International Journal of Architectural Engineering & Urban Planning, Volume 31, Number 3, 2021
DOI: 10.22068/ijaup.31.3.517

Research Paper

Identifying and Prioritizing the Design Attributes to Improve the Use of Besat Park of Tehran, Iran

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Received: July 2019, **Revised:** June 2021, **Accepted:** June 2021, **Publish Online:** July 2021

Abstract
Nowadays, many urban parks are underutilized due to changes and developments of cities, parks location, inappropriate inner conditions of parks, and other factors. Besat Park in Tehran is located in an urban district where people have fewer recreational choices other than going to parks. So, the issue of underutilization in this park might lead to so many other problems. This research is aimed to identify and prioritize the effective factors which can improve the visitors' number of Besat Park. Field observations and interviews with Besat Park users were used in this research. During the observation process, three main factors were scrutinized including activity, access, and legibility. Behavioral mapping was applied to observations in 18 parts of the park which occurred at 6 different times in various seasons. Behavior mapping recordings were based on people's age, gender, and activity. Also, a questionnaire was set up covering the three main factors investigated in behavioral mappings. The results show that activity as the main important factor had negatively affected the level of presence in Besat Park. Even on large scale, the incompatible land uses inhibited neighborhood resident's interaction with the park edges. Inside the park, despite the lack of legibility and impermeability of some routes and districts, only the ones which had other issues in terms of activity, access, and other sub-factors were vulnerable to the mentioned problems. Generally, the factors affecting Besat Park use could be prioritized based on their level of influence respectively as activity, legibility, and access.

Keywords: *Besat park, Urban parks, Park use, Tehran, Behavioral mapping.*

1. INTRODUCTION

There has been much focus on the significance and advantages of green spaces such as parks, in our urban environment (Wei, 2017). The important aspects and benefits of urban parks have been widely mentioned in previous studies, considering their positive effects on physical activity and health-related aspects (Cohen et al., 2010; Kara et al., 2011; Klemm et al., 2017; Konijnendijk et al., 2013; McCormack et al., 2010; Nady, 2016; Sakip et al., 2015; Schipperijn et al., 2010; Shaftoe, 2012). Economic progress such as increasing the value of adjacent properties have been enumerated as other benefits of urban parks (Kara et al., 2011; Konijnendijk et al., 2013; Nady, 2016; Sakip et al., 2015). Also, essential environmental aspects of parks have been addressed in some previous studies (Gholami et al., 2021; Klemm et al., 2017; Shaftoe, 2012).

1.1. Previous Studies Related to Park Use

Despite all these advantages, Bahrini et al. (2017) have declared a lack of based line data on people's use of parks and public green spaces in the UK. It is approved by other studies, which have noticed the lack of visitors in some parks against extensive use of some others. Cohen et al. (2007) and Gold (1972) have declared our demand to shift from park use assessment (which outcomes from a traditional approach to urban recreation planning) to a nonuse problem. Two important factors in design including observing the use of a park and measuring the

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perceptions of people about the park to make it a successful space was suggested by Turan et al. (2016). Previous studies on park use could be categorized into three major groups. The first group associated park use with one or two related factors, including access, physical activity, proximity, or other agents (Kaczynski et al., 2009, 2014; Schultz et al., 2017).

The second group argued about the user preferences, patterns of use, different categories of users, and widely used facilities in urban parks (Cohen et al., 2007; Dunnett et al., 2002; Lindberg & Schipperijn, 2015; Luximon et al., 2015; McCormack et al., 2010; Habibpour Kouchaki et al., 2017; Ozer & Baris, 2013; Sreetheran, 2017), and the last group of studies generally focused on the influential and deterrent factors of park use (Cohen et al., 2010; Gold, 1972; Klemm et al., 2017; Schipperijn et al., 2010; Shaftoe, 2012). Moreover, some studies have investigated some factors related to park use, particularly in the Asian context, including some developed countries such as Hong Kong, Japan, Singapore, South Korea, Thailand, China, and Pakistan (Fan et al., 2016; Sreetheran, 2017) and some similar studies were done in other areas including the US and Australia (Ayala-Azcárraga et al., 2019; Cohen et al., 2009; Dunton et al., 2014; Edwards et al., 2015; Huang et al., 2020; Knapp et al., 2019). But fewer studies have investigated environmental qualities and design attributes of urban parks all together as the main factors impressing park use. The significance and effect of cultural context on park visitation are undeniable. There are some pieces of evidence from previous studies indicating that people's use of landscape, needs, and preferences are related to their cultural background (Gentin, 2011). Despite the importance of cultural fields, there have been few studies that investigate the link between the factor and park use.

1.2. The Influencing Factors on Park Use

Previous studies have indicated several factors influencing park use. Some of them were related to neighbourhood characteristics and the location of the park. Parks with high-poverty neighbourhoods have been reported to have few visitations. Cohen et al. (2012) and Han et al. (2018) stated that park use was negatively associated with the crime rate of the neighbourhoods. In addition, living in the proximity of parks has been determined as one of the effective factors in frequent park visitations of older adults and seniors. Because it provides the ability to achieve a place (Guo et al., 2019; Rigolon, 2016). The proximity and distance of parks and open spaces to their users has been declared to be inversely associated with the use of these spaces (Kaczynski et al., 2014; Nielsen & Hansen, 2007; Payne et al., 2002; Schipperijn et al., 2010). In some studies, distance has been considered as the main factor influencing the use of green space. There are also pieces of evidence that a distance of 300-400m is a threshold after which park use starts to decline more rapidly (Schipperijn et al., 2010). European Environment Agency has enumerated a 15-minute walking distance (900-1000m) to green space, appropriate for all people. This could help identify the appropriate distance for urban park design (Stanners & Bourdeau, 1995). Also, the park's surrounding land use is another important attribute that influences its use (Camargo et al., 2018; Cohen et al., 2007; Rosenberg et al., 2009).

Generally, public spaces work best in urban areas with mixed-use planning. Jacobs (2016) and Shaftoe (2012) have asserted that land use diversity of neighbourhood brings vibrancy and people presence for a park. Access is another important factor influencing park use (Gu et al., 2017; Wang & Mu, 2018). The ease of reaching or obtaining a site or service is accessibility. It can also be called measuring the relative opportunity for interaction or contact with a given phenomenon such as a park (Freestone & Nichols, 2004). Physical activity which has been considered as one of the benefits of urban parks is supported by accessibility (McCormack et al., 2010). Access to a park is impressed by many factors including distance, availability of a park, the population demands of an area (Wei, 2017), and the integrity of the covering area (Bahrini et al., 2017). Also, the level of park use was attributed to the access to public transportation, as it gives the capability of physical activity to some groups of people (Day, 2008). Public transportation helps increase the threshold distance specially for elderly residents and consequently might have a positive effect on park use of this group of people (Guo et al., 2019). The establishment of a clear hierarchy in paths that could be evident to the users is stated as a successful circulation network (Sakip et al., 2015). Kaczynski et al. (2010) have stated the number of nearby urban green spaces as another effective factor on the level of park use. Also, activities are the basic building blocks of space. When there is nothing to do there, a place will be empty and unused, and that generally means that something is wrong (Di Giovanni, 2001).

Park use is linked to both recreational and utilitarian physical activities. Size is a determinant factor of park use being declared in some resources (Schipperijn et al., 2010; Shaftoe, 2012). Legibility as another determining factor of park use has been defined by Lynch (1960) that is clear enough to be understood. In some studies, legibility has been considered as one of the effective physical attributes of park utilization (Karuppannan & Sivam, 2013). In this research, legibility is assessed in terms of clarity of structure, visual permeability, and accessibility. The goal of this study is to identify and prioritize the design attributes which can improve the level of use in Besat Park in Tehran. Thus, three factors including activity, access, and legibility are prioritized.

1.3. Besat Park Location

This study was conducted in Tehran (35.6892 °N, 51.3890 °E) which is in central Iran. Tehran is a large capital city with an area of 18،814 square meters which makes it the twenty-eighth largest city in the world. Its population is around 15 million and currently, Tehran has more than 13,000 hectares of green space within the city limits. Tehran's climate in the mountainous regions of the north is slightly temperate and is hot and dry as it spreads

to the south. The climatic characteristics of Tehran could be determined by two main wind directions: West and Southeast winds. The western wind is the most important factor in air pollution evacuation. The southeast wind blows dust and contaminates the air. Also, it increases heat in the city. The maximum and minimum temperature of Tehran is 41 and -6 degrees Celsius, and its annual rainfall is about 327 mm and on average, there are 40 days of frost, annually.

1.4. Information about Besat Park

Besat Park with an area of about 42 hectares is in district 16 of Tehran (Fig.1). This park was inaugurated in 1973 and was called Farah Abad Park. Before the construction of Besat Park, its land belonged to Khazaneh bricklaying furnaces. For the construction of the park, some of the pits were filled and the deepest ones were dedicated to the construction of the two lakes.

2. RESEARCH METHODS

As mentioned earlier, the purpose of this study was to determine and prioritize the design attributes that were assumed to have the most effects on the level of presence in Besat Park. In general, the research method was divided into the following phases: Field observations and interview with Besat Park users.

2.1. Observations and Behavioural Mapping

During the observation process, three main influencing factors on Besat Park use were investigated, including activity, access, and legibility. The behavioural mapping was initially used as a method to assess the people's presence in 18 parts of the park based on gender, age, and especially activity in six different times and various seasons (each survey had different time features) (Table 1). Figure 2 reveals the number of users in different parts of the park per visit.

2.1.1. Evaluating the Factors Influencing the Park Use in Three Scales

Activity as the first assumed factor influencing the Besat Park use was evaluated in three scales. Various aspects of activity were taken into consideration in each scale. On a macro scale, neighbourhood land uses were considered. In meso-scale, the activity level of Besat Park edges adjacent to the city and the proximity of different parts of the park to active edges or other active parts were considered. The activity level in each part of the park, was investigated on a micro scale. Also, the observations covered other influencing factors on Besat Park use, such as accessibility, which was assessed in macro and meso-scale. Investigating access on a macro scale was mostly focused on the distance from residential parts to Besat Park and the access to public transportation. Also, access in meso-scale consisted of two main sub-factors including the visual permeability of paths that was classified into 3 degrees (high, medium, and low) and vulnerability against visual permeability. By overlaying the visual permeability map with five other layers, the paths were divided into two groups, vulnerable and non-vulnerable. Also, the legibility was assessed in terms of accessibility and the level of distinction of each part from other parts of the Besat Park. The determining factors for defining the level of distinction between different parts of the park were topography, planting, edges, and a variety of activities. Also, the connection and coherence between these parts were other factors that had effects on legibility. Another agent investigated for assessing the legibility was the existence of landmarks. Indeed, the overlaying process helped to analyze all design layers and park features that were associated with each other.

2.2. Interview with Park Users

The user interview included a series of questions which at first, targeted general information such as age, gender, and visitor's address. Then, the respondents were asked whether they had come to the park alone or by others. Also, they were inquired about their frequency of park visits. Then, park visitors were divided into 5 groups based on their frequency of visit. Other questions contained three main layers including activity, access, and legibility. Generally, 150 people were chosen from Besat Park users of different ages (13-70 years old) and both genders. Cronbach's coefficient α was used to calculate the internal consistency of the items. If Cronbach's alpha coefficient is more than 0.7, it indicates that the reliability of the questionnaire is qualified. Furthermore, studies have shown that Cronbach α values between 0.5 and 0.7 represent an acceptable level of internal consistency (Tharaldsen et al., 2008). The Cronbach's alpha of the questionnaire was 0.854 indicating high consistency and confirming reliability.

3. RESULTS

The findings of this research are divided into two parts. The first part is based on the field visits and behavioural mappings and the second part is related to the analysis conducted based on the interviews.

3.1. Field Observations and Behavioral Mappings

One of the factors taken into consideration was the average level of presence in different parts of the park. Based on the average presence of the six behavioural maps (Figure 9), part 4 had the highest amount of presence and after that parts 2, 6, and 15 had respectively the highest levels of presence and others had the least amounts. Also, Table 1 reveals a time schedule for visiting Besat Park. Each of the six visits has special time features and Figures 3-8 demonstrate different behavioural maps for each visit.

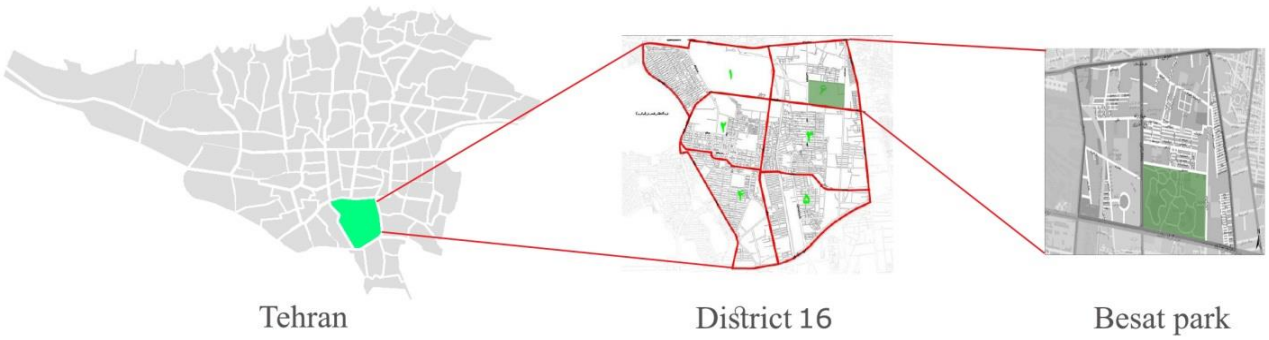


Fig 1. Besat park location

Table 1. Time Schedule for Visiting Besat Park

Day of the week (Special occasion)	Time	Date	Number of surveys
Wednesday (Public holiday)	10/30-13/40	2016.11.30	1
Tuesday (Non-holiday)	14-16	2017.02.07	2
Saturday (Non-holiday)	10-12	2017.04.15	3
Wednesday (Non-holiday)	17/40-19/30	2017.05.13	4
Friday (Holiday)	10-11 & 19-20/30	2017.05.26	5 & 6

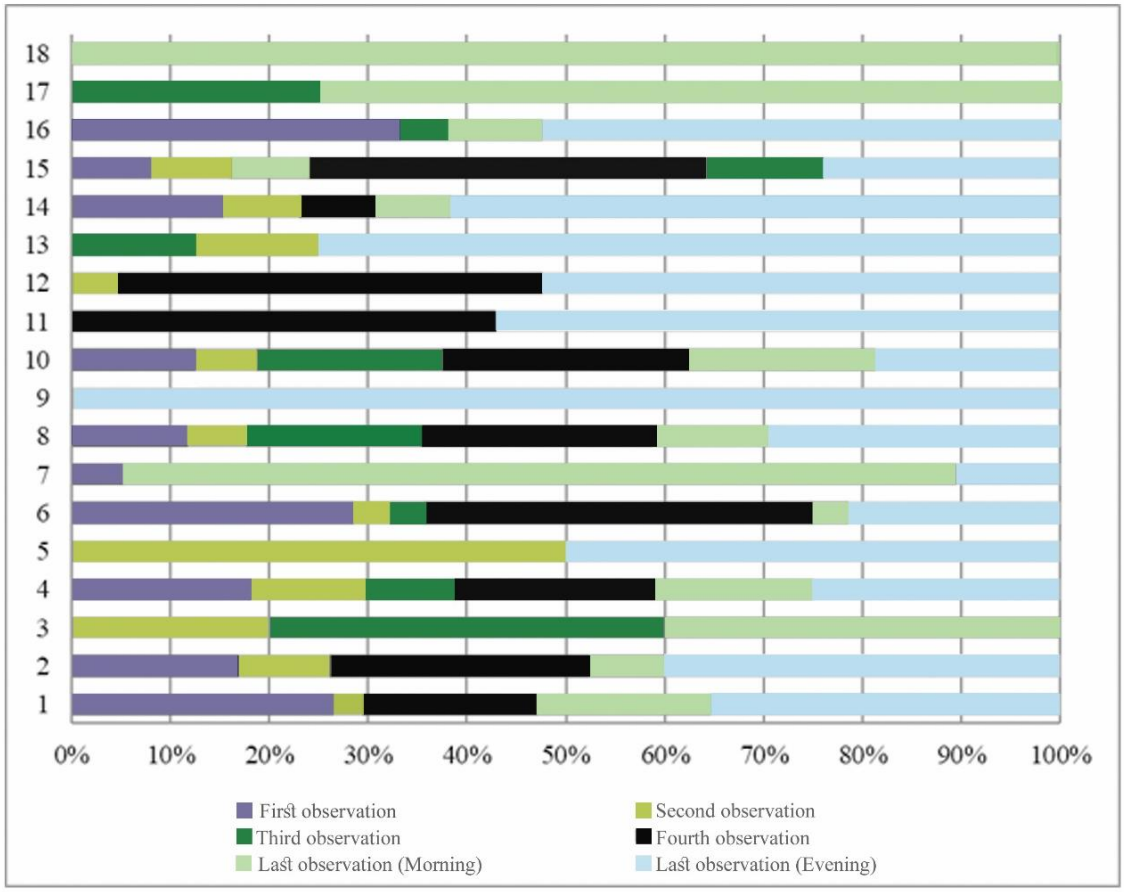


Fig 2. Attendance Percentage in Each of the 18 Parts of the Besat Park per Visit

Fig 3. First Observation

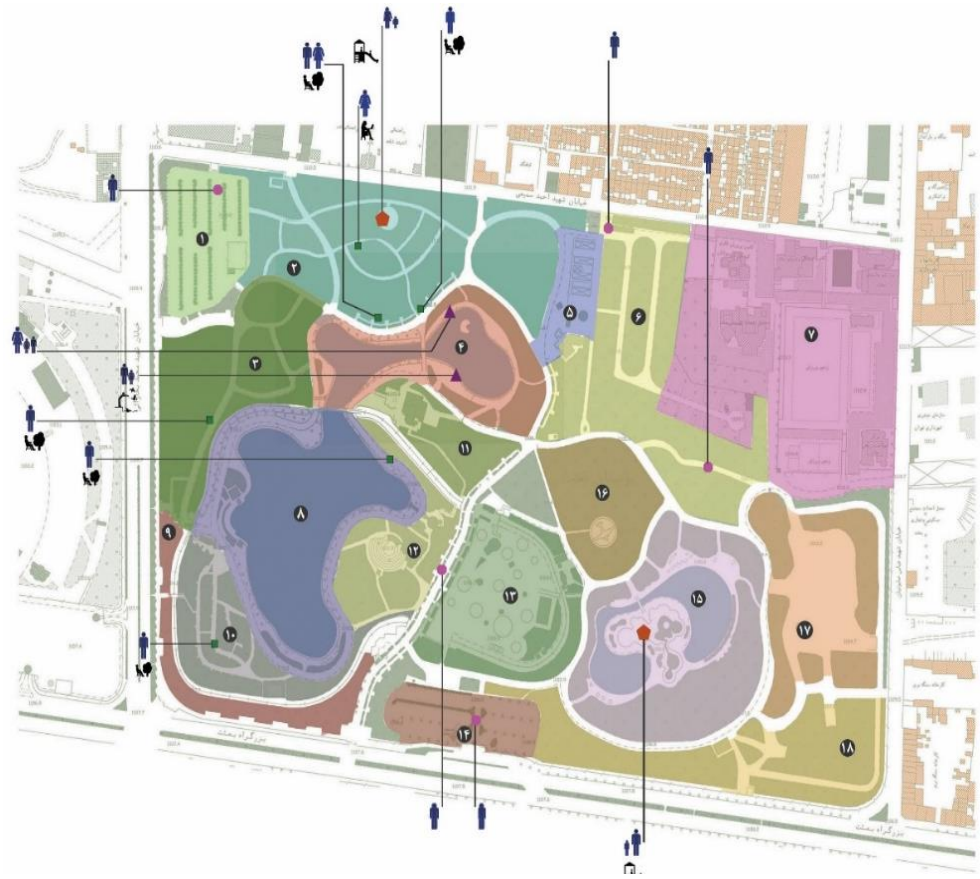


Fig 4. Second Observation

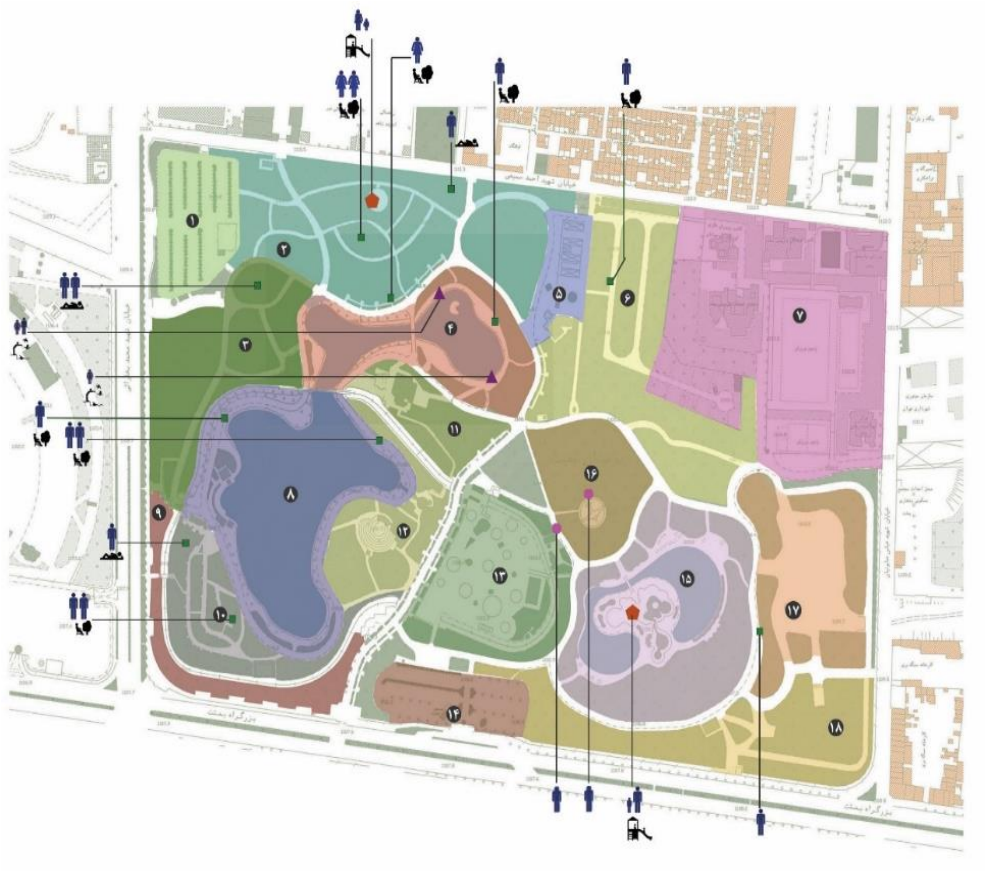


Fig 5. Third Observation

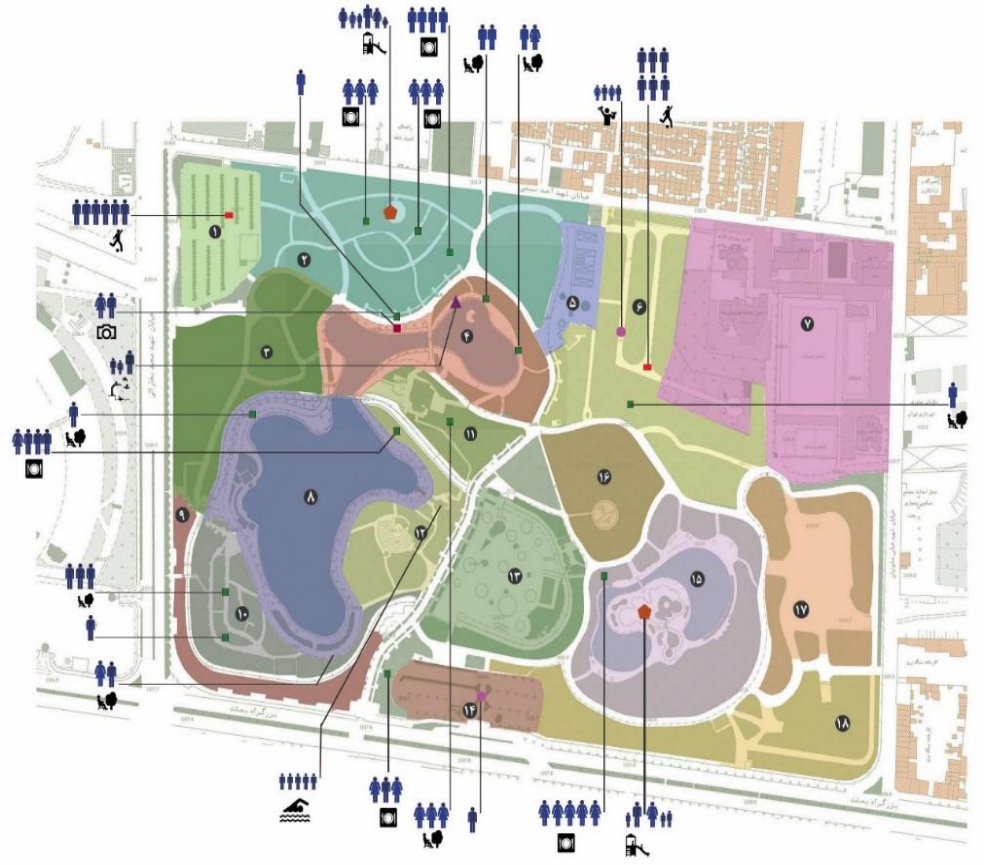


Fig 6. Fourth Observation

Fig 7. Fifth Observation

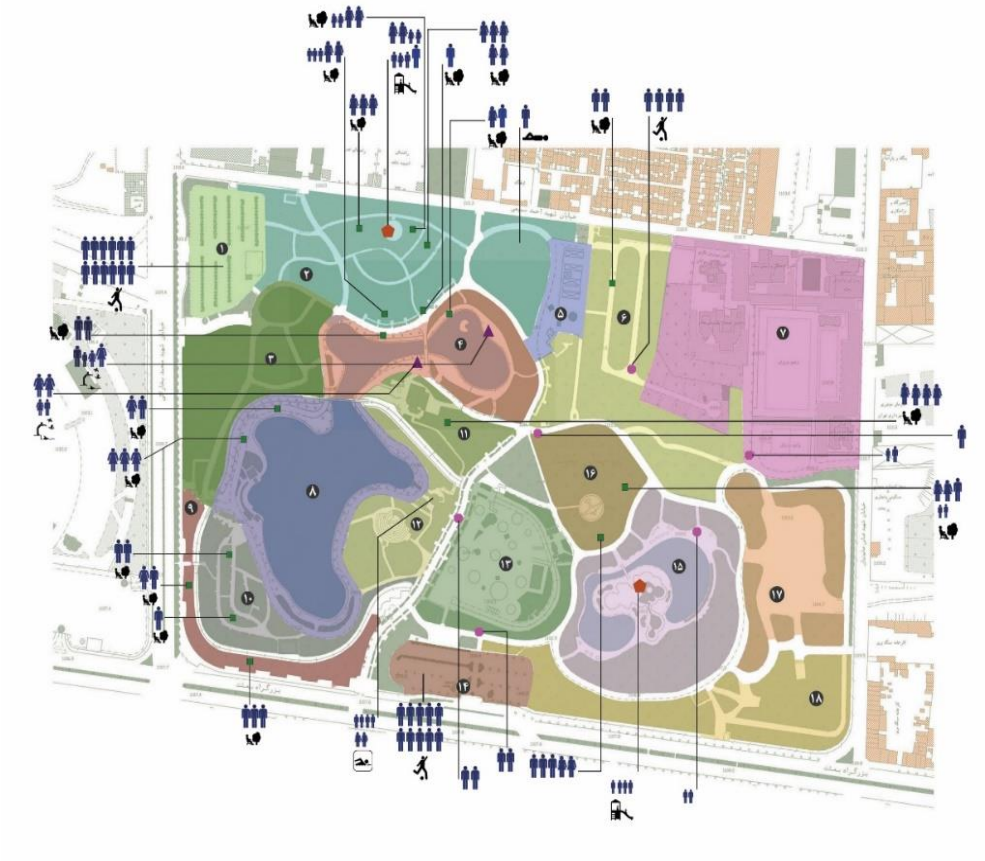


Fig 8. Sixth Observation

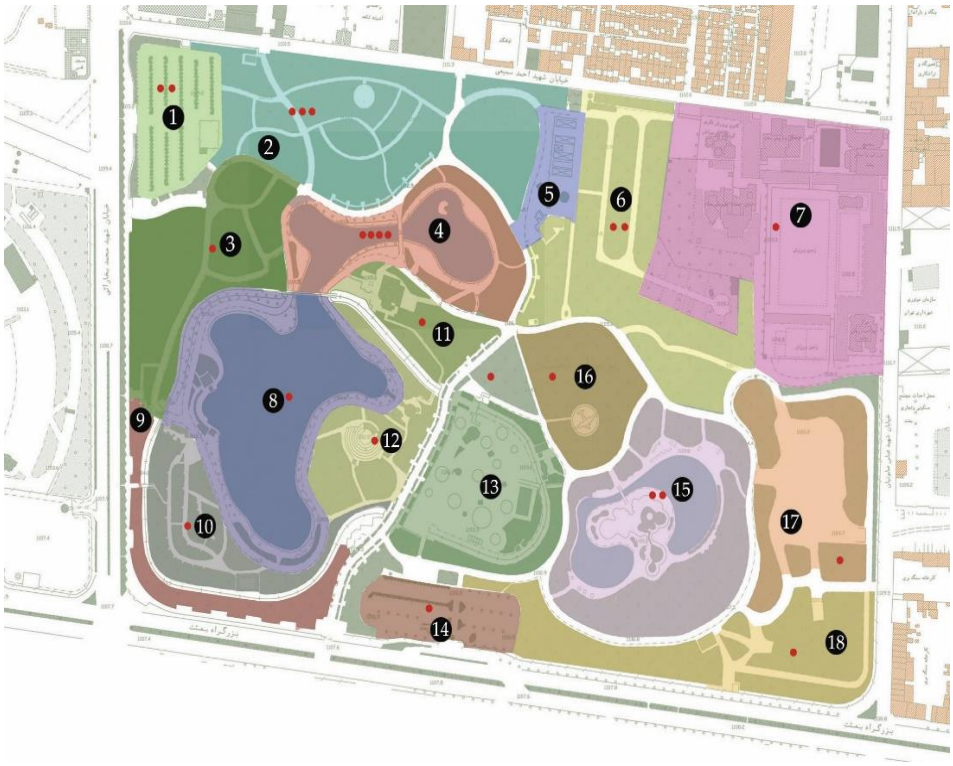


Fig 9. Average Presence in Different Parts of Besat Park during the Six Visits

Table 2. Activities of the High Attendance Parts

Zone Number		Related Activities	Level of Presence
Zone 4		Feeding and watching birds, sitting, walking and communicating with others.	● ● ● ●
Zone 2		Children playing (in the playground), camping/sitting/walking, exercise, and communicating with others.	● ● ●
Zone 6		Walking, sitting, communicating with others, using exercise equipment, playing football (occasionally).	● ●
Zone 15		Children playing (in the playground), sitting and communicating with others, walking, and exercise.	● ●

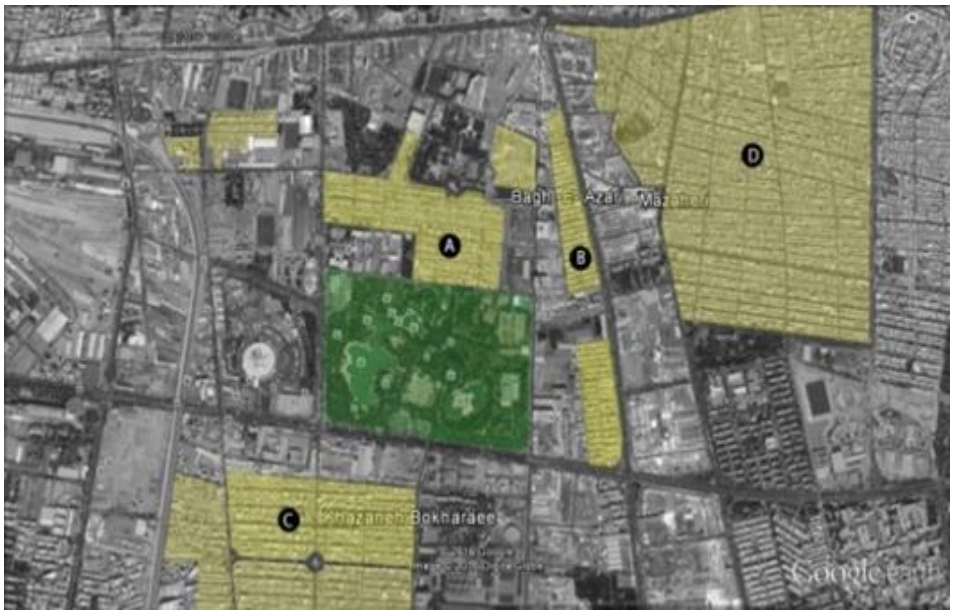


Fig 10. The Residential Parts (Zones A, B, C & D) as the Potential Users of Besat Park

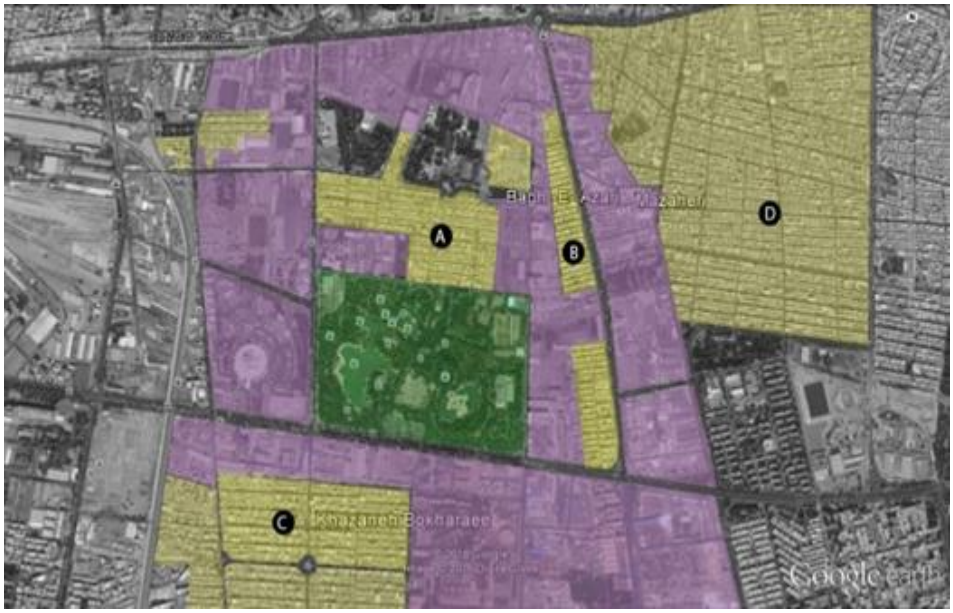


Fig 11. The Residential Parts Being Separated and Confined by Incompatible Land Uses

3.1.1. Activity

Surveying activities and land uses on a large scale revealed an obvious contrast between the density of surrounding residential parts of Besat Park and its visiting number. While the residential parts encompass the highest density (almost 23.7%) in the region (Naghshe Mohit Consulting Engineers, 2007) and lack of green spaces was obvious in the neighborhoods, the average amount of use from Besat Park was very low. Some of the residential parts were confined between incompatible urban land uses such as terminals, parking, garages, and industrial zones. These incompatible land uses prevent the residents of zones A, B, C, and D from accessing the Besat Park and either would not help attract people to the park. Indeed, these land uses have high densities around Besat Park working as a barrier between the park and the potential users (Figures 11 & 12). Furthermore, the decrease in density of crystal and porcelain shops from Shoush square to Besat Park in Sabounian Street had negative effects on Besat park use (Figure 13).

In meso- and micro-scale, activity level was investigated in the park edges which were adjacent to the city (Figure 14) and also in different parts of the park. The average amount of activity in edges of the Park (those being adjacent to the city) indicated that most of the edges are inactive or semi-active. As an exception, the north edge had some active parts, due to the existence of playground equipment and a neighbourhood park being in its vicinity.

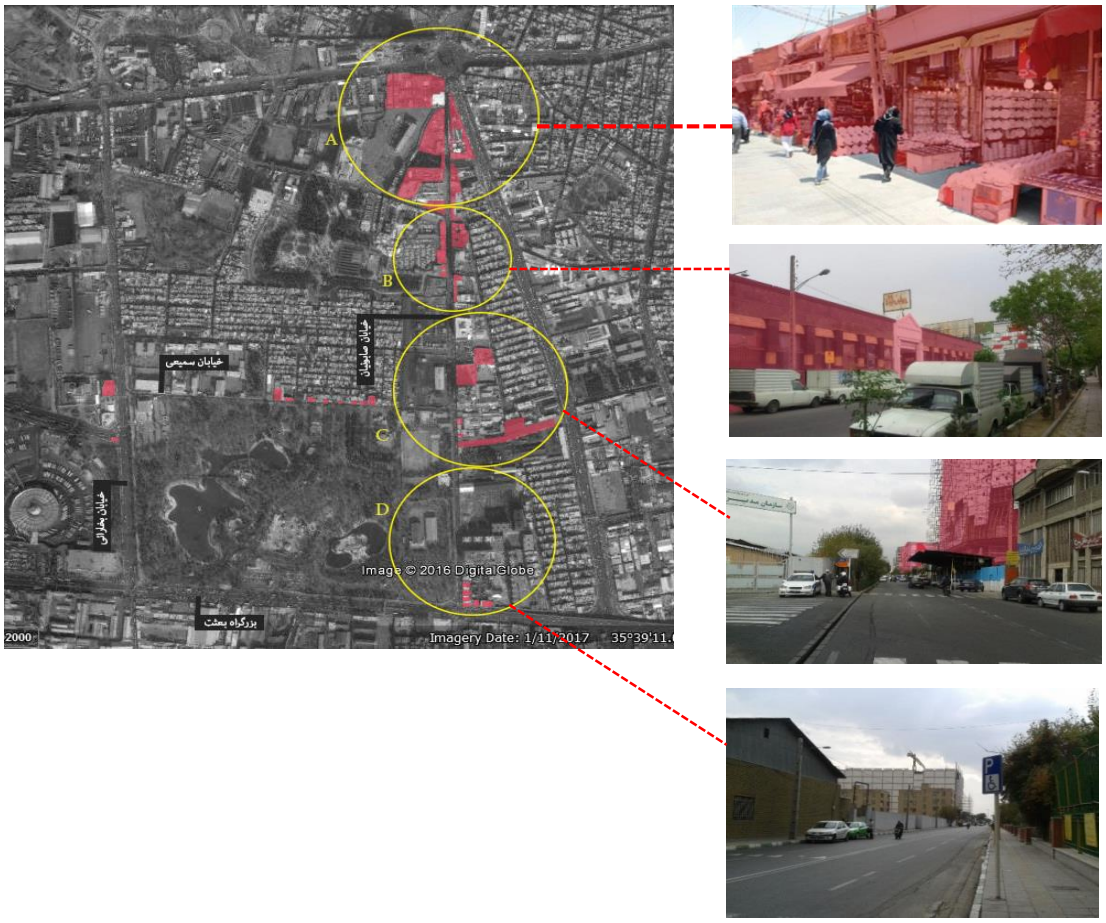


Fig 12. Decrease in the Density of Crystal and Porcelain Shops

Map Guide

Inactive edges

Semi-active edges

Active edges

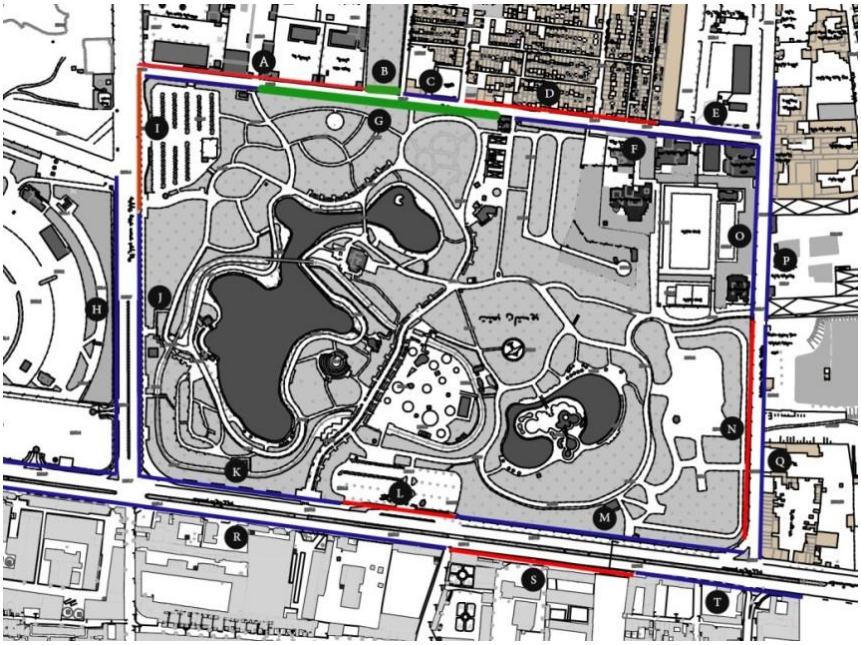


Fig 13. Activity Level of Besat Park Edges

Measuring the level of activity in different parts of the park indicated that the highest level of use was respectively related to part 4, part 2, and part 1 (Fig. 9). So, the level of use was in accordance with the activity level in different parts of Besat Park. Also, it was revealed that the activity level of parts 1 and 2 increased due to their proximity to active edges and active zones. Part 4 that was near to these parts (parts 1 and 2) had the highest amount of activity. Another factor that had influenced the activity level was physical compatibility. For instance, Parts 4, 2, and 1 which had the highest activity levels respectively, had these features: the Lake with bird's garden (Part 4), children playground combined with camping areas (Part 2), and a wide parking area which was used as the football playground (Part 1). The existence of these features brought physical compatibility which led to high levels of activity in these parts.

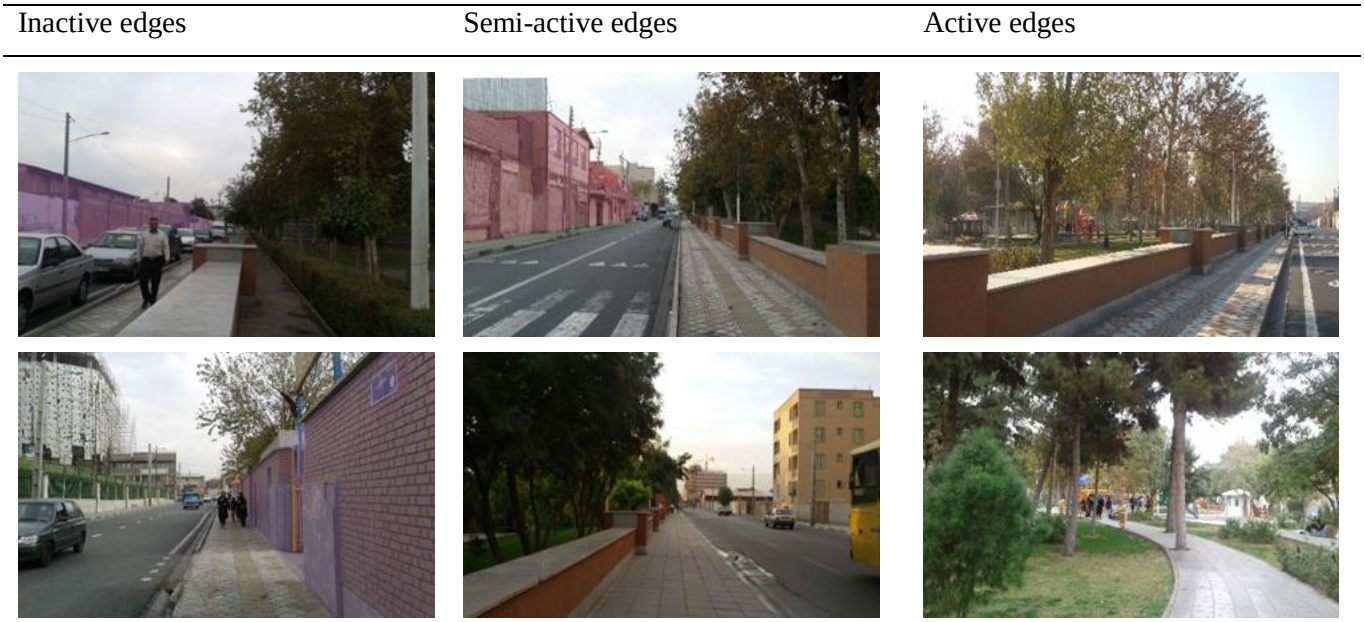


Fig 14. Some of the Active, Semi-active, and Inactive Edges of Besat park

Fig 15. Physical Compatibility of Parts 1, 2, and 4 Leads to High Levels of Activity in These Parts

3.1.2. Access

Access was identified as another factor that has a significant effect on the level of use of Besat Park. The lack of a well-functioning movement network was obvious on a large scale. Because the current movement network could not transfer the potential users (the residents of zones B, C, and D and also the Shoush Street crowd) to the park. Furthermore, the Besat Highway acts as a barrier for the residents of zone C due to high speed and lack of crosswalks. Also, the residents of zone B could not access Besat Park well, because there are not enough secondary routes that could connect the residents of zones B and D to Sabounian Street. Indeed, the high density of incompatible land uses acts as a barrier between these two residential zones and Besat Park. Also, the population in Shoush Street could have better access if there were more secondary routes in zone A that could help navigate people from Shoush Street to Besat Park. But currently, the high density of incompatible land uses has reduced the possibility of creating these paths.

In meso-scale, the lack of the main path that could improve the legibility of the park and indicates the whole space to the park visitors was obvious. In fact, this path existed in the park, but it was unrecognizable due to the number of split paths, poor edge definition in paths of the park, lack of landmarks, and also the similarity of the adjacent parts of the main path to each other (Fig. 17).

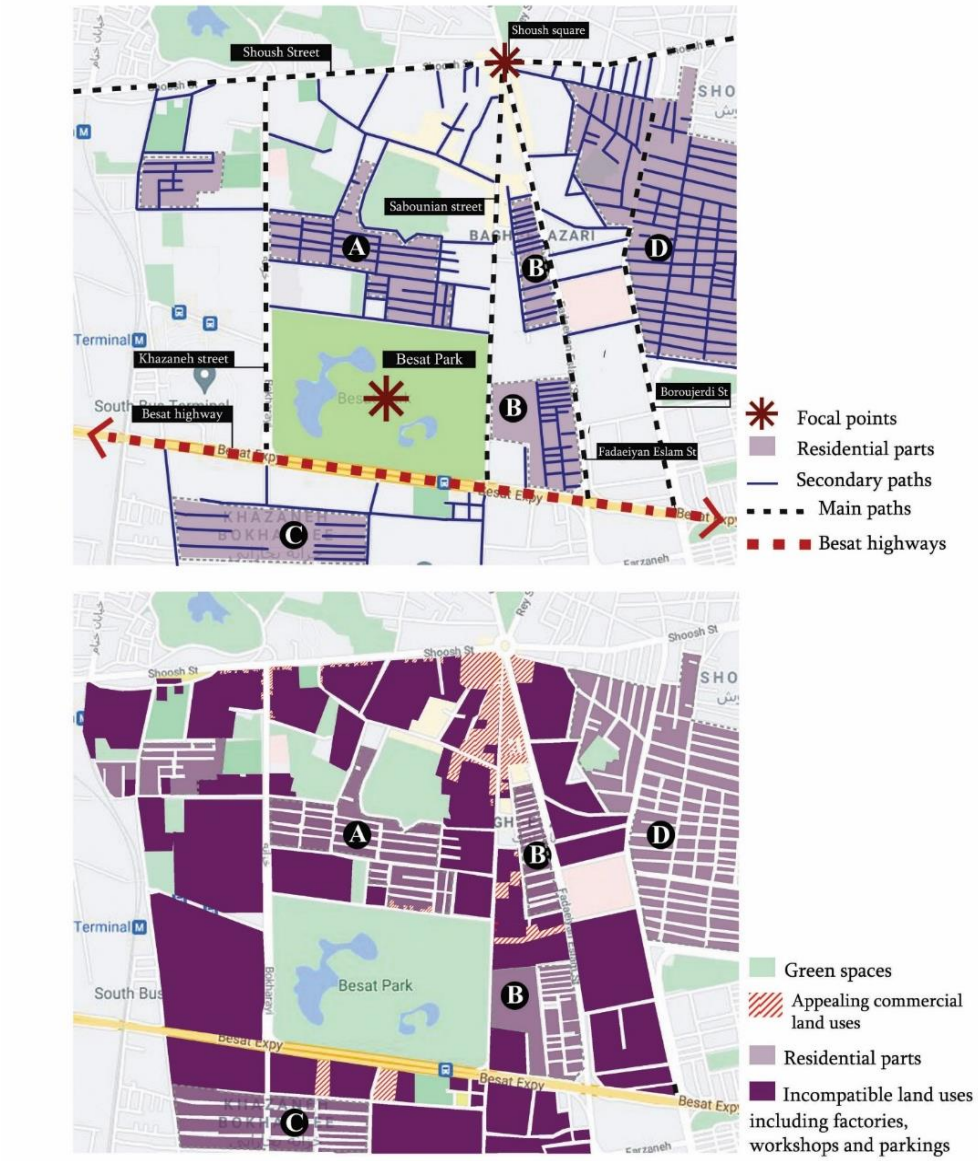


Fig 16. The efficiency of the Movement Network and the Existence of Incompatible Land Uses as Physical Barriers

Fig 17. The Main Path of the Park

Fig 18. Some Points on the Main Path of the Park (The Points Are Marked in Figure 17)

Another important feature that was found in the paths of the park was the continuity of people's experiences on pedestrian routes. But, most of the routes did not have the feature due to many of the activities were hidden and trapped amongst topography. Also, uniformity in many parts of the park has a determinant effect on the discontinuity of user's experiences (Fig. 19).

Visual permeability was another important feature that was scrutinized in routes of Besat Park. The level of visual permeability is demonstrated in Figure 20.

However, only a few of the routes were vulnerable to visual impermeability including those being distinguished by overlaying the following layers: level of use, areas requiring distinction, level of activity, existing landmarks, visual permeability, and focal points of activity in Besat Park routes. Also, the paths located in large - scale and monotonous parts of the park with a low level of presence were vulnerable to visual impermeability (Fig. 21).

Fig 19. The Routes in which Visitors Faced with the Discontinuity of Experiences

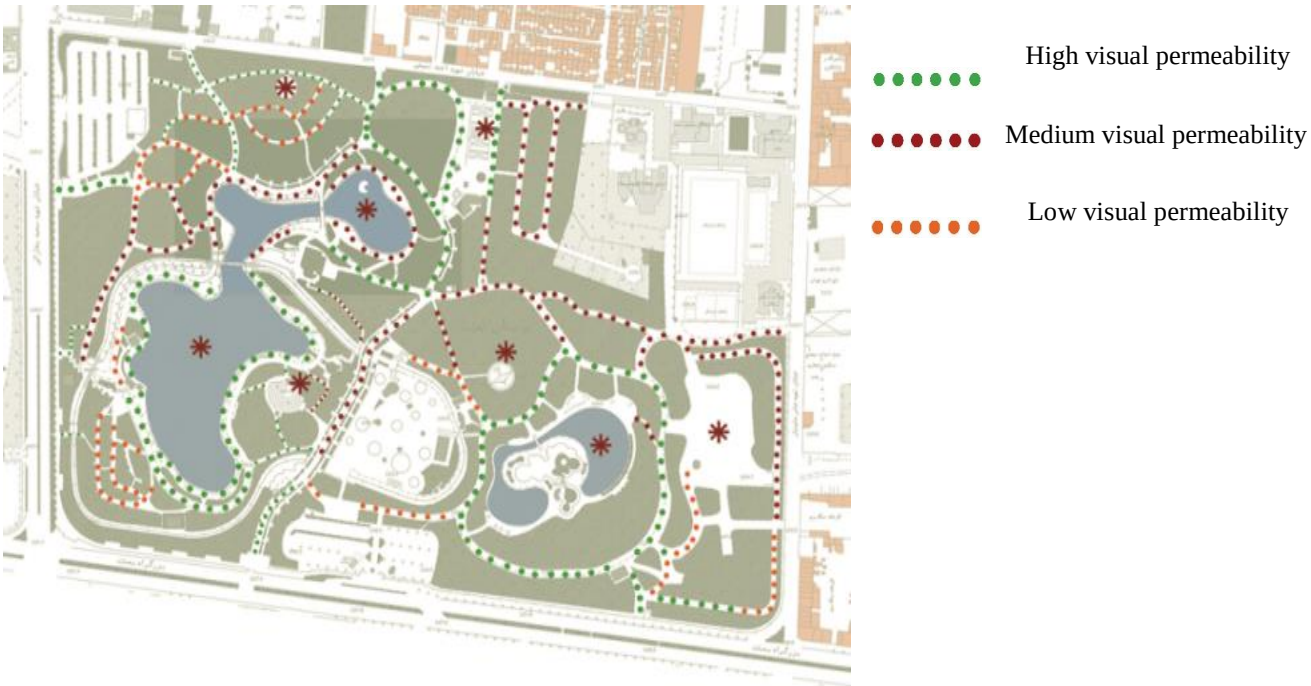


Fig 20. The Level of Visual Permeability in Different Routes of Besat Park

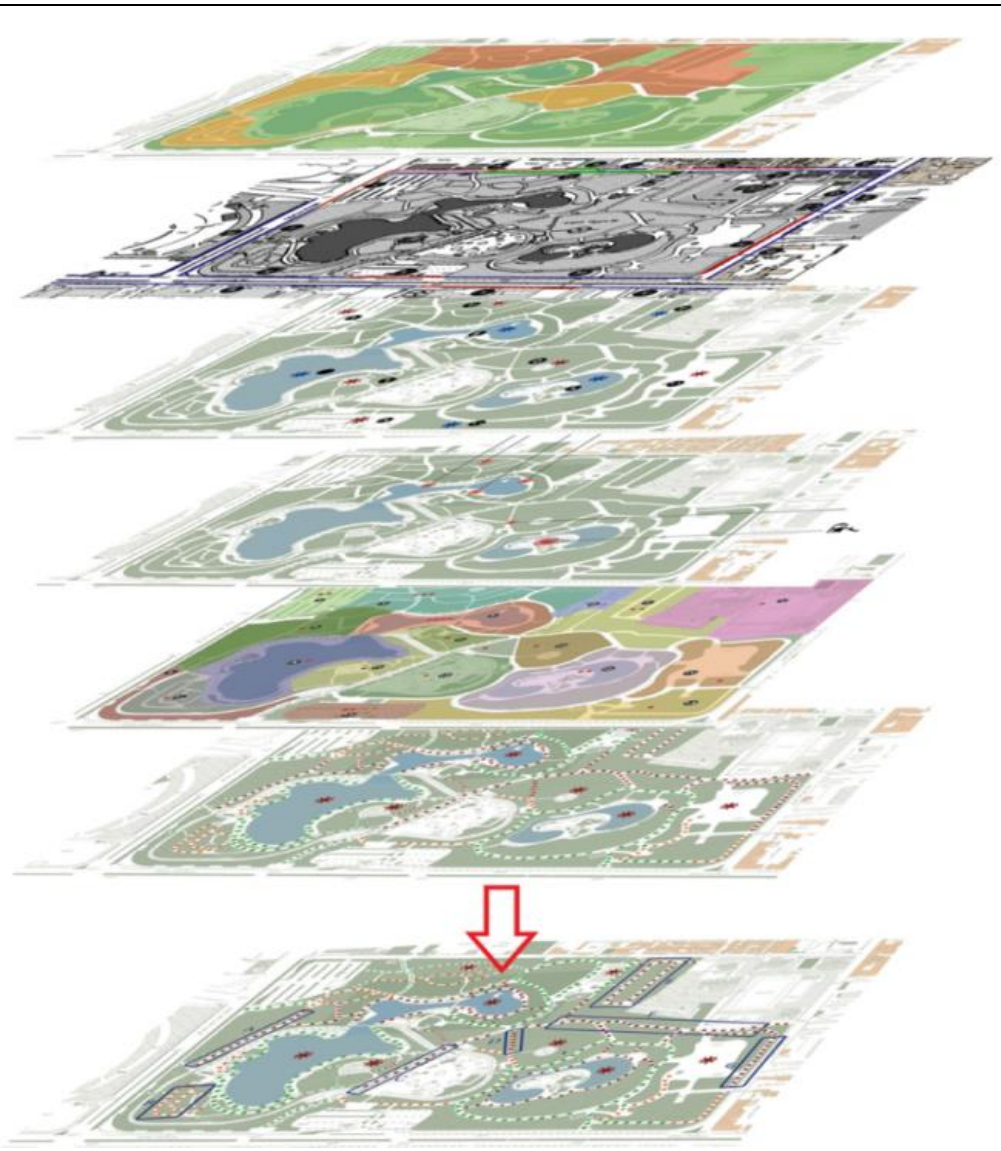


Fig 21. Vulnerable Paths to Visual Impermeability

Fig 22. Some Paths Vulnerable to Visual Impermeability

3.1.3. Legibility

District, landmark, node, edge, and path were the five determining factors of legibility that were enumerated by Lynch. These five factors were investigated in three scales in Besat Park.

Districts

The district as a determinant part of Lynch's legibility theory was replaced with the term parts to assess the legibility of Besat Park. The level of distinction among different parts of the park was investigated as a feature that could determine the park's legibility. In this regard, the determining factors of distinction included topography, edges consisted of natural (water and vegetation), and man-made ones. Finally, some parts of Besat Park including parts 2, 3, 6, and 16 were determined as not to be distinguished well (Fig. 23).

Nodes

Some nodes in the routes of the park needed improvement and reinforcement. Recognizing these nodes was accomplished by overlaying multiple layers including existing nodes, vulnerable routes to visual impermeability, existing landmarks, and the level of park use in different parts of the park. As a result, 11 nodes needed strengthening (Figures 24-25).

Fig 23. The Level of Distinction between Different Parts of the Park

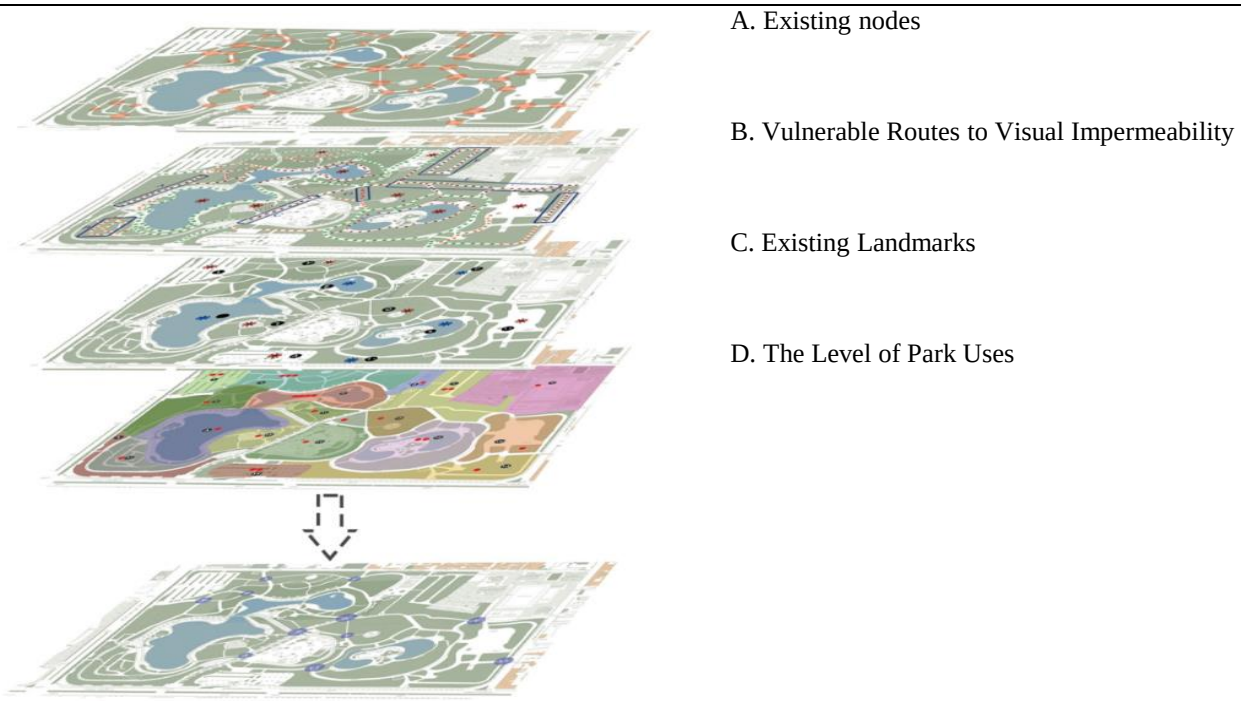


Fig 24. The Nodes which Require Improvement and Strengthening

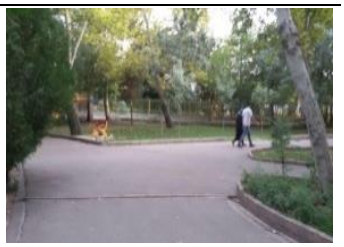
Node number		Node number		Node number	
1		4		7	
2		5		8	
3		6		9	

Fig 25. Examples of Nodes that Require Strengthening

3.2. User Interviews

The interview process was accomplished in 6 visits. One of the visits occurred in spring 2018 and the rest of them took place in winter 2020-2021. The total number of respondents was 150 due to the low level of presence in Besat Park which was considered as the main issue in this study. Information about these visits has been expressed in detail in Table 3 which included date of visit, day of the week, being holiday or non-holiday, the total number of respondents, and their distinction based on male and female numbers in each visit. The answers to the first question regarding the gender of users revealed a remarkable difference between the number of males and females. The male numbers were 1.67 times as many as women which might be related to the low security of Besat Park.

Investigating the 6 visits, it was represented that 22.6% of respondents were under 20 years old, 31.3% of them were between 20-30 years old and the highest percentage was related to 30-40 years old which made up for 36% of the respondents and the least percentage was dedicated to over 40 years old (10.1%). Among all the respondents, 48% of them came from district 18 of Tehran and 36% of them were residents of district 19. Also, only 16% of the respondents came from district 17 of Tehran. None of the residents of districts 11, 12, 15, and 20 were observed during the interview process. But these districts were also near Besat Park (Fig. 26).

The majority of respondents were accompanied by their family (about 41.33%). Also, 38.66% of those who answered the questionnaire came with their friends and only 20% came alone. The frequency of visits revealed that 42% of the respondents came to the park once a month and 20% of them used to come to the park daily. Also, 15.33% of the respondents rarely came to the park. While 11.33% of them used the park only once a week, the same percentage (11.33%) used it several times a week.

Based on the respondents' opinions, the majority of them (41.33%) intended to go to Besat Park for using green space. Also, 18% of them came to the park for children playing and 17.33% of the respondents brought up talking with friends as their main incentive for coming to Besat Park. Also, 16.66% aimed to use the park as a picnic area and 6.68% of them were in Besat Park because it was on their way. Among the accidental passers-by, 60% of them aimed to go to their home and 28.66% of them wanted to go to industrial units and workshops and 11.34% tended to go to Crystal market. Thus, user's priority for coming to Besat Park was respectively using green space, children playing, talking with friends, picnicking, and finally using the park because it was on their way to another destination.

The majority of the contacts (almost 45.33%) had walked to Besat Park and 35.33% of them had come to the park by their personal vehicles. While the area is rich in terms of public transportation, only 17.33% of the respondents came to the park by subway or bus. Lack of desire to use public transportation might be associated with user's visiting patterns because the majority of users had come to the park with their families and friends. So, they might have preferred to use their personal vehicles. Only 2.01% of the respondents had used a taxi to get to the park.

In terms of legibility, 64% of the interviewees declared the paths were legible enough to find their way. The majority of Besat Park users (42.66%) remarked that they had a problem finding their way around the smaller lake of the park while 26.66% of them declared the picnic area and playground at the northern part of the park were more illegible. The space around the amusement park and the old airplane was found to be illegible by 20% of the park users. The space between the sport field and the old airplane, parts of the park near the big lake, and the southwest edge of the park respectively accounted for 5.33%, 2.66%, and 2.66% of respondents' opinions regarding the illegible paths of the park. Also, the following landmarks were declared as the parts of the park that could guide the users better: Big Lake (52% of users), amusement park (15.3%), the old airplane (10%), gym (by 4.66%), the small lake of the park (9.33%), parking areas (4.66%), and the amphitheater was declared by only 4% of users. The results clarified that the main incentive which led people to use Besat Park was its size (declared by 68% of users) and after that the availability of Besat Park (mentioned by 20% of users) and the variety of activities (determined by 12% of users). General questions included the age and gender of the interviewees. Among all the respondents, 62.66% of them were males and 37.33% of them were females.

Table 3. The Questionnaire Distribution Dates

Number of visit	Date	Day of the week	Total Number of respondents	Number of males and female
1	2018/05/06	Sunday (Non-holiday)	30	23 Male/7 Female
2	2020/12/29	Tuesday (Non-holiday)	20	16 Male/4 Female
3	2021/01/03	Sunday(Non-holiday)	10	7 Male/3 Female
4	2021/01/07	Thursday(Non-holiday)	30	13 Male/17 Female
5	2021/01/08	Friday(Holiday)	35	20 Male/15 Female
6	2021/01/17	Sunday (Public holiday)	25	15 Male/10 Female

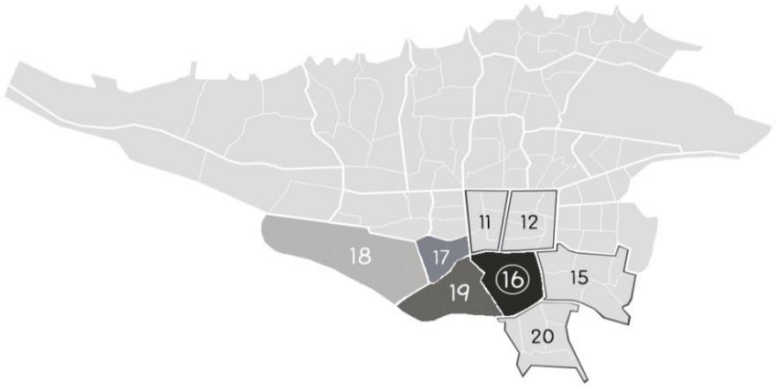


Fig 26. The Urban Districts Adjacent to Besat Park

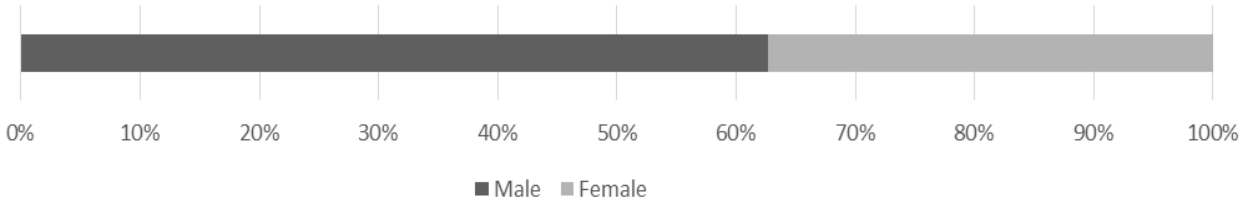
According to the results, 22.66% of interviewees were under 20 years old, 31.33% were between 20-30, 36% were between 30-40 years old, and only 10.01% were over 40.

The percentage of respondents who lived in districts 18, 19 and 17 were 48%, 36% and 16%, respectively.

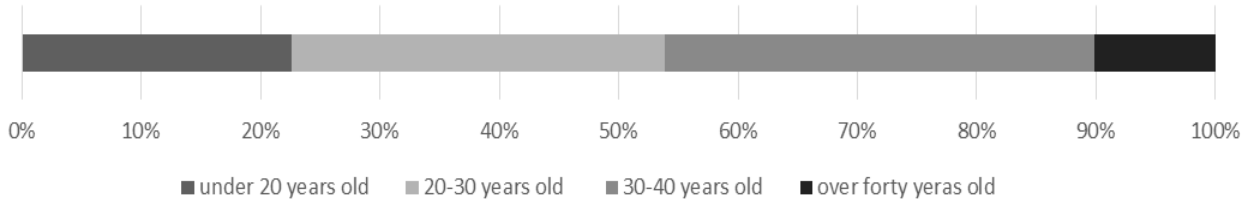
Based on the results, over 20.3% of people came to the park alone, while almost 38.66% came with their friends and 41.33% came with their family.

Interviewees had a different frequency of visits so that 20% of them came to the park daily, 11.33% of them visited the park several times a week and equally 11.33% visited the park once a week. Also, 42% of the users had a monthly frequency of visits, and users who came to the park rarely accounted for 15.33% of the respondents.

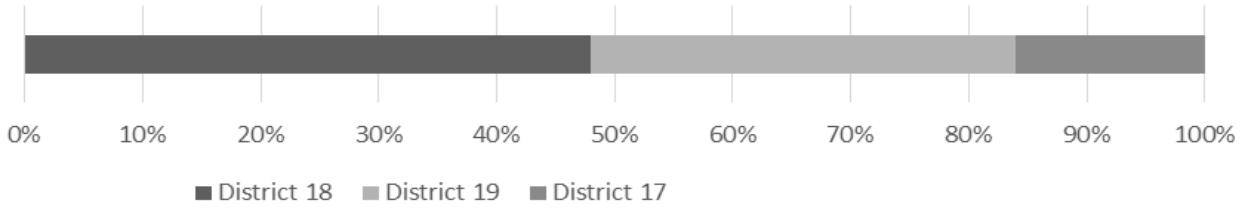
Over 16.66% of interviewees, used the park for picnicking and 18% of them utilized it for using children playground. Also, 17.33% of the interviewees intended to come to the park for talking with friends, and over 41.33% of them aimed to use the park's green space. Only 6.68% of the whole respondents told they had used the park because it was on their way.



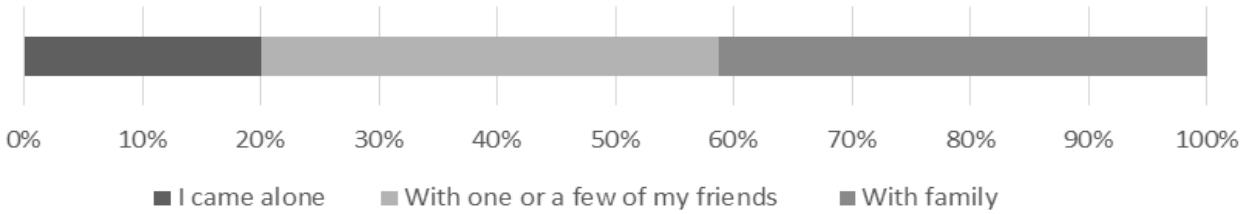
Graph 1. Gender Ratio of the Respondents



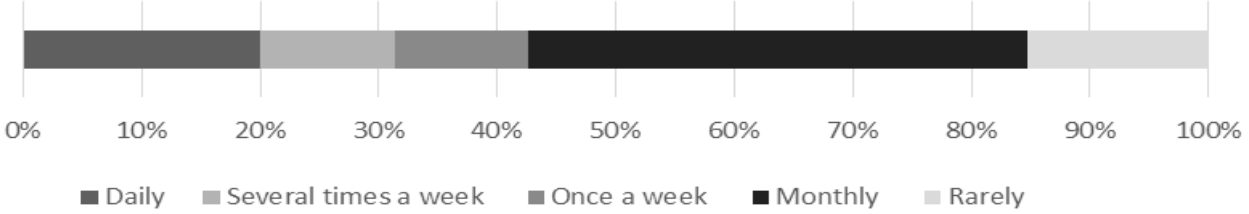
Graph 2. Age Composition of the Interviewees



Graph 3. Distribution of the Respondents among the Adjacent Districts of Besat Park



Graph 4. The Way the Respondents Were Accompanied for Coming to Besat Park



Graph 5. Frequency of Visits of the Respondents

Based on the results, users' priorities for the park use were as follows: Using the park's green space, utilizing the children playing area, talking with friends, picnicking, and using the park as a pass to go somewhere else. Also, 60% of users who were crossing the park to go to another place determined their home as their intended destination while 28.66% of them wanted to go to the surrounding workshops and factories and 11.34% of them were going to Shoush crystal and porcelain market.

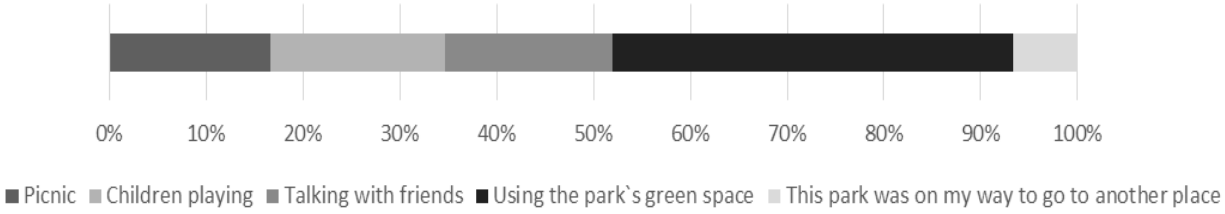
The means of transportation people used for coming to the park were personal vehicles, public transportations, and taxi which respectively accounted for 35.33%, 17.33% and 2.01% of the users. Also, 45.33% of the respondents used to come to the park on foot.

Among all the respondents, 64% of them agreed the paths were legible enough while the rest of them disagreed.

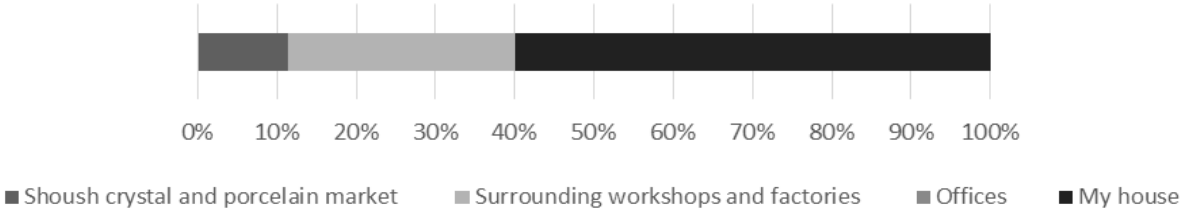
The respondents who had considered the paths illegible declared certain parts of the park as the most illegible ones. Each part accounted for a different percentage of the respondents' opinions. The areas and their associated percentage were as follows: The area near the small lake (42.66%), the area near the big lake (2.66%), the picnic and children playground area in the northern part of the park (26.66%), around the amusement park and the old airplane (20%), space between the sports fields and the old airplane (5.33%) and the southwest edge of the park (2.66%).

The results revealed the following landmarks helped the park users find the routes in Besat Park: Big Lake (52%), the small lake (9.33%), parking areas (4.66%), amusement park (15.3%), amphitheater (4%), gym (4.66%) and the old airplane (10%).

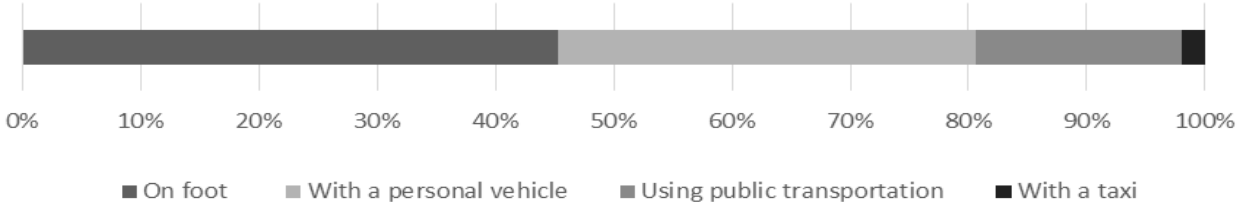
Finally, when the interviewees were asked to determine one factor as their main incentive to come to Besat Park, 68% of them implied extensiveness of the park, 20% of them encountered accessibility of the park as the main appealing factor for coming to Besat Park and 12% of the interviewees declared the diversity of activities was the main reason which made them come to the park.



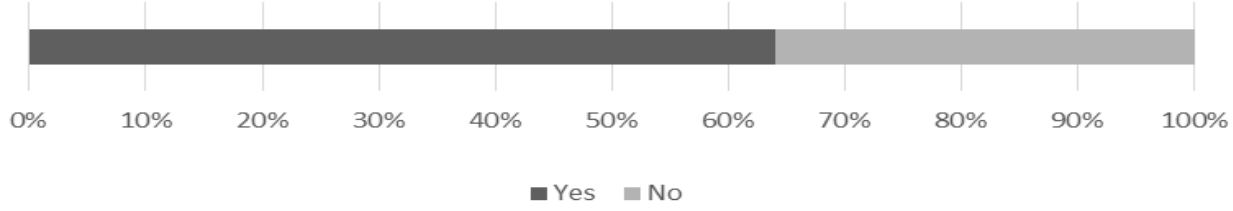
Graph 6. The respondents' intentions for coming to the park.



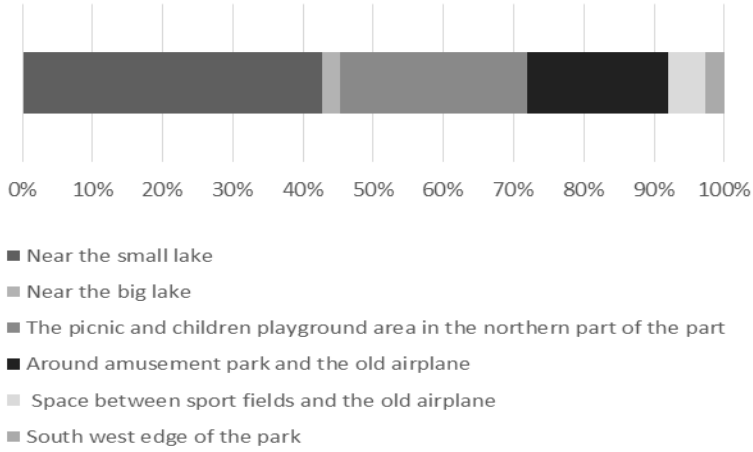
Graph 7. The Final Destination of the Respondents Passing through the Park to Go to Another Place



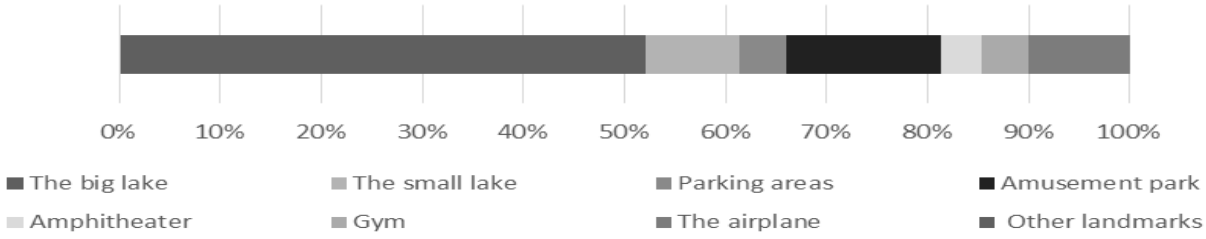
Graph 8. The means of transportation people used for coming to the park.



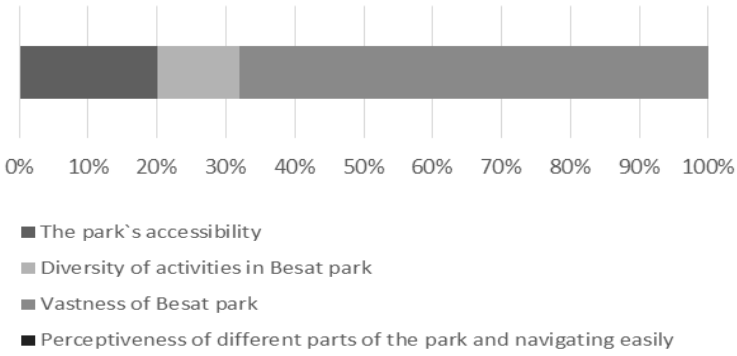
Graph 9. Percentage of People Who Perceived Besat Park as a Legible Urban Space



Graph 10. The Most Illegible Parts of the Park



Graph 11. The Landmarks in the Park Help People Navigate Better



Graph 12. The Motivating Factors for Coming to Besat Park

4. CONCLUSIONS

Generally, according to the results obtained from the observations and interviews, the activity could be enumerated as the most determining factor influencing the Besat Park use. Despite all the physical barriers, the existing of appealing activities could be a convincing reason for people to use Besat Park. So, lack of the appealing activities in the area has a negative effect on attracting potential users. Based on the interview results, some of the users initially did not intend to come to the park as a separate goal and the majority of those who had selected it as a distinct destination were from the districts adjacent to the park. On the other hand, observations revealed the people living in the neighborhoods had also some limitations for using Besat Park. Indeed, the park has been observed most crowded respectively during the sixth, fourth, fifth, first, third, and second visits. In fact, the most crowded times were holidays and evenings when people could be accompanied by their families and friends. Thus, urban planning should consider appealing land uses in the proximity of Besat Park to attract people from further districts. About this attitude, prolonging crystal shops along Sabounian Street can be an effective strategy to attract people to the park. Also, while the neighborhood is rich in public transportation, most users preferred to use their own car. Also, a large number of the residents of adjacent areas that accounted for 45.33% of respondents had walked to the park. Taking these issues into account, Besat Park does not have enough attractive activities for residents of further areas. In fact, typical activities have been indicated as the most appealing ones for using Besat Park which could mostly attract the residents of neighborhoods.

Legibility was not diagnosed to be a very determining factor due to the fact that most users included the residents of neighborhoods who had a good acquaintance with the

park environment. Also, since the majority of users preferred to visit the park in a group (coming by family or friends), not even the illegibility of paths did not make trouble for the users but also adding some mystery might attract the users who are visiting the park together with a sense of safety and security. Also, it was indicated that most users (64%) had found the paths legible enough due to their acquaintance with Besat Park. Also in a large scale, access was of less importance. Indeed, there were fewer possibilities for attracting people from other areas. Thus, accessibility was not considered to be a very determinant factor for improving park usage. It is analogous with Bahrini et al.'s (2017) findings, which did not consider accessibility as a determining factor influencing the level of park use in comparison with other variables such as park size, level of maintenance, and anti-social behaviors. However, to plan for attracting people from other districts of Tehran, the accessibility problems should be considered as an obstacle to improve park use. Also, factors such as discontinuity of spatial experiences in routes and lack of visual permeability did not play an important role to increase the level of park use. It is worth noting that, these factors are somehow related to legibility which did not play a significant role in attracting the users to Besat Park. But for attracting users widely, legibility should be strictly taken into consideration. Also, the routes should become an area for emerging attractive activities. Thus, legibility-related factors might become more important for users who are not acquainted with the park or those users that come alone and feel insecure walking in illegible paths. Vulnerability to visual impermeability can be compensated by improving activities or creating an appropriate view of active areas. Also, the effect of thermal comfort should be investigated in future studies. Since not all parts of the park are always in an acceptable thermal condition which could decrease the level of use.

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HOW TO CITE THIS ARTICLE

Afsharzadeh, M., Khorasanizadeh, M., Norouzian-Maleki, S., Karimi, A. (2021). Identifying and Prioritizing the Design Attributes to Improve the Use of Besat Park of Tehran, Iran. *Int. J. Architect. Eng. Urban Plan*, 31(3): 1-24, https://doi.org/1022068/ijaup.31.3.517.

URL: http://ijaup.iust.ac.ir