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Research Article

## Cairo's Green Spaces Between Public Appreciation and the Threat of Official Trivialisation

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### Abstract

The importance of green spaces is well-recognised in many cities around the world for their contribution to enhancing people's quality of life. Unfortunately, in Cairo, they are not viewed similarly by the responsible authorities, resulting in the removal of several green spaces and the deterioration of many others. This article examines public perceptions of green spaces and public parks through an online questionnaire. The main finding of the questionnaire is that the public values green spaces and public parks, contrary to the official policies. Visits to public parks were found to be an infrequent activity in Cairo. The main reason is the deterioration of their condition, among other accessibility barriers. The questionnaire showed that specific parks in Cairo are liked because of the high level of their upkeep. It indicated that the public is interested in community participation, which can benefit in enhancing and protecting green spaces. The findings highlight a clear disconnect between official urban development practices and residents' environmental priorities, emphasising the role of governance and management in shaping access to, and perceptions of, urban green spaces. Addressing this gap is essential for promoting more inclusive, sustainable, and publicly supported urban development strategies in Cairo. Public officials in the city need to realise that their approach to the city's green spaces does not meet the aspirations and expectations of the public. Green spaces need to be reconsidered as priorities for Cairo to stop the removal of more green spaces and enhance the quality of existing ones.

**Keywords:** Green space value; Urban development; Equal access; Public involvement; Leisure

### Highlights

- The public in Cairo values green spaces, contrary to the official neglect and continuous removal.
- Parks in Cairo have low visitation rates due to poor upkeep, distribution, and accessibility.
- Cairo's residents show a strong willingness to protect and enhance green spaces.

## 1 Introduction

Green spaces are landscaped open spaces in cities that are primarily characterised by vegetation (Evert et al., 2010, pp. 282 and 778; Farinha-Marques, Lameiras, Fernandes, Silva, & Guilherme, 2011; Swanwick, Dunnett, & Woolley, 2003). These spaces provide multiple environmental, sociocultural and economic benefits to people (Aly & Dimitrijevic, 2021; Bolliger & Kienast, 2010; de Groot, Alkemade, Braat, Hein, & Willemsen, 2010; Haq, 2011; Lee, Jordan, & Horsley, 2015). In Cairo, green spaces are limited and poorly distributed. The individual share of green spaces in Cairo is only 0.74 m<sup>2</sup>, significantly below international recommendations, such as the 9 m<sup>2</sup>/individual suggested by the World Health Organisation. Nearly one-third of Cairo's residents live in districts with more than 3 m<sup>2</sup> per individual of green spaces, while approximately 66% of the population live in districts with less than 0.5 m<sup>2</sup>. All districts that enjoy more green spaces are predominantly inhabited by higher-income residents. (Aly & Dimitrijevic, 2022a). Inequalities in urban green space distribution result in unequal access to their associated benefits. This creates an environmental justice issue because underprivileged communities are disproportionately deprived of the quality of life enjoyed by wealthier populations (Lee et al., 2015; Wolch, Byrne, & Newell, 2014).

Despite this significant shortage and unequal distribution, green spaces in Cairo are not given proper protection. Public authorities often fail to recognise their importance and value, which is evident in their urban development approach, achieved at the expense of many existing green spaces. Green spaces are rapidly being invaded by commercial activities and infrastructure projects (Al-Messiri, 2004; Aly & Dimitrijevic, 2022a; Al-Zamley, 2006). Commercialisation and commodification are increasingly pressuring public and green spaces worldwide, leading to more spaces being partially or entirely privatised. Profit-driven practices are now applied to spaces that were previously appreciated for their broader social and environmental values. Profit becomes more important than supporting environmental quality and enhancing human well-being. Spaces within this model are often homogenised, lack character and identity, and favour surveillance over the spontaneity and vibrancy of non-commercial uses. Prioritising commercial uses also raises issues of spatial injustice, where resources could be directed to develop spaces that pose more commercial value while excluding lower-income and marginalised groups (Carmona, Magalhães, & Hammond, 2008; Chan, 2020; Levinson & Pfister, 2014).

Moreover, existing green spaces and public parks in Cairo suffer serious deterioration due to inadequate management practices (Aly & Dimitrijevic, 2024). It is well documented that users perceive public space quality as more tied to its management than design. Deteriorated spaces reflect neglect and isolation, causing feelings of insecurity, while a well-kept space sustains quality and attracts more users, reaching its full potential (Carmona & Magalhães, 2006; Collomb, 2015; Dempsey & Burton, 2012). Management challenges are common in many countries where public and green space managers operate within very limited resources, face cuts in budgets, and lose skilled workers (Carmona et al., 2008; Collomb, 2015; Dempsey & Burton, 2012; Hawthorn, Kirik, & Eagles, 2002). Accordingly, management not only influences the physical condition of a green space, but it also shapes the public experience and perception of quality. Shortcomings in management practices intensify concerns about the long-term sustainability and future of green spaces. Continuous deterioration and weak management also raise accountability concerns and question residents' role in green spaces. Public participation is crucial in reflecting community needs, which contributes to greater stewardship, a stronger sense of ownership, and increasing trust in the governance process. When communities are more involved in the governance process, green spaces are less likely to be neglected or vandalised, and more likely to be used, protected and sustained (Shackleton & Njwaxu, 2021).

In the context of Cairo's rapid urban transformation, which amplified the issues related to green spaces, it is crucial to examine how residents perceive these issues and measure how their expectations align with the ongoing development approach. Understanding public perception is also a crucial step toward developing more inclusive and sustainable development policies, especially with the limited

opportunities Cairo's residents have for public participation. This article aims to explore the public attitude towards the city's green spaces and how it resonates with the current changes. It contributes empirical evidence on the use and perceived value of green spaces, offering insights that challenge the dominant official development priorities and highlighting the urgency for more inclusive and community-centred policies.

## 2 Methodology

An online questionnaire was used to investigate the attitudes and opinions of the public about the green spaces and public parks in Cairo. It is divided into five sections to cover a variety of aspects: 1) general information, 2) opinions about green spaces in Cairo, 3) the use of public parks, 4) preference and quality, and 5) participation. Questions were asked about people's opinions regarding the current situation of the quantity, quality and distribution of green spaces in Cairo, and the current approach to urban development and its effect on green spaces. Participants were asked about their perception of the value of green spaces and what they consider important to have in parks. They were asked about the usage patterns of public parks and their favourite parks in Cairo. Finally, their willingness to be more actively involved in protecting and enhancing the green spaces in the city was examined.

The researcher derived the questions using two main frameworks: the public park system and the sustainable park management framework, adapted from Aly & Dimitrijevic (2021, 2022b). The questionnaire went through several revisions and peer consultations. Five colleagues from an architecture and urban planning background provided initial feedback on the questionnaire, in addition to testing it with Strathclyde architecture department PhD students, receiving 11 test responses. Two colleagues from other fields also revised the questionnaire to make sure that people who are not familiar with the topic will understand the questions well. It was then translated into Arabic and revised by one colleague with an architecture and urban planning background and three others outside of the field.

Social media platforms were used to distribute the questionnaire. The researcher employed her personal Facebook and LinkedIn accounts to post information about the questionnaire. A wider distribution was achieved by sharing the questionnaire on existing Facebook groups for each of Cairo's districts. Each district has more than one group that is created by its residents. The link was also shared on other general groups and pages (not district-affiliated). A total of 538 responses were received between November 2020 and May 2021. Two responses were omitted because the responders mentioned living outside of Egypt. There were 500 responses from the Greater Cairo Region (GCR) and 396 from Cairo Governorate alone. However, the distribution of the responses is not equal between the districts because most of the responses were from Nasr City and New Cairo districts. More details about the questionnaire participants are provided as supplementary material.

"No responses" and limited accessibility to all subjects are known limitations of online questionnaires (Jones, Baxter and Khanduja, 2013). There was a lower completion rate relative to the number of times the questionnaire was accessed online. The interaction coming from groups and pages was not similar, resulting in many incomplete responses that were omitted. Other researchers like Keleg, Watson and Salheen (2021) identified similar patterns. Reasons for the difference in responses between the different groups can be related to the difference in the existing level of interactions of the users with these Facebook groups and pages. In addition, there are differences between the residents of the districts in their interests, economic and awareness levels, which could have affected their judgment about the relevance of the topic to their daily concerns. However, sharing the questionnaire on social media platforms created a chain that allowed it to reach more people with an acceptable variety. For example, it was re-shared on Facebook by 218 people. The limitations related to the distribution between the districts and the concentration of the answers within districts among middle- and higher-income groups are acknowledged and taken into consideration in the analysis.

The analysis of the questionnaires was approached quantitatively using descriptive statistics and qualitatively using thematic analysis. Both “numerical” and “graphical” categories of descriptive statistics (Given, 2008) were used in the research. The data were organised and analysed in IBM SPSS, and thematic analysis was used to determine patterns in the collected data (Kiger & Varpio, 2020). The main results are represented in tables and figures in the following section, while additional tables and figures are provided in the supplementary materials document.

Ethical approvals were granted by the University of Strathclyde Ethics Committee. An information sheet was added at the beginning of the questionnaire, ensuring that participation is voluntary and requesting informed consent. It included information about the research purpose, how the collected data would be handled and indicated that the research does not bear any potential risks.

### 3 Results

#### 3.1 How are green spaces and public parks perceived in Cairo

There is a general agreement that Cairo’s green spaces are inadequate, have poor quality, are not well distributed between the city’s districts, and its public parks are not well-managed (Table 1). 4 out of 5 participants agree that Cairo's green spaces are insufficient. Just below ¼ of the participants do not believe that green spaces in Cairo have high quality. The vast majority of the participants (around 89%) realise the inequality in the distribution of green spaces in Cairo. When asked specifically about public parks, similar discontent was expressed, around 70% of the participants believe that Cairo’s public parks are not well-managed.

Table 1: Opinions about green spaces quantity, quality and distribution in Cairo.

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Total
<i>Cairo, in general, has a sufficient quantity of green spaces</i>						
Frequency	177	252	31	48	28	536
%	33%	47%	6%	9%	5%	
<i>Cairo, in general, has high-quality green spaces</i>						
Frequency	143	245	70	69	9	536
%	27%	46%	13%	13%	2%	
<i>The distribution of green spaces between districts in Cairo is equal</i>						
Frequency	245	230	47	9	5	536
%	46%	43%	9%	1%	2%	
<i>Public parks in Cairo are well-managed</i>						
Frequency	109	264	123	36	4	536
%	20%	49%	23%	7%	1%	

Despite the variation in the participants' numbers from different areas inside the GCR and outside, the average of the responses in each area showed a slight difference in opinions when the respondents were asked about the specific districts where they live. Only respondents living in new communities in Cairo Governorate and those who are living outside of the GCR believe that their districts have an adequate quantity of green spaces, while those living in Cairo City, Giza and al-Qalyobiya disagree. Those who did not mention their districts are divided approximately equally between agreeing and disagreeing.

On the other hand, when asked about green spaces quality in the districts where they live, slightly more than half of the respondents from new communities in Cairo believe that green spaces in their districts are of good quality. Participants living outside the GCR are divided equally between disagreeing,

undecided and agreeing on their districts having high-quality green spaces. All participants from al-Qalyobiya, and 75% and 67% of Cairo and Giza participants respectively, find that green spaces in their districts are not of high quality.

In the past few years, green spaces in Cairo have often been replaced with other functions (Aly & Dimitrijevic, 2022a). The participants showed that they value existing green spaces and public parks, as 80% of them do not welcome demolishing green spaces or public parks. In addition, a vast majority considers increasing the quantity of green spaces (88%) and enhancing their quality (86%) to be either an essential or high priority (Table 2).

Table 2: Opinions about protecting and improving green space in Cairo.

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Total										
<i>I welcome demolishing parks or green spaces because more important uses can replace them</i>																
Frequency	330	101	30	35	40	536										
%	<table border="1"> <tr> <td>Strongly disagree</td> <td>62%</td> <td>Disagree</td> <td>19%</td> <td>Undecided</td> <td>6%</td> <td>Agree</td> <td>7%</td> <td>Strongly agree</td> <td>7%</td> </tr> </table>						Strongly disagree	62%	Disagree	19%	Undecided	6%	Agree	7%	Strongly agree	7%
Strongly disagree	62%	Disagree	19%	Undecided	6%	Agree	7%	Strongly agree	7%							
<i>What do you think the degree of priority should be in working on improving green spaces in Cairo in terms of quantity and quality?</i>																
	Essential	High priority	Medium priority	Low priority	Not a priority	Total										
<i>Increasing the quantity of green spaces by developing new ones</i>																
Frequency	313	159	42	19	3	536										
%	<table border="1"> <tr> <td>Essential</td> <td>58%</td> <td>High priority</td> <td>30%</td> <td>Medium priority</td> <td>8%</td> <td>Low priority</td> <td>4%</td> <td>Not a priority</td> <td>1%</td> </tr> </table>						Essential	58%	High priority	30%	Medium priority	8%	Low priority	4%	Not a priority	1%
Essential	58%	High priority	30%	Medium priority	8%	Low priority	4%	Not a priority	1%							
<i>Enhancing the quality of existing green spaces</i>																
Frequency	271	192	59	11	3	536										
%	<table border="1"> <tr> <td>Essential</td> <td>51%</td> <td>High priority</td> <td>36%</td> <td>Medium priority</td> <td>11%</td> <td>Low priority</td> <td>2%</td> <td>Not a priority</td> <td>1%</td> </tr> </table>						Essential	51%	High priority	36%	Medium priority	11%	Low priority	2%	Not a priority	1%
Essential	51%	High priority	36%	Medium priority	11%	Low priority	2%	Not a priority	1%							

Green spaces and public parks have multiple benefits and positive impacts on people’s lives (Aly & Dimitrijevic, 2021). The questionnaire tested how Cairo’s residents and those who live in other nearby areas perceive that influence. When asked if they consider green spaces to be important, all the participants except one answered yes. A list of benefits and impacts was given to be evaluated according to their degree of importance. All the points they evaluated came on average to be either important or highly important. Environmental benefits are among the highest evaluated benefits in their degree of importance, while economic ones came among the lowest.

Similarly, the participants were asked to evaluate the degree of importance of having several elements and qualities in a public park. The average of their answers showed that none of the evaluation points is unimportant. The majority of the points had an average that places them to be highly important, while a few others came as slightly important. By arranging the answers averages, cleanliness, security, utilities and openness had the highest average. Points related to the upkeep of a park came very high as a combined average showing that for users, the most important factors to be in a park are more related to its management and operation (cleanliness, security, maintenance and utilities) rather than its design characteristics.

### 3.2 Public Parks Use in Cairo

65% of the participants either do not visit public parks or visit them only once or twice yearly (Table 3). It is important to note here that despite the efforts to distribute the questionnaire evenly between residents of different districts in Cairo, the higher percentage of responses came from districts that have more middle- and high-income groups like Nasr City, New Cairo and Heliopolis. These groups rarely visit public parks (Ghanem, Ahmad, & Aboualy, 2021) and tend to use other types of leisure facilities, such as shopping malls, outdoor food courts and private clubs (COSSP personal communication, 2021, Ghanem et al., 2021). Lower-income groups represent a higher percentage of public park users

(Ghanem et al., 2021). However, the annual number of visitors to different public parks in Cairo is low relative to the city’s population<sup>1</sup>. It is expected that the low frequency of visitation will be similar among lower-income groups, despite generally being the higher percentage of visitors.

Table 3: Visiting public parks in Cairo.

How often do you visit public parks?						
	Never	Once or twice yearly	Once or twice monthly	Once a week	Twice or more weekly	Total
Frequency	92	254	130	48	12	536
%	17%	47%	24%	9%	2%	
Less Frequent Visits			More Frequent Visits		Total	
Frequency	346		190		536	
%	65%		35%			
Do you prefer other forms of recreation rather than visiting parks?						
	Yes, I do not like visiting parks	No, I like visiting parks	Total			
Frequency	112	234	346			
%	32%	68%				

Low visitation does not vary between age groups or genders. A Kruskal-Wallis test showed that the frequency of visits is the same between all age groups ( $H(5)=4.23, p=0.52$ ). Regardless of the age group, people tend not to visit parks frequently (less frequent visits are between 51% and 69% for the 5 age groups that answered the questionnaire). Both females and males visit public parks less frequently; 66% of the female participants and 61% of the male ones do not visit parks frequently. A Mann-Whitney test did not record any significant difference between genders in the rate of visits distribution ( $U(N_{females}=334, N_{males}=202)=30947, z=-1.71, p=0.09$ ).

However, more than 2/3 of the participants who visit parks less frequently like visiting public parks despite their infrequent visits (Table 3). The participants who did not visit parks often, either liking or disliking the activity, did not give significantly varied reasons (

Figure 1). Both groups mentioned the same top five reasons (either for disliking visiting public parks or for not visiting frequently despite liking): 1) parks in Cairo do not have sufficient utilities, 2) they are often crowded and noisy, 3) there are no parks close to where they live, 4) parks in Cairo have many malfunctioning elements, and 5) they are not clean. Parks not having good activities for children was among the highest mentioned reasons for not visiting public parks. It was mentioned by 157 participants (a total of those who like and dislike visiting parks).

People with children are around 2 times more likely to visit public parks than those who do not have children. A Mann-Whitney test indicated a significant difference between having and not having children in the rate of visits distribution ( $U(N_{with\ children}=273, N_{not\ having\ children}=263)=31018, z=-2.91, p=0.004$ ). Having children is a high motivation to visit parks, and having better children’s activities will be required to accommodate their needs. More efforts should be directed at making the public parks more attractive for people who do not have children and eliminating their reasons for not visiting parks frequently or not liking to visit to encourage them to visit parks regularly.

Ensuring security in public parks is among the most important qualities to provide. It ranked high in importance on the questionnaire. The respondents did not mention security issues as the main reason for not visiting parks frequently. Parks in Cairo not being safe was mentioned 57 times (24%) by those

<sup>1</sup> Data of the number of visitors of public parks in Cairo were acquired from the different administrations responsible for their management.

who like visiting parks but do not visit frequently, and 23 times (21%) by those who dislike visiting parks (Figure 1).

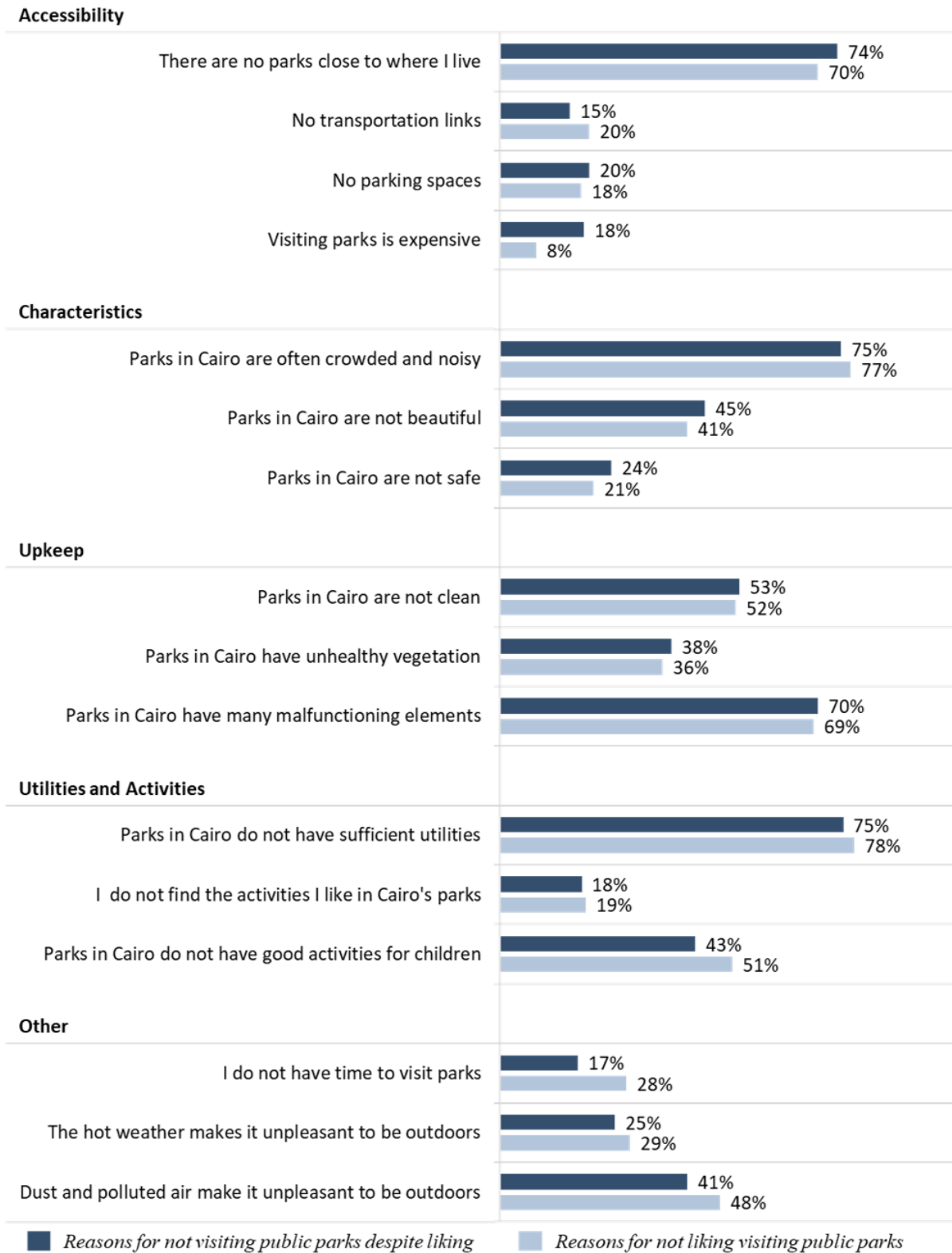


Figure 1: Options given to participants as reasons for either not liking visiting public parks or for not visiting despite liking (% calculated relative to participants number who answered each question, 234 that like visiting but do not visit frequently and 112 that do not like visiting).

Notably, safety is more of a concern to women than it is to men ( $\chi^2(1) = 5.316, p = 0.02$ ). They are nearly twice as likely to consider safety as a reason for not visiting public parks (Figure 2). Nine main security concerns were mentioned by the respondents. They are divided into 3 categories: 1) the lack of supervision through either utilities or by personnel; 2) the parks' configuration leading to isolated spots and, in other cases, a lack of privacy; and 3) concerns about the behaviour of other users that can directly affect them. Harassment is the highest mentioned concern (40 participants, 50% of those who considered safety as a reason for not visiting public parks).

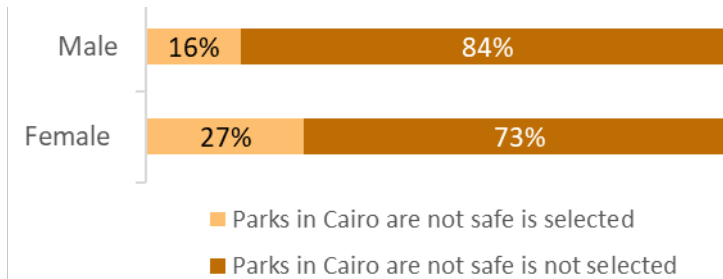


Figure 2: Gender difference in considering safety concerns in public parks (% calculated relative to participants number who reported less frequent visits, either liking or disliking visiting parks, Female=222 & Males=124).

### 3.3 Access and Participation

In the preceding section, the reasons for the low frequency of park visitation in Cairo were discussed. Affordability was not found to be a significant barrier to not visiting parks in Cairo (

Figure 1). It is slightly higher for those who like visiting parks and do not visit frequently than for those who dislike visiting (10% difference). In general, people are divided about the affordability of public parks in Cairo, with 1 out of every 5 participants being undecided about the issue (Table 4). 46% consider Cairo's parks to be affordable for everyone, while 33% disagree. As most of the participants are either medium- or high-income groups, it is expected that more of them will not see affordability as a problem. However, they are also divided about free access to public parks (Table 4) (only a 14% difference between those who see that parks should be free for all people and those who do not).

Table 4: Opinions about the affordability of public parks in Cairo.

Public parks in Cairo are affordable for everyone						
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Frequency	56	122	114	213	31	536
%	10%	23%	21%	40%	6%	
Do you think that public parks should be free of charge for all people?						
	Yes	No	Total			
Frequency	306	230	536			
%	57%	43%				

Out of the 230 participants who view that parks should not be free, 189 mentioned reasons. Their responses can be categorised into three main reasons: 1) fees are required to cover maintenance and improvement costs (mentioned 117 times), 2) paying fees will protect the parks from misbehaviour (56), and 3) paying fees will decrease the intensity of use and protect the parks from being overused (16). These reasons highlight management problems at different levels, which have been repeatedly reflected in the responses. In addition, they show that people are expecting parks to be overused if they become free, also reflecting the problem of low provision and poor distribution of parks and green spaces in Cairo.

Despite the widespread acceptance of paying to enter parks, there is an even wider awareness of the importance of having free access. 181 participants out of the 306 who see that parks should be free mentioned reasons for their claim. They expressed these reasons in 3 ways: 1) by directly mentioning a benefit or an impact a park has, thus allowing free use will give people access to these advantages (46% of the people who mentioned reasons), 2) by using the term ‘right’ (40%) or ‘need’ (7%) then refer to a benefit or an impact, for example, people have the right/basic need to access affordable recreation or the right to have clean air, etc., and 3) by mentioning that if parks become free, more people will be encouraged to visit them more frequently (8%). Equality between all users and having access to recreation, in general, and affordable recreation in particular, are the highest mentioned reasons for why parks should be free to all users. Fewer people gave the reason that these parks are publicly owned, and the users are taxpayers who should not be paying to enter a park.

In terms of active participation, only 5% (29 people) of the respondents participate in activities related to green spaces. The most common activities they all participate in are planting trees (19 people), cleaning (11) and maintaining green spaces (9), and awareness campaigns (10). They mostly work on streets or green spaces close to where they live, but less in public parks. However, people are willing to get more involved with green space protection, enhancement and management. Despite not being actively involved in any of the decisions related to their green spaces, 76% of the participants are willing to help in protecting green spaces, but they do not know how; 58% of the participants are willing to contribute money to protect green spaces, while 60% are willing to contribute time and direct effort (Table 5). This readiness to help should be utilised, especially since the dominant opinion is that citizens must become more active in managing and enhancing green spaces in Cairo (462 participants (86%)).

Table 5: Willingness to participate.

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	Total
<i>I am willing to help to protect green spaces, but I do not know how</i>						
Frequency	168	237	93	30	8	536
%						
<i>I am willing to contribute money to preserve a park or a green space</i>						
Frequency	101	208	159	53	15	536
%						
<i>I am willing to contribute time and direct effort to preserve a park or a green space</i>						
Frequency	116	207	151	49	13	536
%						

51 out of the 74 participants who disagreed that citizens should not be involved mentioned reasons for their claim. Reasons were dominantly divided between the view that it should be the government’s responsibility rather than the citizens’ (mentioned 24 times), and that such responsibility should be left to professionals because people may not have the required experience and skills (21). On the other hand, 305 out of the 462 participants who agreed on active involvement mentioned reasons. They see that such direct involvement will benefit in increasing the sense of ownership (30) and belonging (50), increase awareness about the importance of green spaces (42) and will make people value and protect the green spaces where they invested their efforts (143). Being the direct users and beneficiaries of these spaces is expressed to be another reason for the importance of involvement as people can identify their needs and work on achieving the goals related to them (20).

It will require more effort to get people to be hands-on in caring for their green spaces because, despite viewing participation to be important, people are inclined more towards being passively involved through donating money (42%) (Figure 3). The three points related to donations represent 33% of the sum of all mentioned options. There are also many people who, despite viewing participation to be

important, are not willing to participate themselves (17% mentioned not being interested in any activities compared to the 14% who saw that citizens should not be involved).

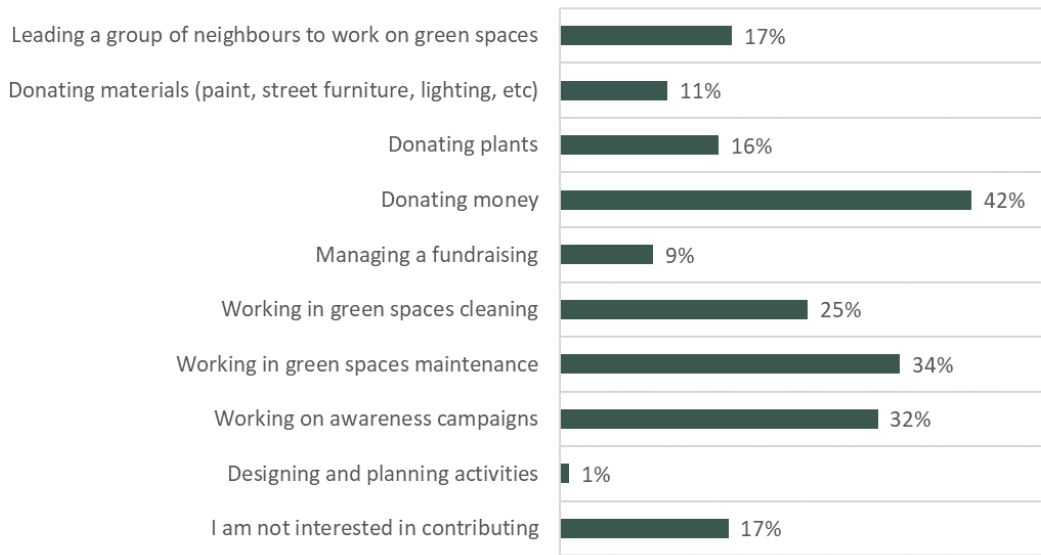


Figure 3: Activities respondents are willing to participate in (% calculated relative to the total number of the questionnaire respondents = 536).

### 3.4 Favoured Parks in Cairo

The questionnaire examined what favoured parks in Cairo look like. Participants were asked if they have a specific park they like to visit in Cairo. Their answers once again indicate the disconnection from Cairo’s parks. Only 52% of the participants mentioned that they have a park they like in Cairo. ¾ of them do not have the parks they mentioned in the district where they live (Table 6).

Table 6: Favoured parks in Cairo.

	Yes	No	Total
<i>Is there a specific park in Cairo that you like to visit?</i>			
Frequency	279	257	536
%	52%	48%	
<i>Is this park in the district where you live?</i>			
Frequency	70	209	279
%	25%	75%	

Al-Azhar Park was the most liked park (mentioned by 137 participants out of the 279 who like to visit specific parks). Family Park is the second most mentioned (63 times). The third mentioned park is al-Orman (26 times) in Giza Governorate and within the GCR. Merryland Park (15), the Specialised Gardens<sup>2</sup>: al-Dawliya (14) and al-Tyfl (9), and the Aquarium Grotto (9) are liked parks in Cairo but were mentioned less frequently. Participants were asked about their likes and dislikes of these parks. To confirm that evaluation, an additional question was asked using a 5-point Likert scale to evaluate several features of the park separately.

41 respondents mentioned 2 or more liked parks, making it difficult to connect their likes, dislikes and evaluation to a specific park. Therefore, their answers to the three evaluation questions were eliminated from the analysis. Only those who mentioned one park were considered, al-Azhar park was evaluated

<sup>2</sup> Specialised gardens are a category of public parks in Cairo managed by a dedicated management agency, with affiliation to Cairo Governorate, called the Specialised Gardens Administration.

by 107 participants, Family Park by 43, al-Orman Park by 18, Merryland Park by 9, and al-Dawliya, al-Tyfl and the Aquarium Grotto by 7 each. Only al-Azhar Park and Family Park received high enough evaluations to be considered. Because none of the other parks was mentioned frequently enough to reflect a representative collective opinion, their results are not discussed. However, as the Specialised Gardens (SGs) in total received 23 evaluations for 6 parks, their evaluations will be considered collectively.

### 3.4.1 Al-Azhar Park

Al-Azhar Park is among the best and most visited parks in Cairo, from all over Egypt and by tourists. When the participants were asked about what they dislike about al-Azhar Park, the most selected choices were: being far from their place of residence, being crowded and noisy, having a low variety of activities and children’s activities, and not having good public transportation links (Figure 4). All these options were selected more as dislikes than their opposite attributes that were given as choices for likes, except for children's activities, which came close between liking that the park has children’s activities (29 participants) and disliking that it does not have them (21). Participants were divided between likes (24) and dislikes (20) regarding access to the park by public transportation.

Because the park is highly visited, it can get very crowded and noisy, particularly on public holidays. Yet, the park is not crowded or dominated by structures or noises from their activities like other parks in Cairo. Crowdedness and noise are common problems in many parks in Cairo and were mentioned among the reasons for not frequently visiting parks. Not having parks close to home was mentioned often as the most common dislike about al-Azhar Park. Both issues are related, as mentioned before, to the poor distribution and low availability of public parks in Cairo, which puts more pressure on the few existing good ones.

The view of the participants that the park has a low variety in activities, and especially children’s activities, is not entirely true. According to the park’s manager, besides the free children’s playground, the park arranges workshops and other activities for children. It has an open theatre that hosts events, restaurants and plenty of open spaces that are flexible enough to accommodate a variety of activities. Users cannot notice a variety in activities if they are not frequent visitors, a possible explanation for why they often selected not having a variety in activities as a dislike. The administration could improve its marketing of the park’s activities and events and make sure that the information is well communicated to more users.

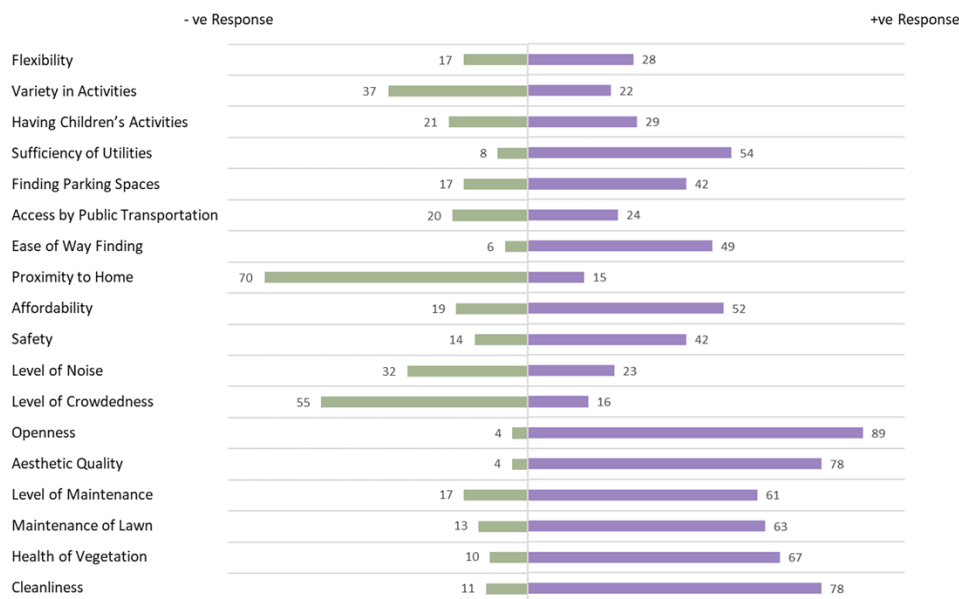


Figure 4: Frequency of likes (+ve response) and dislikes (-ve response) of al-Azhar Park according to the participants (the total number of participants who evaluated al-Azhar Park = 107).

Despite the division in viewing the access to the park by public transportation, in reality, it has several transportation options. It has a bus stop in front of the main gate, and it is on the line of several minibuses. The participants could be divided on this point because, depending on how far they live, the ease of access using public transportation will vary. People who live far away may not have public transportation that takes them directly to the park. In addition, the main gate is on a busy main street with no traffic lights or pedestrian bridges, making crossing the road difficult.

On the other hand, participants mentioned openness, aesthetic quality, cleanliness, vegetation health and well-maintained elements to be among the highly liked features (Figure 4). Al-Azhar Park has a vast area, and it offers unique views, enhancing its openness. The park operation is highly organised and efficient, resulting in a high level of cleanliness and good condition for all its elements. Its design, along with other qualities like cleanliness, good condition of elements, the health and variety of its vegetation that enriches its aesthetic quality, are noticed and appreciated by users. It can be seen here that the most valued qualities of the park are closely tied to the success of its administration in keeping it in good condition.

Furthermore, the participants evaluated a list of qualities and elements of al-Azhar Park. Their evaluation is positive for all the qualities and between high-moderate and good, ranging between 2.44 and 3.23 (on a scale from 0 (very poor) to 4 (excellent)). The evaluation is consistent with the answers about what users like about the park. Openness, aesthetic quality, cleanliness and landscape quality have the highest evaluation values. Flexibility, utilities, shelter, connectivity, and security are the lowest but still within the high-moderate evaluation rank. Most of these qualities are not mentioned frequently as a dislike, showing that they are not at a critical low condition. 28 participants see that the park allows options for flexible use, versus 17 who see the opposite. 54 believe that the park has sufficient utilities, while only 8 disagree. Security was mentioned more as a like (42 participants) than as a dislike (14). The value of security evaluation is not critically low (2.74), and the park is still generally perceived to be safe. In addition, it is considered safe by most of the females who answered the questionnaire. 8 females mentioned that the park is unsafe, while 29 females mentioned that they like that it is safe.

### 3.4.2 Family Park

Similar to al-Azhar Park, Family Park is a high-quality and well-maintained park. However, it shares the same issues in connectivity and flexibility qualities as al-Azhar Park. The most selected dislikes about the park were: being expensive, being far from home, not having transportation links, being crowded, not allowing flexible use, being noisy and having limited activities (Figure 5). Affordability, proximity to home, and access to public transportation received significantly more negative than positive responses. Ticket price for Family Park is among the highest in Cairo, the cost of its activities is expensive, and even bringing your own food to the park will cost a fee. Its location in one of the new communities makes it far away from most of Cairo's residents and not accessible by public transportation. All these issues undermine the park's flexibility in accommodating all user types.

Participants' opinions were divided between likes and dislikes regarding the park's calmness (11 likes and 7 dislikes) and flexibility (12 likes and 10 dislikes), but both received more positive responses despite being among the most selected dislikes. Both crowdedness and availability of activities had more positive responses as well, showing that they are not to be considered serious issues. Family Park, in contrast with al-Azhar Park, has several structures that accommodate different activities, including many children's activities. However, their effect on openness is not significant because the park has a large area. Openness is mentioned among the most liked attributes, which is one of the shared likes with Al-Azhar Park. They share other mostly mentioned likes: cleanliness, being well-maintained and aesthetic quality. Finding parking spaces and children's activities are also frequently mentioned as likes. Users notice and appreciate the park's cleanliness and how it is well-maintained.

The calculated values for each of the park's qualities according to the participants ranged between moderate (lowest 2.29) and good (highest 3.51). Openness, cleanliness, aesthetic quality and landscape quality are evaluated the highest, similar to al-Azhar Park and consistent with the most

commonly mentioned likes. Flexibility, shelter, connectivity, utilities and security are the qualities with the lowest evaluation, the same also as al-Azhar Park. Their evaluation is not critically low, and except for connectivity and shelter (which are not among the likes and dislikes), they are not often mentioned as dislikes. 12 participants believe that the park offers options for flexible use, while 10 disagree. 25 participants believe that the park utilities are sufficient, while only 3 disagree. 25 participants mentioned that they like the park for its safety, while only 4 said they dislike that it is unsafe. Female participants also mentioned the park being safe rather than unsafe (18 females liked the park for its safety, versus only 3 who disliked that it is unsafe).

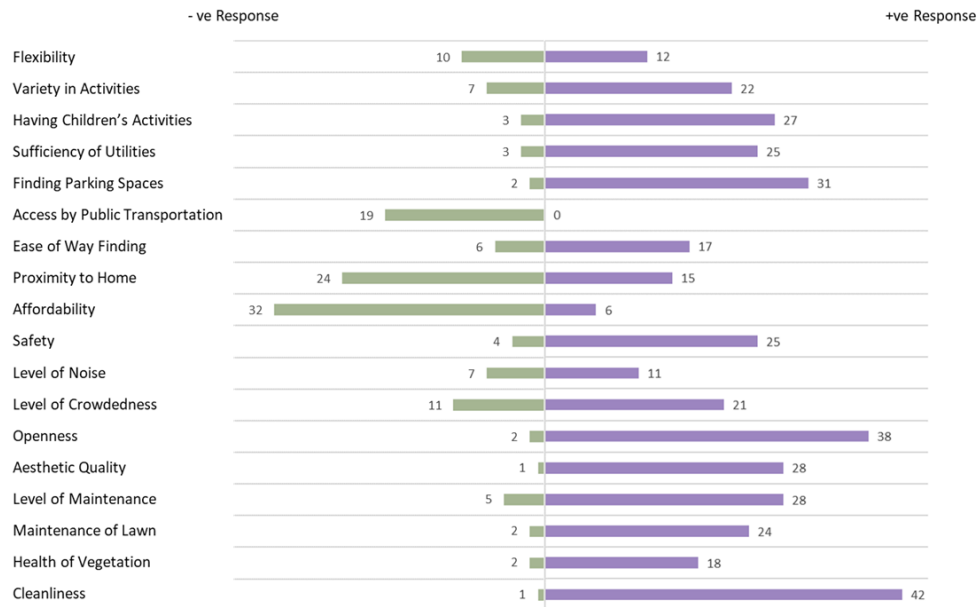


Figure 5: Frequency of likes (+ve response) and dislikes (-ve response) of Family Park according to the participants (the total number of participants who evaluated Family Park = 43).

### 3.4.3 Specialised Gardens

In total, the questionnaire received 23 evaluations for 6 SGs (al-Dawliya Park, al-Tyfl, um-Kulthum, al-Golf, Agha-Khan, and al-Andalus). Despite being mentioned as parks that respondents like to visit, the average of users evaluation for these parks is significantly lower than that of al-Azhar Park or Family Park with an overall evaluation of 2.34. Utilities evaluation was affected by the parks' low level of maintenance. The bad condition of its natural elements, especially water features, also lowered the landscape quality evaluation. SGs are well-connected externally through public transportation and can be easily reached; however, users see that it is difficult to find a parking space, decreasing the overall calculated average for external connectivity. Utilities, external connectivity, in addition to the low score of organised events and other flexibility attributes, all brought the flexibility quality to rank among the lowest evaluated qualities. That is despite the good evaluation of the park's affordability.

## 4 Discussion

The positive or negative image of a certain space is recognised to depend more on the quality of its upkeep rather than other design characteristics (Carmona & Magalhães, 2006). For Cairo, the questionnaire confirmed the same and showed that at the top of the qualities that users find to be most important are management-related qualities like cleanliness, security, utilities, and the condition and maintenance of elements. Among the top reasons for not visiting parks frequently are the parks not having sufficient utilities, having several malfunctioning elements and being unclean. Cairo's favoured parks, namely al-Azhar and Family Parks, are well-maintained and clean. Users give these qualities the highest evaluation, and they are the most noticed and liked ones. On the other hand, SGs that are

considered as favourites are far less mentioned, and users evaluated them to generally have a low level of upkeep.

Moreover, the questionnaire results showed that the participants recognise the problems of green spaces in Cairo. They do not believe that the current quantity, quality or distribution of green spaces are acceptable, and public parks are considered to be poorly managed. Despite the obvious gap in the provision of green spaces between Cairo's districts (Aly & Dimitrijevic, 2022a), people from all the districts expressed that they do not have sufficient green spaces or high-quality ones where they live, even in districts where the provision is relatively higher. However, more of those who live in new communities find their green spaces to be sufficient and have high quality, showing the difference in the provision compared to other districts in Cairo.

Several concerns related to the use of public parks in Cairo were revealed. One of the main findings was that Cairo's public parks are not frequently visited. Consumerism is claimed to have changed over time and affected the concept of leisure, like all other aspects of modern life. Leisure has become something to consume, e.g. purchasable time in a gym, restaurant, etc., instead of an experience (Juniu, 2010). Many parks in the world are shifting more towards this type of commodified leisure with the increase of commercial activities and ticketed events (Smith, 2018).

From the late 90s and early 2000s, spaces that support the culture of consumerism, like shopping malls, bowling centres and coffee shops, became the alternative public space for many people in Cairo. Different functions of these spaces have appeared to cater for a variety of social classes. They became more controlled and secured places for meeting and socialising, substituting either the shortage of public parks or the restricted entry to many existing ones (Abaza, 2001, 2011). These types of spaces, especially coffee shops, became meeting spaces for young women who did not have many other safe gathering spaces before the spread of Western-style coffee shops. For a long time, it was not normal for many women to use traditional Egyptian coffee shops that were dominantly used by men (Koning, 2011). Women also often raise concerns regarding safety in public spaces and parks.

Shopping malls can be more inclusive and less restrictive than private clubs. Young people from all economic backgrounds go to malls to hang out with friends, even if they cannot afford it, "only 20% of all Egyptians can actually afford to shop in malls" (Mostafa, 2003 in Abaza, 2011). They can walk around, window shop, sit and eat at the mall food court, which often offers fast food options that are cheaper than other coffee shops and restaurants. However, restrictions are sometimes imposed to exclude certain social classes (Abaza, 2011). Moreover, lower-income families find spending leisure time in such spaces more difficult because of the high cost compared to the purchasing power of a young individual spending time alone or with friends. Alternative and cheaper options can be found, but it still means that leisure has to have some cost, and free leisure has become more difficult to find even in public parks.

Public parks in Cairo are continuously shifting towards a similar model, which is altering their role and undermining their ability to provide benefits for all users. More and more restaurants, coffee shops, celebration halls, amusement parks and other similar activities keep replacing green areas inside public parks. They became the focus of the parks' usage while the green areas act as a niche background (Aly & Dimitrijevic, 2024). This practice is being justified by the lack of resources or as a catalyst to bring more users who will prefer such activities. However, the questionnaire results showed that people are still seeking good quality parks and that barriers to spending more leisure time in them are not only about the tendencies toward more consumerist leisure activities.

Despite the changes in leisure time habits, survey participants expressed that visiting public parks is still a desirable activity. Al-Azhar Park, which received the highest evaluation points among Cairo's parks, has an average number of visitors close to 29 SGs, showing that visiting public parks is still largely a desirable activity when the opportunity is provided with higher standards. The reasons mentioned for not frequently visiting public parks were mostly not because the activity is not liked but because of issues related to the parks' quality, quantity and distribution. They clearly expressed management-

related issues. Three of the top five mentioned reasons are related to the condition of the parks. The other two are about the problem of quantity and distribution of green spaces and public parks in Cairo. The limited presence of these spaces in the city and their unequal distribution put pressure on existing parks, causing them to be crowded and noisy and making it less convenient for many of Cairo's residents to access a green space or a public park near where they live.

The poor distribution and low availability of green spaces prevent having them in close proximity to many residents, which is a barrier to more frequent visits. Only ¼ of the participants who mentioned a park they like to visit in Cairo have this park close to their homes. Being far from home was among the most commonly mentioned dislikes about the favoured parks, al-Azhar and Family. All the previous shows that the low frequency of visiting parks in Cairo is not only about preference. Increasing the number of existing green spaces and achieving a better distribution will reduce the pressure on existing ones, reduce their crowdedness and facilitate access to spaces closer to more residents. Enhancing management practices in existing parks would improve their quality and encourage more people to use them.

Some participants expressed safety concerns as a reason for not visiting parks frequently or for not liking to visit them. Despite not being mentioned frequently, security is a critical quality that should be addressed by management because of its significant influence on public park use, especially for women. Security issues need to be addressed where they exist to counter the negative image of public park safety in Cairo. Resolving security problems will not be enough because there is already a negative image of some parks that will need to be altered. Therefore, the administrations will need to start promoting the parks as safe spaces for women and children to regain the trust of visitors and encourage them to visit more frequently.

Within the general trend of low visitations to parks in Cairo, people with children were found to be more likely to visit parks compared to those who do not have children. Therefore, children's activities have special importance for parks in Cairo as they cater to users who are already most likely to visit parks. Parks will need to be made more attractive to other users to accommodate additional and diverse visitor groups. Reasons that keep these visitors away from visiting parks will need to be mitigated as well. A balance is required between the park uses to offer a variety of opportunities that consider the needs of both those who seek active engagement and others who will seek passive ones.

On the other hand, affordability was not found to be the main barrier to visiting parks in Cairo for the group that answered the questionnaire (mostly representing middle- and higher-income groups). Paying entry fees is also widely accepted in Cairo, even by lower-income groups. Access to green spaces for Cairo's residents is more affected by the low availability and poor distribution of the parks in the city. As the questionnaire showed that affordability is not a barrier for middle- and higher-income groups, it should similarly be investigated with a focus on lower-income groups as previous studies showed that paying for tickets is one barrier that lowers the frequency of their visits even if they are accepting of the idea of paying fees (Basu & Nagendra, 2021; More & Stevens, 2000).

The United Nations Sustainable Development Goals (SDGs) advocate for universal access to green and public spaces (SDG Knowledge Platform 2020). It is important to address the barriers to equal access. In many countries, people have free access to their public parks, which is not the case for the vast majority of Cairo's parks. Public officials believe that free parks are unattainable in a city like Cairo, and many Cairenes agree with that view. For Cairo, the general acceptance of paying fees to use parks has an equally opposed awareness of why it is important to have free parks in cities. Reasons why parks should be free show how people's expectations and aspirations regarding parks differ completely from the goals of the parks' administrations. Having entry tickets to cover maintenance costs or protecting the parks from being overused are both management shortcomings. Parks are not considered a priority for governmental authorities, hence, public funds for supporting their maintenance are insufficient. People are aware of the lack of resources the parks' administrations face, so they believe that users should contribute to covering maintenance and improvement costs.

People living in Cairo do not have strong community ties to their green spaces and public parks. They are not highly involved in the decision-making process and are not consulted or even informed. Despite this obvious disconnection, the questionnaire results showed that many people are willing to be more actively involved. They care about green spaces and public parks, and they do not like to see them deteriorate or disappear. Involvement with green space activities will enhance their quality, strengthen community ties, establish a sense of ownership and increase the sense of belonging.

Green spaces and public parks can be used to induce positive impacts on nearby communities and have a wider effect on the whole city. An example is al-Azhar Park, which was a catalyst for many changes within the nearby al-Darb al-Ahmar community. The Agha Khan Trust for Culture, the park's founder, built trust and worked with the community to transform a landfill site into a vibrant green space and initiated other community projects (Fettig, 2007; The Agha Khan Development Network (AKDN), 2005, 2007, 2018). On the contrary, most other public parks are detached from their surrounding communities. They are being managed in complete isolation from these communities and the needs of the residents.

Many parks are treated as a burden because of the problems associated with their proximity to low-income areas. Instead of trying to utilise these parks to change these communities positively, these parks are often neglected and deteriorated (Aly & Dimitrijevic, 2022a). The positive experience of al-Azhar Park at al-Darb Ahmar can be attempted in a variety of communities in Cairo. There are already some initiatives to plant residential green spaces supported by Cairo Cleanliness and Beautification Agency, in Nasr City, for example, through its Collective Efforts Administration and other successful initiatives in new communities. However, communities' involvement is still not widespread and requires more support and guidance, and it often happens in high- and middle-income districts more than in lower-income ones.

## 5 Conclusions

The investigation of the public's opinions about green spaces in Cairo showed that there is a gap between people's aspirations and expectations from such spaces and the official practice in Cairo. As expressed in the questionnaire, Cairo's residents do not welcome the current approach to urban development in the city, which has caused the demolition of many green spaces. Despite the clear disconnection between the public and green spaces in Cairo (expressed in the low rate of visits and not being actively involved, but not in terms of how people value and appreciate green spaces), visiting parks is still a widely desirable activity. The general changes in leisure preferences may have affected the usage pattern of parks in Cairo, but other barriers to visitation were also identified. Green spaces and public parks need to be perceived and treated differently by the authorities to meet the aspirations and expectations of the public. Community participation can benefit green spaces in Cairo, as the questionnaire showed that the public expressed a high willingness to get involved in matters related to their green spaces.

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### Ethical Approval Declaration

The study was conducted in accordance with established standards for research integrity and ethics.

### Data Availability Statement

All data supporting findings are available from the author upon reasonable request.

### Conflicts of Interest

The authors declare no conflict of interest.

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