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ASSESSING THE ROLE OF NATION GARDENS IN SUSTAINABLE LOCAL ECONOMIC DEVELOPMENT: A STUDY OF TÜRKİYE'S GREEN SPACE POLICIES

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Abstract

From an economic standpoint, green spaces often gain value when they are conserved or restored to serve specific economic and social functions. Financial issues such as consumption (use value) and government investments are considered in traditional economic valuations of green spaces. However, a broader perspective, aligned with sustainable development principles, considers both direct and indirect social, environmental, and economic impacts.
Uses mixed-methods study aims to assess the sustainability of Türkiye's Nation Gardens (NG) project in the context of local economic development. This study focuses on completed Nation Gardens (NG) projects in Istanbul. Survey data was collected to gauge visitor perceptions and satisfaction with the NG. The study results show that while the NG serves its purpose as a green space, there are some concerns regarding its contribution to sustainable development. This research contributes to a better understanding of the economic value of sustainable urban design and park management.

Keywords: Local economy, Sustainable development, Environmental economics, Parks, Nation Garden
JEL Classification: D6, H51, I31, Q2, R1

MİLLET BAHÇELERİNİN SÜRDÜRÜLEBİLİR YEREL EKONOMİK KALKINMADAKİ ROLÜNÜN DEĞERLENDİRİLMESİ: TÜRKİYE'NİN YEŞİL ALAN POLİTİKALARI ÜZERİNE BIR ÇALIŞMA

Öz

Ekonomik açıdan bakıldığında, yeşil alanlar genellikle belirli ekonomik ve sosyal işlevlere hizmet etmek üzere korunduklarında veya restore edildiklerinde değer kazanırlar. Yeşil alanların geleneksel ekonomik değerlemelerinde tüketim (kullanım değeri) ve devlet yatırımları gibi mali konular göz önünde bulundurulur. Ancak, sürdürülebilir kalkınma ilkeleriyle uyumlu daha geniş bir bakış açısı, hem doğrudan hem de dolaylı sosyal, çevresel ve ekonomik etkileri dikkate alır.
Bu karma yöntem çalışması, Türkiye'nin Millet Bahçeleri (NG) projesinin sürdürülebilirliğini yerel ekonomik kalkınma bağlamında değerlendirmeyi amaçlamaktadır. Bu çalışma, İstanbul'da tamamlanan Millet Bahçeleri projelerine odaklanmaktadır. Ziyaretçilerin Millet Bahçeleri ile ilgili algılarını ve memnuniyetlerini ölçmek için anket verileri toplanmıştır. Çalışma sonuçları, Millet Bahçeleri'nin yeşil alan olarak amacına hizmet etmesine rağmen, sürdürülebilir kalkınmaya katkısı konusunda bazı endişeler olduğunu göstermektedir. Bu araştırma, sürdürülebilir kentsel tasarım ve park yönetiminin ekonomik değerinin daha iyi anlaşılmasına katkıda bulunmaktadır.

Anahtar Kelimeler: Yerel Ekonomi, Sürdürülebilir kalkınma, Çevre ekonomisi, Parklar, Millet Bahçesi
JEL Sınıflandırması: D6, H51, I31, Q2, R1

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1. INTRODUCTION

While urban life is often marketed as offering high-quality, comfortable living spaces (Temiz and Sağlık, 2021), they can also have detrimental effects on social life (Fuller et al., 2007). As urban populations grow, individuals increasingly spend more time indoors, leading to a decline in access to open spaces. This reduction in outdoor activity can result in physical and mental health issues (Akalp et al., 2021; Barbieri and Mercado, 2022; Bozdağ, 2021). Conversely, outdoor activities have been shown to promote physical and psychological well-being and foster social cohesion (Kim, 2018; Kim and Coseo, 2018; Kim and Miller, 2019; Kuo, 2015; Richards et al., 2017). As income levels rise, individuals often seek homes with gardens or proximity to natural areas like forests, lakes, or the sea (Bockarjova et al., 2020; Cui et al., 2022). Urban residents, in particular, rely on city parks and other green spaces for recreational activities (Kelly et al., 2022; Walch et al., 2005). Therefore, the preservation and development of sustainable green spaces within urban environments is crucial (Coppel and Wüstemann, 2017; Zhou and Wang, 2024).

Traditionally, the economic valuation of green spaces has been limited to their local economic impacts (Chiesura, 2004). However, a broader perspective is emerging that recognizes the multifaceted benefits of these spaces. Economic sustainability, in this context, entails preserving natural capital while optimizing economic output (Cossiga, 2019). Green spaces, as natural assets, contribute to environmental health, social well-being, and economic prosperity. Their ability to mitigate air pollution and regulate microclimates has become increasingly important in the era of climate change and urbanization (Patricola and Wehner, 2018; Herath and Bai, 2024). Studies have shown that access to green spaces can positively impact physical and mental health, including reducing obesity and improving cognitive function (Walch et al., 2005; Fernandes et al., 2023; Grazuleviciene et al., 2015). Well-designed and strategically located green spaces can enhance quality of life, attract investment, and stimulate tourism (Vella-Brodrick and Gilowska, 2022; Walch et al., 2005; Collomb, 2015). Therefore, the planning, design, and management of urban green spaces should be approached with a holistic perspective, considering both ecological and socio-economic factors (Richards et al., 2017; Lam et al., 2018; Jabbar et al., 2022).

Parks and similar green spaces are sustainable ecosystems that reduce air pollution and improve microclimate (Çet, 2006; Özgüner, 2009; Dadvand et al., 2015; Williams et al., 2020; Jabbar et al., 2022; Yao et al., 2022). Parks increase social capital among neighbours, friends, acquaintances, and visitors. They are also an important destination tool to attract tourists to the region (Haredy, 2019). Increased social awareness has led to an increase in green space projects (Costa et al., 2008; Jansson, 2014; Jabbar et al., 2022; Halecki et al., 2023). Furthermore, parks are facilities that help those living in ghettos and with low socioeconomic levels (van den Berg et al., 2016; Jabbar et al., 2022; Jamalishahni et al., 2023; Zawilińska et al., 2023). When the development levels of the regions are compared, the areas with a high number of parks are at the top (Zawilińska et al., 2021). In particular, the 2030 SDGs (Sustainable Development Goals) agenda emphasises that parks should be multipurpose, safe, and accessible for women, kids, the elderly, and those with impairments (Selanon and Chuangchai, 2023; Williams et al., 2020). Furthermore, parks preserve a city's cultural and social legacy (Giedych and Maksymiuk, 2017; Rausell-Köster et al., 2022; Tao and Lin, 2023).

In this study, the NG (Nation Gardens) announced at the development summit in Istanbul, Türkiye's megacity, is considered. The NG project started with a large investment and has gained momentum across the country since 2020. The need arose to compare NG, which has large surface areas in urban centers, with social, environmental, and economic sustainable development criteria. A mixed method was applied in the study. The survey application was carried out from quantitative methods.

Even if they might not know how a park should be constructed or run, visitors offer valuable feedback after seeing in parks (Buteau-Duitschaever et al., 2010; Shuib et al., 2015). With qualitative approaches, conclusions were drawn from the data. In the first part of the study, how park areas are determined, the construction process, and the characteristics of the parks are examined. The second part includes a literature review. In the research section, visitor perception in terms of individual well-being and satisfaction within the scope of the Nation Gardens in Istanbul is evaluated. In the findings and discussion section, conclusions related to NG in regional and urban development are presented. For the future, we can suggest that urban development needs to be (1) coordinated with regional development goals, (2) involve the public in the plans, and (3) new sustainable environmental policies are needed. The results will enable the comparison of the NG, the largest natural area project in Türkiye, with the goals of urban sustainable development.

2. NATURAL ENVIRONMENTS, PARKS, AND GARDENS

Natural environments, such as forests, arable land, and bodies of water, offer numerous benefits to human well-being. Urban green spaces, including parks and gardens, provide opportunities for recreation, fresh air, relaxation, and social interaction. As Lefebvre (2021) suggests, cities are inextricably linked to natural environments, and access to green spaces is essential for a healthy and sustainable urban lifestyle.

Despite sharing common objectives, national parks and urban parks exhibit distinct characteristics. National parks are primarily designated to protect unique natural and cultural heritage sites. These protected areas often contain diverse ecosystems, rare species, and significant historical and cultural landmarks. In contrast, urban parks are designed to serve the recreational and social needs of urban populations (Ministry of Agriculture and Forestry, 2024). Governments create and oversee national parks. Conversely, gardens are made by constructing green spaces in cities that will improve the well-being of the local populace (Uğuryol, 2020). As a result, their design takes into account local requirements. As a concept, gardens are places of intergenerational transition and the transmission of regional cultural characteristics. Factors such as planning, conservation, management of cultural resources and values, visitor management, and management of buildings and facilities are also considered in garden design (Eroğlu, 2022). Gardens are designed according to the characteristics of the area such as climate, vegetation, and green infrastructure (Uğuryol, 2020, Sağlık et al., 2019). Creating a lovely area is typically a garden's primary goal. Gardens are built using artificial or natural materials. Some types include backyard gardens, flower gardens, landscape gardens, greenhouse gardens, or nation gardens. Parks are areas with a lot of green in the public space. Their surface areas can be larger than gardens. Many large urban parks incorporate features such as walking and cycling paths, recreational centers, sports facilities, swimming pools, and playgrounds. Some parks may also include wildlife conservation areas, botanical gardens, or water bodies suitable for various water sports. Additionally, historical monuments, sculptures, and fountains can be found within these green spaces. In some regions, particularly those with colder climates, parks feature winter sports facilities, such as ski slopes (Kungu, 2018).

Extensive research in the fields of psychology, sociology, and physical health has consistently demonstrated the positive impacts of parks and green spaces on human well-being. In densely populated urban areas, parks serve as essential breathing spaces, mitigating the negative effects of sedentary lifestyles and poor diets. Economically, these green spaces can reduce healthcare costs associated with chronic diseases and contribute to environmental sustainability by improving air quality and mitigating climate change.

While the maintenance and development of parks can be costly, their long-term benefits to the environment and economy are significant. Parks contribute to urban culture, individual well-being, public health, social cohesion, economic growth, and tourism. Well-planned parks can enhance property values and attract investment, particularly in disadvantaged areas (D'Acci, 2014). In conclusion, parks play a crucial role in balancing environmental and economic concerns, making them indispensable components of sustainable urban development.

3. LITERATURE REVIEW

Green infrastructure is about achieving sustainable development goals. In today's world, parks are one of the first investments that come to mind in the development projects of governments (Sim, 2020). For this reason, there is an increase in the number of parks in developing countries (de Bon et al., 2009). Parks have economic, social, and health advantages (Hajzeri, 2021; Kelly et al., 2022; Rehman et al., 2023).

The decrease in raw material resources in the world makes circular economy more important. A circular economy is a system that makes waste management easier and permits resources to be transformed or reused (Valencia et al., 2023). Therefore, it's imperative to create green in this areas. Urban agriculture is one of the SDGs, and urban agriculture can be practiced, and urban agriculture can be practiced in parks (Clark and Nicholas, 2013). Sustainable investments such as agriculture contribute to a sustainable economy over time. Green spaces can provide a competitive advantage for a country if they are well-designed and executed with the right strategies (Managi et al., 2005). In this process, qualified employees are needed, and new job types and employment are also contributed (Bank, 2012; Damiani et al., 2016; Molla, 2015). Recreational activities and park café services also generate income (Bergstrom et al., 1990). On the other hand, as the level of access to nature increases, crime rates in the region may decrease (Shepley et al., 2019). Parks are also used as shelters and disaster centers after disasters (Başgün and Bulut, 2023).

Even though both the irrational behaviour approach in behavioural economics and the rational behaviour approach in classical economics are discussed in the literature, there is a common view that parks are a place that increases social welfare (Rehman et al., 2023; Taylor et al., 2018). People feel a physiological need. Green spaces meet this need. Especially public spaces such as parks close to their homes are related to human health (Lee and Maheswaran, 2011; Akpinar, 2016; Schebella et al., 2019). It has been found that people dealing with economic problems reduce their stress by taking a stroll in natural environments such as parks and beaches (Stigsdotter et al., 2010; Taylor et al., 2018). Parks provide the chance to spend free time in a lovely setting (Gómez-Baggethun and Barton, 2013). Research agrees that green spaces positively impact health issues (Cohen et al., 2007; Kabisch et al., 2017; Pauleit et al., 2017; Sadeghian, 2013; Shepley et al., 2019). In this context, it can be said that parks improve the quality of life (Vallés-Planells et al., 2014). Research conducted in the aftermath of the COVID-19 pandemic has also shown that they increase urban resilience (Fagerholm et al., 2022).

Rohde and Kendle (1994) divided the effects of natural areas in cities into five categories (psychological, cognitive, developmental, behavioural, and social). According to these categories, spending time in nature has outcomes such as improving the immune system (Ulrich, 1984), reducing stress levels and headaches (Kaplan, 1973; Kaplan, 1980; Weitzer, 1984), or reducing fatigue and attention deficit (Kaplan, 1995). For example, patients tend to recover faster thanks to hospital beds in rooms with windows facing green space (O'Connor, Davidson, and Gifford, 1991; Ulrich, 1984). Therefore, we can say that people who interact with nature have both physical, psychological, and developmental gains. In addition, it can be said that areas such as parks in the immediate vicinity

reinforce the sense of place, create common values for people, and increase social welfare (Corbett, 2005; Guéguen and Stefan, 2016). As various activities in natural environments provide both physical and mental improvement for people, the demand for green space is also increasing (Hartig et al., 2014).

The basic science of green spaces is the environment. Places like parks support the maintenance of the urban climate and ecosystem (Giyasova, 2021; Herath and Bai, 2024). Trees, vegetation and other living things contribute to environmental waste management, energy saving, and greenhouse gas reduction (Gratani et al., 2016; Herath and Bai, 2024). Parks are livable, calm, and peaceful places as they reduce noise and soil pollution. Parks can filter the air and replenish groundwater. Green spaces can also provide food (Escobedo et al., 2011; Halecki et al., 2023; Kelly et al., 2022; Myalkovsky et al., 2023). It is also one of the best investments to address the problem of recreation in the population. All of these issues are related to the quality of life, human welfare, and the improvement of the socio-economic structure of the region (Myalkovsky et al., 2023).

Ease of access, activities, and size increase the park's value (González et al., 2023; Li et al., 2022). Green spaces are also places to visit for tourists and new visitors. Sometimes they are also used for special purposes such as weddings or flower exhibitions (Rehman et al., 2023). Parks also host unifying activities to increase social capital (Kim et al., 2023; Mowen and Rung, 2016). Ultimately, green spaces will also have macroeconomic consequences, as local sustainability will have global implications. The regional impacts of a park affect the whole world, both environmentally and economically (Cranz and Boland, 2004; González et al., 2023).

4. METHODOLOGY

A mixed-methods research approach was employed in this study. The historical development of Istanbul's gardens was explored, followed by a quantitative analysis of contemporary garden initiatives.

4.1. Study Area

The concept of a garden is defined as "*a product of thousands of years of accumulation of Turkish culture, cultural, geographical, philosophical, religious interactions, and beliefs*". After the proclamation of the republic, there were places where artistic activities, special days such as Labor Day, cinema, and entertainment activities were organized (ÇŞİDB Guide, 2020). Gardens offer a range of features that cater to human needs for recreation, relaxation, and education. Türkiye boasts a rich history of garden culture, with Ottoman gardens serving as prime examples. These opulent gardens, both indoor and outdoor, were meticulously designed to optimize topography, views, and functionality. In addition to aesthetic appeal, Ottoman gardens often incorporated orchards and fruit trees, demonstrating a harmonious blend of horticulture and landscape architecture (Uğuryol, 2020). There were periods in history when gardens stood out. For instance, the so-called Tulip Period of 1718-1730 was productive in respect to fine arts (Özlü, 2021). There are structures in Turkish gardens that are typical of Turkey as well as constructions that have elements of other cultures, including Japan, China, and India (Eldem, 1976). There are gardens in many buildings built during this period. According to source from this era, gardens were constructed in environmentally sensitive areas without causing any harm to the surrounding area (Atasoy, 2005). Gardens of houses, palaces, and pavilions were designed with fountains, pools, and bends. These buildings have significant historical and scientific pieces, such as broad stone feet, fountains with snake-shaped openings, and reliefs (Eldem, 1977). While many of these historic gardens have been lost or significantly altered over time, their enduring legacy can still be seen in contemporary garden design. However, it is evident that modern gardens often diverge from the traditional Ottoman style, reflecting evolving tastes and priorities.

The NG project is a nationwide initiative in Türkiye. It was introduced at the Climate Summit as a significant development project. Their features are different from those of the gardens in Istanbul's past. NGs vary in size and design, differing from traditional Turkish gardens. While the term "garden" might not be entirely accurate, it aligns with broader discourses of nationhood and public space in Turkish politics (Yücebaş and Yücebaş, 2022). This project aims to create aesthetic, ecological, sustainable, and reactive open spaces in cities, have high-quality urban life, and provide a transferable cultural landscape identity (ÇŞİDB Guide, 2020). It is also planned to be a place to unite the public in case of disaster.

The number of Nation Gardens opened in Türkiye is 237 and 275 in ongoing projects. An estimated $10.4 billion has been allocated for the gardens (Evrensel, 2022). Selected locations are at least 15 thousand square meters. Usually, these areas are in public ownership. Parks are built in or near the city center. It is stated that technical issues such as geological structure, soil depth, erosion, suitability for climatic conditions, and infrastructure features (water, natural gas, sewage, etc.) are at the forefront when selecting the area.

It was declared that the park was built to preserve cultural heritage features and historical buildings. It is stated that the park's design appeals to all segments and all age groups is functional and ergonomic, has soft grounds, and has buildings such as entertainment, resting, eating, and drinking. According to the Nation Garden Guide, different types of afforestation and flowering are carried out. In garden design, different designs such as thematic gardens (scent garden, colour garden, medical garden, aromatic garden, local garden, Turkish garden, techno-garden, topiary garden, rose gardens, sensory gardens, water garden, art garden, reflection garden, plant collection garden, exhibition garden, botanical garden, arboretum) are used. Solar energy panels are used for park lighting, while there are special parking areas due to the increase in electric vehicles. Solar energy panels are used for park lighting, while special parking areas are provided for electric vehicles. Some have groves, orchards, gardens, orchards, ponds, water show pools, ornamental pools, playgrounds, sports fields, mosques or masjids, health information units, natural gas barbecues, and observation towers. Often parks have walking paths, picnic and festival areas, parking lots, amphitheaters, and dining facilities. The guidebook states that there will be shelters and food bowls for stray animals. Pollinator Houses It is thought to increase biodiversity by creating habitats for pollinator insects. Electric vehicles also provide transportation for the disabled and elderly in the park area. Security is provided by security guards assigned to the gardens and smart security systems. Regarding access within the park, it is stated that the design is made in line with "*Law No. 5378 on Persons with Disabilities*" and the "Accessibility Monitoring and Supervision Regulation" for disadvantaged people such as disabled, elderly, and pregnant women. In addition, it is stated that smoking may be prohibited in parking areas, and there may be special smoking cabins. In terms of health, it is emphasised that studies on obesity and chronic diseases can be carried out. It is also explained that there may be drinkable, clean, and free water dispensers at the borders of the garden (ÇŞİDB Guide, 2020).

Figure 1. Sample NG Design (Esenler 15 Temmuz Nation Garden)

Source: (ÇŞİDB Guide, 2020).

As of the end of 2023, 15 of the planned 43 Nation Gardens (NG) projects in Istanbul have been inaugurated. These NGs vary in size and feature diverse amenities. These are Bakırköy Baruthane, Esenler 15 Temmuz, Hoşdere, Zeytinburnu Çırpıcı, Başakşehir, Kayaşehir, Üsküdar Nakkaştepe, Küçükçekmece, Ayazma, Pendik, Yıldız Technical University, Ümraniye and Gaziosmanpaşa Nation Garden. Başakşehir has a self-cleaning biological pond of 15,600 square meters, a café, a coffee house type of Turkish, and a reading room. A gymnasium for 15 thousand people and a semi-Olympic pool are also being built. A mosque for 2,500 people surrounded by water was built in Hoşdere. Ayazma has a library and viewing areas, and Nakkaştepe has an adventure park, archery range, and flying road. There is a platform for exhibitions, festivals, and concerts in Kayaşehir, a science workshop in Zeytinburnu, and an amphitheater in Pendik. Other NGs offer unique features such as libraries, adventure parks, and cultural performance spaces.

Figure 2. View from NG (a) Başakşehir NG (b) Nakkaştepe NG (c) Ümraniye NG (d) Kayaşehir NG

Source: (ÇŞİDB Guide, trthaber.com; yasemin.com, 2024).

4.2. Participatory Questionnaire Survey and Analysis

This study utilized a mixed-methods research approach, combining quantitative and qualitative research techniques. Sometimes the findings of a study may create contradictions for evaluation. Such a mixed-methods design allows for a comprehensive understanding of the research problem. Quantitative data can provide a broader perspective and facilitate generalization of findings (Hesse-Biber, 2010). However, qualitative data can be used to delve deeper into the underlying meanings and experiences of participants. By triangulating data from both quantitative and qualitative sources, researchers can enhance the validity and reliability of their findings (Creswell, 2014).

The data consists of both secondary and primary data. Secondary data consists of self-reported information about the NG. Primary data was collected through a survey among NG visitors. It is simple to use surveys to reach big audiences and to base research on enormous cohorts.

After the research questions were prepared, a pilot study was conducted with ten people. Questions, answers, and sentence structure were reviewed. The questionnaire was applied by snowball method. The snowball method is preferred when it is difficult to reach the population. It is also a method that is thought to provide rich data (Creswell and Clark, 2017; Patton, 2005). It is also easy to initiate research and gives access to new contacts (Denzin, 2008).

The research received approval the Maltepe University Ethics Committee (decision No. 2023/12-11 dated 06.08.2023). The survey was administered between August 1, 2023, and April 1, 2024. 390 participants responded to the survey. The questionnaire form was sent to the participants via online intermediaries. The categories are basic demographic information, physical characteristics of the NG, activities, safety characteristics, and well-being characteristics (Figure 3). Many variables were considered to assess the relationship between NG and visitors. Basic questions such as frequency of visits to the parks, mode of transportation, time spent in the park, and purpose of the visits were asked to reveal the factors that led to the choice of these gardens. To identify physical benefits, "*physical activity*" was defined with expressions such as "*sport* or ", "*walking*", "*cycling*", and "*playing basketball/volleyball*". Questions were asked about the reliability of the parks. To elicit individual emotion, questions were asked to express the feeling experienced between peace and anxiety. The participants were asked to write down if they had a different opinion with various options and the other option.

SPSS 23 was used for statistical analysis. Since the questionnaire responses were not normally distributed, nonparametric analysis methods were applied. Spearman correlation test was applied to determine the relationship between the questions determining demographic characteristics and other questions. Correlation and simple regressions were used to evaluate the interactions between variables.

Categories	Properties
Physical properties	Accessibility
	Buildings (benches, seating, health booths, cafes, etc.)
	Maintenance and cleaning
	Lighting
	Types of physical activity
	Landscape
	Ergonomics and safety
Activity Properties	Weekday-weekend and day-night use
	Seasonal availability of parks
	Variety of activities
	Suitability for disabled people

	Fitness for purpose (walking, sports, picnics, etc.)
Welfare properties	Sport
	Apprehension
	Tranquility
	Calmness
	The need to socialize
	Spending time with family
	Recreation and leisure
Safety Properties	Access to security officers
	Access to healthcare
	Hygiene conditions
	Ergonomic suitability

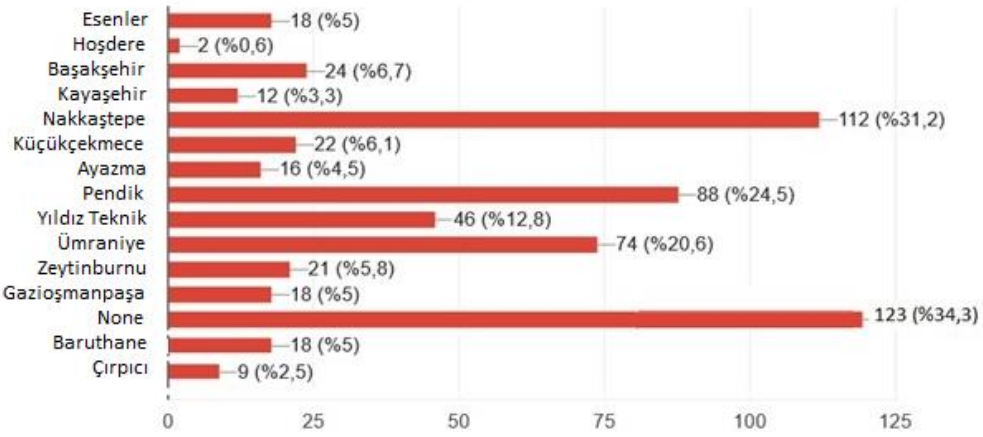
Figure 3. Factors for Choosing the Nation Garden

133 respondents stated that they had not visited any NG before. Since 5 questionnaires were incompletely answered, statistical analyses were made on 252 questionnaires. The survey statistics were analysed with Cronbach's α effective reliability analysis. The reliability coefficient value was tested as 0.69. In social sciences, Cronbach's alpha is equal to or greater than 0.60, and less than 0.80 is reliable (Kalaycı, 2018; Zhang et al., 2023).

4.3. Findings

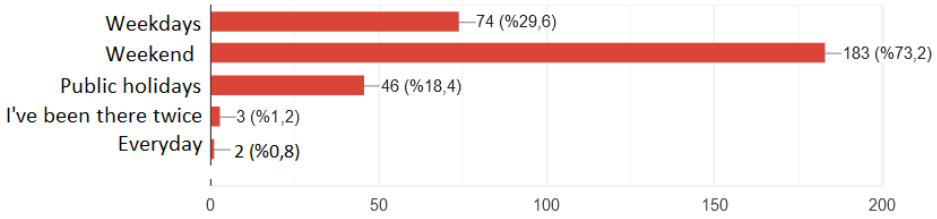
36.1% of the participants are in the age range of 16-24, 50.4% 25-49, 11.4% 50-64, 2.1% 65 and over. 58.9% of the participants were female and 41.1% were male. 88.6 % of the participants have a university education, 9.9 % have a high school education, and 1.6 % have secondary and primary school education. 17.6% of the participants work in different jobs or have a workplace. 39.4 % of the participants are unemployed, 40.5 % are students, and 2.8 % are housewives. 63.4 % of the participants have children, 8.9 % are married and have no children. 27.7 % are single. 80.8 % of the participants do not have allergy problems that prevent them from going to the park. 54% of the participants said they visited the NG in summer, 27.6% in spring, 5.6% in fall, 0.4% in winter and 12.4% in all seasons. 57.6% of the participants stated that NG is suitable for all seasons, and 42.4% stated that it is not suitable for all seasons. 58.7% of the participants visit the NG on weekends, 33.5% on weekdays, and 8.7% on holidays or days off. To go to the NG, 56.2% of the respondents prefer their vehicle, 43.4% prefer transportation (bus, metro, tram, ferry, minibus, taxi) and 11.6% prefer walking. The most common activities in NG were walking (71.8%), getting fresh air (7.1%), socializing (7.1%) and picnics (6%). Regarding the duration of the visit, 54.4% of the participants spend 3-5 hours, 39,3% spend 1-2 hours, and 6.3% spend more than 5 hours in the park. For disadvantaged individuals (people with disabilities or special needs), 36.5% of the participants think the parks are suitable, 27.8% think that they are not suitable and 35.7% have no opinion. Some of the questions included multiple choice options. In this way, it was assumed that more information about the use of NGs could be obtained.

Table 1. Most Frequently Visited NG



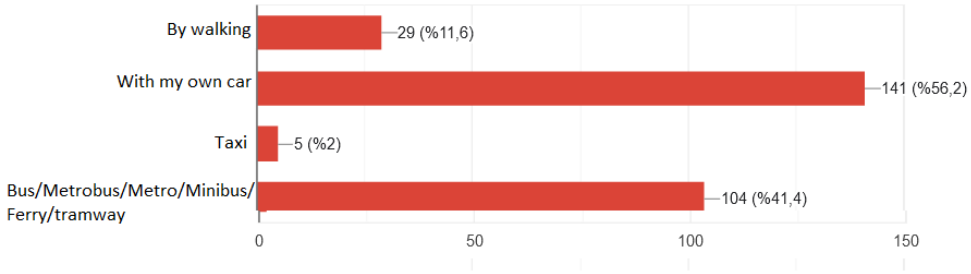
The survey included multiple-choice questions to assess visitor preferences. Results indicate that Nakkaştepe NG was the most popular among respondents, attracting 31.2% of visitors. A key factor contributing to its popularity is the panoramic view of the Istanbul Strait. There is also a survivor area for children. However, the park's hilly terrain presents accessibility challenges for young children, the elderly, and individuals with disabilities.

Table 2. Periods of NG Visitation



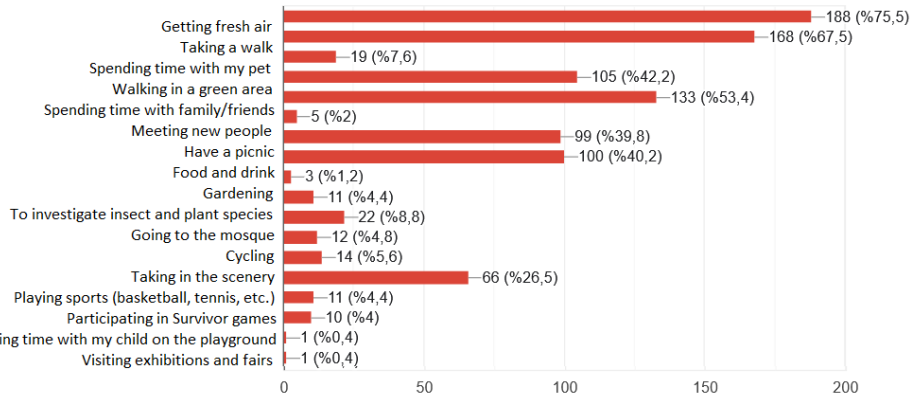
As can be seen, 73.2% of the visits take place on weekends. The rate of visiting the NG on weekdays is 29.6%.

Table 3. Options for Accessing NGs



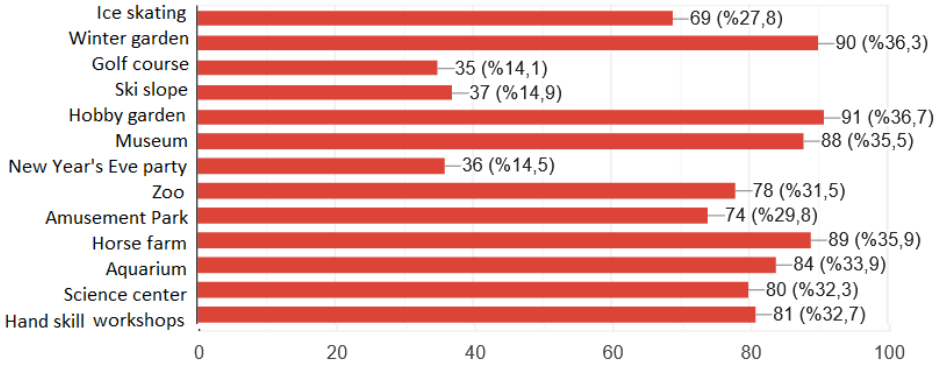
The majority of visits are made by private cars, motorcycles, or bicycles. The number of people traveling on foot is 11.6%.

Table 4. Activities in NGs



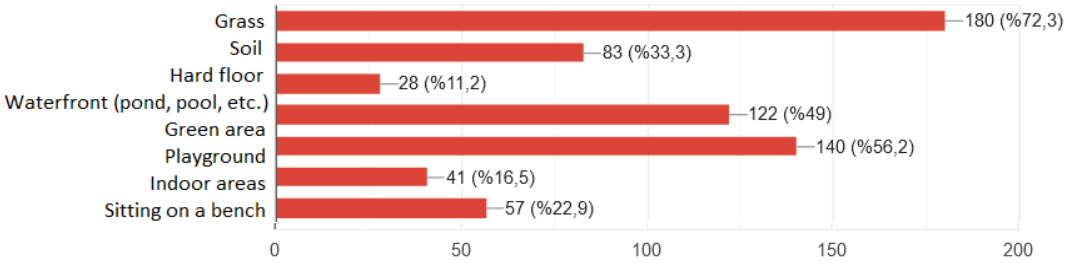
Among the purposes of the visits, 75.5% were to get fresh air and 67.5% to walk (multiple choice). Activities such as playing sports, reading books, and studying are much less common.

Table 5. Types of activities in NG



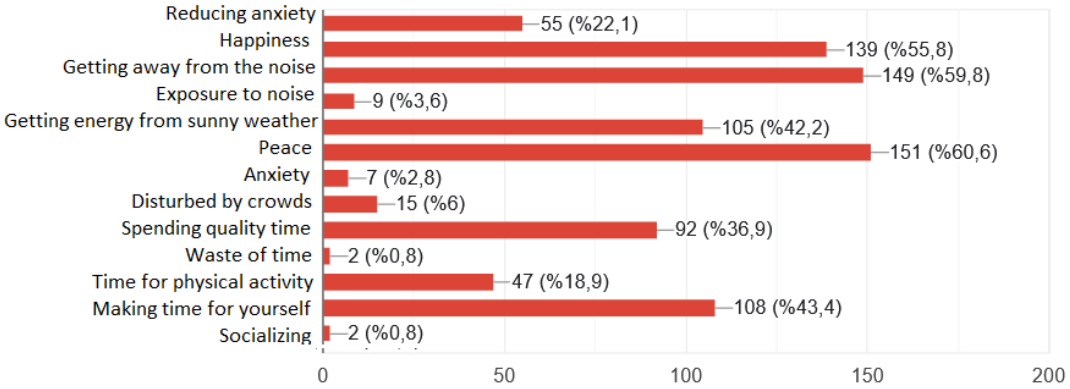
When asked about desired activities within NGs, respondents expressed a strong preference for hobby gardens 36.7%, winter gardens 36.3%, museums 35.5%, horse farms 35.9%, aquariums 33.9%, and science center's 32.3%. Conversely, golf courses and New Year's party venues were the least popular options.

Table 6. Preferred Areas in NG



It is understood that the most preferred area for NG visits is the grass area, with 72.3%, and the least preferred area is asphalt/hard ground, with 11.2%.

Table 7. Psychological Expression of Going to NGs



When we look at the participants' opinions about NG, 60.6% stated that they felt peaceful, 59.8% stated that they got away from the noise, 55.8% said that NG gave them happiness, and 43.4% said that it gave them time for themselves.

Table 8. Correlation Analysis

Variable	*n*	*mean*	*SS.*	*1*	*2*	*3*	*4*
1. Activity Properties	252	.9497	1.78829		.342***		.226***
2. Welfare Properties	252	1.2447	1.12660	.342***		.451***	.278***
3. Safety Properties	252	2.2093	.50108		.451***		.548***
4. Physical Properties	252	1,6242	.44998	.226***	.278***	.548***	

p< .05 **p< .01 *<.001*

According to Spearman's rank correlation coefficient analysis, there was a positive significant relationship between the safety and physical features of the parks ($r_{Spearman}$ correlation = .548, p < .001). It showed that there was a positive relationship between the safety features of the parks and the well-being experience of the time spent in the park ($r_{Spearman}$ correlation = .451, p < .001). There was a positive relationship between activities in the park and well-being experience ($r_{Spearman}$ correlation = .342, p < .001). Finally, there was also a positive relationship between the park's activities and the parks' physical characteristics ($r_{Spearman}$ correlation = .226, p < .001.).

Table 9. Kruskal Wallis H-Test Results

	Level of income	N	Mean ranks
Safety Properties	1000-5000	8	72.44
	5001-10000	14	174.29
	10001-15000	27	128.98
	15001-20000	49	122.02
	20001- plus	154	125.95
Physical Properties	1000-5000	8	59.06
	5001-10000	14	148.79
	10001-15000	27	134.67
	15001-20000	49	128.87
	20001- plus	154	125.79
Safety Properties 0,028 < 0.05 and Physical Properties 0.072 < 0.05			
Gender			
Safety Properties	Woman	148	134.92
	Man	104	114.52

Safety Properties 0.027 < 0.05			
Family structure			
Welfare Properties	family with child	160	129.88
	Childless family	18	155.28
	Single	74	112.20
Welfare Properties 0.044 < 0.05			

According to the Kruskal Wallis H-Test results, there is a difference between income level, security, and physical characteristics. When the mean rank values are analysed, those with an income below 5000 differ from the others. According to the test results, those who are single differ from the others.

Table 10. The Impact of Welfare Impact Determinants On Activity Preferences and Security Determinants

Independent variable	B	Std. error	β	F	R^2	t	p	CI
Fixed	-.645	.303		23.288	.210	-2.127		
Activity Properties	.176	.039	.280			4.537	0.00	2.199
Safety Properties	.719	.150	.320			4.786	0.00	10.103

CI = Condition Index

In the study, regression analysis was conducted to examine the effect of well-being characteristics experienced by park-going participants during the park experience on activity, safety, and physical characteristics. It is statistically significant since the P value is less than 0.05 (0.00). Therefore, in the regression analysis, it was understood that the well-being elements had a significant and positive effect on the activity characteristics and safety characteristics (R^2= .210; p< .001). In the model, there is a partial correlation of 28% between well-being and activity characteristics and 32% between safety characteristics. Accordingly, a one-unit increase in the activity of NG visitors leads to a 0.28-unit increase in the well-being effect. A one-unit increase in the safety characteristics of NG visitors leads to a 0.32-unit increase in the welfare effect.

5. DISCUSSION

Urban green spaces, such as the NG (Nation Gardens) project in Istanbul, offer valuable recreational opportunities for diverse populations, regardless of age or socioeconomic status. These spaces are particularly important in densely populated urban areas, providing respite from the stresses of city life. Numerous studies have demonstrated the positive impacts of spending time in nature, including improved physical and mental health (Fernandes et al., 2023; Kim and Coseo, 2018; Kim et al., 2023). Green spaces also facilitate social interaction, community building, and quality time with loved ones (Haredy, 2019; Vella-Brodrick and Gilowska, 2022). Beyond individual benefits, urban green spaces play a crucial role in environmental sustainability. They help mitigate the impacts of climate change, such as air pollution and temperature differences (Clarck and Nicholas, 2013; Herath and Bai, 2024; Kelly et al., 2022; Kim and Coseo, 2018; Kim et al., 2023; Shepley et al., 2019). Moreover, the scarcity of pedestrian-friendly spaces in urban environments underscores the importance of well-designed parks and greenways. These spaces provide essential opportunities for physical activity, social interaction, and mental rejuvenation.

Show the importance and impact of parks on daily life. However, one of the limitations of the research is that it is within the scope of the NG completed in Istanbul. Other parks and gardens in

Istanbul were not included in the study. Comparisons are made between the explanations of NGs and finished NG projects, leading to certain conclusions. In addition, Istanbul was the site of a survey. A total of 133 participants (33.6%) reported that they had never visited an NG prior. There may be many reasons for this. It is understood from some of the questionnaire returns that the reason for not visiting the parks consists of prejudices such as politics and the fact that they are built by the public. It can also be said that some people do not like visiting parks. However, not going to the NG affects the level of utilization of parks. Future research could also include a study on the reasons for not visiting the Nation Garden.

Istanbul is the city with the largest area and population in Türkiye. Therefore, the number of NGs is higher than in other cities. There is generally no spatial similarity in the locations of NGs. Some are by the sea; some are in mountainous areas. Some are in neighborhoods, and some are further away from residential areas. According to research, parks overlooking the sea and bridges have more visitors than others. Results from research conducted in other provinces can differ.

In generally, the current survey results show that visitors are satisfied with the time spent in the NG. 81.6% of the respondents said they visit NG in the summer, but 57.6% think that NG can be used in all four seasons. Winter in Istanbul is usually harsh, cold, and rainy. In such cases, more indoor space is needed to utilize the NG. However, existing gardens are mostly designed for spending time in spring and summer. Time spent in parks is usually 3-5 hours (54%) or 1-2 hours (38.8%). It is understood that they usually use parks to get fresh air (75.5%), to take a walk (67.5%), and to spend time with family or friends (53.4%). The presence of an orchard, hobby, or activity area in only a few NGs makes it difficult to use these features frequently. When asked what they would like to see in the NG, hobby garden (36.7%), winter garden (36.6%), horse (pony) farm (35.9%), and museum (35.1%) were the most preferred options. Golf courses and Christmas parties were the least popular choice. The neighborhoods, or cultural traits of the areas where the parks are situated could be the cause of this. Participants demand to spend time in NGs even in cold weather, as seen by their choice for the winter garden. Accessibility of parks is valuable in terms of distance and time cost. People are thought to spend their leisure time in parks that are closer or easily accessible (Penedo and Dahn, 2005). In this study, it was observed that people generally reached the parks by their vehicles (56.4%). While 41.4% of the respondents used transportation cars, only 11.6% walked. Despite the continuous increase in the number of parks, it is understood that accessibility in the living area is less. However, it should also be considered that if the research had been conducted among people in a park, the rate of those who accessed the park "on foot" might have been higher.

In the questions related to individual well-being characteristics, participants stated that they felt most peaceful (60.6%) and that it was good to get away from the noise (59.8%). They also stated that the time spent in the park was a source of happiness and that they did something for themselves. These responses confirm the positive effects of green spaces on people. Correlation and regression analyses show that there is a positive relationship between these feelings and the perception of security in parks. The absence of security problems was associated with an increase in feelings of peace and happiness. In addition, an increase in activities in the park is also associated with an increase in psychological satisfaction. Therefore, increasing the activity areas in the parks will increase the satisfaction of utilizing the parks. According to the Kruskal-Wallis H-Test results, it is understood that visitors with low-income status attach less importance to the security features and physical features of the parks than others. The effect of NG on the well-being of single people is less than others. On the other hand, women are more cautious about the safety of parks than men.

As is evident from the poll results, park visitors to the NGs are largely happy with the features of parks. The idea that green spaces are crucial for people living in urban areas is supported by these findings. On the other hand, these parks' sustainability cannot currently be discussed. The most NGs have just opened. Some of them are still unfinished. $10.4 billion has been invested on these parks, which is a significant sum. Even while most parks are attractive to visitors, many still lack sufficient green space. Furthermore, parks are insufficient for use throughout the year. For the parks to using continuous, indoor recreational areas are necessary, particularly during Istanbul's severe winter months. Also, the accumulation of snow and ice on the park's walking areas can pose a risk to park visitors. There is a parking lot in almost the entire NG. Some even have an electric charging area. However, the parking lots cover a lot of space. The necessity of these spaces may also be a matter of debate.

The Nation Gardens (NG) project was conceived as a significant national initiative aimed at environmental sustainability and development. While detailed design plans have been outlined, variations in the actual implementation of these plans can be observed across different NGs. The long-term sustainability of these large-scale projects hinges on factors such as resource efficiency, environmental impact mitigation, and social equity. Neglecting these factors, particularly in the case of extensive parks, may compromise their long-term viability and limit their potential benefits. Vacant urban spaces can lead to a variety of economic and social problems, particularly in tourism-dependent cities. Central Park in New York City serves as a prime example of a successful urban green space. Established in 1876, this expansive park offers numerous recreational opportunities, including sports facilities, cultural events, and natural areas (Taylor, 1999). It has become an iconic symbol of the city, attracting visitors from around the world and contributing to the local economy.

When looking at Istanbul's history reveals that the gardens contain significant cultural and artistic opus (Eldem, 1977). In contrast, while the NG project in Istanbul aims to create green spaces, it lacks a clear cultural or historical significance. (Wolch et al., 2014). The sustainability of these large-scale projects, particularly in terms of long-term maintenance and economic viability, remains a concern. Furthermore, the potential gentrification effects of such projects, especially in rural areas, should be carefully considered. By focusing on the preservation and restoration of existing historical gardens and parks, cities can leverage their cultural heritage and create unique urban spaces. Such an approach can also contribute to sustainable urban development and enhance the overall quality of life for residents.

The study also highlights the need for further research into the energy consumption and waste management practices within NGs. While the projects have made significant investments, it is essential to consider long-term sustainability and cost-effectiveness. Implementing energy-efficient measures and effective waste management strategies can help reduce costs and minimize environmental impact. Furthermore, educational initiatives promoting sustainable practices, such as recycling and waste reduction, can enhance the overall sustainability of NGs (Umunnakwe and Azubuine, 2021). The long-term sustainability of these parks hinges on effective cost management. Municipalities will incur ongoing expenses for maintenance, which may become burdensome during economic downturns. Implementing cost-saving strategies, such as sustainable landscaping practices and efficient energy use, is crucial to ensure the long-term viability of these green spaces.

Ethical Statement

Ethics committee approval dated 06.08.2023 was obtained from Maltepe University Ethics Committee to conduct the research.

Contribution Rate Statement

Only the author contributed to all processes from the writing of the study to the final reading and approval of the final version.

Conflict Statement

There were no conflicts of interest resulting from this investigation for either individuals or institutions/organizations.

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Extended Abstract

Assessing the Role of Nation Gardens in Sustainable Local Economic Development: A Study of Türkiye's Green Space Policies

The rapid urbanization of cities has led to a decline in green spaces, resulting in reduced opportunities for outdoor activities. This trend has significant implications for public health, as indoor confinement can negative impact to physical and mental health issues (Akalp et al., 2021; Barbieri and Mercado, 2022). Conversely, spending time in nature has been linked to numerous benefits, including improved physical and mental well-being and stronger social bonds (Kim, 2018; Kim and Coseo, 2018; Kim and Miller, 2019). In response to these challenges, urban green spaces, such as parks, have become increasingly important. While traditional economic assessments of green spaces often focus on their local economic impact (Chiesura, 2004), a broader perspective is necessary to account for their social, environmental, and economic benefits. Sustainable urban development requires a holistic approach that considers the interplay between human activities and natural systems.

This study examines the NG project in Istanbul, a large-scale urban greening initiative. By employing a mixed-methods research approach, the study assesses the extent to which the NG project aligns with the principles of sustainable development. The findings of this study provide valuable insights into the role of green spaces in urban environments, specifically focusing on the NG project in Istanbul. At the time of the research, 15 NGs were in operation in Istanbul. The analysis indicates that NGs, generally situated in urban centers, are popular among residents, particularly families with children. Visitors primarily utilize these spaces for relaxation, leisure activities, and social interactions. While the parks are generally perceived as safe and clean, accessibility issues for individuals with disabilities remain a concern. Additionally, the absence of health facilities and security personnel in some parks may limit their potential. According to the responses of the participants, visitors are generally satisfied with the construction of many new parks. There is not much indoor space in the parks. Visitors usually visit the parks during the day and on weekends. Generally, the time spent in the park is 3-5 hours. The majority of NG visitors are between the ages of 25-49. There are more women visitors than men. Families with children prefer to go to parks more than others. Most time is spent on grass areas in parks. Generally, visitors go to NGs to get fresh air and take a walk. They stated that they feel peaceful in the park and get away from the noise. There is no concern about the safety of the parks. Visitors think that NGs are safe, clean and suitable for everyone. However, some parks are not suitable for people with disabilities and do not have a health unit or a security unit. Correlation analyses show that there is a positive relationship between parks' safety features, physical features and well-being experience. Likewise, there is a positive correlation between the activities in the parks and the physical characteristics of the parks. T-test results show that income level and marital status are different between the security and physical features of NG.

The NGs are designed to be accessible year-round, offering recreational opportunities throughout the seasons. However, the current design and management of these parks lack diversity and engagement. While the parks provide basic amenities, they often lack additional features, such as workshops, hobby gardens, or cultural events, that could enhance the visitor experience. Additionally, concerns have been raised regarding the sustainability of these large-scale projects, particularly in terms of long-term maintenance and operational costs. To ensure the future viability of NGs, it is crucial to implement strategies for waste management, energy efficiency, and public health and safety.

As a result, The NG project, as a large-scale urban greening initiative, carries significant responsibilities for environmental sustainability. To ensure the long-term viability of these spaces, it is essential to adopt sustainable practices, such as water conservation, energy efficiency, and waste reduction. The integration of renewable energy sources, such as solar and wind power, can further enhance the environmental performance of NGs. By prioritizing sustainability, these projects can contribute to a greener and more resilient urban environment.