https://www.jenas.org
ISSN: 2146-9229

Research Article

Received Date
22 / 01 / 2022
Accepted Date
16 / 04 / 2022

Evaluation of Satisfaction Level Regarding Urban Parks: The Case of Eskişehir Millet Bahçesi

Kentsel Parklara İlişkin Memnuniyet Düzeyinin Değerlendirilmesi: Eskişehir Millet Bahçesi Örneği

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How to Cite: Alamri, Y. Inceoglu, M. (2022). Evaluation of Satisfaction Level Regarding Urban Parks: The Case of Eskisehir Millet Bahcesi. *Journal of Environmental and Natural Studies*, 4 (1), 38-51. https://doi.org/10.53472/jenas.1061763

ABSTRACT:
Urban parks are important for improving the city's environment and meeting the psychological and physical needs of the users. Activities carried out in open areas are among the urban environmental factors that increase the quality of life. However, factors such as the ease of access to the parks, the convenience and security of the parks and the facilities in the parks influence parks satisfaction levels. Eskişehir Millet Bahçesi is one of the parks serving as an amusement and education park in the city of Eskişehir. The aim of this study is to determine the satisfaction levels of city residents from city parks in the case of Eskişehir Millet Bahçesi. Urban area quality parameters and a group of indicators are used to measure the level of satisfaction in the park. The indicators cover three main topics: comfort; use of different physical activities, aesthetics, safety and access. A questionnaire was applied to evaluate the indicators and the Importance-Performance Analysis (IPA) technique was used. The results indicate high performance and high importance, so that all evaluation indicators enter the first quarter of the IPA scheme, thus indicating the achievement of user satisfaction in Millet Bahçesi. It is thought that the results obtained from the research will guide the authorities in determining the priorities in the development of new parks and the improvement of existing parks.

KEYWORDS: *Urban parks, Importance-Performance analysis, Eskişehir millet bahçesi*

ÖZ:

Kentsel parklar, kentin çevresini iyileştirmek ve kullanıcının psikolojik ve fiziksel ihtiyaçlarını karşılamak için önemlidir. Açık alanlarda yapılan ve yürütülen etkinlikler yaşam kalitesini artıran kentsel çevre faktörlerindendir. Bununla birlikte, parklara erişim kolaylığı, parkların rahatlığı, güvenliği ve parklardaki olanaklar gibi faktörler, parklara ilişkin memnuniyet düzeylerini etkilemektedir. Eskişehir Millet Bahçesi, Eskişehir kentinde eğlence ve eğitim parkı olarak hizmet veren parklardan biridir. Bu çalışmanın amacı, kent sakinlerinin kent parklarından memnuniyet düzeylerini, Eskişehir Millet Bahçesi örneğinde belirlemektir. Parktaki memnuniyet düzeyini ölçmek üzere kentsel alan kalite parametreleri ve bunların altında bir dizi gösterge kullanılmaktadır. Göstergeler üç ana başlığı kapsamaktadır: Farklı fiziksel aktivitelerin eğlence amaçlı kullanımı, güzellik, güvenlik ve erişim. Göstergelerin değerlendirilmesine yönelik olarak anket uygulanmış ve Önem-Performans Analizi (ÖPA) [Importance-Performance Analysis (IPA)] tekniği kullanılmıştır. Sonuçlar, tüm değerlendirme göstergelerinin IPA planının ilk çeyreğine girmesi için yüksek performans ve yüksek öneme sahip olduğunu ve böylece Millet Bahçesi'nde kullanıcı memnuniyetinin sağlandığını göstermektedir. Araştırma ile elde edilen sonuçların, yetkililere yeni parkların geliştirilmesi ve mevcut parkların iyileştirilmesi süreçlerinde önceliklerin belirlenmesi konusunda yol gösterici olacağı düşünülmektedir.

Anahtar Kelimeler: *Kent parkları, Önem-Performans analizi, Eskişehir millet bahçesi*

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INTRODUCTION:

Public parks are an essential component of cities and are used by residents for their own recreation and the recreation of their families. But these inhabitants may refrain from frequenting them if these urban parks are not adequately equipped to attract visitors and to function efficiently for their enjoyment and recreation.

Parks provide a source of greenery in the city's thick weave apart from being an important part of a sustainable, healthy and livable city (Neema et al., 2013). Residents' well-being and quality of life are significantly improved by urban parks (Hartig et al., 2003), (Chiesura, 2004a). In the challenging urban environments and living conditions faced by urban residents, parks play an important role in reducing stress, anxiety and isolation with the community (Gidlöf-Gunnarsson & Öhrström, 2007). Thus, parks have a positive impact on the health and gratification in addition to to lowering pollution and encouraging physical exercise (Nielsen & Hansen, 2007). The existence of parks is not sufficient to ensure their optimal use. Residents' use of parks is inversely related to accessibility (Kaczynski & Henderson, 2007). Some indicators, such as biodiversity, ecology, access, usability, aesthetics, and other recreational and environmental functions, determine the perception of park users (Zhang & Gobster, 1998, Gunnarsson et al., 2017). It is inextricably linked to quality, upkeep, and hygiene (Akpinar, 2016). Furthermore, citizens may be deterred from accessing parks due to safety and security issues, such as fear of crime and harassment (Boyd et al., 2018). Women and children, in particular, need to be safe. Furthermore, pollution and the presence of noise are regarded as deterrents to the use of parks (Ferré et al., 2006). According to the literature, the expected contribution of parks to inhabitants' personal and social well-being is determined by the number of parks they visit, which determines their satisfaction and perceptions of quality indicators such as accessibility, safety and amenities, attractiveness, etc. On the other hand, the benefit that residents get from public gardens is measured by their perceived satisfaction with the gardens' features. Satisfaction is a mental state that occurs when one's wants and expectations are met without causing social, psychological, or bodily suffering (Düzgüneş & Saraç, 2018).

Authors of this study evaluated the satisfaction of the residents of Eskişehir, Turkey, with the features of parks in the city and applied in Eskişehir Millet Bahçesi. Three main indicators will be used in the assessment, comfort, beauty, security and safety. In order to discuss the congruence between importance and performance in the garden for users, this research study collected a closed-ended and open-ended questionnaire and also measured the level of satisfaction using the Importance- Performance Analysis (IPA). The results of this exploratory study are expected to provide a reference for further future studies of the local authority, which is responsible for developing city parks. It will assist in making the parks more appealing to inhabitants, therefore boosting the city's quality of life.

1. Literature Review

1.1. Urban Parks

Urban parks are a component of urban green spaces and have a major role in urban modernization and sustainable development (Xu et al., 2019). Urban parks with green nature and water areas are characterized as having ecological functions (Cohen et al., 2014), relaxation, health improvement (McCormack et al., 2014) and fire prevention (Syphard et al., 2007), and therefore they have importance in measuring livability in cities (Wenzhong, 2007). Research on urban parks is essential for building adaptive living environments in cities, and the level of development of urban parks has been included as one of the main indicators for assessing the quality of urbanization (Werner, 2011, Németh & Langhorst, 2014).

Urban parks in cities contribute by producing an urban environment to a more healthy, cultural and well-being life (Jo & Jeon, 2021). Parks enhance the urban environment in various ways, such as improving comfort and providing a place for different activities (M et al., 2009). Specifically, it provides green spaces for residents and is gaining importance as an infrastructure that provides essential activities for living (Chiesura, 2004).

Urban parks are parks close to or within urban construction, which have human interaction with the natural environment and also a high level of accessibility (Wojnowska-Heciak et al., 2022). These open spaces offer a variety of functions whether economic, environmental or social (Wolch et al., 2014) and thus provide elements needed by residents to fill the void in and planning cities (Wojnowska-Heciak, 2019, Davies et al., 2008).

Urban parks are also places for daily contact with nature and social activities. They provide the population with many benefits that are all associated with human well-being and quality of life including environmental, aesthetic and recreational advantages (Tzoulas et al., 2007). These advantages can be achieved not only through regular trips to urban parks, but can also be enhanced through good perceptions and experiences (Wan et al., 2020).As a result, in order to serve the public effectively, we must first understand how people value and perceive urban parks.

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In densely populated areas, people need access to nature in order to restore their bodies and minds, and urban gardens provide this (Konijnendijk et al., 2013). Urban parks are the most accessible outdoor space for city residents, especially at a time when the global COVID-19 pandemic continues. Parks allow individuals to engage in outdoor activities and seek psychological rehabilitation, health promotion, recreation, relaxation, and socializing by providing access to the natural environment (Geng et al., 2021).

1.2. Quality of life and urban parks

Parks are important for a community's quality of life, health, economic advantages, and overall well-being, according to the "American National Park and Recreation Association" (Shuib et al., 2015). One of the predictors of quality of life is urban parks, which are significant components of urban green zones (Koramaz & Türkoğlu, 2018). Urban quality must be viewed from a much broader perspective than physical features, and that the concept of urban quality is clearly related to the social, psychological and cultural dimensions of a place. The space should be designed to provide certain qualities that make people want to spend time in it and increase the user's desire to use that space(Montgomery, 1998). The quality of a place is related to its ability to satisfy the psychological, social, and cultural needs of the users of that place. Therefore, it is important to include users when measuring space quality. The link between park quality and urban quality has an impact on various population groups' levels of satisfaction.
Children benefit from gardens in their development. As part of their development, children are influenced by a range of physical activities and social connections (Oloumi et al., 2012). Children are more likely to spend more time indoors in this modern era (technological era), playing video games, watching television, and using social media on the Internet. Zhang and Li (2017) found that the number of Children and youngsters participating in outdoor recreation activities has decreased globally in recent years.

"Understanding the relationships between urban parks and the domains of health, physical activity, and social relationships within the framework of quality of life provides insights for policies that contribute to improving the quality of life in cities" (Koramaz & Türkoğlu, 2018). According to the Project of Public Spaces (PPS), there are four key qualities of a successful place which good public space generally needs to offer them: (1) it must be accessible, (2) it must be comfortable and have a good image, (3) it must be sociable, and (4) it must enable people to engage in an array of activities(Polat, 2021). PPS developed the Place Diagram as a tool to judge any place whether it is good or not (Figure 1).

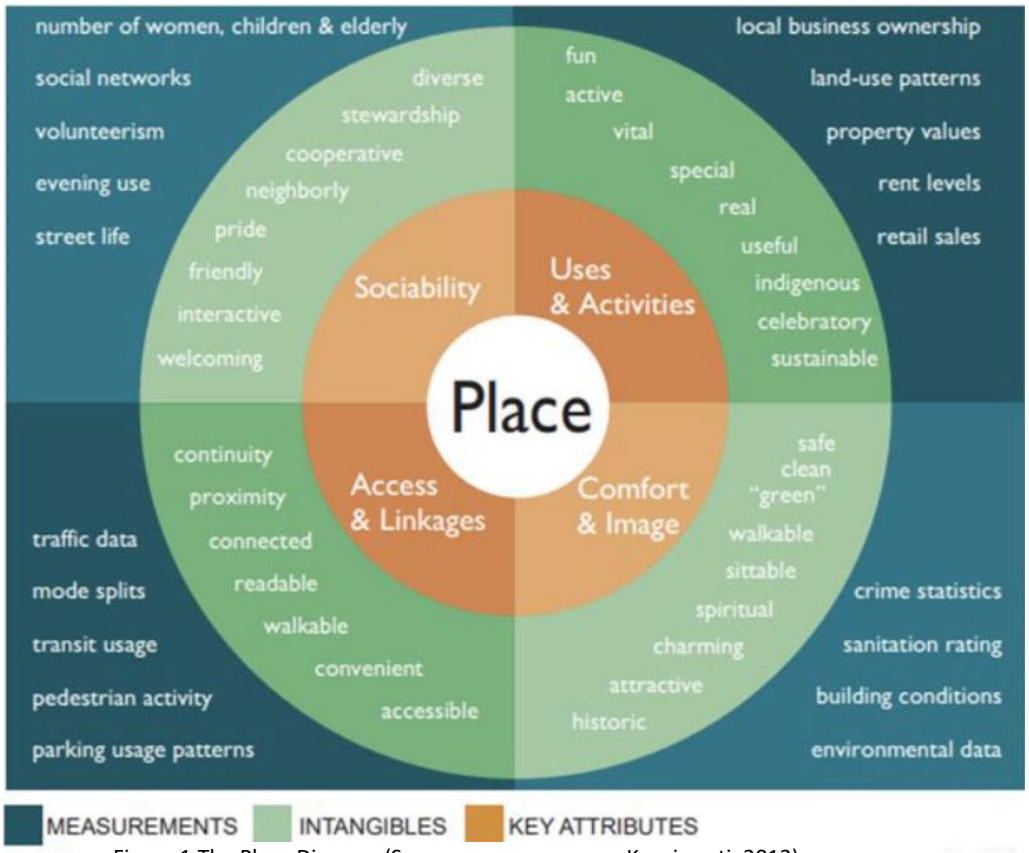

Figure 1:The Place Diagram (Sources: www.pps.org, Kurniawati, 2012)

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2. Case Study Area

Eskişehir is a province in the Anatolian region of Turkey, having a total area of 13.781 km2. The province, which spans 12 counties and 190 villages, is located west of Ankara, southeast of Istanbul, and northeast of Kütahya(Koca, 2020). The city's position is significant, since it is situated between major cities such as Istanbul and Ankara. The area consists of two plains in the Porsuk River's irrigation basin, which is a tributary of the Sakarya River. The city's center is located on the Porsuk Plain's east side (Figure 2).

Figure 2:Location of Eskişehir city.

2.1. Selection of sample parks

Millet Bahçesi study sample was selected in Odunpazarı municipality in Eskişehir province. The selection was made based on many determinants of convenience (more specifically, accessibility) and the city's perceived prominence in the park hierarchy, in addition to the lack of previous studies for this park.

Eskişehir Millet Bahçesi was completed in 2021. The total park area is 52.392 m², the total construction area is 16,221 m2, the total landscape area is 40,227 m2 and the grass area is 20,005 m2. A total of 160,000 plants and 878 trees were applied. It has been turned into a park where the people of Eskişehir can have a good time, do sports and have fun with the kiosks, entrance and promenade paths, bicycle path, walking path, basketball court, fitness area, sitting area, children's playground, outdoor activity area, ornamental pool. It is aimed to relieve Eskişehir traffic by applying a closed parking under the park area. It will serve individuals from all age groups such as children, young and old (Figure 3, Figure 4).

Figure 3: Locations and View of the sample park.

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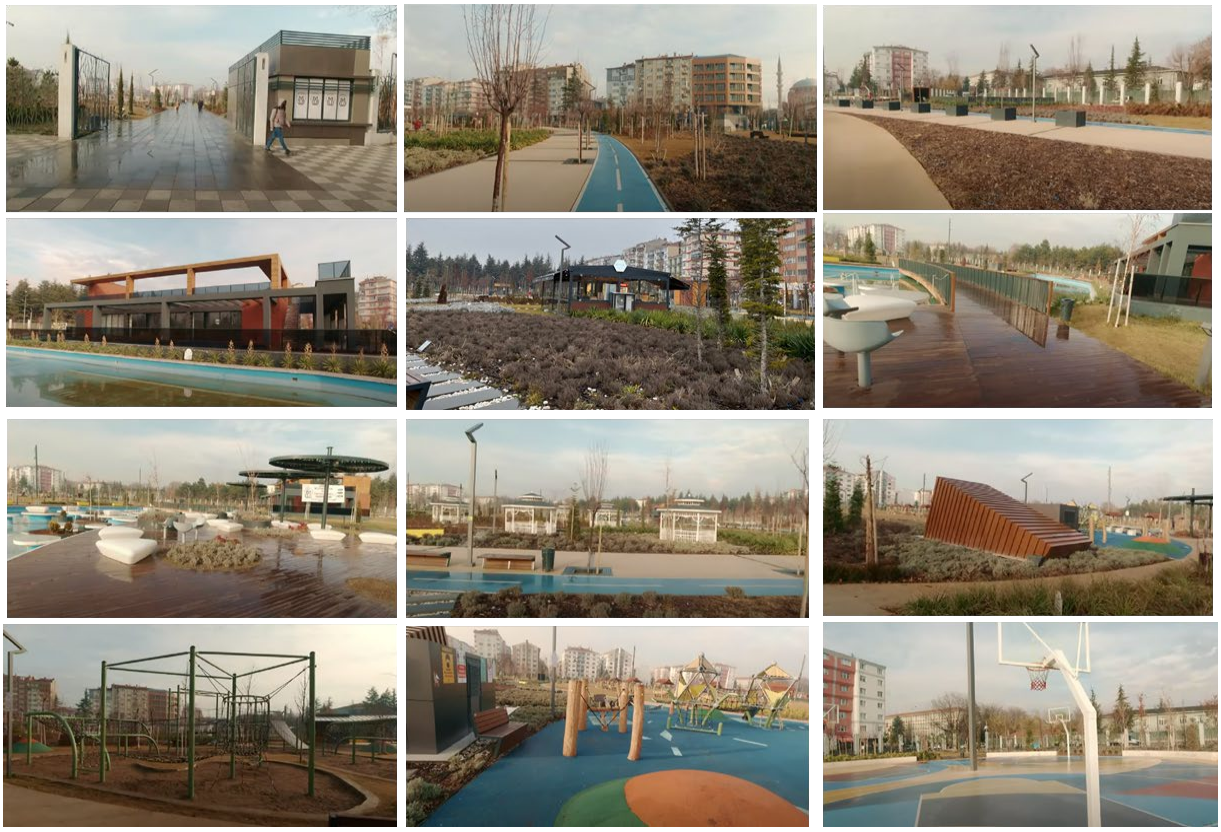

Figure 4: Showing the different activities inside Millet behçesi

3. Methodology

Survey methodology have been used regularly in assessment studies on green space satisfaction (Schipperijn et al., 2013). In this study, a questionnaire was used to collect data from users of Milllet Bahçesi, Eskişehir, Turkey. To assess the satisfaction status of the users, the Importance-Performance Analysis (IPA) was used. This section explains how to gather data and statistical analysis questionnaire.

3.1. Questionnaire design

Majority of empirical research to understand user satisfaction is conducted using method of questionnaires with assessment indicators (Yu et al., 2018). A web-based survey application has used to create a questionnaire for the present study, which will be used to gather data from park users via a direct questionnaire. Three essential categories of data are necessary to be collected to achieve the purpose: profile for respondents , their habits of using and visiting the parks, and their level of satisfaction with the park's features in terms of importance and performance. Data collection on gender (female or male) and age category (18-25 years, young, 26-40 years, 41+ years) was made possible. The data required for the behavioral pattern of park users included the customary mode of transportation for trips to the park on foot, bike, vehicle or public transportation), the time to the park (in minutes), the purpose of the park visit (open), and the frequency of the visit in the preceding year.

The questionnaire's last component assessed the park's importance and performance in order to gauge user satisfaction. Respondents had to select, on a Likert scale, from 1 (low importance) to 5 (very high importance) to measure the level of significance. Also, from 1 (not very satisfied) to 5 (very satisfied), to measure the level of performance, for the park's various characteristics.

Aspects can be categorized into three broad groups of elements: comfort, aesthetics, and safety and accessibility Table 1. Some amenities for active or passive enjoyment are available to park visitors. They also require some delights to make their time in the garden more comfortable. For the survey, six items of indicators were included in the comfort set: (1) walking/running path, (2) seating arrangement, (3) shade, (4) litter boxes, (5) play area and (6) WCs. Park users are looking for a clean and beautiful environment and quite space in the park that provides a rest from the stressful city environment. The aesthetic group have included six items: (1) landscaping, (2) general view, and (3) cleanliness, (4) Plants , (5)Supporting facilities – Lights (6) Supporting facilities – Gazebo. Finally, visitors choose parks with quick and secure access, as well as an environment free of crime or public annoyance. In the survey, these issues were included by six indicators in the comfort and safety group: In the survey, these issues were included by six indicators in the comfort and safety group:- (1) pollution, (2) illumination, (3) fear of crime, (4) fear of harassment, (5) accessibility, (6) road to the park. In all, there were 18 Likert scale items in all, divided into three groups. These are common aspects that can be found in literature, for example, (Hasani et al., 2017,Rey Gozalo et al., 2018, Yu et al., 2018, Maniruzzaman et al., 2021)etc.

Table 2: Evaluation criteria and indicators related to urban parks used in the study

Quality parameters	Quality indicators
Comfort	walking/ running path seating arrangement shade litter boxes playing area WCs
Aesthetics	Landscaping general view cleanliness Plants Supporting facilities – Lights Supporting facilities – Gazebo
Safety and Accessibility	pollution illumination fear of crime fear of harassment accessibility route to park

3.2. Importance-Performance Analysis (IPA)

The Importance–Performance Analysis (IPA) approach is used to do a correspondence analysis of the importance and satisfaction of impact elements that influence recreation perception (Yu et al., 2018). Conformance level is the result of comparison between the level of visitor satisfaction and the level of interest. IPA techniques are widely used for quality checking in services. IPA emerged in business and marketing as a way of understanding customer satisfaction based on service performance. Since then, IPA has been used in multiple disciplines, such as tourism, health services, green practices, and education (Baloglu & Love, 2003, Martilla & James, 1977). An IPA is a method that allows for easy assessment of the differences between the relevance and performance of a service (Addas et al., 2021). In this study, the IPA was used to examine the importance and performance of different garden components and to assess the level of satisfaction of the social groups served by the garden.
To assess the importance of the park, the indicator of the improvement of public places was used, which was developed by(Addas et al., 2021), as follows:

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$$I_p = \frac{IS_p - PS_p}{RI_p} \quad (1)$$

$$RI_p = \frac{IS_p - IS_{p-min}}{IS_{p-max} - IS_{p-min}} \quad (2)$$

where Ip is the optimization index of parameters type; ISp is the degree of importance; PSp is the performance score; RIp is the relative importance of indicator points; ISp max and ISpmin are the degrees of maximum and minimum importance of points of parameters, respectively. A higher index value shows a significant gap between importance and performance, implying that the related item's score needs to improve Figure .

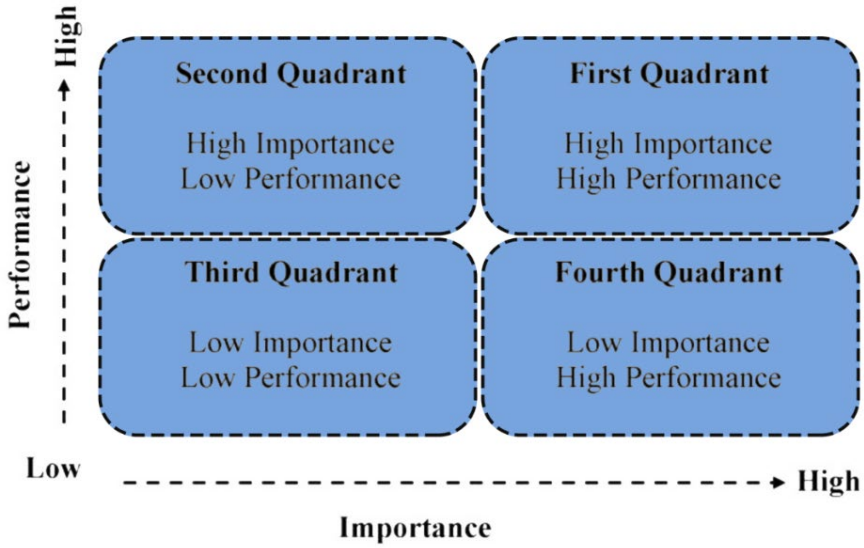

Figure 5: Urban park IPA grid(Addas et al., 2021)

4. Results and Discussion

Refer to Table1 the indicators that were used to evaluate the park, its importance and performance were evaluated. According to the respondents, the purposes of going to the park are as follows: to sit and rest (45% of the participants), gather with friends (15.52%), walk and do sports (19%), take pictures (1%) and play with children (19.48%).

Figure 6 and 7 shows the perceived significance and performance of each type of indicator in Millet bahçe. It can be seen that the significance ranges from very important (5) to low importance (1) and performance ranges from highly agree (5) to strongly disagree (1). With importance, restrooms (51%) were rated as “very high importance” by stakeholders, followed by shade (33%), play areas (26%), plantings (21%), and seating distribution (18 %). High importance was assigned to ease of access (69%), followed by seating (61%), lighting (56%), litter boxes (53%), and walking/running path (40%).

On the other hand, respondents' satisfaction with the performance of the indicators that were used to evaluate the park was not high. Where the highest percentage was in the walking/running path (59%), followed by sitting places (57%), shadow places (51%), general view (50%), and lighting (47%).

In order to make the evaluation process easier, it was divided according to the parameters into three groups. Each group had a number of indicators rated on the Likert scale according to importance and performance from 1 low to 5 high.

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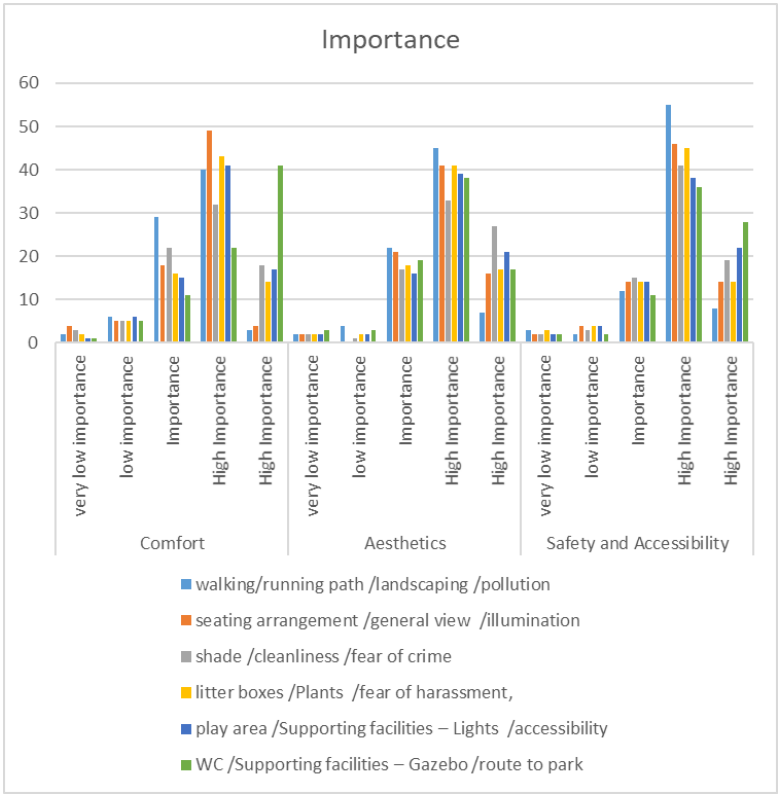

Figure 6: Distribution of importance as perceived by users (based on Likert scale)

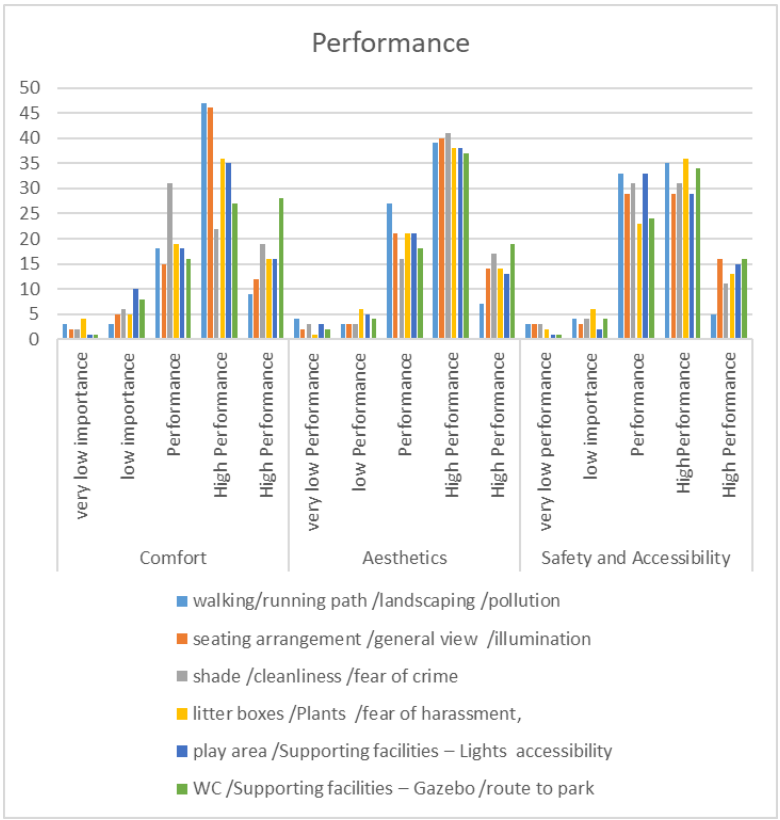

Figure 7:Distribution of performance as perceived by users (based on Likert scale)

There is a difference between the importance and performance of parameter scores, as seen by stakeholders. Understanding these differences is essential to good garden planning management as well as their recuperation. Overall, the average importance rating (3.81) was slightly higher than the average performance rating (3.43), indicating that the performance of the parameters in the park is rather satisfactory. Importance rating (ranging from 3.45 to 4.2) for all indicator types. Performance rating (ranging from 2.52 to 3.98). The standard deviation shows a relatively lower degree of dispersion (0.17) with significance compared to performance (0.52). This result clearly shows that respondents recognized the importance of parameters in the park, but some differences were found when comparing importance with performance.

Given the discrepancy between importance and performance, the highest value was the supporting facilities - lights (-1.27), followed by cleanliness (-1.18), plants (-1.14), and overall view (-1.1), down to seating arrangement (.21) Walking path /running (.25) Table 2 and Figure 8.

Table 3: Results of the discrepancy between importance and performance ratings

Quality parameters	Quality indicators	Importance	Performance	Discrepancy
Comfort	walking/running path	3.45	3.7	0.25
	seating arrangement	3.55	3.76	0.21
	shade	3.7	3.62	-0.08
	litter boxes	3.8	3.68	-0.12
	play area	3.8	3.68	-0.12
	WC	4.2	3.9	-0.3
Aesthetics	landscaping	3.6	2.52	-1.08
	general view	3.86	2.76	-1.1
	cleanliness	4	2.82	-1.18
	Plants	3.86	2.72	-1.14
	Supporting facilities – Lights	3.93	2.66	-1.27
	Supporting facilities – Gazebo	3.78	2.83	-0.95
Safety and Accessibility	pollution	3.78	3.77	-0.01
	illumination	3.82	3.98	0.16
	fear of crime	3.9	3.87	-0.03
	fear of harassment,	3.78	3.87	0.09
	accessibility	3.92	3.8	-0.12
	route to park	4	3.82	-0.18

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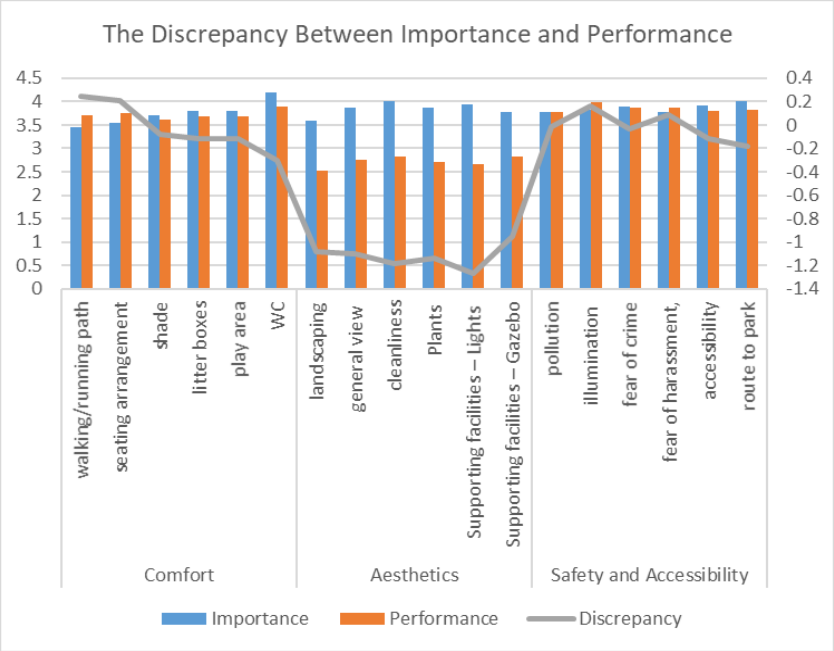

Figure 8:The discrepancy between importance and performance

Through the in-situ evaluation indicators of the IPA and improvement index (Table 3), As well as the photos taken of the garden (Figure 9), it can be seen that the perceived value of the types of transactions in the park improves the level of satisfaction as well as the prioritization. The IPA chart (Figure 10) shows that all evaluation parameters fall into the first quartile (high importance and high performance). Thus, it can be clearly seen from the average performance of the park that it is able to meet the requirements of its stakeholders. This good performance may also be due to a lack of proper understanding of the contribution of evaluation coefficients in the garden. In particular, supporting facilities - lights can affect the well-being of people in the garden and should be given priority because they took first place, followed by hygiene (second), plants (third). Therefore, more attention should be paid to gardens to enhance overall satisfaction among stakeholders.

Table 3: Parameters improvement indicators and ranks in the park

Quality parameters	Quality indicators	RI_p	I_p	Rank
Comfort	walking/running path	0	-1.82	1
	seating arrangement	0.13	-1.62	2
	shade	0.33	0.24	7
	litter boxes	0.47	0.26	8
	play area	0.47	0.26	8
	WC	1	0.3	12
Aesthetics	landscaping	0.2	5.4	14
	general view	0.55	2	15
	cleanliness	0.73	1.62	17
	Plants	0.55	2.07	16
	Supporting facilities – Lights	0.64	1.98	18
	Supporting facilities – Gazebo	0.44	2.16	13
Safety and Accessibility	pollution	0.44	0.02	5
	illumination	0.49	-0.33	3
	fear of crime	0.6	0.05	6
	fear of harassment,	0.44	-0.2	4
	accessibility	0.63	0.19	8
	route to park	0.73	0.25	11

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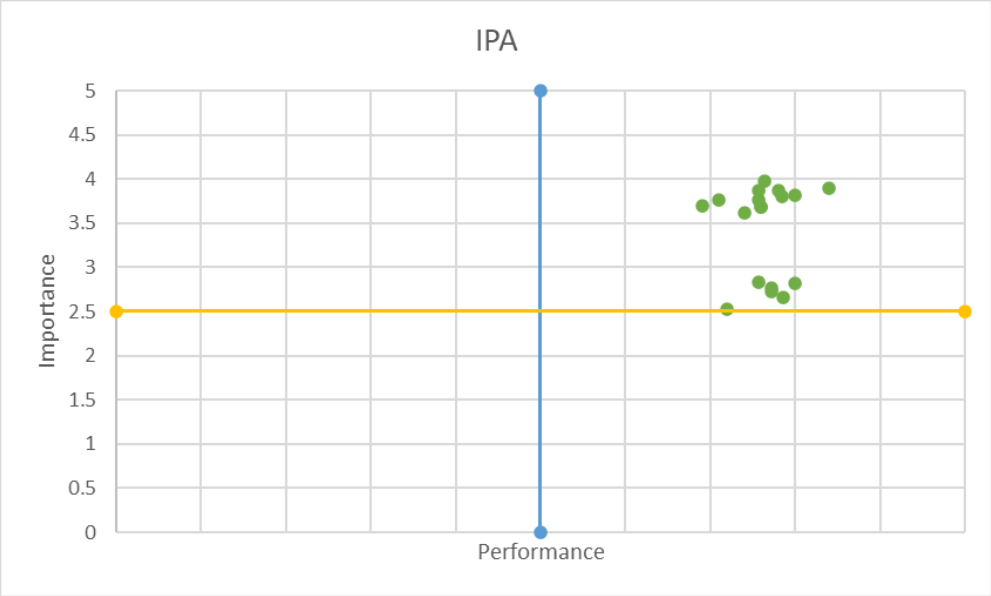

Figure 9: IPA diagrams in Millet behçesi

Conclusion

This study is an attempt to assess the satisfaction of Eskişehir city residents with public parks. Research was carried out in Millet Bahçesi. In this study, Importance-Performance Analysis (IPA) was used to assess satisfaction in the park. An online survey was used to examine the relevance and performance of park parameters, as perceived by users.

For the evaluation, a set of indicators were used as tools to measure the level of satisfaction in the park. The indicators covered Three main parameters: comfort; use of different physical activities, aesthetics, safety and access. Analysis was performed to examine differences in perception of importance and performance.

The results showed that among all the types of indicators used in the evaluation of the park, the most importance was given to the bathrooms (4.2), followed by the shade (4.7) and the supporting facilities - the lights (3.98). Over 55% of users are aware of the importance of assessment places in the park. Participants use the park as follows: sitting and resting (45% of participants), walking and exercising (19%), playing with children (19.48%), gathering with friends (15.52%) and taking pictures (1%).

There were slight differences between the importance and performance of parameter types as perceived by users. The average importance rating ranged from (3.45 to 4.2) for all types of indicators. Performance rating (ranging from 2.52 to 3.98). respectively. There are small differences between significance and performance. The highest disparity was recorded in the supporting facilities - lights (-1.27), followed by cleanliness (-1.18), vegetation (-1.14), and general view (-1.1).

All evaluation indicators fall into the first quadrant of the IPA chart, indicating high performance and high importance. Thus, it is clear that the park has the potential to meet the needs of its users. Consequently, it indicates the achievement of visitor satisfaction in Millet Bahçesi.

Thus, from the results, it can be concluded that there is an urgent need for effective planning and management strategies, to enhance the contribution of parks and improve the quality of life for users. To further attract more users to Millet Bahçesi and increase satisfaction; It is necessary to develop designs that lead to the diversity of activities within the park. For those who come to the park for physical activity and sports, equipping them with jogging and cycling trails and equipment that meets their exercise needs can increase individuals' level of satisfaction with the use of the park.

This study should be seen as a start and a draft on the topic. It can be improved by adding various factors to the model. One last warning should be mentioned. The survey was conducted only among park users. There may be some residents who do not use the parks who stay away due to their low level of satisfaction. Since the survey did not include these people, the study may have overestimated the population's satisfaction levels.

Compliance with Ethical Standard

Conflict of Interests: The authors declare that for this article they have no actual, potential or perceived conflict of interests.

Ethics Committee Approval: Approval has been obtained from the Ethics Committee for this study.

Funding Disclosure: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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