waterfalls, biological pools, water plays, water channels, water walls, water gardens, decorative sprinkler pools. Despite the benefits of water elements within urban public areas, the problems due to climatic conditions such as cold winter or rainy seasons are barriers to the design and use of water elements. Moreover, maintenance actions of water elements such as supplying water, recycling, and cleaning are among the difficulties as well (Xiao et al., 2017).

Göztepe park has three types of water features: sprinkler water element, fountain, and biological pond. The Göztepe park users pointed to the importance of water features concerning microclimatic effects by indicating the air purification and cooling effects of water features in the park. In addition to the environmental benefits, the respondents believed that water features also have recreational attractiveness. Although people are satisfied with the water features within the park, they also mentioned the negative experiences. According to the users, the water sprinkler (water play area) in the middle of the park does not function properly. Water-based recreation is attractive to people, especially children. Users also referred to the lack of adequate potable water element within the park as a negative experience.

Table 5.15 : Experience with water features.

No	Valid	Frequency	Percent	Cumulative Percent
BE6-1N	Negative: Misfunctioning	38	21.8	21.8
BE6-2N	Negative: Lack of potable water	8	4.6	26.4
BE6-3P	Positive: Recreational attractiveness	62	35.7	62.1
BE6-4P	Positive: Microclimatic effects	66	37.9	100.0
	Total	174	100.0	

Figure 5.19 : Water features.

5.2.1.6 Movement and accessibility networks

The research participants addressed the difficulties and limitations with respect to the movement and accessibility network of the park. Lack of appropriate tactile paving/lack of tactile paving, weeds in pavers, accumulation of rain or irrigation water, deterioration and unevenness of flooring, exposed pipes on pathways, broken stairs, construction leftovers, lack of bike or scooter track/walking or jogging path, problems in ramps and inclines/lack of ramps. Albeit there are negative views, users pointed to the positive aspects of movement and accessibility networks as well, such as proper circulation networks that provide accessibility throughout the park and sufficient pathways width, which is convenient while walking.

Table 5.16 : Experience with pathways, ramps, stairs.

No	Valid	Frequency	Percent	Cumulative Percent
BE7-1N	Negative: Lack of appropriate tactile paving/Lack of tactile paving	16	4.4	4.8
BE7-2N	Negative: Weeds in pavers	17	4.7	9.8
BE7-3N	Negative: Accumulation of rain or irrigation water	29	8.0	18.5
BE7-4N	Negative: Deterioration and unevenness of flooring	66	18.3	38.1
BE7-5N	Negative: Exposed pipes on pathways	25	6.9	45.5
BE7-6N	Negative: Broken stairs	20	5.5	51.5
BE7-7N	Negative: Construction leftovers	21	5.8	57.7
BE7-8N	Negative: Lack of bike or scooter track/walking or jogging path	27	7.5	65.8
BE7-9N	Negative: Problems in ramps and inclines/Lack of ramps	28	7.8	74.1
BE7-10P	Positive: Circulation	55	15.2	90.5
BE7-11P	Positive: Pathways width	32	8.9	100.0
	Total	336	93.1	

Urban spaces which promote pedestrianism encourage people to easily move around and reach their destinations without the need to use vehicles while enjoying walking as a recreational or non-recreational activity. Pedestrianism includes various aspects such as connection, legibility, safety, and access to services needed by pedestrians (Zegeer, 20O2). But in recent years, sidewalks have not developed in terms of social aspects, creating internal interactions, and in terms of the presence of suitable services for users, and in this way, the indisputable rights of pedestrians, who make up a substantial percentage of urban space users, have been ignored. Along with the lack of suitable conditions for walking, such as the lack of security, and the presence of biological and noise pollution, the number of its users has decreased day by day.

Park users stated that the circulation and movement elements (walking pathways) are among the influential reasons for their park use. In reference to this matter, Giles-Corti et al. (2005) pointed out that the availability of amenities such as walking pathways increases the rate of park usage. The pathways-space relationship and the form of pathways play a critical role in encouraging users to engage in physical activities such as walking, jogging, and running throughout the park. It is apparent that the design of Göztepe park’s looping walkway facilitates walking and jogging throughout the area because the entrances and the connected routes lead users to different places within the park.

According to Zhai and Baran (2017), the type of material used for pavement, the form and width of the trail, and the presence of seating areas such as benches along the trail are the particular features of pathways that designers need to consider while planning and designing the park landscape. In addition, the author believes that these design practices encourage physical activity and provide health-promoting environments.

With reference to universal design principles, parks are public open spaces that need to be accessible by all people; as a result, authorities and decision-makers endeavor to implement inclusive initiatives within the park. With this view, already existing parks have been under reconstruction to build a barrier-free landscape for people; in the meantime, regulations and legislation are devised for new park design and construction. Wider pathways, tactile paving, ramps, handrails, resolving uneven curbs with obstacles and holes within the pavement, removal of inconvenient or dangerous interruptions, and timely maintenance of stairs material are among implementations within parks to ensure mobility for people with mobility and sensory disabilities.

The tactile paving is implemented within pedestrian lanes in the urban transportation network for visually impaired users to walk independently in a safe environment. Tactile paving warns and guides visually impaired users where the pathway ends and begins. Moreover, it functions as a hazard indicator in case of changes in the level and directional guidance of park facilities (Siu, 2013).

In recent decades, there has been a great tendency to encourage cycling as a mode of transportation or a healthy recreational activity among transportation planners and public health organizations. As a result of presenting substantial environmental, social, and economic benefits of cycling scientific studies, authorities and decision-makers have implemented bicycle network projects within urban environment accessibility networks.

The bicycle is one of the oldest methods of human transportation, and its use in urban transportation has many advantages, including: facilitating commuting and reducing traffic congestion; reducing the problem of air pollution, especially in large and densely populated cities; relatively cheap and easy of use; energy efficient; healthy and suitable for the environment; occupying less urban space and reducing parking problems; and helping to reduce the economic and social gap; reduce traffic accident, faster and safer mode of transportation. (Tranter, 2012; Belter et al., 2012; Handy et al., 2014). Accordingly, the reasons for the tendency of Göztepe park users to use micro-mobility options within the park are apparent based on these advantages.

Figure 5.20 : Movement and accessibility networks (No.1).

Figure 5.21 : Movement and accessibility networks (No.2).

5.2.1.7 Urban furniture

The city is considered a whole that is formed from the juxtaposition of places with different characteristics. The elements that make it possible to live comfortably and conveniently in this whole which people are in constant contact with them are called urban furniture (Şişman & Gültürk, 2016). The term urban furniture is used in the urban planning and urban design field. The urban environment must be equipped with special equipment to ensure its occupants' well-being and quality of life. By designing and installing urban furniture, the public spaces within the urban environment are prepared for the activities of the citizens. In addition to facilitating urban life for citizens, urban furniture, known as equipment for urban areas, has a crucial role in cities' beatification.

The equipment, with its characteristics such as color, form, and practicality, are inseparable components of the urban environment. Using inappropriate urban furniture or removing this equipment from public spaces causes people's needs to remain unanswered; consequently, the urban system fails. The type of urban furniture also shows a city's identity and culture. According to Aksu (2013), in the design of urban furniture, function, aesthetics, form, material, color, texture, and perceptibility should be taken into account. Urban furniture needs to be not only functional but also aesthetically pleasing. They can be divided into four main groups: street furniture, park furniture, traffic furniture, and information and advertising equipment.

Urban furniture within the park can be classified as follows according to their functions Floor coverings, Seating units, Lighting elements, Signs and information boards, Limiters, Water elements, cover elements (stops, canopies, pergolas), Sales units (kiosks, exhibition pavilions, kiosks), Artistic objects (sculptures), Playground elements, other elements such as garbage cans, flower beds, bicycle parking lots, square clocks, plant items, flag poles, etc.

Park areas are where urban furniture is used the most compared to open-green areas within the urban environment. A park’s functionality is related to the quality and quantity of its furniture. Therefore, urban furniture associated with parks needs to serve a specific purpose, be unique, and be compatible with the physical structure of the environment and societies’ social, cultural, and economic characteristics. Accordingly, they must be integrated with the host landscape in all dimensions.

The park furniture consists of all types of seats, garbage cans, light sources such as park lamps, playground equipment, exercise devices, water fountains, decorative objects such as statues, flower beds, signs, paving stones, awnings, and pavilions, shading structures, protective fences, public toilet cabin, and kiosk. Paying attention to the design and maintenance of park furniture results in user satisfaction and increases contribution.

In this study, the Göztepe park users enquired about their experiences with seats, restrooms, exercise devices, playground equipment, commercial facilities and amenities, and garbage cans during park use. In this part, the respondents’ answers about seats are discussed. The other park elements are discussed within the recreation (exercise devices, playground equipment), waste (garbage can), and service facilities (restrooms and commercial facilities and amenities) contexts. The respondents reported the following positive and negative experiences with respect to seats within the park: negative experiences including faulty installation of wooden benches, water element seats, lack of ergonomic seats, lack of shade structure, lack of group seating for a picnic, and positive experiences including gazebos, adequate number of seats.

Table 5.17 : Experience with seats.

No	Valid	Frequency	Percent	Cumulative Percent
BE8-1N	Negative: Faulty installation of wooden benches	19	5.3	9.8
BE8-2N	Negative: Water element seats	10	2.8	14.9
BE8-3N	Negative: Lack of ergonomic seats	33	9.1	32.0
BE8-4N	Negative: Lack of shade structure	20	5.5	42.3
BE8-5N	Negative: Lack of picnic seats	13	3.6	49.0
BE8-6P	Positive: Gazebos	19	5.3	58.8
BE8-7P	Positive: Adequate number of seats	80	22.2	100.0
	Total	194	53.7	

One of the important reasons for park use is the adequate number of benches in the park, based on users' answers. However, there is negative feedback about the benches as they are not ergonomically designed. Users stated that the seats are uncomfortable enough for a longer use duration. The users also posed their safety concerns regarding problems with wooden benches as they are not well installed, and they are faced with the danger of falling and getting hurt. This problem does not apply to concrete benches. In addition, the lack of shade structures is among the negative experiences that users experience, especially in warm seasons. Park users prefer to picnic in the park; however, the lack of seats and tables prevents such recreational activity. Notwithstanding, users were satisfied with the seat in gazebos in the rose garden.

Figure 5.22 : Seats.

5.2.1.8 Service facilities

In the light of user-oriented design, the presence of service facilities such as shops within a public place positively affects contribution (Golinik & Ward Thompson, 2010). Although the availability of service facilities is essential, their success in users' satisfaction is contingent on service quality (Eng & Niininen, 2005).

The Göztepe park users complained about the commercial facility in the park in the form of a kiosk for food and beverages. They mentioned that the kiosk is undersupplied as it does not contain a wide range of products. Moreover, the kiosk remains closed most of the time. Although there are shops on the commercial arteries near the park, users prefer to use the kiosk and expect the kiosk to be open and offer products. Users also expressed their demands regarding seating areas adjacent to the kiosk for eating and drinking while spending leisure time. However, in 2022 the food and beverages kiosk was closed due to construction nearby, and instead, there is another kiosk outside close to the park's northern entrance.

Street vendor activities are under the umbrella of street service facilities and amenities, also considered part of the informal economy. The presence of street vendors in public spaces is not a new phenomenon (Graaff & Ha, 2020), as such activities can be seen in streets, train stations, buses, and public parks. Accordingly, Istanbul is no exception, as the informal economy is an important part of this metropolitan economy, and street vendors can be seen throughout the city. Street vendors sell commodities in various forms; for instance, they use fixed stands, such as kiosks, and semi-fixed booths, such as folding tables, pickup trucks, or vans. As a result, street vendors attract more users resulting in a lively place with respect to social and economic aspects, according to the study done by Rahman et al. (2020). Yet, the authors also pointed out the negative aspects of this issue regarding ecological and aesthetic functions.

Although some Göztepe park users expressed their satisfaction with street vendors, the rest said the opposite. Availability and relative cheapness can be counted among the reasons for users' satisfaction. On the other hand, the chaos caused by street vendors, noise pollution, and aesthetic concerns are reasons for users' dissatisfaction.

Table 5.18 : Experience with the commercial facility and amenity.

No	Valid	Frequency	Percent	Cumulative Percent
BE9-1N	Negative: Undersupply	5	1.4	8.6
BE9-2N	Negative: Closed most of the time	11	3.0	27.6
BE9-3N	Negative: Lack of suitable table and chairs	5	1.4	36.2
BE9-4N	Negative: Street vendors	12	3.3	56.9
BE9-5P	Positive: Street vendors	2	.6	60.3
BE9-6P	Positive: Adequate and sufficient	23	6.4	100.0
	Total	58	16.1	

Figure 5.23 : Food and beverages kiosk and street vendors.

A toilet is among urban service facilities which are inevitable within public areas, and their presence increases the use of open public areas, particularly parks. They must be accessible to all members of society and provide clean water and sanitation for public health. Greed (2004) contended that the existence of public toilets in the city's public spaces is an indicator of a sustainable city as it serves citizens' comfort. Since it is an indication of a socially inclusive society, the failure of local authorities to provide public toilets deters people from using public places, which is quite the opposite of the principles of design and planning for a sustainable city. Although there is a public toilet in Göztepe park, users stated negative experiences with it. According to the interview result, the toilet is closed most of the time.

The closure of public toilets is a way to control probable activities such as vandalism, graffiti, drug use, sexual intercourse (Greed, 2002), and homeless people who use public restrooms as a place to stay. Vandalism, anti-social behaviors, and poor hygiene result in not using the public toilet by people (Cockfield & Moss, 2002). The park visitors also indicated the problem of inadequacy of toilets in crowded times.

Table 5.19 : Experience with restroom facility.

No	Valid	Frequency	Percent	Cumulative Percent
BE10-1N	Negative: Closed most of the time	28	7.8	40.0
BE10-2N	Negative: Inadequate number of toilets	6	1.7	48.6
BE10-3P	Positive: Restroom is adequate and sufficient	36	10.0	100.0
	Total	70	19.4	

Figure 5.24 : Restroom facility.

5.2.1.9 Waste-clean environment

Park users referred to both the quality and quantity of the garbage cans in response to their experience with the park's clean environment. Their intentions regarding quality can be classified into two: aesthetic aspects and clean environment. Garbage cans within parks are considered urban furniture as well. Accordingly, the design of garbage cans needs to be in harmony with the surrounding environment features; in addition, the host community's aesthetic perception must also be considered. As a result, considering aesthetics and functionality is important in designing garbage cans within parks. The garbage can size and capacity, optimal location and proximity distance of garbage cans, visibility, and accessibility, the maintenance and cleaning matters have a significant influence on users' park preference.

Furthermore, users were aware of waste management initiatives such as recycle bins which, with the aim of waste separation, are devised. The purpose of waste separation is to separate materials from each other so that recyclable materials can be recycled and returned to the cycle of nature; indeed, these activities decrease natural resource consumption. Currently, most developed countries seriously follow the recycling program to protect the environment and ensure human well-being.

Insufficiency in waste separation within built environments causes health problems, economic challenges, and energy loss. Therefore, waste separation before collection and disposal is important in terms of easiness in the recycling operation. Consequently, there are basic measures for waste separation. One of the essential actions is to place colored waste sorting bins in public places, organizations, and residential buildings, which need to be associated with public education and informational campaigns to raise awareness with respect to this matter; gradually cultivating the culture of sustainability within society.

Sanitation problems associated with animals living in urban environments threaten public health. As a result of public health movements, animals were eradicated from cities; however, living with animals took a new form. Urban people now live with pets, so the number of pets has risen in households (Instone & Sweeney, 2014). In addition, dogs have become a part of urban cultures (Urbanik & Morgan, 2013). Accordingly, dog walking is a form of activity that takes place within urban green spaces, especially parks. Therefore, paying attention to the sanitation problems due to dogs' presence is important. Collecting dog feces and putting them in dog waste bins helps to have a clean environment and remove dog waste from public sights. According to interview participants, the lack of a dog waste bin in Göztepe park is a problem that parks users confront. The users complained not only about the unpleasant odors but also about the adverse impact of the aesthetic quality of the landscape (McCormack et al., 2010).

Table 5.20 : Experience with garbage cans.

No	Valid	Frequency	Percent	Cumulative Percent
BE11-1N	Negative: The garbage cans are not adequate (Quantity)	22	6.1	14.1
BE11-2N	Negative: The garbage cans are not adequate (Quality)	45	12.5	42.9
BE11-3N	Negative: There is no recycle bins	15	4.2	52.6
BE11-4N	Negative: Lack of dog waste bin	24	6.6	67.9
BE11-5P	Positive: The garbage cans are adequate	50	13.9	100.0
	Total	156	43.2	

Figure 5.25 : Garbage cans.

5.2.1.10 Animal-inclusive

Animal inclusiveness in parks is a crucial aspect of creating sustainable and livable cities. Parks are an essential urban amenity that offers numerous benefits to humans and wildlife. Therefore, the goal of park design needs to be creating od inclusive spaces that provide a habitat for different species of animals while also ensuring that humans can safely enjoy the park. The long-term coexistence between people and animals is an indication of the need to be intertwined with nature, which causes urban dwellers to value and protect animals (Magle, 2018). As a result, the presence of companion animals in the urban household due to lack of access to the natural environment is highly observed. In addition to enhancing individuals' mental and physical health and quality of life (McNicholas et al., 2005; Beetz et al., 2012), companion animals are recognized as contributors to social capital as they improve the social relations among people (Kubinyi et al., 2009). Since urban open spaces, especially parks are places where pet owners visit for recreational and functional pet-walking, paying attention to the needs of pets and pets' owner is important. Pet-friendly urban parks are places where animals are included in the planning and design of green spaces, and the amenities and facilities are available for animals and their owners. However, there are difficulties associated with pets or wandering or stray animals living in an urban environment, such as transmitted diseases, unpleasant odors, noise pollution, and animal-human conflict, which causes insecurity (Feldmann, 1974; Butcher & Keuster, 2013). These problems are known as factors influencing people's use of the park. Accordingly, considering and controlling these problems within the park is critical.

Based on a study conducted by Cutt et al. (2008), particularities of a park, such as play areas for the dog to exercise, attract more users to a park. The availability and accessibility to public open space for dog owners and the supply of infrastructure associated with dogs inside parks are major environmental factors influencing whether or not owners walk their dogs. Such facilities not only help owners to feel comfortable but also are helpful for dogs' mental and physical health. Göztepe park users reported that the park's shortcomings include the lack of a dog playground or agility equipment.

The problems associated with dogs within the urban environment, such as conflicts due to unleashed dogs, noise pollution due to barking, and dog feces, lead to devising regulations for surveillance and control of public spaces, especially parks. Accordingly, parks' management needs to take steps to educate dog owners via signages and bulletin boards. Göztepe park users expressed their concerns about the park' shortcomings in managing dog-related matters within the park. Although users shared their opinion about supplying communal water and food bowls as an action supporting the animals living in the park, there are problems, such as contamination resulting spread of diseases among animals. Therefore, regular cleaning and disinfection are mandatory for such areas within parks.

Table 5.21 : Experience the pet-friendly environment.

No	Valid	Frequency	Percent	Cumulative Percent
BE12-1N	Negative: Lack of dog playing ground or agility equipment	20	5.5	15.9
BE12-2N	Negative: Lack of dog food and water bowls	14	3.9	27.0
BE12-3N	Negative: Lack of clear guidelines for pet-walking	25	6.9	46.8
BE12-4P	Positive: Pet friendly environment	64	17.7	97.6
	Total	123	34.9	

Figure 5.26 : Pet-inclusiveness.

5.2.1.11 Culture-inspired

Schetke et al. (2016), in their study, reported the park users' demands for having facilities for praying in the park located in Karachi city, where most of its population is Muslim. The authors added that the prevailing cultural and religious beliefs of local people strongly influence the types of activity within a park. This is because one of the fundamental elements in forming the culture and norms of a society, in general, social values, is religious beliefs. In fact, religion determines customs and traditions in a society, which can be passed from one generation to another. Therefore, the desires and demands of users need to be considered while designing and planning a park.

Similarly, to the study of Schetke et al. (2016), the demand for a praying room for Göztepe park is also mentioned by a minority of users. It should be noted that the majority of the Türkiye population is Muslim and prays five times a day. The reason for such demand lies in the users' preference for leisure time in the park without interrupting their prayers. Moreover, it is because the availability and accessibility of such areas within the park prevent long-distance travel to reach the nearest mosque for praying. However, the nearest mosque is Selami Çeşme mosque, located within 14 minutes walking distance from the park. In addition, there are other religious facilities near the park, including Galip Paşa, Tütüncü Mehmet Efendi, and Şakir Berkan mosques which are located within 16, 17, and 20 minutes walking distance from the park, respectively.

Gill and Simeoni (1995) believed that social organizations held in parks promote democratic park use for community members as these events bring people from various backgrounds. Based on Göztepe park users, some charity events are held in the park, but few people know about such activities.

Table 5.22 : Opinion about the future of the park.

No	Valid	Frequency	Percent	Cumulative Percent
OV1-1N	Negative: Lack of prayer Room (Mesjid)	2	1.4	1.4
OV1-2N	Postive: Holding cultural events and festivals	68	49.3	49.3
	Total	138	100.0	100.0

5.2.1.12 Heritage preservation

Sustainable urban practices include the conservation and preservation approaches with respect to historical and cultural heritage elements such as landscapes. As a historical territory, Istanbul city faces challenges adapting to the constantly developing urban environment to provide urban needs while trying to preserve historical and cultural landscapes. Furthermore, Istanbul, as a compact city consists of high-density built environments such as buildings and infrastructures in close juxtaposition; thus, greeneries are limited within urban areas. Consequently, paying attention to preserving the current green areas is of great importance as they are considered heritage values by the community. Therefore, policies and regulations need to be taken into account to enable green areas to survive.

In order to preserve urban green spaces, they must first be evaluated quantitatively and qualitatively. The area they cover and the service radius need to be examined. It means investigating the amount of green space compared to the density of the city. At the same time, the quality of urban green space should be investigated to evaluate its functionality based on its components' performances (Van Herzele & Wiedemann, 2003; Oguz, 2000). Jim (2004) believed that the data and information regarding green areas based on environmental characteristics need to be gathered for conservation management, a database that includes existing green areas and areas with greenery potential. The author added that the conservation needs to consider the physical characteristics of green areas and their quality in fulfilling ecological services such as vegetation growth and socio-cultural services to ensure people's satisfaction.

In research from Ames & Dewald (2003), the actions to preserve the greeneries have been described as controlling the on-site and adjacent off-site activities. In the case of Göztepe park, the interventions of nearby off-site activities can be seen within the park. Due to the construction site near the park that includes the west part of the park, the preservation of its greenery is jeopardized. Additionally, the high speed of urban development stemming from social and economic motives in Istanbul has led to a large number of constructions in the city. Green areas have been replaced by many residential, commercial, and social facilities and governmental and non-governmental buildings. The concern originating from the loss of urban green space is also seen in park users. This issue is indicated by participants as a sort of activity that endangers the park and accelerates its demolishment. Moreover, participants stated that inadequate maintenance of infrastructures and insufficient recreational facilities would affect the park adversely, causing a reduction in the attractiveness of the park; subsequently, it discourages people from park use, subsequently causing a decrease in the rate of park use.

Urban green areas are recognized as essential parts of the urban landscape; however, in developing countries such as Türkiye, they are used as lands for residential and commercial building construction due to the needs of increasing populations. The change of land use from open areas and brownfields to build the environment is not a new phenomenon. According to a study conducted by Şimşek et al. (2022), the density of green areas surrounding Göztepe park is diminished through the years due to the mass construction of the urban development process.

Table 5.23 : Opinion about the future of the park.

No	Valid	Frequency	Percent	Cumulative Percent
OV3-1N	Negative: Inadequate maintenance of infrastructures will affect park adversely	14	3.9	70.1
OV3-2N	Negative: Inadequate recreational facilities reduce attractiveness of park so less participation	8	2.2	72.3
OV3-3N	Negative: Risk of park demolishment due to mass construction	41	11.4	83.7
OV3-4P	Positive: No adverse consequences/no threat to the park	59	16.3	100.0
	Total	122	100.0	

Figure 5.27 : Metro construction site and mass construction adjacent to the park.

5.2.1.13 Participatory approach

Human norms and values guide human needs and desires; responding to these needs and desires will preserve and sustain human values. Rapoport (2005) believed that addressing people’s needs and demands, in general, understanding their culture helps design to be appealing.

Maintaining the bilateral relationship in the matter of space creation requires constructive interaction between the parties involved in the design. In human-centered research and design fields, the emphasis on the user's involvement and their roles have changed from the passive, who are only considered as the subjects for research and investigation, to the active ones, who are the decision-makers and collaborators. Accordingly, participatory design and user-centered approaches have been widely adopted from this point of view. Participatory design is often defined as a change in attitude from designing for the user to designing with the user.

In the current socio-economic conditions of the urban environment, there is a drop in quality caused by creating a gap between the designer and the users. In designing with a participatory approach, the critical intention of the communication and consensus of the designer with the user is to recognize the users’ values and needs and consider them along with the design principles. This interaction between decision-makers and users will improve the quality of man-made spaces, following the satisfaction of the users of that space.

The participatory design approach within a park generally addresses the users’ environmental perception. The environmental perception of people is the determiner of how they interact with the environment (Kaplan et al., 1989). Therefore, understanding human perception is essential to figure out the interrelations between people and the environment (Hadavi et al., 2015).

Rethinking the fundamental values of design in the direction of supporting concepts such as human scale, social interactions, cultural actions, democratic process, and justice in the construction of urban environments is discussed within the outline of the participatory design approach (Banerjee & Loukaitou-Sideris, 2019). With the participation of the people, they become actively involved in the development process, and there will be a better physical environment; consequently, collective spirit, greater user satisfaction, significant financial savings, and environmental justice create trust and bonds within the communities. Therefore, they accept the implemented decisions, plans, and projects or look for solutions to problems (Mahdavinejad & Amini, 2011). Indeed, these outcomes are considered factors influential on social sustainability. Social sustainability addresses the influence of the environment on the quality of life and well-being of people (Kadir & Jamaludin, 2013). Several studies emphasize the influence of the participatory design approach on sustainability (Smith & Iversen, 2018; Fowles, 2012; Smith et al., 2017).

Ziaesaeidi et al. (2020) indicated that the participatory approach is a method for understanding youth perception regarding a neighborhood park to create a youth-friendly space. The authors stated that considering the youth preferences for activities within a park play a key role in understanding their needs. As a result, addressing their needs encourages social engagement within neighborhood parks, which is an indicator of social sustainability and sustainable development.

Turan et al. (2016) used the participatory approach to design an urban park and reported that user satisfaction increased with the new implementation. The authors used the following criteria to evaluate user satisfaction: user characteristics, sense of safety, lighting, the design of green areas, maintenance, disability-friendliness, recreational activities, and types of facilities. Iltus and Hart (1995) also utilized from participatory design approach in re-designing of recreational areas for children. The authors indicated that participatory planning and design allow effective play environments for children, resulting from new insights obtained during the participatory process. The authors believe that loss of community is prevented with community engagement. Community development is positively affected by the presence of stakeholders in all stages of decision-making, planning, and design.

In relation to urban green spaces, the design of parks based on a participatory approach brings well-designed spaces in which users meet their needs. Therefore, it increases the use of parks by people, and it contributes positively to urban life. In fact, the participatory approach increases social capital and creates a sense of community by shifting the power to people as the main actors within the built environment (Sanoff, 1999).

Parks designed with a participatory approach that considers accessibility, legibility along with being safe, and well-preservation (Yücel & Yıldızcı, 2006) accelerate sustainable development by contributing to a healthy living environment with multiple positive impacts. Indeed, it is considered influential in social sustainability, which is an indicator of sustainable development.

In this light, the Göztepe park users asked about their opinions regarding the participatory approach within the park. Although most interviewees stated their inclination to be part of the planning, design, and management of the park, other users stated that there is no need for a participatory approach design due to divergent tastes and desires. In addition, park users pointed out the importance of informing them of such initiatives via the municipality website, local authority, or bulletin board in the park.

Table 5.24 : Knowledge about the participatory planning, design, and management.

No	Valid	Frequency	Percent	Valid Percent	Cumulative Percent
K1-1N	No need for participatory design due to various tastes and desires	24	6.6	6.6	77.3
K1-2P	Municipality website/Local authority send invitation-Bulletin board in the park	82	22.7	22.7	100.0
	Total	118	100.0	100.0	

5.2.1.14 Education-oriented

In relation to general information boards that consist of the park's rules and regulations as well as information about the park in the form of a map representing places, some users reported negative experiences. Lack of appropriate signage for visually impaired users, signage (quantity), and signage (quality) are among the issues the users emphasized. However, most users reported the adequacy and appropriateness of signage within the park.

Table 5.25 : Knowledge about park rules and regulations.

No	Valid	Frequency	Percent	Cumulative Percent
K2-1N	Negative: Lack of appropriate signage for visually impaired users	7	1.9	5.5
K2-2N	Negative: Signage (Quantity)	16	4.4	18.0
K2-3N	Negative: Signage (Quality)	28	7.8	39.8
K2-4P	Positive: Adequate and appropriate signage	77	21.3	100.0
	Total	128	35.5	

Today, protecting the environment is necessary to achieve sustainable development goals. In this regard, the participation of people is necessary to achieve these goals as quickly and appropriately as possible. Environmental education basically discusses the relationship between humans and the surrounding environment. It seeks to educate citizens about the natural environment and related issues to raise awareness and provides a ground for collaborative approach regarding environmental problems.

Using parks in the urban environment is identified as a way of developing interaction between people and nature; however, access to the natural environment is limited due to the expansion of the built-up areas. Urban parks are considered a great opportunity for people to receive environmental education. The significance of parks in the environmental education of children and adolescence has been validated by several scholars (Simmons, 1994; Milton, 1995; Farmer, 2007). Using green open space as an educational function and nature experience is crucial to obtaining knowledge and raising environmental awareness.

According to a study by Talal et al. (2021), park users with various demographic profiles tend to obtain information about the kinds of plants and vegetation across different park typologies. Thus, providing educational and experiential opportunities in the park is among the necessities related to environmental education. Interpretive signage generates a positive user experience. Therefore, plant species labels containing information related to plant species that help plant identification need to be implemented across parks. Moreover, the use of signage that enhances the ecological knowledge of park users raises community awareness and environmental literacy (Spoon, 2014). Additionally, signage and information board related to animal species living in parks mitigate human–wildlife conflict and provide information about biodiversity. Parks with education-oriented planning and design may ultimately improve visitor experiences and increase the benefits of parks for both society and the environment.

To improve environmental literacy in parks, notice signs, boards, and environmental reminders need to be accessible to all users regarding diversity in users' abilities. There must be no barriers for users to be in interaction with nature. Accordingly, the following matters need to be considered within a park: signs appropriate for different physical and mental health conditions, age-appropriate signage, multi-lingual signage, audio systems for users with vision impairment, braille signage for hearing impaired users, and sensory equipment for touch and smell.

Göztepe park users' opinions concerning obtaining knowledge regarding plant species include both quantity and quality aspects. The users indicated that the information sheets are unavailable for all species throughout the park. In addition, in some cases, the information sheets lack quality as they are damaged and not well-maintained. Moreover, braille describing plant characteristics is not available for visually impaired users. Regarding animal species information sheets, users reported that there are no such initiatives within the park. Users also reported that there is an abandoned aquarium within the park.

Figure 5.28 : Signage and boards.

Table 5.26 : Knowledge about plant species.

No	Valid	Frequency	Percent	Valid Percent	Cumulative Percent
K3-1N	Negative: Lack of appropriate plant information sheets for visually impaired users	16	4.4	4.4	61.8
K3-2N	Negative: Information sheets (Quantity)	69	19.1	19.1	80.9
K3-3N	Negative: Information sheets (Quality)	32	8.9	8.9	89.8
K3-4P	Positive: Adequate and appropriate information sheets	37	10.2	10.2	100.0
	Total	154	100.0	100.0	

Figure 5.29 : Plant information sheets.

Table 5.27 : Knowledge about animal species.

No	Valid	Frequency	Percent	Cumulative Percent
K4-1N	Negative: Lack of animal information sheet	66	18.3	68.0
K4-2N	Negative: Nonfunctioning aquarium	8	2.2	76.3
K4-3N	Negative: Low species diversity	23	6.4	100.0
	Total	97	26.9	

Figure 5.30 : Biological pond. (2021, June). Gezmeye gidiyoruz. http://gezmeyegidiyoruz.blogspot.com/2021/06/goztepe-60-yil-parki-istanbul.html

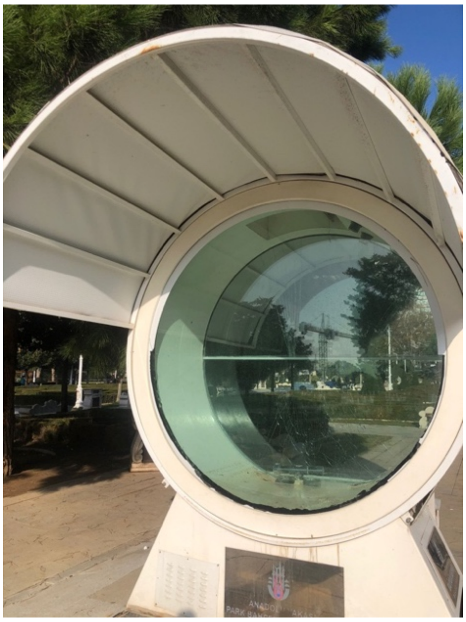

Figure 5.31 : Nonfunctioning aquarium**.**

5.2.1.15 Emotional

People's perception of the environment relies on information about the environment and their experience (Devlin, 2018); since the emotional design is an approach to evoke emotions in users resulting in a positive user experience. The surrounding environment characteristics influence human well-being as it directly affects people's cognitive, physical, and physiological notions. The emotions that a design creates can greatly impact the user's perception of the design. Emotions play a significant role in the human ability to understand and learn about the world. Positive experiences arouse curiosity and interest, while negative experiences protect us from repeating mistakes.

Bigné et al. (2005) focused on the role of cognitive and emotional variables in evaluating users' satisfaction within a park. The authors believed that people's emotional and cognitive aspects strongly influence their use behavior and preferences regarding a place. In this perspective, a park needs to evoke positive feelings in its users with its characteristics and components. Park users need to feel happy, joyful, and relaxed while they are pleased and entertained by the services provided by the park.

To have good feelings about a place, people need to feel safe at first. Sense of safety is one of the major factors affecting the feelings people may have within a park. Sense of safety brings mindfulness to park users so that people become conscious of their surrounding environment, focus on the current moment and be able to actively engage in recreational activities. Accordingly, the design and management of the park need to be in the way of a safe promoting environment.

Poor management and inappropriate design cause parks to be meeting places for vandals (Shinew et al., 2013). Secluded places or obstructed view-lines due to poor design facilitate crime (Iqbal & Ceccato, 2015). Similarly, Jacobs (1961) indicated that parks have the potential to be amenities or nuisances contingent on the design and on the urban context in which they exist. However, it is believed that parks situated in neighborhoods can potentially prevent crime as they increase the safety of the surrounding area (Groff & McCord, 2011). Jane Jacobs (1961) distinguishes parks as places that attract more conventional users as compared to other types of land use; parks allow informal surveillance or, in other words, "eyes on the street" as the number of park visitors, who are mostly individuals seeking physical activity or other recreational activities rise, the park and its surrounding neighborhood overall safety increases.

Sense of safety is one of the factors in improving the quality of urban public spaces. The desirable and practical design of built spaces reduces crime and increases urban space quality. A safe urban space encourages appropriate activities and limits inappropriate activities. Therefore, it is urban spaces and their type that will influence the rate of crime and violence in the city. With the increase in the presence and supervision of citizens, the level of social interaction in these places will increase and security will be provided in the environment. One of the important goals of creating security is improving the quality of urban spaces. The desirable and practical design of the built environment increases citizens' presence, consequently reducing crime and increasing the quality of sidewalks. The city's physical structure, with the aim of interaction between humans and the environment, is the newest approach that reduces urban crimes in the form of physical and social dimensions. Safety issues also affect the parents' choice of park for their children's leisure activities.

Regarding Göztepe park, users generally feel safe while using the park; however, some users do not feel safe. Some users feel safe with companies; otherwise, they do not have a sense of safety. The users indicated that the lack of security guard presence is why they lack a sense of safety.

Table 5.28 : Sense of safety.

No	Valid	Frequency	Percent	Cumulative Percent
FE1-1N	Negative: Not safe enough during night	22	15.8	15.8
FE1-2N	Negative: Safe enough with companies during day or night	18	12.9	28.7
FE1-3N	Negative: Lack of security guard presence	21	15.1	43.8
FE1-4P	Positive: Safe enough during day and night	78	56.2	100.0
	Total	139	100.0	

5.2.1.16 Multisensory

Chen et al. (2009) stated that natural elements enhance aesthetic satisfaction by employing auditory, olfactory, tactile, and visual senses. Therefore, in this study, the questions under cognitive dimension- sensory experiences focus relates to investigating the users’ evaluation regarding the aesthetic quality through the senses mentioned above.

According to several respondents’ answers, the noise pollution caused by car traffic, children and other users in crowded times, dogs barking, and approximate construction sites is disturbing while using the park. Similarly, in research conducted by Liu et al. (2018), the negative impact of noise pollution due to the car and human traffic on people’ experiences have been mentioned. Since Göztepe park is juxtaposed with commercial and business arteries, human and car traffic are inevitable.

Three types of sound sources create a soundscape, including biophony, which refers to the sound of animal species, geophony which refers to the sound produced by non-living components of the natural world; and anthrophony, which is about the sounds that human and human-related activities (Pijanowski et al., 2011). The negative experiences of park visitors are mostly related to the sounds of human activities. However, dogs' unwanted and bothering noise is also mentioned as a negative experience by them.

However, some users have a positive experience with nature's soundscape and define it as a pleasing, calming sound that helps them to interact with nature. They define listening to nature's soundscape as a recreational activity that evokes peaceful feelings. Accordingly, urban planners and landscape designers need to consider the importance of nature soundscapes as a vital factor for urban dwellers' well-being; thus, they need to adapt approaches to reduce noise pollution which prevails in nature soundscapes, especially in parks within the urban environment (Anderson et al., 1983). The authors pointed to the potential of place acoustic features in users’ perception and appraisal of place quality; that is to say, it affects people’ environmental preferences (Anderson et al., 1983; Henshaw, 2013). Liu et al. (2018) claimed that musical sounds such as water sounds, positively influence users' preferences and satisfaction levels. The authors continued that the musical sounds are considered aesthetically pleasing for people.

“Birdsong, wind, and water are often considered characteristic of pleasant, tranquil natural environments. The presence of these sounds can enhance immersion and sense of presence in visual or other virtually mediated environments and increase positive appraisals of these settings” (Ratcliffe, 2021).

The Göztepe park users expressed their satisfaction with the sound of water running in water elements. Besides the sound of nature and water features, some users expressed their satisfaction in listening to people's voices around them. The users believed that the sound of people, especially children, makes the park a lively place, and it causes feeling joyful and happy while using the park.

Table 5.29 : Hearing perception.

No	Valid	Frequency	Percent	Valid Percent	Cumulative Percent
SE2-1N	Negative: Noise pollution caused by people	13	7.3	7.3	7.3
SE2-2N	Negative: Noise pollution caused by cars	10	5.6	5.6	12.9
SE2-3N	Negative: Noise pollution caused by dogs	22	12.4	12.4	25.3
SE2-4N	Negative: Noise pollution of surrounding construction	22	12.4	12.4	37.6
SE2-5N	Negative: Location of sport area (Close to playground area-Noise pollution)	7	3.9	3.9	41.6
SE2-6P	Positive: Pleasant sounds of water element	35	19.7	19.7	61.2
SE2-7P	Positive: Pleasant sounds of nature	60	33.7	33.7	94.9
SE2-8P	Positive: Sound of people	9	5.1	5.1	100.0
	Total	178	100.0	100.0	

Tactile qualities are difficult to recognize or understand, given that some tactile values are realized even without necessarily touching the object in question. An open question was posed to the respondents in an attempt to bring out the most common elements that called for tactile appreciation within the landscape. Results showed that some elements were indeed appreciated more by the sense of touch.

Table 5.30 : Touch perception.

No	Valid	Frequency	Percent	Valid Percent	Cumulative Percent
SE1-1N	Negative: Low maintenance limits seating or walking barefoot on lawn	18	11.0	11.0	11.0
SE1-2N	Negative: Improper waste management limits seating or walking barefoot on lawn	6	3.7	3.7	14.7
SE1-3N	Negative: Concrete seats/Wooden seats	20	12.3	12.3	27.0
SE1-4N	Negative: Exercise equipment/Playground equipment	19	11.7	11.7	38.7
SE1-5N	Negative: Slippery surface (Water element area)	6	3.7	3.7	42.3
SE1-6N	Negative: Slippery surface (Pathways)	20	12.3	12.3	54.6
SE1-7N	Negative: Water sanitation (Water features)	6	3.7	3.7	58.3
SE1-8N	Negative: Sanitation (Restroom)	5	3.1	3.1	61.3
SE1-9N	Negative: playground equipment hard surface	9	5.5	5.5	66.9
SE1-10N	Negative: playground equipment sharp edges	6	3.7	3.7	70.6
SE1-11N	Negative: playground area sandy ground	7	4.3	4.3	74.8
SE1-12P	Positive: Water (Water feature)	19	11.7	11.7	86.5
SE1-13P	Positive: Vegetation	22	13.5	13.5	100.0
	Total	163	100.0	100.0	

In connection with the experience of the sense of smell, park users showed their interest in the presence of odorous plants within the park's green area. The users are satisfied with the smellscape of the park because of the odors diffused by trees and grass. Especially rose and tulip gardens are among the answers to olfactory experiences that influence users' inclination for park use. Since rose diffuses pleasant fragrance while covering up unpleasant odors (Xiao et al., 2017).

Contrary to the satisfying result of vegetation odor in Göztepe park, the users pointed to the unpleasant fragrance substances that are discharged into the space through the water in water elements. In addition, users indicated a failure to control the unpleasant smell of garbage within the park during the overcrowded time.

Smell influences human's feelings, emotions, memories, perception of surrounding environments, and health; fragrant plants and water also have therapeutic functions. (Henshaw, 2013). In the context of urban smellscape design, the pleasant scents of natural elements such as odorous trees, shrubs, flowers, and water play a key role because of their restorative effects on people. Researchers have studied and confirmed the positive opinions of people exposed to the pleasant smell of water and vegetation (Henshaw, 2013; Moncrieff, 1966).

By virtue of the smell of fresh and clean water, which plays an influential role in people's experience of a place, subsequently enhancing people's quality of life, the use of water elements in the landscape design of urban areas has been recommended (Henshaw, 2013). water elements also bring a visual aesthetic to public spaces (Xiao et al., 2017).

Xiao et al. (2021) defined the smellscape approach to the built environment as appropriate actions and policies that create a positive experience for people; it entails implementations to eliminate the unpleasant scent and produce gratifying odors. Indeed, the smellscape approach is recognized as a sanitary measure to control public health within the built environment. The smellscape approach refers to the restorative environment concept in the context of environmental psychology. In the planning and design of the urban built environment, the utilization of fragrant plants, including trees, flowers, and grass, as well as water elements such as streams, ponds, and fountains, provide positive experiences of odor for citizens (Xiao et al., 2017). The design and use of vegetation and water elements within urban environments face challenges, such as differences in users' preferences regarding the presence of smell; for example, the restrictions, allergic reactions, or culture-based fragrances can be mentioned.

Besides, the users also address occasional negative smellscape produced by waste generated by humans, which is solvable with proper waste management initiatives such as timely cleaning of garbage cans and separating wet and dried wastes.

Besides the above-mentioned negative experiences, the users also referred to the problems associated with the smoking behavior of people in the park. In addition, several users mentioned that they are bothered being exposed to tobacco smoke. In order to prevent these adverse experiences, there are some legislations focusing on smoke-free spaces within urban environments. These initiatives are also established to reduce cigarette litter and discourage smoking (Platter & Pokorny, 2018).

Parks as green spaces are not only habitats of various native vegetation species but also places with pleasant nature odors crucial for the health and aesthetic satisfaction of urbanites. The olfactory sense is recognized as a significant environmental preference indicator. Indeed, it defines one of the aspects of human and built environment interaction.

Table 5.31 : Smell perception.

No	Valid	Frequency	Percent	Cumulative Percent
SE3-1N	Negative: Not all the time nice smells due to improper waste management	13	9.9	9.9
SE3-2N	Negative: Water odor (Water feature)	5	3.8	13.7
SE3-3N	Negative: Lack of smoking area (Regulation for non-smoking area)	11	8.4	22.1
SE3-4P	Positive: Vegetation (Lawn-Rose garden-Tulip garden)	99	77.9	100.0
	Total	128	100.0	

It is difficult to explain the aesthetic quality as it relates directly to the physical characteristics of the landscape and the users' aesthetic perceptions regarding it (Daniel, 2001). The users' aesthetic perceptions vary regarding their demographic, social, cultural, and economic backgrounds. However, there are studies revealing the importance of natural elements such as vegetation that are aesthetically pleasing components for people (Hoyle et al., 2017; Talal et al., 2021). As the nature-related components are important restorative attributes, the scenic beauty of the landscape alleviates people's stress and tensions and helps relaxation (Talal & Santelmann, 2020). Talal et al. (2021) stated that exposure to natural elements, such as colorful flowers and trees within parks, brings enjoyment to visitors. Göztepe park users mentioned their satisfaction with the rose garden, tulips, and other vegetation within the park. In addition, the users reported that the topiary is aesthetically pleasing for them as it distinguishes the park. Topiary is the art of cutting and shaping trees and shrubs in geometrical or abstract forms to create aesthetically pleasing green space. Besides ornamental functions such as living sculptures, topiary has practical applications too, including "subdividing garden space, defining pathways and walks, archways and emphasizing gateways, structural background, and scenery" (Ruemler, 2004).

Water features, colorful park elements, gazebos, red seats, and forms of pathways are among people's positive experiences regarding the park's visual quality. However, low maintenance, litter, faded color of playground elements, concrete seats' shape, and lack of visual art forms (urban art) were reported as negative experiences.

Light is one of the most important qualitative factors and has a special place in terms of practical function in landscape design. The night view of urban parks and lighting elements are also part of the landscape design with respect to a park. As an integral part of the design of parks and gardens, the night view must be designed simultaneously with other components. Lighting in the park must align with the following goals: illuminating the signs, crossing routes, and high-density areas, facilitating pedestrian movement, promoting greater safety in the environment, emphasizing the park's landmarks, and encouraging participation at night. Accordingly, understanding the characteristics of light and its effects on the environment and lighting techniques leads to the proper design of the night scene of a park. The colors should be suitable for the environment and the season and consider the design principles since the color of lights is key in attracting users. Göztepe park users reported their negative experiences regarding park's lighting by indicating inadequate lighting, lightings (comfort), lightings (color).

Table 5.32 : Visual perception.

No	Valid	Frequency	Percent	Cumulative Percent
SE4-1N	Negative: Inadequate lighting	44	10.5	10.5
SE4-2N	Negative: Lightings (Comfort)	24	5.7	16.2
SE4-3N	Negative: Lightings (Color)	7	1.7	17.9
SE4-4N	Negative: Low maintenance	25	6	23.9
SE4-5N	Negative: Existence of litter	16	3.8	27.7
SE4-6N	Negative: Faded color of playground elements	10	2.4	30.1
SE4-7N	Negative: Concrete seats shape	10	2.4	32.5
SE4-8N	Negative: Topiary	2	0.5	33.0
SE4-9N	Negative: Lack of visual art forms (Urban art)	14	3.3	36.3
SE4-10P	Positive: Rose Garden	48	11.5	47.8
SE4-11P	Positive: Tulip season	29	6.9	54.7
SE4-12P	Positive: Vegetation	65	15.5	70.2
SE4-13P	Positive: Topiary	25	6	76.2
SE4-14P	Positive: Water features	39	9.3	85.5
SE4-15P	Positive: Colorful park elements	17	4.1	89.6
SE4-16P	Positive: Gazebos	15	3.5	93.1
SE4-17P	Positive: Red seats	12	2.8	96.9
SE4-18P	Positive: Forms of pathways	17	4.1	100.0
	Total	419	100.0	

Figure 5.32 : Topiary applications within the park.

Table 5.33 : Negative and positive views.

Item	Positive view	Negative view	Total views
Recreation/ Playground equipment	2	7	9
Recreation/ Sport facility and equipment	1	7	8
Green space	1	3	4
Water feature	2	2	4
Movement and accessibility networks/ Pathways	2	9	11
Urban furniture/ Seats	2	5	7
Service facilities/ Commercial facility and amenity	2	4	6
Service facilities/ Restroom facility	1	2	3
Waste-clean environment/ Garbage cans	1	4	5
Animal inclusive/ Pet-friendly environment	1	3	4
Culture-inspired	0	2	2
Heritage preservation- Park's future	1	3	4
Participatory approach	1	1	2
Education-oriented/ Rules and regulations	1	3	4
Education-oriented/ Plant species	1	3	4
Education-oriented/ Animal species	0	3	3
Emotional/ Sense of safety	3	3	6
Multisensory/ Touch perception	2	11	13
Multisensory/ Hearing perception	3	5	8
Multisensory/ Smell perception	1	3	4
Multisensory/ Visual perception	9	9	18
Total	37	92	129

According to Table 5.33 total of 129 polar views are obtained which 37 are positive and 92 are negative. These numbers demonstrate that Göztepe park users have more negative views than positive ones.

5.2.2 Set II: sense of place measurement- findings

The results of sense of place measurement are categorized based on age groups and it is measured out of 5; lower than 1 is considered as no sense of place, 1 to 3 is considered as yes but low sense of place and more than 3 is considered yes and high sense of place. As it is demonstrated in Table 5.41, as the age of respondents increases, the sense of place level enhances. So, the variation between the youngest and oldest participants is around 2,27; adolescents with a total of 1,33 have the lowest sense of place level, whereas park users above 75 years old have the highest level of sense of place (3,60). The highest distance between the sense of place levels (0,75) belongs to the second and the first age groups and the lowest distance (0,12) is between the fourth and third age groups.

Table 5.34 : Sense of place based on age groups.

Age group	B2-1		B2-2		B2-3		B2-4		B2-5		B2-6		B2-7		B2-8	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
PI	1,33	0,29	2,27	0,61	2,58	0,61	2,77	0,77	2,95	0,71	3,1	0,77	3,24	0,85	3,45	0,64
PA	1,83	0,29	2,18	0,51	2,38	0,92	2,54	0,71	2,66	0,85	2,83	1,06	3,29	0,95	3,55	0,55
PD	0,83	0,29	1,77	1,1	2,31	0,95	2,31	0,89	2,55	0,72	2,71	0,93	3,32	1,13	3,8	0,42
SOP	1,33	0,29	2,08	0,63	2,42	0,74	2,54	0,69	2,72	0,62	2,88	0,86	3,28	0,91	3,6	0,49

The total sense of place level of Göztepe park users is demonstrated in Table 5.42. The rate of sense of place indicators follows a descending order: the total rate of place identity is 2,71 out 5, the total rate of place attachment is 2,66 out 5, and the total rate of place dependence is 2,45 out of 5. In general, park users' place identity is higher than the other two indicators. Place identity indicates the level at which a park, with its characteristics, has achieved an established status regarding the spatial structure of the society and its social consciousness. Indeed, it defines the level of emotional and symbolic meaning that park users assign. Accordingly, it is understood that Göztepe park users have place identity; however, it is low.

Regarding place attachment, as it is about the emotional connection between users and place and determines the level of closeness to the place, it can be understood that Göztepe park users have place attachment, but its level is low too. The users' place dependence indicates the level of functional attachment to the park and determines the level of users who are satisfied with the park's quality. Akin to the place identity and place dependence, users also have place dependence regarding Göztepe park; however, its rate is also low.

Table 5.35 : Sense of place measurement results.

Indicators	Mean	S.D.
Place Identity	2,71	0,67
Place Attachment	2,66	0,56
Place Dependence	2,45	0,91
Sense of Place	2,61	0,70

5.3 Results Interpretation: The Integration of Set I and Set II Results

Each participant's total of negative views (x_1) and total of positive views (x_2) are calculated, then the relationship between park users' views and the sense of place (y) is measured using a regression model. The results of this analysis are as follows:

Table 5.36 : Regression model summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.841[a]	.707	.702	.46558

a. Predictors: (Constant), Positive, Negative

Based on the Table 5.36 the regression model fits the data. The Pearson correlation coefficient (R) is 0.841. This coefficient indicates the linear correlation between the value of dependent variables and the value predicted by the model. The closeness of this coefficient to the value of 1 indicates that the regression model is able to show a greater share of changes in the dependent variable.

Table 5.37 : ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60.163	2	30.081	138.774	.000[a]
	Residual	24.928	115	.217		
	Total	85.091	117			

a. Predictors: (Constant), Positive, Negative
b. Dependent Variable: SOP

Based on the Table 5.37 the results are reported as follows:

The total data changes is 85,091, and most of these changes are indicated by the regression model (60,163). The F ratio, which indicates the contribution of the regression model to the residuals in indicating the total dispersion, is a large value; therefore, the regression model is suitable. Indeed, the large value of F Sig and the closeness of Sig to zero indicate the appropriateness of the regression model. The most important output in this section is in the Table 5.38.

Table 5.38 : Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.774	.219		12.641	.000
	Negative	-.066	.008	-.557	-8.645	.000
	Positive	.071	.012	.372	5.771	.000

a. Dependent Variable: SOP

Based on Sig in the table above, the width origin, negative and positive components must be present in the model. The coefficients of these components are 2.774, -0.66 and 0.071, respectively. Therefore, the regression model equation is as follows:

$$Y_i = 2.77 - 0.066x_{1i} + 0.071x_{2i} \tag{5.1}$$

According to the coefficients, negative views have a negative coefficient which demonstrates the higher the negative score, the lower the sense of place. On the other hand, the positive coefficient of positive views indicates that the sense of place rises with the increase of positive views. The constant value is not considered, and the model is written only based on the components; therefore, the coefficients are -0.557 and 0.372. In this case, the equation is as follows:

$$Y_i = -0.557x_{1i} + 0.372x_{2i} \tag{5.2}$$

Bearing in mind that the value of coefficients indicates that negative views have a more significant impact on the sense of place level than the positive views because the coefficient of (x_1) is -0.557. The model is used to examine among women and men separately to find out whether this matter fits or not. Firstly, the model is tested for men; therefore, the sum of negative views of each man is defined as (x_1), and the sum of positive views of each man is defined as (x_2) and the sense of place level is defined as (y). Accordingly, the following results are achieved.

Table 5.39 : Regression model summary for male participants.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.850[a]	.723	.713	.47486

a. Predictors: (Constant), Positive, Negative

As it is seen in the Table 5.39, the value of R is equal to 0.850 This value shows that the regression model functions well and is appropriate. The second output is shown in Table 5.40.

Table 5.40 : ANOVA[b] - Male

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33.014	2	16.507	73.206	.000[a]
	Residual	12.627	56	.225		
	Total	45.642	58			

a. Predictors: (Constant), Positive, Negative
b. Dependent Variable: SOP-Male

33.014 out of 45.642 mean changes are covered by the regression model and according to the high level of F =73.206 and Sig =0, it is concluded that the regression model functions properly for this set of data.

Table 5.41 shows the values of the component coefficients. Based on this table, negative views have a negative effect and positive views have a positive effect on the sense of place level. As Sig value indicates, all three values of the constant and components coefficients must be in the model.

Table 5.41 : Coefficients[a]-Male

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.931	.321		9.134	.000
	Negative	-.072	.011	-.605	-6.516	.000
	Positive	.062	.018	.322	3.470	.001

a. Dependent Variable: SOP-Male

Therefore, the equation is as follows:

$$Y_i = 2.931 - 0.072x_1 + 0.062x_2 \tag{5.3}$$

Akin to the aforementioned interpretations in the general state, the same is valid for male participants. To examine the relationship among women, similarly, the sum of negative views of each woman is determined as (x_1), the sum of positive views of each woman as (x_2), and the sense of place level as (y). Thus, the following results are obtained.

Table 5.42 : Regression model summary for female participants.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.844[a]	.712	.702	.46119

a. Predictors: (Constant), Positive, Negative

Accordingly, the value of R is equal to 0.84 which is an indication of the suitability of regression model. As it is shown in Table 5.43, 29.927 out of 42.051 indicates that changes are covered by the regression model and based on F =70.350 and Sig =0, it is apparent that the regression model functions properly for this set of data.

Table 5.43 : ANOVA[b] – Female.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.927	2	14.963	70.350	.000[a]
	Residual	12.124	57	.213		
	Total	42.051	59			

a. Predictors: (Constant), Positive, Negative
b. Dependent Variable: SOP-Female

Table 5.44 shows the values of the component coefficients. Based on this table, as it is observed in the general state and male participants, the same relationships are also established here. Accordingly negative views have a negative effect and positive views have a positive effect on the sense of place level. As Sig value indicates, all three values of the constant and components coefficients must be in the model.

Table 5.44 : Coefficients[a]-Female.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.654	.299		8.877	.000
	Negative	-.061	.010	-.539	-6.108	.000
	Positive	.079	.017	.404	4.583	.000

a. Dependent Variable: SOP-Female

Therefore, the equation is as follows:

$$Y_i = 2.654 - .061\, x_1 + .079 x_2 \quad (5.4)$$

The study aims at understanding the effect of positive and negative views on the sense of place levels of participants based on age groups as well. Indeed, the study investigates whether the same inference draws for different age groups or not. The results for B2-1 and B2-2 age group (participants who are under 24 years old) are as follows:

Table 5.45 : Regression model summary for B2-1 and B2-2.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.945[a]	.894	.875	.22483

a. Predictors: (Constant), Positive, Negative

Table 5.46 : ANOVA[b] – B2-1 and B2-2.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.684	2	2.342	46.335	.000[a]
	Residual	.556	11	.051		
	Total	5.240	13			

a. Predictors: (Constant), Positive, Negative
b. Dependent Variable: SOP- (B2-1 and B2-2)

Table 5.47 : Coefficients[a]-B2-1 and B2-2.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.208	.326		6.770	.000
	Negative	-.047	.009	-.649	-5.566	.000
	Positive	.069	.019	.421	3.608	.004

a. Dependent Variable: SOP- (B2-1 and B2-2)

As the above tables show, the results are the same, negative views have the negative effect on the sense of place level while positive ones have the positive effect.

$$Y_i = 2.207 - 0.047 x_{1i} + 0.069 x_{2i} \quad (5.5)$$

The next age group is B2-3 who are 25-34 years old. The results of data analysis related to this age group are as follows:

Table 5.48 : Regression model summary for B2-3.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.844[a]	.712	.655	.43522

a. Predictors: (Constant), Positive, Negative

Table 5.49 : ANOVAb – B2-3.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.693	2	2.346	12.387	.002[a]
	Residual	1.894	10	.189		
	Total	6.587	12			

a. Predictors: (Constant), Positive, Negative
b. Dependent Variable: SOP- (B2-3)

Table 5.50 : Coefficientsa-B2-3.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.360	.518		6.485	.000
	Negative	-.068	.017	-.747	-4.011	.002
	Positive	.027	.026	.191	1.023	.330

a. Dependent Variable: SOP- (B2-3)

The Table 5.50 shows the coefficients of the regression model. Based on this table, the values of constant, coefficient of x_1 and coefficient of x_2 are equal to 3.360, -0.068 and 0.027, respectively. As it is apparent, Sig is a constant coefficient and x_1 is in the model, but $x_2$is not in the model. Because the value of Sig = 0.33> 0.05 means positive views do not influence users' sense of place levels in this age group; on the other hand, negative views strongly affect their sense of place. In this case, the equation is as follows.

$$Y_i = 3.36 - 0.068x_{1i} \quad (5.6)$$

The results of B2-4 which consists of participants with ages between 35-44 are as follows:

Table 5.51 : Regression model summary for B2-4.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.862[a]	.742	.718	.36892

a. Predictors: (Constant), Positive, Negative

Table 5.52 : ANOVAb – B2-4.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.233	2	4.116	30.244	.000[a]
	Residual	2.858	21	.136		
	Total	11.091	23			

a. Predictors: (Constant), Positive, Negative
b. Dependent Variable: SOP- (B2-4)

Table 5.53 : Coefficientsa-B2-4.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.279	.538		2.377	.027
	Negative	-.019	.022	-.137	-.887	.385
	Positive	.128	.026	.760	4.920	.000

a. Dependent Variable: SOP- (B2-4)

Interestingly, in this age group, unlike the previous one, there are negative views that have been removed from the model (Sig = 0.385> 0.05) Therefore, the equation is as follows:

$$Y_i = 1.279 + 0.128x_{2i} \tag{5.7}$$

This demonstrates that for these age groups, positive views are effective in people's sense of place, as they increase their level of sense of place. The next age group under examination is 45 to 54 years old. For this age group the results are as follows:

Table 5.54 : Regression model summary for B2-5.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.787[a]	.620	.572	.40519

a. Predictors: (Constant), Positive, Negative

Table 5.55 : ANOVAb – B2-5.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.277	2	2.138	13.026	.000[a]
	Residual	2.627	16	.164		
	Total	6.904	18			

a. Predictors: (Constant), Positive, Negative
b. Dependent Variable: SOP- (B2-5)

Table 5.56 : Coefficientsa-B2-5.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.079	.603		3.447	.003
	Negative	-.043	.026	-.322	-1.643	.120
	Positive	.094	.034	.546	2.783	.013

a. Dependent Variable: SOP- (B2-5)

The coefficients in Table 5.56 and the significance values for each coefficient show that the component $x_1$is not present in the model. Therefore, negative views do not have the effect have on these people's sense of place levels akin to the positive views. Therefore, the equation is as follows:

$$Y_i = 2.079 + 0.94x_{2i} \tag{5.8}$$

For participants in B2-6 age group (55-64) the results are as follows:

Table 5.57 : Regression model summary for B2-6.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.881[a]	.777	.752	.42986

a. Predictors: (Constant), Positive, Negative

Table 5.58 : ANOVAb–B2-6.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.585	2	5.793	31.350	.000[a]
	Residual	3.326	18	.185		
	Total	14.911	20			

a. Predictors: (Constant), Positive, Negative
b. Dependent Variable: SOP- (B2-6)

Table 5.59 : Coefficientsa-B2-6.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.511	.663		3.787	.001
	Negative	-.049	.029	-.373	-1.669	.112
	Positive	.083	.034	.538	2.406	.027

a. Dependent Variable: SOP- (B2-6)

Based on the above two tables, the regression model is an appropriate model for these data. The Table 5.59 indicates that in this case, similar to the previous age category, the negative views related to the park do not have a significant impact on a individuals' sense of place levels. Therefore, the equation is as follows:

$$Y_i = 2.511 + 0.083x_{2i} \tag{5.9}$$

For participants in B2-7 age group (65-74) the results are as follows:

Table 5.60 : Regression model summary for B2-7.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.929[a]	.863	.844	.36193

a. Predictors: (Constant), Positive, Negative

Table 5.61 : ANOVAb – B2-7.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.576	2	5.788	44.186	.000[a]
	Residual	1.834	14	.131		
	Total	13.410	16			

a. Predictors: (Constant), Positive, Negative
b. Dependent Variable: SOP- (B2-7)

Table 5.62 : Coefficientsa-B2-7.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.646	.665		3.981	.001
	Negative	-.056	.023	-.443	-2.464	.027
	Positive	.111	.038	.527	2.932	.011

a. Dependent Variable: SOP- (B2-7)

In this age group, all three components of the model are present in the regression model because the value of Sig in all three cases is less than 0.05. Therefore, the equation is as follows:

$$Y_i = 2.646 - 0.056x_{1i} + 0.111x_{2i} \tag{5.10}$$

The interesting point here is that the coefficient of negative views is almost half of the coefficient of positive views, and this means that a person's positive views have twice as much influence on a person's sense of place level in this age group than negative views.

The last age category under examination is the category of participants who are 75 years old and above. In this category, the results appeared as follows:

Table 5.63 : Regression model summary for B2-8.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.719[a]	.518	.380	.38290

a. Predictors: (Constant), Positive, Negative

Table 5.64 : ANOVAb – B2-8.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.101	2	.550	3.754	.078[a]
	Residual	1.026	7	.147		
	Total	2.127	9			

a. Predictors: (Constant), Positive, Negative
b. Dependent Variable: SOP- (B2-8)

Based on the above two tables, the regression model has been effective. Table 5.65 shows that the number of positive and negative views does not affect people sense of place levels. Therefore, two components $x_1$and $x_2$and are not present in the regression model.

Table 5.65 : Coefficientsa-B2-8.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.263	.855		3.817	.007
	Negative	-.044	.040	-.367	-1.091	.311
	Positive	.052	.041	.430	1.278	.242

a. Dependent Variable: SOP- (B2-8)

In sum, the study demonstrates that park's physical landscape and provided services are influential in people's perceptions and preferences, subsequently their sense of place. Planning decisions, design characteristics and management strategies within the park need to align with users' needs and desires. The positive and negative views of users regarding park components and services demonstrate the extent of their satisfaction. Users' satisfaction is contingent on their level of place identity, place dependence, and place attachment, the three indicators of sense of place. Accordingly, by measuring these three indicators the sense of place level is obtained.

In sum, the correlations between each group age sense of place level and their positive and negative views are summarized in the following diagram (Figure 5.33).

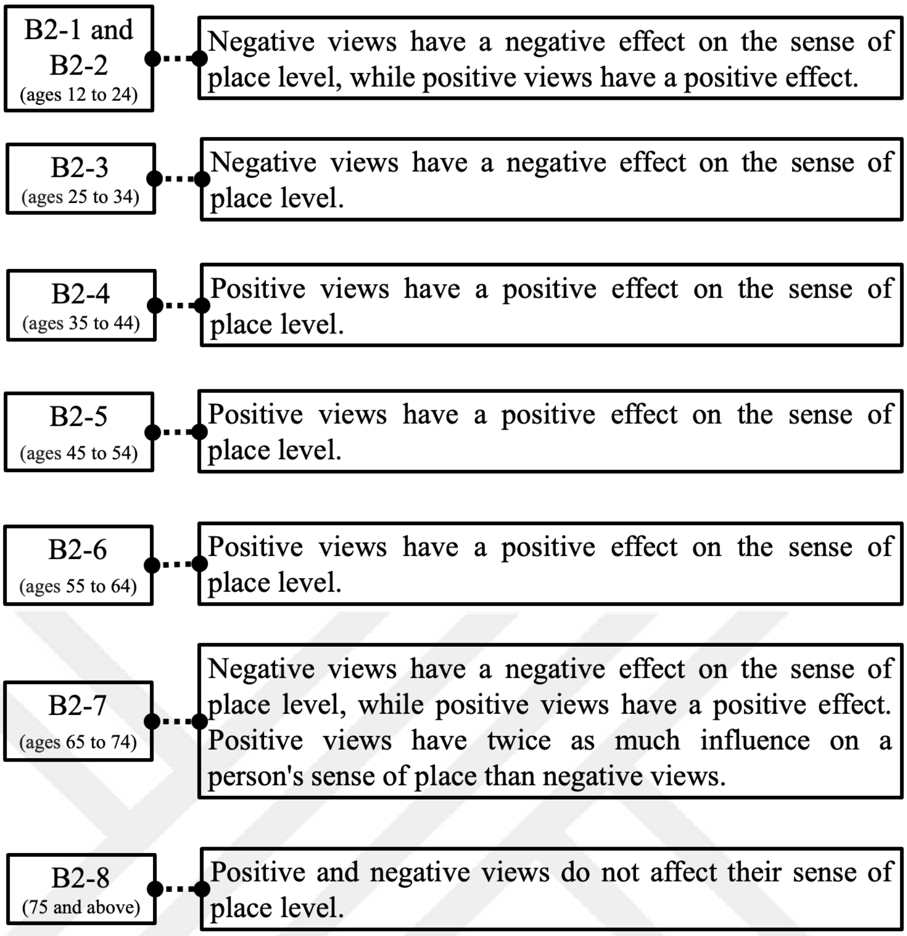

Figure 5.33 : The diagram of positive and negative views effects on the sense of place levels based on age groups.

5.4 Implications and Recommendations

In this part of the study, in accordance with the derived sub-themes and themes from interview results, the issues and implications are discussed. Indeed, this part focuses on presenting actions and initiatives to improve Göztepe park's condition to provide opportunities to enhance users' sense of place level. It is proposed to implement the necessary measures through the following strategies and solutions. Indeed, themes and sub-themes highlight the issues that need to be considered within Göztepe park.

5.4.1 Recreation-playground

Table 5.66 : Recreation-Playground sub-themes and themes.

Sub-theme	Theme
Possibility of choice	Design for all
User capacity	Supply and demand dynamics
Safety	Quality maintenance
Comfort	Urban Furniture Design
Possibility of choice	Diversity
Novelty	Innovative design
Comfort	Ergonomic design
Tactilescapes	Urban furniture design (Material use)

Based on the sub-themes and themes demonstrated in the table and the investigations carried out in the field studies, the suggestions and solutions are as follows:

- The possibility of playing group games,
- Use of various color shades in playground equipment,
- Use of electrostatic materials,
- Avoiding sharp edges,
- Use of natural materials such as wood in playgrounds,
- Mind and physically challenging play equipment,
- Use of various sorts of the playground with different themes,
- Age-appropriate play equipment for children; attention to the height and surface of equipment (Chalmers et al., 1996),
- Safe promoting environment,
- Use of durable pavement, which is appropriate for playground flooring,
- Use of pavement material that has a smooth and soft surface that creates enough friction and prevents children from slipping,
- Timely maintenance of pavement to prevent a safety hazard,
- Considering supply and demand dynamics in planning for playgrounds,
- Designing playgrounds with respect to children's ergonomics (Ratte et al., 1990),

- Innovative design approaches to enhance the contribution, improving child development,
- Visual and auditory warnings to eliminate hazards (Roderick, 2004),
- Provide opportunities for physical activities such as climbing, sliding, balancing, and swinging, contributing to strength, flexibility, and coordination (Frost et al., 2004),
- Appropriate lighting for enhancing legibility; use colorful lights and target light,
- Universally designed playground equipment to ensure the utilization of all children with different disabilities,
- Considering the location of playgrounds and their surrounding environment; avoid closeness to exercise devices area,
- Use of the material for devices that are comfortable for users in case of cold and hot weather, smooth materials.

5.4.2 Recreation- sport facilities and amenities

Table 5.67 : Recreation-sport facility and equipment sub-themes and themes.

Sub-theme	Theme
Functionality	Quality maintenance
User capacity	Supply and demand dynamics
Possibility of choice	Diversity
Land use (Comfort)	Landscape Design
Land use (Safety)	Landscape Design
Possibility of choice	Design for all
Comfort	Urban Furniture Design
Comfort	Ergonomic design
Tactilescapes	Urban furniture design (Material use)

- Allocation of areas for sport courts,
- Incorporation of complementary exercise devices,
- Appropriate Lightings for exercise area,

- Allocation of exercise area away from playground areas in order to ensure children' safety and prevent noise pollution to have calm and relaxing area for adults to exercise,
- Timely maintenance of exercise devices to ensure their functionality,
- Allocation of exercise devices in respect to the number of users to avoid long intervals between device use due to the intensity of use by other users,
- Use of safety warning and user guides based on universal design principles to guarantee use by all people with different disabilities,
- Use of ergonomically designed devices,
- Application of color in exercise devices to be legible while improving the visual aesthetic,
- Use of material for devices that are comfortable for users in case of cold, hot weather, smooth materials.

5.4.3 Green space

Since urban green spaces have a natural ecological value (Chace & Walsh, 2006), their conservation and development are of great importance. In this regard, green space management involves various principles and techniques to preserve these natural elements. Generally, green space management involves the following main matters based on studies done by Aronson et al. (2017); Fratini and Marone (2011); Łopucki and Kiersztyn (2015); Shanahan et al. (2014):

- Improving the quality of green space,
- Equitable distribution of green space per capita,
- Maintaining the quality of green space,
- Avoid fragmentation in green areas within the park,
- Evaluation, planning and design appropriate to the physical characteristics of landscape (Ecological features, climatic conditions),
- Finding solutions to reduce operations and maintenance costs related to green areas,
- Expansion of green spaces,
- Creating a culture of sustainability by encouraging the contribution of citizens in the preservation and maintenance of green space,

- Increasing the participation by emphasizing the green space recreational functions,
- Preserving species diversity,
- Appropriate site selection,
- Redevelop deteriorated lands,
- Proper actions for land preservation,
- Conservation of land characteristics, landscape maintenance,
- Use of suitable plants.

Table 5.68 : Green space sub-theme and theme.

Sub-theme	Theme
Comfort	Quality maintenance
Nature (Horticulture-Floriculture)	Attraction
Visualscape (Aesthetic)	Landscape design
Nature Smellscape	Attraction
Nature Soundscape	Attraction
Environmental education	Opportunity

According to the derived sub-themes and themes the following recommendations are presented to ensure Göztepe park green spaces quality to satisfy park's users.

- Formation of integrity and unity in green space is an indicator stability of a design. Use of plants and decorative vegetations need to be in a way to create unity. Unity in green space design prevents visual chaos for users,
- Balance in the design of the green space leads in creation of long-lasting which has significant impact on users' visual perception,
- Esthetically harmonious green space (Antrop, 1997), considering harmony and contrast in design of green space have restorative effects,
- Increase in number of plants to create scenic beauty (Parsons & Daniel, 2002) trees, shrubs and ground cover, herbaceous plants, bulbs and flowers complement the green area in the landscape design. Due to their size, they mainly occupy the dominant image of the design,
- Highlighting certain green elements in the design with use of illumination
- Appropriate lighting for enhance legibility,

- Using contrasting elements to be more effective in attracting the visitors' attention,
- Determine the functional needs for plant selection in design process including conservation, decorative or ecological purposes,
- Establish strategies for plantation and post plantation steps such as maintenance and protection; for instance, proper soil preparation, irrigation, drainage, fertilization, pruning and pest control, controlling and removal of invasive plants (mechanical, biological and chemical treatments), and other care operations (Alhorr, 2019),
- Use of plants with different color spectrum,
- Use of vegetations for smellspace which are not prone to seasonal changes, such as evergreen plants (Xiao et al., 2017),
- Cut and shape trees and shrubs both with aesthetical and functional purposes,
- Considering the two important phases after applying topiary within green spaces including routine maintenance and regeneration (Ruemler, 2004),
- Considering spatial needs of plants: required space (for both aerial and terrestrial organs), required slope,
- Considering ecological needs of plants such as: soil condition, water condition, microclimate; shade, and nutrients,
- Climatic region and vernacular vegetations, paying attention to plants natural and habitat needs is significant since the ecological factors are involved in the growth and survival of plant species. Thus, the plants selected for an area must be naturally adapted to the physical condition of environment in order to reduce plants instability; thus, native plants need to be used. Moreover, artificial planting is not economically friendly as the plantation and maintenance are costly. Additionally, it is practically impossible to provide exact plant living conditions. Since vegetation is not permanent, it is necessary to be preserved, restored and developed constantly in order to achieve the long-term goals of sustainability.
- "Selections of fragrant plants considering local cultures and activities as well as wider environmental factors such as temperature and seasonal changes" (Xiao et al., 2017),

- Improve the quantity of existing flowers and plant brightly colored flowers as they are factors enhancing aesthetic preferences (Hoyle et al., 2017),
- Acoustic experiences of nature bring tranquility; the restorative effects of nature soundscape are acknowledged in environmental psychology (Irvine et al., 2009); therefore, preventing noise pollution to enhance positive soundscape experiences through actions and initiatives to control sound path from source and receivers and/or sound barrier to protect the receiver,
- Use of noise free gardening and landscaping equipment and machinery to avoid noise pollution,
- Use of trees and vegetations for absorbing and functioning as barriers to avoid noise pollution. Pouya (2017) in a study listed the name of the trees effective in absorbing sounds,
- Proportional drainage; efficient irrigation methods such as subsurface drip irrigation,
- Proper landscape design with drought-resistant native plants,
- Prevent land contamination, soil erosion and desertification which are threat for biodiversity (Alhorr, 2019),
- Remediate the damaged lands by preserving land quality; which is the way to ensure the healthy environment for preservation of flora and fauna,
- Three main steps for land preservation; zoning, which refers to distinguish the disturbed lands for recovery and selection of already developed built environment to minimize interventions in natural lands to preserve its naturality and diminishes in footprint. In addition, constant monitoring and controlling soil quality and taking appropriate strategies and implementation is also recognized as a way for land preservation,
- Creation of the pleasant smellscape by considering plants’ type, density, the size of the area and its openness (Song & Wu, 2022). The authors listed the fragrant plants for park use to enhance users’ perception of the park,
- Creation of smell memory for users by user of specific fragrance plants within the park,
- Innovative approach in plant species information/fact sheets as options for digital environment; for instance, use of QR (Quick Response Code),

- Use of Braille as a tactile writing system in plant species information sheers for visually impaired users,
- Use of audio format as an alternative for visually impaired users, illiterate visitors,
- Use of attractive graphic design associated with practical information in plant species fact/information sheets,
- Use of plant species information sheets with age-appropriate description for children,
- Plant pruning: removal of dry, diseased, weak and broken branches. Removing annoying branches which can be a problem for passers-by, Removal of overlapping branches due to heavy and bent branches. Leaving the inner part of the tree alone for better light absorption and air circulation among the branches. Stimulation of flowering in plants, trees and shrubs. Help to create freshness and rejuvenation of trees and shrubs,
- Incorporation of plant sheet for each plant kind,
- Re-designing plant sheets; innovative approaches for plant sheets.

5.4.4 Water features

Table 5.69 : Water features sub-theme and theme.

Sub-theme	Theme
Maintenance	Quality maintenance
Comfort	Opportunity
Soundscape	Attraction
Smellscape	Quality maintenance
Visualscape (Aesthetic)	Urban Furniture Design
Nature (Recreational)	Attraction (Environmental amenity)

According to the derived sub-themes and themes the following recommendations are presented to ensure Göztepe park water features quality to satisfy park's users.

- Water elements as beneficial urban furniture; utilize from more water, elements for their restorative potential for human mental and physical health

- Considering timely maintenance of water features to protect the positive smellscape,
- Design of interactive water play for children development (White & Stoecklin, 1998),
- Design and use of water elements to mask the noises and improve the environment soundscape,
- Design of dynamic water fountain and streams,
- Integration of music and/or light with water elements (Wang et al., 2021),
- Use of the streams within park; as flowing water in the streams with a low slope and spiral form improve the air quality,
- Use of water elements to mitigate the noise pollution,
- Use of water elements both for recreational and functional purposes such as irrigation (Booth, 1989),
- Design and use of water elements considering environmental, social, and cultural characteristics of the place; as waterscapes can constitute difficulty in case of harsh climatic conditions, or be problematic in multi-cultural societies as people have various preferences,
- Water monitoring which is a way to figure out water quality by detecting water pollutants to reduce the risk of health problems,
- Timely cleaning and maintenance to eliminate the negative smell,
- Water sensitive urban design which is a way to integrate natural water cycle (storm water) with built environment to eliminate negative impact on the aquatic environment (Wong & Eadie, 2000),
- Installation of shadings to minimize evaporation,
- Rainwater harvesting which is a way to collect rain for irrigation and other uses,
- Design amenities integrated with storm water systems which provide both aesthetic and ecological values (Echols & Pennypacker, 2008),
- Design of drinking fountain based on universal design principles to enable all people to use,
- Quality maintenance of drinking fountain to eliminate the risk of health consequences,
- Installation of sensors on drinking fountain faucet,

- Installation of leak detection systems in drinking fountain,
- Incorporation of safety signs in respect to universal design principles,
- Safety hazard signs for pond; use pond fencing,
- Announcing the operation hours.

5.4.5 Movement and accessibility networks- pathways

Table 5.70 : Movement and accessibility networks- pathways sub-themes and themes.

Sub-theme	Theme
Possibility of choice	Design for all
Comfort	Quality maintenance
Safety	Quality maintenance
Possibility of choice	Diversity
Land use	Accessibility
Land use (Comfort)	Ergonomic design
Visualscape (Aesthetic)	Landscape design

According to the derived sub-themes and themes, the following recommendations are presented to ensure Göztepe park movement and accessibility networks (pathways) quality in order to satisfy the park's users. Park users need to be able to walk and pass-through areas within the park without any difficulties; that is to say that the park's landscape design must include barrier-free landscape principles to ensure accessibility. Indeed, providing the chance for everyone, especially children, elderlies, or those with movement disabilities. Moreover, the comfort and safety of park users need to be considered by quality maintenance within the movement and accessibility network; actions such as removal of barriers, including trash along the ways of passing, weeds between tiles, installation equipment, construction and maintenance leftovers as well as actions to prevent accumulated water due to irrigation or precipitation.

The planning and design of the landscape in order to enable pedestrians to access the park through various entrances is crucial as it promotes contribution within the park. Furthermore, the width and slope of the pathways play a significant role in the comfort of users by enabling body movement. Applying ergonomic principles in the park's pathways contributes to people's comfort. Moreover, the visualscape of the landscape plays a crucial role in users' perception of the place. The curved pathways that provide different view lines for users while walking, are aesthetically pleasing for users. It is because the curved forms are recognized as "more harmonious, relaxing, or pleasant and more in consonance with nature than straight or broken lines" (Gómez-Puerto et al., 2016, p. 1).

The Göztepe park pathways need to include bicycles, scooters, and skating routes. The integration of cycling with urban public transportation plays a crucial role in reducing car traffic and air and noise pollution, promoting human health, and increasing social interaction. Furthermore, bicycle roads contribute to the mobility of people within the urban environment as they are cost-efficient, affordable, and smaller than other vehicles. Indeed, designing such routes within Göztepe park provides the possibility of choice for the user as there are options for people to use their way of transportation. Additionally, it is necessary to distinguish between walking pathways and bike lanes to reduce the risk of injuries and help the safety of users.

- The floor covering of the pathways should be made of hard and non-slippery materials; the materials that are used for flooring need to be resistant to cracking and easy maintenance,
- Maintenance of broken stairs and damaged pavements,
- all components of urban facilities on the floor of the pathways need to be placed in appropriate compartments,
- Leveling the floor with compartment covers to reduce the risk of falling,
- Use of recognizable material in pathways to guide the visually impaired people,
- Innovative approach for helping way finding for visually impaired users; the use of smart phones application to automatically detect the tactile paving to assist visually impaired people to be able of tracking the line (Ghilardi et al., 2016),
- Use of appropriate lighting systems in all pedestrian routes and bicycle routes increases the safety and comfort of pedestrians,
- Design pathways with a maximum longitudinal slope of 5%. If the slope is more than this, it is necessary to use stairs in the pedestrian corridors and create a ramp next to it with a suitable slope for disabled people to pass,
- Design pathways with a maximum transverse slope of 2% in which rainwater and running water are transferred to the sewer or the green space next to the pathways,

- Removal of weeds within pathways,
- Creating a suitable space for the installation of urban furniture, such as benches, garbage cans, the base of signs, and lights,
- Design of routes for micro-mobility such as bicycle, scooter and skating,
- Promoting green transportation, pedestrianism; encouraging urban dwellers to use bicycles by providing conditions such as bike lane is recognized as a practical solution to solve nowadays urban environment problems,
- Incorporation of signs and boards based on universal design principles to guide users to destinations,
- Adequate lighting sources to ensure legibility,
- Use various target lights with different color.

5.4.6 Seats

Table 5.71 : Urban furniture-seats sub-themes and themes.

Sub-theme	Theme
Safety	Quality maintenance
Safety	Urban Furniture Design
Comfort	Ergonomic design
Possibility of choice	Diversity
User capacity	Supply and demand dynamics
Visualscape (Aesthetic)	Urban furniture design
Tactilescapes	Urban furniture design (Material use)

According to the derived sub-themes and themes, the following recommendations are presented to ensure Göztepe park seats' quality in order to satisfy the park's users. Paying attention to the number of users and supplying an adequate number of seating areas is important; therefore, while planning and designing the park, the supply and demand dynamics must be considered for present and future alterations. Designing various types of seating areas allows users to have the possibility of choice. In addition, safety and comfort provisions need to be considered while designing seats for parks. Park's seating areas need to provide proper support and improve comfort for users, which is possible by applying ergonomic principles in their design. In addition, the aesthetic quality of the seating areas (Perumal & Rahman, 2016) and the material surface is of great importance for users' perception, satisfaction and preferences (Khalid & Helander, 2006).

- Design of benches as accessories of park; designing aesthetically pleasing seats; considering local culture and preferences while designing seating areas, shape, form, color to create vibrant and beautiful park and enhance visualscape,
- Check for hardware issues; proper installation of benches within park to prevent danger of falling and hurting users (secure benches to the ground),
- Building canopy cover, tree canopy for providing shadings for users' comfort,
- Supplying various types of seating area for different usages consist of seats and tables,
- Designing benches with back supports especially for concrete benches,
- Keep them durable and appealing; protect wooden benches with shading structures to prevent shrinking and color fading due to moisture and temperature variations,
- Elimination of surface damage in seats; removal of rust in metal benches, use of tough coating to shield metal, sand the wood periodically, use of durable paints for wooden and metal surfaces,
- Avoid seats with sharp edges,
- Comfortable material surface for positive tactile experience,
- Design various sorts of seating area while considering harmony, unity, cohesion; and visual comfort,
- Considering the appropriate length, width, and height of seats to be used by all people regardless of their age and movement abilities,
- Use of materials to ensure the tactile comfort for users,
- Using sustainable materials in designing and building the seats,
- Design and use of seating areas as versatile furniture.

5.4.7 Service facilities- public toilets

Table 5.72 : Service facilities- Public toilets sub-themes and themes.

Sub-theme	Theme
Operating hours	Management
User capacity	Supply and demand dynamics
Comfort	Streetscape amenities
Clean environment	Quality maintenance

According to the derived sub-themes and themes, the following recommendations are presented to ensure the Göztepe park restroom facility’s quality in order to satisfy the park’s users. The public toilet is considered a streetscape facility that is fundamental for people using urban public environments to ensure their comfort, especially those needing frequent use, such as children and elderlies. The public toilet under the management of the municipality is in the northwest part of Göztepe park, which is in the vicinity of Bağdat avenue. This public toilet is multipurpose as it serves both park users and other people who visit Bağdat avenue, where commercial places and business centers are located. Indeed, Göztepe park is in the juxtaposition of active transportation and walking networks. Therefore, the operating hours and cleaning time need to be planned to serve the users without disrupting service delivery. Furthermore, the number of passerby and park users in the general level of visitation determines the number of toilets; thus, the supply and demand dynamics must be considered for such service facilities.

Afacan and Gurel (2015) argued that there are three aspects in the matter of the public toilets’ conditions, including design, management, and users’ pattern of use, which directly relates to their socio-cultural dimension. Therefore, the design of public toilet components must be compatible with people's culture, as the users’ religious beliefs, customs, and social behaviors manifest within their use behavior. Furthermore, local authorities must account the sanitary regulations and service hours policies to ensure public health.

- Cleaning and maintenance in a hygienic manner based on latest sanitary regulations,
- Eliminate unpleasant odors of toilets, use of toilet odor neutralizer,
- Promoting culture of cleanliness through use of universally designed signs,

- Design adequate toilet based on universal design principles to ensure all people equal access to such service,
- Considering lighting, ventilation, and piping conditions, both aesthetically and functionally (Afacan & Gurel, 2015),
- Considering aesthetic quality; designing public toilets in respect to the socio-cultural context and physical characteristics of the environment instead of using prototype ones,
- Water management initiative: Installation of sensors on faucets, installation of leak detection systems, increasing water conservation and recycling programs; educating people for water conservation, installation of water efficient plumbing fixtures,
- Public toilet needs to be equipment with essentials such as toilet papers, cleaning supplies, liquid soaps, trash cans, toilet seat liners, which are disposable, biodegradable and flushable,
- Revision of operation hours to encompass long time span during day and night especially crowded time of park use,
- Guarantee the safety and security of public toilet.

5.4.8 Service facilities- food and beverage kiosk

Table 5.73 : Service facilities- food and beverage kiosk sub-themes and themes.

Sub-theme	Theme
Consumer satisfaction	Management
Operating hours	Management
Comfort	Urban furniture design
Comfort	Streetscape amenities

According to the derived sub-themes and themes, the following recommendations are presented to ensure Göztepe park food and beverage service facility's quality to satisfy park users.

Nutrition culture has undergone a fundamental transformation in recent years due to changes in the social, cultural, and economic aspects of societies. The development of human life influences people's consumption habits; therefore, the consuming of food outside of the household has increased recently. Accordingly, the demand for food and beverage service facilities has risen. As a result of this consumption trend, street vendors are present within the urban environment. However, in parks, food and other goods, such as balloons, especially near playgrounds, can be seen. This kind of streetscape amenities promotes civic and economic activity in public areas.

- Revision of operation hours to encompass long time span during day and night especially crowded time of park use,
- Design and placement of chair and table near food and beverages kiosk to ensure users' comfort,
- Supply goods based on users' preferences,
- Policies and regulations for street vendors to prevent crowdedness, negative smellscape, and noise pollution,
- Considering aesthetic quality; designing kiosk in respect to the socio-cultural context and physical characteristics of the environment instead of using prototype ones,
- Use of water efficient appliances,
- Waste separation for recycling,
- Health related rules and regulations,
- Appropriate and design-oriented lighting.

5.4.9 Waste- clean environment

Table 5.74 : Waste- clean environment sub-themes and themes.

Sub-theme	Theme
Clean environment	Quality maintenance
Visualscape (Aesthetic)	Quality maintenance
Visualscape (Aesthetic)	Urban furniture design
Smellscape	Quality maintenance

According to the derived sub-themes and themes, the following recommendations are presented to ensure the quality of Göztepe park garbage cans' quality to satisfy the park's users. In general, the wastes of parks and urban green spaces can be divided into three main groups: the wastes resulting from the preservation and maintenance of the park, wastes produced by users, and dog waste.

A large amount of waste generated in parks is sent to landfills, such as green waste, including cut grass, tree leaves, and other plant waste. Green wastes contain valuable nutrients and can be used as compost to improve soil quality. Also, most of the waste generated by visitors is recyclable. Indeed, the use of all these kinds of waste in generating energy is addressed by (Długoński & Szumański, 2016). Waste management is important for public health and results from the demand for a clean environment. Consequently,

- Supplying recycle bins within the park helps to waste separation as well as promoting users' environmental education,
- Collecting cut grass and tree leaves in the maintenance process of park help to have clean environment that happen to influence user's perception and preferences,
- Initiatives to ensure positive smellscape within park; waste separation, detection and neutralization of negative odor source, and diffusion of positive odors,
- Designing dog waste bin,
- Design of garbage cans as accessories of park; designing aesthetically pleasing garbage cans; considering local culture and preferences while designing garbage cans' shape, form, color,
- Signs and boards for education-oriented purposes-environmental education.

5.4.10 Animal-inclusive

Table 5.75 : Animal inclusive sub-themes and themes.

Sub-theme	Theme
Pet-inclusive	Opportunity
Safety	Management
Education-oriented	Opportunity
Wildlife and habitat conservation	Opportunity

According to the derived sub-themes and themes the following recommendations are presented to ensure Göztepe park animal-inclusiveness to protect biodiversity, improve pet-inclusiveness within park.

- Prescence of fish in pond increase aesthetic preference of visitors (Wang et al., 2019),
- Presence of bird house,
- Planning and design for dog playing ground and agility equipment in an appropriate setting not close to the pond,
- Supplying food and water bowls for animals,
- Providing clean water pond and stream,
- Avoiding the use of pesticides and fertilizers,
- Incorporating dog toilet facilities within park (Holderness-Roddam, 2020),
- Establishing guidelines for pet-walking which includes rules and regulations such as leash use, dog waste collection,
- Safety and precautionary signs to protect both users and animals living in the park,
- Protection of children playground with fences to prevent conflict (McQuillan, 1992),
- Incorporation of animal information sheets within the park for education-oriented purpose.

5.4.11 Culture-inspired

Table 5.76 : Culture-inspired sub-themes and themes.

Sub-theme	Theme
Comfort	Opportunity
Community engagement/social inclusion	Attraction
Visualscape (Aesthetic)	Opportunity

Based on the sub-themes and themes demonstrated in the table and the investigations carried out in the field studies, the suggestions and solutions are as follows:

- The presence of public art such as monuments, sculptures, graffiti, murals which are reflecting the culture of local people (Mehta, 2009),
- Historical and cultural references in art works within the park generate the identity and meaning (Ferdous, 2013) subsequently increasing social inclusion,
- Holding cultural events, festivals, celebrations to enhance community engagement and community cohesion,

- Providing appropriate educational and cultural programs in parks to improve and expand appropriate social interaction, strengthen the bonds within community, subsequently contributing to sustainable social development.

5.4.12 Supplementary recommendations

- Using diversity of sustainable materials throughout urban furniture, tools, equipment, appliances,
- Considering the lighting of the park for increasing sense of safety besides considering the energy consumption policies to ensure sustainable energy management,
- Allocation of smoking areas and distinguishing the non-smoking areas within park through use of signs consisting of rules and regulations,
- Integrating participatory approach in future planning, design and implementations within the park; using focus groups ideas and opinions to improve the park conditions,
- Adoption of clear and appropriate criteria for wise and participatory decision-making regarding evaluation of park's current situation,
- Instilling the importance of protecting and maintaining the park among the citizens to resolve their concerns about the possibility of park demolishment,
- Use of innovative approach in informing people about the decisions and actions in respect to the park; for instance, social media, bulletin boards with quick response code (QR),
- Planning and design of playing areas for various adult age groups,
- Strategic Landscaping which creates visibility and control points. Strategically placed trees and plantings can block off hidden areas while improving visibility to other park areas.

Sub-themes	Themes	Playgorund	Sport facilities and amenities	Green space	Water features	Pathways	Seats	Public toilet	Food and beverage kiosk	Waste	Animal inclusive	Culture-inspired
Possibility of choice	Design for all	■	■			■						
	Diversity	■	■			■	■					
User capacity	Supply and demand dynamics	■	■				■	■				
Safety	Quality maintenance	■				■	■					
	Urban Furniture Design						■					
	Management										■	
Land use (Safety)	Landscape Design		■									
Comfort	Urban Furniture Design	■	■						■			
	Ergonomic design	■	■				■					
	Quality maintenance			■		■						
	Opportunity				■							■
	Streetscape amenities							■	■			
Land use (Comfort)	Landscape Design		■									
	Ergonomic design					■						
Land use	Accessibility					■						
Novelty	Innovative design	■										
Functionality	Quality maintenance		■									
Nature (Horticulture- Floriculture)	Attraction			■								
Nature (Recreational)	Attraction (Environmental amenity)				■							
Visualscape (Aesthetic)	Landscape design			■		■						
	Urban Furniture Design				■		■			■		
	Quality maintenance									■		
	Opportunity											■
Smellscape	Attraction			■								
	Quality maintenance				■					■		
Soundscape	Attraction			■	■							
Education-oriented	Opportunity										■	
Environmental education	Opportunity			■								
Maintenance	Quality maintenance				■							
Clean environment	Quality maintenance							■		■		
Pet-inclusive	Opportunity										■	
Wildlife and habitat conservation	Opportunity										■	
Tactilescapes	Urban furniture design (Material use)	■	■				■					
Operating hours	Management							■	■			
Consumer satisfaction	Management								■			
Community engagement/social inclusion	Attraction											■

Figure 5.34: Matrix table of sub-themes and themes.

Sub-themes	Themes	Description
Possibility of choice	**Design for all**	The possibility of choice in design create a more positive user experience that is welcoming and fosters a sense of inclusivity for all individuals. Spaces need to be accessible and welcoming to people of all ages, abilities, and backgrounds.
	Diversity	Using various types of park components to attract people with diverse demands and preferences. The possibility of choice creates an opportunity for individuals to personalize their experience leading to higher levels of satisfaction. Individuals value experiences that are accommodating and meet their unique needs creating a more positive association with the design.
User capacity	**Supply and demand dynamics**	Understanding the supply and demand dynamic for user capacity is a crucial aspect of designing public spaces that are functional, safe, and enjoyable for all. Supply refers to the amount of space and amenities available within a public space, while demand refers to the number of people who want to use that space and the activities they want to engage in. To ensure that a public space can accommodate the demand, it is important to carefully consider the supply of that space. One way to do this is to conduct a user capacity analysis, which can help to determine the maximum number of people the space can safely and comfortably accommodate at any given time.
Safety	**Quality maintenance**	Quality maintenance is an essential component of ensuring the safety of public spaces. Well-maintained spaces can reduce the risk of injury or harm to both users, as well as enhance the usability and overall enjoyment of the space.
	Urban Furniture Design	Prompt repair of damaged or broken urban furniture ensure safety by reduce the risk of injury to users.
	Management	It is important to recognize that effective park management requires a broader range of strategies and practices. implementing a range of safety measures within a collaborative and holistic approach is a way to ensure that park is a safe environment.
Land use (Safety)	**Landscape Design**	One key element of landscape design that can contribute to park safety is spatial arrangement. This involves careful placement and arrangement of spaces within the park, such as seating areas, picnic spots, walking paths, sport areas, and play areas, to maximize visibility, accessibility, and safety.
Comfort	**Urban Furniture Design**	Comfort is important consideration in the design of urban furniture. Furniture should be designed to accommodate the needs and preferences of a diverse range of users.
	Ergonomic design	Considering factors such as ergonomic design, adjustability, and accessibility for all people is important to provide comfortable spaces for people to enjoy their recreational activities.
	Quality maintenance	Quality maintenance is achieved through a number of measures. One important aspect is regular upkeep, which includes watering, pruning, and cleaning. This ensures that the green spaces remain healthy, tidy and free from litter which results in users' satisfaction in relation to comfort.
	Opportunity	Parks maintain their unique identity while promoting sustainability by incorporating elements of local history, traditions, and culture into park design and programming. By doing so, parks will be in conformity with local culture and people feel more comfortable.
	Streetscape amenities	Streetscape amenities such as public restrooms and food and beverage kiosks bring significant benefits and added comfort for park users. These amenities are essential for creating a welcoming and inclusive space that promotes community engagement and enjoyment of the outdoors. By providing these amenities in parks and public spaces, cities can create healthier, more livable and economically prosperous communities.
Land use (Comfort)	**Landscape Design**	The placement of spaces should be based on several factors, including the intended use of the space based on user group, the desired level of privacy, considering potential safety issues or hazards that ensure comfort of park users.
	Ergonomic design	A well-designed park pathway enhance the user experience by providing a comfortable, safe, and accessible environment for all users, regardless of age, physical ability, or mobility. Ergonomic design is a key consideration in park pathway design. It involves creating pathways that are comfortable and natural to use for park visitors.

Figure 5.35 : Sub-themes and themes description table (No.1).

Sub-themes	Themes	Description
Land use	**Accessibility**	Accessibility is a key consideration in land use of park planning, as parks need to be designed to be inclusive and accessible for everyone. Pathways need to be connected to all parts of the park to maximize use.
Novelty	**Innovative design**	Innovative design involves creating a places that not only looks and feels unique, but also offers new, exciting, engaging and stimulating experiences for users. For instance, designing playground that is not only fun and exciting, but also contributes to the development and growth of children's cognitive, physical, and social abilities.
Functionality	**Quality maintenance**	Quality maintenance is crucial in creating functional components that bring safe, enjoyable, high-quality park experiences. To ensure quality maintenance, there is a need to schedule regular inspections and repairs of sports devices, which include checking for damages, replacing worn-out parts, and ensuring safety measures such as the proper installation of safety nets and anchors. Accordingly, maximize functionality and ensure quality time for users.
Nature (Horticulture-Floriculture)	**Attraction**	Horticulture and floriculture add color, texture, and fragrance to the park environment, creating a sensory-rich experience for visitors. Visitors can explore the various plant species, and natural elements like trees, flowers, and shrubs, which offer opportunities for learning and appreciation of the natural world.
Nature (Recreational)	**Attraction (Environmental amenity)**	Natural elements are considered as environmental amenities within parks as they provide more ecological niches and supporting natural processes. Water features are essential environmental amenities in a park. Not only do they provide recreation and relaxation opportunities for park visitors, but they also contribute to the park's overall environmental health and sustainability.
Visualscape (Aesthetic)	**Landscape design**	Visualscape, including aesthetic and natural elements such as green spaces, plays a vital role in public parks. It can positively influence the overall experience of visitors and promote the park's use. Green spaces contribute to the aesthetic appeal of the park.
	Urban Furniture Design	Proper landscape design support environmental sustainability, provides a tranquil atmosphere and promotes community engagement. In addition, it contributes to the park's aesthetic appeal; therefore, it positively influences the overall experience of visitors and promotes the park's use. Planning and designing natural elements, such as green spaces and other components, such as pathways, plays a vital role in visualscape of the park.
	Quality maintenance	Quality maintenance is essential to ensure that the aesthetic aspect of the park is preserved. Regular maintenance activities must be conducted, such as proper waste management, to retain the features' visual appeal.
	Opportunity	Culture-inspired aesthetic design can bring numerous opportunities for park users by providing an immersive and enriching experience. In fact, integrating cultural themes into park design can provide diverse and unique features that can make a community park more appealing for visitors.
Smellscape	**Attraction**	Designing a smellscape is an essential factor in enhancing the attraction of a park to visitors. Creating enjoyable scents, such as natural scents, positively influence visitors' experience of the park. The pleasing scents increase their well-being and bring them closer to nature, effectively attracting visitors to the park.
	Quality maintenance	It is critical to ensure ongoing maintenance and proper waste management to prevent negative impacts on the environment and the overall visitor smellscape experience. Water management is also important to ensure the positive smellscape. Proper drainage systems need to be installed to avoid stagnant water or water accumulation, which can create a foul odor.
Soundscape	**Attraction**	A well-designed soundscape plan that incorporates natural features like green areas and water elements significantly enhance the overall visitor experience, promote mental and psychological well-being, and improve the environmental sustainability of the park.

Figure 5.36 : Sub-themes and themes description table (No.2).

Sub-themes	Themes	Description
Education-oriented	**Opportunity**	Parks establish a code of conduct specifically for educational purposes. This may include guidelines and safety measures to prevent hazards and ensure safety. For instance, guidelines for dog walking, as well as for respecting park resources and other visitors.
Environmental education	**Opportunity**	Parks offer environmental education opportunities for visitors focusing on topics such as green area conservation, wildlife protection, and sustainable practices.
Maintenance	**Quality maintenance**	Under the umbrella of quality maintenance, regular inspection of water features is essential since it helps identify potential issues with water quality, such as murky water, abnormal behavior of aquatic animals, or an unusual smell. Maintaining water features in parks is crucial for ensuring hygienic conditions and keeping visitors safe.
Clean environment	**Quality maintenance**	By implementing good maintenance practices such as regularly cleaning, inspecting and maintaining public toilets in parks, visitors can enjoy the park experience safely and comfortably. With proper ventilation, hand sanitization, signposting, and the use of environmentally friendly products, parks improve hygiene levels and keep the environment clean.
Pet-inclusive	**Opportunity**	By allowing pets in parks, the community is encouraged to integrate outdoor activities with their pets, promoting better health overall. The inclusion of pets in parks fosters community building and responsible pet ownership. Park management should consider the necessary measures, including clear rules for pet handling, to provide a welcoming environment for pet owners while ensuring the safety of all visitors.
Wildlife and habitat conservation	**Opportunity**	wildlife and habitat conservation within a park provides several opportunities for park users. These opportunities can range from environmental, recreational, and educational. Preserving habitats and wildlife within parks is crucial for both the users and the existence of the park itself.
Tactilescapes	**Urban furniture design (Material use)**	Materials used in urban furniture design within parks must be carefully selected to create a tactile landscape for park users. Selecting materials that provide a sensory experience can enhance the users' overall park experience and contribute to their emotional attachment to the park.
Operating hours	**Management**	Effective park operating hours and management require careful planning, communication, and execution. By establishing regular park hours, training and managing staff, promoting positive visitor behavior, maintaining the park's condition, park management can ensure a quality experience for visitors that will drive repeat visits and positive reviews.
Consumer satisfaction	**Management**	Park management must carefully consider variety of options, quality of food, availability of healthy options, reasonable pricing, customer service, cleanliness and hygiene, timely service, appropriate furniture to ensure high levels of customer satisfaction with food and beverage kiosks in parks. Proper park management helps to guarantee that visitors have a positive experience while using park facilities, which will ultimately lead to increased park usage and visitor satisfaction.
Community engagement/ social inclusion	**Attraction**	Culture-inspired activities and implementations within parks can bring community engagement and social inclusion by creating shared spaces, promoting economic development, providing opportunities for learning, fostering civic engagement, and celebrating diversity. These initiatives can help to build stronger, more cohesive communities and provide opportunities for residents to connect with one another in meaningful ways.

Figure 5.37: Sub-themes and themes description table (No.3).

6. CONCLUSION

Parks, as integral components of urban environments, have a key role in promoting sustainable development through the conservation of natural resources, initiating eco-friendly economic practices, and their stands in encouraging sociocultural viability. Therefore, a park is considered satisfactory in its capability to cope with various dynamics. In this sense, the sustainable park is defined as a development strategy that improves human quality of life and well-being by guaranteeing the reduction of adverse environmental, economic, social, and cultural impacts simultaneously. Hence, ignoring each of these aspects brings about difficulties, such as ill-conditioned public space, exclusion from the sociocultural structure of the society, losing the sense of belonging and participation in users, and subsequently, loss of place. Consequently, the park functions against the will of sustainable development; thus, acting upon sustainability transformation becomes necessary. Sustainability transformation has become an important matter of debate in sustainability research and policy discourses, and it is essential to fundamentally consider the current sustainability challenges.

The quest for sustainability is not only focusing on the concrete/material aspects of the place and its physical transformation or, in other words, "the outer dimension" instead it is an approach to connect people to the place by reflecting their perceptions and preferences; that is to say, emphasizing on "the inner dimensions" (Horlings, 2015). Sustainability is a context-dependent a place-based phenomenon (Horlings, 2018) which is accompanied by human involvement in its achievement process. Practices regarding sustainable place-creation are recognized as potential drivers in connecting people to places. In addition, understanding the interrelationships between people and places is vital to realize social motivations and determining approaches toward sustainability (Brown, 2015).

Taking into account that places are not merely geographical locations; rather, they are the manifestation of human-place interaction, which consists of human values, beliefs, and bonds that they are assigned to them. Places are the product of both concrete and abstract/material and immaterial dimensions and processes. Places are dynamic; that is to say, they are constantly under the influence of human-place relational changes. “Place as a perception–action process; in other words, place is a dynamic, multi-level relationships are possible between elements of mind, body, culture, and environment” (Raymond et al., 2017).

Russo and Cirella (2018) believed that poorly designed urban public green areas bring adverse impacts concerning the social dimension of a community. Green spaces' functionality depends on their performance in attracting people which is possible by synchronously addressing aesthetic, ecologic, social, cultural, and economic aspects (Naveh, 2001). Pazhouhanfar and M.S. (2014) stated that the planning, design, and management approach regarding a public green space which determines its characteristics and components, is essential in promoting park usage. Green spaces must have particular characteristics that vary according to the context of every community in order to offer real benefits to people (McCormack et al., 2010). Accordingly, parks need to be planned, designed, and managed with respect to the users’ perceptions and preferences. With this approach, parks contribute to the community's sense of place and enhance the sense of belonging, participation consequently achieving social cohesion (Dempsey et al., 2012).

The sense of place concept is considered one of the inner dimensions of sustainability transformation and is a social indicator of human-place interaction. Sense of place is defined as an intersection of self, others, and the environment. Gustafson (2001) explained the sense of place as a triangular model in which the self, others, and environment are three vertices of it. Its conceptualization in various studies is carried out with place attachment, place identity, and place dependence.

Accordingly, while discussing sustainability transformation within a park, users’ sense of place needs to be taken into consideration. Park users with a strong sense of place are crucial in the creation of strong, socially sustainable and resilient communities. These users will function as advocates for the park, and its neighborhood. They will endeavor to encourage the positive aspects of the park by contributing to park improvement. Consequently, the feelings and emotions assigned to a park by its users impact strongly on its sustainability. The sense of place enhances users’ capacity to adapt and respond to change by promoting conservation and preservation behaviors that urge long-term stewardship and sustainability transformation (Walker & Ryan, 2008).

The relationship between park users' perceptions and preferences and their sense of place levels is reciprocal, with each influencing the other in a reinforcing manner. When park users have positive perceptions and preferences about a park, they are more likely to have a strong sense of place and emotional connection to the park. On the other hand, negative perceptions and preferences can weaken their sense of place and emotional connection. Furthermore, a high level of sense of place can influence park users' perceptions and preferences. When park users have a strong sense of place, they are more likely to have positive perceptions and preferences about the park, and to engage in behaviors that support park sustainability efforts.

Various factors, including park location, recreational opportunities, natural elements such as green spaces and water features, accessibility, urban furniture, service facilities such as restrooms and food and beverage, cleanliness, safety, animal-inclusiveness, culture-inspired characteristics, initiatives regarding park preservation, users involvement in decision making process, education-oriented initiatives and implementations, actions of enhancing users' well-being by considering olfactory, tactile, visual and auditory perceptions influence how people perceive and experience a park. These factors, in turn, affect the creation of an emotional connection, attachment and dependence to the park. The following shows how users' perceptions and preferences influence their sense of place:

- Aesthetic appeal: a park's visual appearance and design significantly impact users' sense of place (Kaplan & Kaplan, 1989). Actions regarding the beautification of parks, including visually attractive landscapes, inviting architecture, artistic and creative elements, cleanliness, develop positive perceptions and preferences.
- User diversity and inclusivity: parks that provide opportunities for a diverse range of users, including various age groups, abilities, and sociocultural backgrounds, encourage inclusivity and boost users' sense of place (Carr et al., 1992). By considering the needs and desires of different user groups, parks cultivate meaningful connections among community members, facilitating a sense of belonging and attachment.

- Perceived restorative qualities: a park with restorative qualities caters to opportunities for relaxation, reflection, and stress relief, contributes to users' well-being, and fosters a deeper emotional connection to the place; as a result, park users' sense of place levels are influenced directly (Kaplan, 1995).
- Perceived safety and social cohesion: parks that facilitate a sense of safety and social cohesion contribute to users' sense of place (Kuo & Sullivan, 2001). Positive social interactions and a sense of safety can create an atmosphere where users feel comfortable and satisfied with the park.
- Personal experiences and memories: individual experiences and memories of a park can significantly influence users' sense of place (Tuan, 1977). Positive experiences generated by recreational opportunities, natural elements, facilities and amenities create lasting emotional connections and increase the sense of place for park users. In addition, education-oriented approaches that help park users boost their environmental knowledge, create positive experiences and facilitate connectedness to the park.
- Adaptability and responsiveness to cultural context: parks that are adaptable and responsive to users' cultural characteristics or in other words, parks that incorporate context/place- based approaches strengthen users' sense of place.
- Perceived lasting protection and preservation: Parks that are protected and preserved generate a place identity for their users as users can identify with and bond to a park's qualities and values; they feel affiliated and develop a strong sense of place.
- Perceived sense of community power: enabling park users to participate in park planning, design, and management decision-making processes promotes a sense of ownership and attachment to the park (Ryan, 2005). Accordingly, park users become able to feel of having rights regarding the park, which helps them to devote time and effort to support and preserve the park.

In this light, the study aimed to propose a sustainable park model, which is a tool for park sustainability assessment based on a new conceptual framework. With its qualitative approach, this model involves users' perceptions and preferences and their sense of place level in the sustainability evaluation of parks. Indeed, it investigates the link between the sense of place and the park's physical landscape and provided services. Sustainable park model is a new paradigm that encourages more user-oriented and context-sensitive practices within park leading to sustainability.

Accordingly, using the sustainable park model is about involving park users in the park sustainability evaluation process or in other words applying user-oriented approach in sustainability transformation of a park. The main reasons for the efficiency and practicality of this model are as follows:

- Comprehensive and accurate evaluation: the involvement of park users in the evaluation process helps to ensure that the assessment of a park's sustainability considers the perceptions and preferences of the park users. This user-oriented approach results in a more comprehensive and accurate assessment of a park's sustainability.
- Increased satisfaction and community ownership: Taking into account park users' perceptions and preferences helps to design a park that is compatible with their needs and desires. This user-oriented approach results in a more functional, accessible, and enjoyable park for its visitors. As a result, this leads to a higher rate of satisfaction and engagement with the park, and a greater willingness to promote park sustainability efforts.
- Better alignment with community values: By considering park users' perceptions and preferences, authorities and decision makers ensure that the park reflects the values, beliefs, and customs of the local community. This helps to create a park that is more culturally and socially relevant, and in line with the needs and desires of the community.
- Enhanced decision-making: Park users' perceptions and preferences can provide valuable insight into the sustainability challenges. Understanding the strengths and weaknesses of a park's sustainability initiatives positively influences decision-making around park planning, design and management efforts.
- Increased engagement and support: involvement of park users in the evaluation process, provides an opportunity for them to learn about the sustainability challenges facing the park, and to contribute to the improvement of sustainable solutions. This results in increased engagement and support for park sustainability efforts.

- Improved sense of place: the involvement of park users in the evaluation process, help to shape the park in a way to reflect the unique characteristics and needs of the community. Consequently, it generates emotional connection, Sense of belonging, and participation which result in enhancing users' sense of place. This sense of place can then be used as a motivator for continued sustainability efforts.

In sum, involving park users in the park sustainability evaluation process is essential for creating a more comprehensive, accurate, and user-oriented assessment of a park's sustainability. In addition, it is important for creating parks that are welcoming for park users, and that are aligned with the values and needs of the local community.

6.1 Overall Assessment

In general, major theoretical arguments as the backbone of the study have been discussed within the second and third chapters. The theoretical foundation underscored the keywords to be the components and methods to demonstrate the processes of the model. Subsequently, within the fourth chapter the selected components were integrated with the processes to shape the model final scheme. The model was examined through use of a case; consequently, the fifth chapter included description of evaluation processes and results within the case which is Göztepe park.

Within the second chapter, the study aimed to profoundly discuss the scope and meaning of sustainability idea and sustainable development concept and their relation to the concept of sense of place to form the theoretical foundation of the model. As an initial step, the study discussed the reasons behind the necessity of sustainability idea and emergence of sustainable development concept by investigating its history and background through literature that can be summarized as follows:

Over the course of time, human development, which is associated with social, cultural, economic, and political instabilities, has caused numerous challenges for humans. Societies have been engulfed by problems such as a lack of natural resources to supply, lack of appropriate solutions to balance natural resources with human needs, the incremental destruction of natural elements, social disintegration, the disappearance of social and cultural norms, and economic instability. In fact, these problems stem from increasing demands which are consequence of rapid population growth, urbanization, and development. Consequently, human beings' physical and mental needs conflict with the surrounding environment more than ever. Indeed, the future of earth and humanity has been jeopardized due to inevitable impacts of globalization; that is to say the damage to the environmental, social, cultural and economic aspects continues at an alarming rate and the need for rational thinking and actions has become indispensable. As a result, identifying risks and preventing the consequences, controlling, and improving existing conditions, in general, more focuses on people's well-being have become a commitment to the present and the future. Albite, resisting the effects of the current circumstances (short-term focus) and maintaining the fundamental direction of operations leading to sustainability (long-term focus) is challenging. Eventually the many-faceted effect of globalization on human beings has provoked new philosophical dilemmas and challenges; consequently, sustainability has become the necessity and focus of the debates in all scales.

In the late twenty-century, the sustainable development concept, which acquired popular momentum, entered the consciousness of decision-makers, urban planners, landscape architects, architects, and designers and became one of the chief challenges for contemporary design discourses. This concept was an outcome of series of summits and events revolving around necessity of thoughts and actions in respect to sustainability. Sustainable development is about positive growth or trends in environmental, social, cultural, and economic factors. In other words, sustainable development means the development of environmental, social, cultural, and economic aspects of societies sustainably.

The study proceeded in a manner to explore the true meaning of sustainability and sustainable development. The study found that, contrary to existing beliefs around the idea of sustainability, sustainability is not just about environmentalism; embedded in most description of sustainability, concerns relevant to social, cultural, and economic dimensions are also found. Although the word sustainability was just used for forest resources exploitation method in the past, its idea fundamentally aims at ensuring the human well-being and quality of life by means of ensuring basic needs and fulfilling desires. On this account, sustainable development is a kind of development that is accompanied by guaranteeing human’s needs and desires.

In this light, the study used the conceptual framework posed by Jabareen (2006) to display the scope of sustainable development concept as well. Thus, the concept of ethical paradox, natural capital stock, equity eco-form, integrative management, utopianism, and global political agenda were described. In addition to these concepts, the study added the placemaking concept as the eighth concept which is believed to be complementary to the current theoretical framework. Placemaking concept is considered as an approach of sustainable design. It produces spaces that are not only ecologically responsible but also socially and culturally enriching, resulting in vibrant, inclusive, and sustainable places for people to live, work, and interact. Therefore, placemaking is defined as the product of social and cultural aspects of societies, as it brings meaning for its users. The generated meaning brings sense of belonging and participation results in creation of place identity, place dependence and place attachment; the three indicators of the sense of place. In this light, the study accounted the sense of place concept as a crucial indicator of placemaking. Correspondingly, the sense of place concept was recognized as fundamental driver of sustainable development. As a result, the study underlined the interrelation of sustainability and the sense of place concept which it is reciprocal and in a reinforcing manner.

Sense of place is generated because of the particular characteristics and qualities that a specific place has, including physical and socio-cultural features, historical background, and community values. Sense of place is linked to an emotional attachment and sense of belonging to a specific place, and it is recognized as a significant aspect of human-place interaction. A strong sense of place is a powerful driver for preserving and protecting the place environmental, social, cultural and economic values. Therefore, sense of place is a powerful motivator in creating and maintaining sustainable places that are resilient, equitable, and supportive of human well-being. Meanwhile, sustainability measures contribute to a stronger sense of place, as sustainability is about ensuring human biological, psychological, and cultural needs; additionally, it refers to the ability of a system to endure through time in an environmentally, economically, and socially responsible manner which directly influence human’s well-being and quality of life. By prioritizing both, communities are able to develop resilient and livable places that guarantee human well-being and the health of the environment.

These discussions contextualized in the park, as a park with sustainable placemaking approach generates sense of place for its users results in steps towards sustainable development. Therefore, scrutinizing the users' sense of place is determined as an approach for sustainability evaluation of parks.

Throughout the third chapter of study, discussions have been developed to query the way park sustainability assessment tools' view sustainability within parks. Priorly, the role of park in sustainable development advancement and park typology categories were discussed. Indeed, the study tried to extract keywords to be used as model's components-contexts. The study reviewed The Global Sustainability Assessment System for Parks (GSAS), Sustainable Sites Initiative (SITE), Green mark for Parks, and Green Flag. These tools are designed to be comprehensive and inclusive regarding environmental, economic, social and cultural aspects of sustainable development; however, these tools leverage environmental and economic aspects more than the other two. In addition, these tools addressed authorities and decision makers in park sustainability evaluations by focusing on sustainability initiatives within following fields: green space, water, energy, waste and material, recreational, wildlife and habitat management and design. Moreover, they concern heritage conservation as well as design concepts such universal, inclusive, participatory and education-oriented. In these tools' perspective the significance of initiatives within planning, design and management of parks that support national and local economy are emphasized too. Indeed, these tools function as benchmarks for sustainability actions within parks and determine the standards in each field to support optimization.

Following the second and third chapters, there comes the chapter regarding the conceptualizing the sustainable park model. Throughout this chapter the model was devised, and each step of model's design process was described. The model consisted of two separate sets namely interview and sense of place measurement. The interview was used as a method of qualitative evaluation, as users' perception and preferences need to be surveyed to find out the extent a park is successful in sense of place generation. The study used Patton (2001) qualitative approach in devising interview set, which entails dimensions of behaviors & experiences, opinions & values, feelings & emotions, knowledge, sensory, and background. Accordingly, questions were under these focuses which were also parallel to sense of place components or in other words human-place interaction dimensions including behavioral, emotional, and cognitive. The extracted keywords presented in current park sustainability assessment tools and literature regarding park sustainability constituted the question contexts while the question contents were selected according to the contexts and the case characteristics and components. The study devised the second set of model namely sense of place measurement tool with total of 6 components under umbrella of three indicators of place identity, place attachment and place dependence.

The thematic analysis was selected to analyze interview data and to link the results of the interview and sense of place measurement. Selected and labeled codes are influential in users' sense of place levels. The positive label has an ascendant effect while the negative label has descendent effect on the sense of place level of users. In this way, it is possible to understand which factors are effective in people's low or high sense of place. Accordingly, the sustainable park model is a tool that reveals the negative and positive park users' views and correlates them with users' sense of place. Indeed, it indicates the reciprocal effects of users' perceptions and preferences with sense of place level. Moreover, the derived subthemes and themes help to discuss the recommendations and implications in respect to park physical landscape and provided facilities and amenities leading to sustainability.

Within the fifth chapter Göztepe park was used to be evaluated in respect to sustainability by using the presented model. A total number of 118 people participated in the survey. They were subjected to answer questions including reason of park use and the type of activities; experience about recreational facilities such as playground area and sport area; the experience about green spaces, water features and movement and accessibility network; experience about urban furniture such as seating areas; experience about service facilities such as food and beverages kiosk and public restroom; experience about the garbage cans regarding clean environment; experiences about pet-friendliness in respect to animal inclusiveness.

Moreover, park users answered the questions aimed at understanding their opinion about reflection of local culture within the park and future of park under context category of culture-inspired and heritage preservation. In respect to education-oriented matters, the users answered questions about their knowledge of rules and regulations, plant and animal information sheets, and participatory planning, design, and management approach of park authority.

The users' sense of safety was investigated within emotional context while their olfactory, tactile, visual, and auditory perceptions were asked within multisensory context. Besides, demographic questions such as age, gender, location of residence, duration of arrival to the park, duration of park use, frequency, and duration of use in cold and warm seasons, state of use were also asked.

In addition, the model entailed sense of place measurement tool to understand the level of park users' sense of place and included a tool to understand parameters and factors influential in generation of sense of place for park users. The sustainable park model acknowledges the interlinking factors crucial in creation of sense of place through the assessment criteria within Göztepe park. Thus, the Göztepe park users' sense of place measured by a rating system in which users rated total of 6 sentences under three categories of place identity, place attachment, and place dependence. Göztepe park users' sense of place level is 2.61 which indicates that users have sense of place however it is low. Moreover, the evaluation results showed that in general Göztepe park users' sense of place levels and perceptions and preferences are associated with each other parallelly; since negative views influence the sense of place level in a downward manner and positive views influence in an upward manner.

The data of interview were thematic analyzed and results were discussed within the fifth chapter as well. The derived sub-themes (24) and themes (16) were discussed in details within the implications and recommendation parts. According to the results of Göztepe park evaluation, in general the following needs to be considered in planning, design, and management of Göztepe park to increase users' sense of place levels and achieve sustainability within this community park.

- Considering design for all concept to provide possibility of choice for all users in order to create inclusive and accessible environment,
- Implementation of various types of park's components to maximize benefits, such as playground equipment, sport facilities (fitness equipment), seating area (seating arrangement, seating type), pathways (form, material),
- Conducting user capacity analyses to ensure the balance in supply and demand within playground equipment and size, sports area size, fitness equipment, public restroom, and seating area,
- Ensuring safety of park users by proper maintenance of playground equipment, pathways, and seats. In addition, providing guidelines and signage to prevent all kinds of hazards within the park. Moreover, appropriate placement of sport facilities within the park to ensure the safety of children,

- Considering ergonomic design principles within park components,
- Supplying innovatively designed park components,
- Ensuring functionality of park components,
- Proper and timely maintenance of park components to provide clean environment and ensure users' positive experiences regarding visualscape, smellscape, and tactilescape,
- Preserving natural sound environments to enhance the park users' positive soundscape experiences,
- Proper management regarding operating hours, rules and regulations, and consumer satisfaction,
- Considering participatory approach in planning, design and management to increase community engagement,
- Considering educational approach which can increase awareness of sustainability issues and encourage more sustainable practices within the community.

Forasmuch as Göztepe park users have the determining role in the park's functionality, their perception and preferences are considered to determine the extent to which this park satisfies its users. Hence, the study by evaluating this park via the sustainable park model concentrated on including park users in its sustainability assessment process. Consequently, this study emphasized the importance of the involvement of Göztepe park users' preferences and perceptions regarding the park rather than solely relying on the outcomes of current park sustainability assessment tools. Accordingly, the evaluation results provide information for authorities and decision-makers of Göztepe park to enhance users' satisfaction by appropriate implementations that increase users' sense of place levels.

6.2 Study's Limitations

The proposed model functions in various park typologies within urban environment. However, the dimensions, focuses and contexts of the interview set of model are constant criteria as they are devised based on sustainable park meaning posed by park sustainability assessment tools and literature on this subject but the question contents need to be devised based on both contexts and park characteristic. In relation to the second set of model, the sense of place measurements components are valid for all parks evaluations as they aims to find answers for users level of place identity, place attachment, and place dependence.

This study also has limitations in respect to the sample size. The qualitative portion of this study included 118 interviews with Göztepe park users and participants' age ranges between adolescents to elderlies. Therefore, children who are younger than 12 years old are not part of the evaluation process.

In addition, the study has limitations regarding the Turkish context as well. While the study described Göztepe park's users' perceptions and preferences about parks' components, the study may not be representative of all parks' users within Istanbul as the city has demographics diversities. Additionally, there might be issues that were notable to users that were not underscored during the interviews. The model is useful for understanding some key aspects of users' perceptions and preferences pertaining the Göztepe park to plan and implement sustainable initiatives within the park, but should only be examined as a supplement to the detailed evaluations provided by current park sustainability assessment tools.

The users' profiles play a crucial role in obtaining precise information about the parks' condition and its influence on the users' sense of place. It should be noted that the level of sense of place varies for different users of the same place due to their various perceptions and preferences which results in assigning diverse values and meaning to a place.

In addition, users' responses determine sub-themes and themes which are used to understand the area of implementations to satisfy users, enhance their sense of place and reach a sustainable stand within a park. Consequently, the demographic dimension of the area under examination determines the extent and scope of actions and initiatives. This study used Göztepe park as a case which is a community park located in neighborhood with high socio-economic status. The results of Göztepe park qualitative evaluations might be valid for other similar parks to some extent; however, the implications and recommendations need to be posed exclusively for every park. Indeed, the park typology, its location, characteristics, components are all influential factors in users' perceptions and preferences as well as their sense of place.

6.3 Further Implications

Within the frames of this study, there are several issues that set ground for further studies. The model presented by this research covers a community park in the Turkish context. Therefore, exploring users' perceptions and preferences of other parks physical setting and provided services to have comparisons can be the major argument of further studies. In addition, the factors influential in users' sense of place might vary within various park typologies. For example, the level of place dependence to a pocket park differentiates from the level of place dependence in a neighborhood park. Consequently, by using this model for sustainability evaluation of different parks' typologies a concrete benchmark would be obtained.

Building on this study's discussions upon association of the proposed model and current park sustainability assessments tools, a rating system can be assigned for the model. The ranking and rating system help comparisons and provides an incentive for better data collection within municipalities for further implementations. However, assigning points to criteria and indicators needs extensive research on the subject matter. This is possible through evaluation of various park typologies in different socio-cultural and socio-economic contexts.

Future studies of park users could include a greater number and diversity of participants, as well as additional questions regarding what park users like or dislike about park components. The results of the users' interviews in this study, and the study of visitor perceptions and preferences could also be useful in guiding preparation of more structured qualitative surveys.

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