

Shadi Park Renovation with Social Development Emphasis: A Case Study Halabja City, Iraq

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ABSTRACT

The expansion of urbanization and the lack of open spaces in cities, urban green spaces have become very important, especially in recent decades. Among urban green spaces, parks are important because they have leisure and recreational functions, and the favorable physical and mental effects on humans have been proven today. Depreciation of materials, park equipment, destruction of vegetation and lifestyle changes over time have changed the needs and desires of the people and caused the old parks do not meet the needs of citizens. Today, improving parks is a new approach that makes parks matches the demands human beings have evolved over time with the advancement of technology. Shadi Park in Iraq is one of the regional urban parks; the lack of its design, as well as the wear and tear of some uses, lack of optimal lighting system and various uses by different age groups reduces the number of visits. In this research, based on field perceptions of the park and public opinion polls, prioritization and solutions to strengthen the presence of people has been pointed out. The results of the questionnaire indicate the priority of people's demands, the most important of which include: building a sports venue for women, proper service of restaurants and cafes during the day and night, the presence of swimming pools and fountains in the park, parking at the entrances, space allocation to hold cultural and artistic festivals.

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1. INTRODUCTION

Today, the importance of urban green spaces, especially green areas such as urban parks, has become very important due to the expansion of urbanization and the lack of open space in cities. It can be said that parks are the most important recreational and leisure spaces with ecological functions in cities. The quality of design, equipment, and various uses and service conditions in urban parks are among the factors that increase the sustainable presence of people. Lack of proper knowledge of the space for the construction of the park and not paying attention to the interests and desires of local people have reduced their presence in the parks and this factor causes the park to be abandoned and unused, the absence of citizens in the parks as the main users. This factor itself causes the lack of attention to the maintenance and closure of some uses such as amusement parks, cafes, restaurants, shops. In general, the absence of people will affect the maintenance and development of the park over time, and the parking space will move towards non-use and abandonment, and the areas of crime and delinquency in the park will increase. Improving old parks and adapting them to the needs of people that change over time is one of the new approaches, which is called "improving urban parks". And the desires and interests of the people as the main users according to age groups culture and gender.

1.1 Park definition

The design of the approach of outdoor areas to meet the physical and social needs, visually appropriate and have high standards have begun to take place nowadays [1]. According to [2] the space that is planned to meet the need for joint activities and community interaction called is a Green open space. Urban parks are defined as delineated open space areas, mostly consisted of vegetation and water, and generally reserved for public use [3]. According to Dunnett et al. [4] urban green spaces include many forms of green area; Green Space consists of urban parks and gardens and both of them used to Recreation and Amenity. Urban parks and gardens can be named as landscapes also can define this metonymy by designed and are managed the land to complete the needs of the population, needs are consisting of enjoying nature, spending the free time, social activities, sports, and physical activities in some situations, to entertain the architectural, aesthetic, historical, and environmental quality, also urban parks can also urban parks can be used for educational and cultural purposes. [4]. Gardens and parks are made landscapes, and all of them are created by human activity by mix nature and art in a development amalgam at a moment in time and space. Places have a great social role such as a way of implying wealth and power, the scene for political action, part of nature, and part of the broader landscape. Moreover, can attract touristic by historic gardens and parks it's important for positive economic attributes [5].

1.2 The importance of urban parks and green spaces

Urban parks are important to supply social needs and city sustainability [6]. To develop and contribute cities and achieve the quality of life the best way is Well-design urban parks [7].

The idea of public space has a significant role for planners because public spaces are part of the city in which all citizens can access; particularly citizens with extreme needs e.g. low income, elders, persons with disabilities [8].

The presence of natural areas in urban is important for improving the quality of life in cities. Alongside important environmental services (like water and air cleaning, filtration wind and noise, the constancy of microclimate), natural areas have another role such as; supply social

and psychological services which are necessary for the livability of abate cities and stress-reduction and mental health [9].

Moreover, urban parks will also progress the environmental quality in cities because plants decrease the urban heat and pollution, besides this, improve the urban ecosystem by providing habitats for wildlife, so urban parks usually reflects the social, cultural, and economic image of the cities [10]. The best way to enhance psychosocial, health, and comfort of urban residents are visiting the parks for spent leisure time [11].

Urban parks are an important element of a sustainable city [12]. The landscape has a great role to improve the urban environment such as increase biodiversity, recover the atmosphere, decrease wasting water, and reduce crowded noise city [13].

According to [14] City Parks also have important historical and cultural benefits. In the U.S. cities considered to have economic benefits too, for example, increased tourism value, Cost-saving for city government (wastewater, air pollution), Cost-saving factors to citizens (health value).

“An amount of public green spaces per inhabitant”, “public parks”, and “recreation areas” are frequently used as factors of making a city attractive to people [15]. The urban green space may have three benefits types including; (i) economic and aesthetic benefits such as energy conservation and property values (ii) the environmental the benefit which consists of ecological benefits, pollution control, biodiversity and nature conservation, and (iii) social and physical benefits which include recreation and wellbeing and human health [16]. Additionally, public parks and green spaces can have a statistically significant effect on the sale price of houses in close proximity to those resources [6].

Urban green spaces have great importance to meet the needs of daily life within its environment; parks are functional and aesthetic spaces, giving peace to the city. While providing opportunities for protection, utilization, health, and education, they also organize social life. Urban parks should be planned in terms of natural and cultural features of the most exclusive places in cities, they should appeal to every age group, and have active and passive recreation opportunities and facilities [1].

Open spaces are the part of Social Park which contains playgrounds and athletic fields and also has a green area. It can preserve microclimate, reduce air pollutions and provide natural resources and save the areas during disasters, furthermore, Open spaces contain a platform which is a special place that people can use for their activities [2].

1.3 Definition of Regeneration

Regeneration means re-activation or revival of, physical and environmental, economic, and socio-cultural aspects, and Urban regeneration is the regeneration of urban centers that have rejected due to changes in the industrial structure and the widening of new cities and new urban centers. The city is disappearing and prospering after repeated growth, decline and regeneration after birth. In order to keep sustainable growth, it is important to implement urban regeneration to plan and implement desirable urban change. Since the subject of urban regeneration is a local resident, the unique culture of the region, geographical environment, local history, and identity should be considered [17].

1.4 The importance of revitalizing urban parks and green spaces

Today, the redesign of urban parks and gardens are unavoidable due to the incapacity of parks to meet the needs of people and update these needs and the erosion process that occurs during the operation of parks [18]. To determine an effective strategy for a national park, organize and management should discover and analyses the drivers which transmit the number of visitors to national parks [19].

Landscapes and urban arranging depends on the category of history and memories that are visible in physical urban elements such as considerable monuments, buildings, and governmental and public spaces [20]. According to [2] park revitalization necessary for the community can be as nature-based infrastructure that also functioned as a refugee point when a disaster occurs. The Renovation of public parks promotes young people to become more physically active, especially in a poor society in which youth concern about rates. [21]. The capacity of the parking space to make a sense of place is often overlooked but is probably the crucial element that should be count in planning [8].

Playground renovations can have an important role in park utilization [22]. As the nature of the renovations must focus on increase positive social outcomes and reducing any potential negatives [23]. Park renovations were followed by significant increases in park use and physical activity levels among park users, as well as recovery in the conceptions of park safety [21]. Urban regeneration is for local residents and currently, municipalities are mainly planning parks as an element of urban regeneration, in other words, the revitalizing can be the beginning of sustainable growth [17].

It is imperative to take action in two pylons; the first is raising public awareness of the issue. The second is aiming at taking advantage of existing legal documents, and also creating new versions, to secure reduction of further loss and decay and target protection, conservation, restoration, and management procedures. This paper is an introduction to the subject [5].

In general, landscape architects can play a major role in the rehabilitation of contaminated soil, particularly former landfills, and can provide a positive impact on ecology and biodiversity. The regenerative design approach will not only restore habitat resources but also treat air and water source. In addition, the suitable selection of plant materials that have a high potential for the treatment of contaminated soil, with cheaper cost can play an important role in improving the environment [24]. [25] wrote that in this new century, we are facing a different kind of threat to urban parks not only one of disuse but of patterns of design and management that exclude some people and reduce social and cultural diversity.

Given the concerns about low rates of physical activity among low-income minority youth, many community-based organizations are investing in the creation or renovation of public parks, in order to encourage youth to become more physically active [21]. In improvement, the parks must be considered renewable energy for park tools [6]. In the urban regeneration, people can use new plan but is not sustainable every time due to problem in processing the plan. The presence high amount of people in a certain place means that the place is can deserve them and also the area will change and grow. This is can cause an increase in people's economic activity and growth [17].

1.5 The importance of social development in parks

Research of older people in Sweden explained that open spaces in the cities had sufficient effect to increase the social interactions and predicted the strength of ties among residents. Also, useful to avoid people for being an individualistic life in the urban area[26].

[27] In the study of community-dwelling elderly people shows that the important way to improve Health-related Quality of Life (HrQOL) is participating in social relationship and cognitive activities. So, according to World Health Organization (WHO) since 1948, complete health consists of physical, mental and social comfort, and not just luck of disease or illness

[26] Shows that delight in the sharing of enjoyable activity, improve health situation, given the opportunity to reduce depression and meet new people. [26] Discovers that the number of the visitor to national parks influences by the presence the attractive views such as water bodies, obtainability of trails, and minor roads. In contrast, wetlands and grasslands,

broadleaf and coniferous forests and the copious of other national parks have a negative effect to reduce visitor numbers [19]. Urban parks are a good environment to host outside concerts and theatrical representation, it is important to promote cultural entertainment to be offered in a public park (such as festival, music, art, and history) share to a social sense of place [29]. A study in America shows that providing a plan park program for different age groups and genders like supervised activities and social events will increase the number of park visitors, the study explained that supervised activity could increase park usability by 48% and physical activity by 37% [30].

1.6 Factors affecting the social development of parks

Activities are the basic building blocks of space. In fact, they are one of the reasons why people come to space first and come back again. Activities can also make a space special and unique. When there is no activity to do, a place will be empty and unused, and this generally means that something is wrong [31]. Edges with semi-shaded conditions and under-hanging trees provide a good opportunity to stay in space. Opportunity for relative hiding and at the same time visibility, in spaces that are usually chosen to stay, people usually choose corners and recesses or next to pillars, trees, lights, and other physical objects that somehow support them. These objects can also define places of rest and accommodation. Therefore, vegetation and especially trees have an effective role in creating activity in space [32]. The impact of security on the presence of people in space is also very effective, "If crime and violence actually occur in any space and region if people feel insecure and capable, they will leave that space and region" [33]. Having the right opportunities to sit down paves the way for a variety of activities that are among the primary attractions of being in space. These activities include eating, reading, sleeping, playing chess, sunbathing, watching people, talking [34].

Walking, sitting, standing, and staying in space are some of the events that can happen in one space and pave the way for other activities in space. Therefore, paying attention to providing design facilities and suitable environmental conditions for their proper occurrence can be very effective [31].

The aggregation of activities in many cases can lead to an increase in the amount of activity and thus increase the amount of presence in space ("People are attracted to each other and new activities occur in the vicinity of ongoing activities.") Human activities that can watch the activity other human beings are the most attractive in the range. The type and personality of outdoor activities depend a lot on the physical design of the space, it is determined through the design decisions of the pattern of activities. Sometimes providing new facilities in space also leads to the creation of new activities [34].

Research has shown if the number and location of trees are suitable in the parks, the park users and permanence of the peoples are increase, ergo the presence of trees multiply the use of public spaces [35]. In general, one of the important factors to the success of the green open space is community enthusiasm, desire to participate in voluntary works became to grow and financial capital effect to maintain and grow the green open space and encourage the community to save and preserve the area and sometimes improve the site by own expense, also, participate in peoples as a user can note the needs, inclusive infrastructure and management. In this way can select the ideal point of view for green open space [2].

2. METHODS AND MATERIALS

2.1 Study area:

The study was conducted in the city of Halabja located in the northeast of Baghdad, 241.402 km along the 36-35 N and 46 E, and in the southeastern Sulaymaniyah city, Iraq. The area of Halabja is about 1,600 km² with 122,412 populations for the year 2019 according to [36].

2.2 Climate of Halabja [37].

Temperature and Solar radiation: Halabja city is characterized by the large differences in temperature seasons. The lowest temperature degree -5.5 °C will record in January and highest 49.1 °C in July with an average of 21.5 °C. The solar radiation of 12.8 H d⁻¹ is a record in Jun, while this decrease to the of 9.85 H d⁻¹ in December.

Precipitation: The region is characterized by an abundance of precipitation during the seasons of the year, which starts at the end of October and continues to May. The precipitation is mostly rained with an average rate of 700 mm with snowing during from December to February.

Humidity: The relative humidity changes during the year, it may reach the highest of 95% in winter but the lowest is 18.2% in July and August with an average of 51.1% annually.

2.3 History of Shadi Park

Shadi Park is located in the southeastern of Halabja city, which was designed and implemented by the Kurdistan regional government (KRG) in 2012 as the largest city park. Its area is about 10.2 hectare as it is shown in (Figure 1). The city people use it for recreation and leisure. The park is currently managed by the city Municipal.

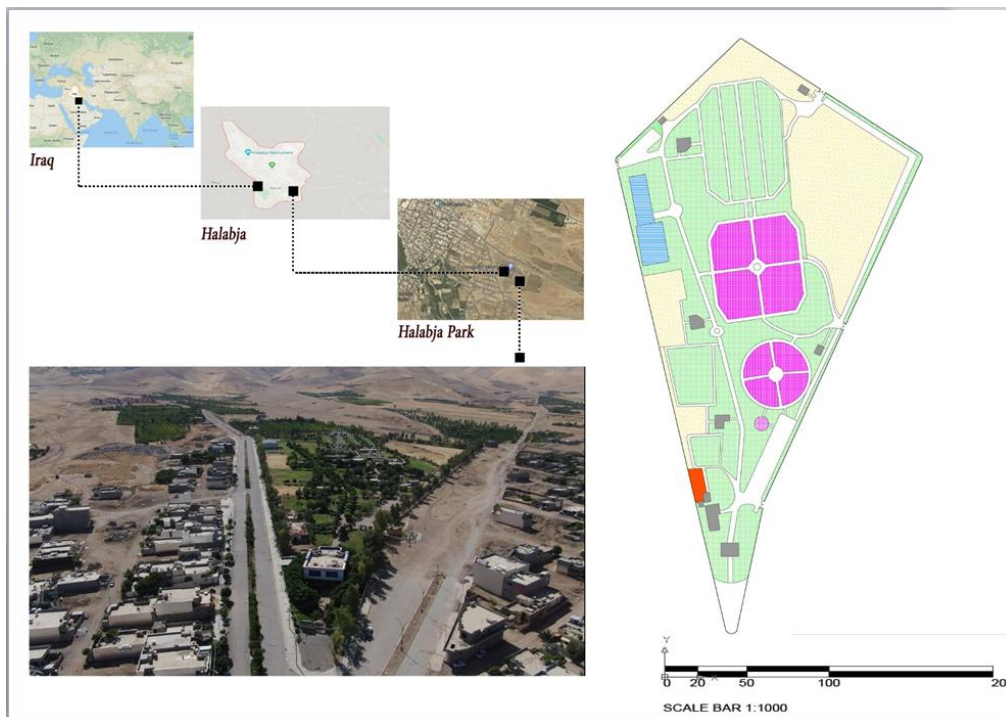


Figure 1: Location of Shadi Park

Scale:1:1000, papersize-A1 (Source: Authors, 2021)

Shadi Park leads from the north, northwest, south and southwest to residential areas and ends from the east to orchards and barren lands in the foothills (Figures 2). Due to its closeness to residential areas, this park if properly improved, the city citizens can visit it daily.



Figure 2: (A) Western view of the park and the surrounding residential context and (B) Eastern view of parks and orchards and barren lands (Source: Authors, 2021)

2.3 Research methodology

The results of this study are divided into two parts. The first part is based on the library documents study, field visits, researchers' findings and the preparation of a report on the park. But, the second part is related to the analysis of people who visited the park and filled the questionnaire.

2.4 Available park conditions

The park has six entrances, which are currently two entrances from the south and southwest side, and traffic is from that part and the other four entrances are not used. The main uses of the park are amusement, playground, sports and courier, picnic space, stalls selling various products and restaurants in the park, which are closed during the study. And also contain a big fountain in the park but inactive. There is car parking on the west side with walking pavement access to the park for people, and vehicles. A large part of the park on the east and southeast sides and north part are remained abandoned due to lack of barren design (Figure 3).

The main vegetation of the park is different tree species such as: *Robinia pseudoacaciavar*, *Cupressus arizonica*, *Chamaecyparis lawsoniana*, *Platycladus orientalis*, *Fraxinus syriaca*, *Robinia pseudoacacia*, pine, juniper, *Salix babylonica* and the major shrub and plant hedges include of *Ligustrum vulgare* and *ligustrum ovalifolium* while grass has been used to cover the bed and contain some type of climbers like climber roses and vine, *Lonicera japonica*. Irrigation of the vegetation is operating using sprinkler irrigation system. And also, the park is depending on rainfall during raining season.

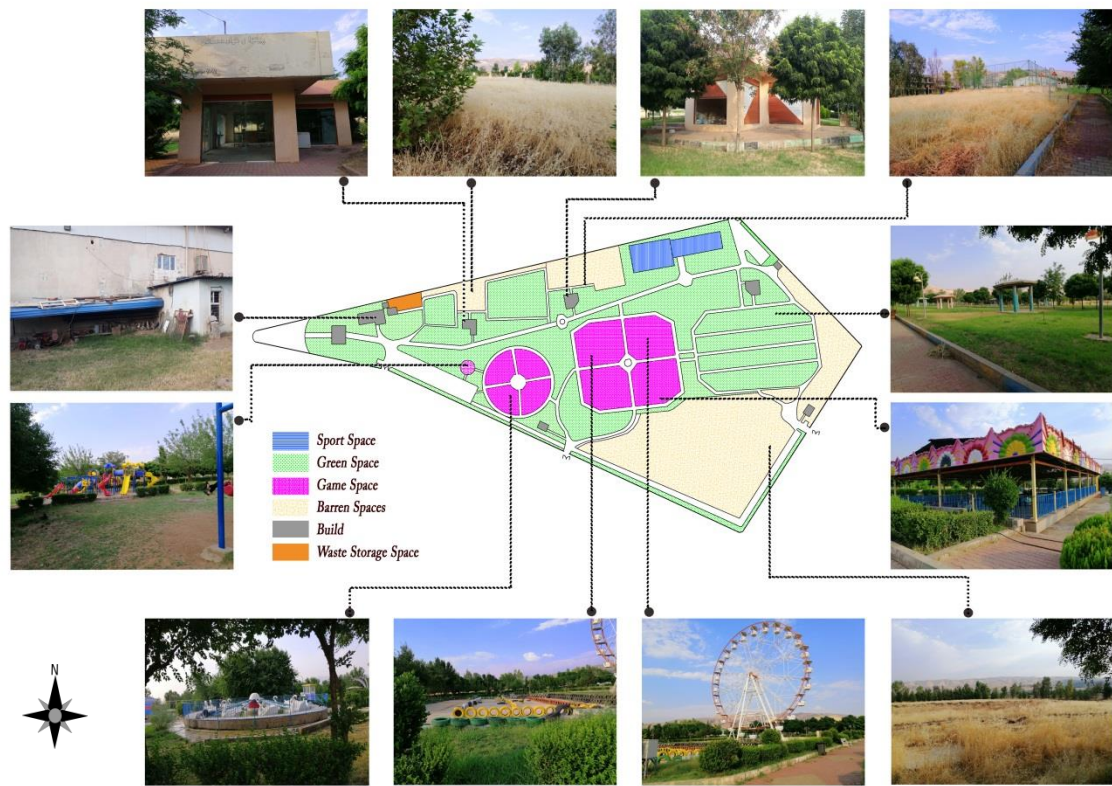


Figure 3: Existing land use plan of Shadi Park (Source: Authors, 2021)

3. RESULTS AND DISCUSSIONS

3.1 *The park problems*

The park analysis based on visiting the park by the research team, which they found the following problems:

- People do not visit the park at night due to lack of lighting in and increase the insecurity.
- Restaurants and service spaces in the park are currently inactive. This is caused by reducing the number of visitors. On the other hand, the presence of staffs and services in the park during the day and night increases the security of the park.
- The vegetation cover in the park does not enough. And also, lack of the variety, desirability, and the standardization of the landscape during the year has reduced visiting.
- The park furniture is currently limited to benches, buckets, tabs and pavilions and without applicable quality, number and distribution. Increasing the number of benches, their variety and creating individual and public relaxing spaces and improving pavilions for picnics can have a great impact on the presence of more visitors with remaining for more time.
- Existence of undersigned and abandoned spots in the park, as well as the existence of vacant workshop spaces that have become a place of accumulation of garbage and waste storage,

have created hazardous spaces, especially children and women in the park and psychologically it has a negative effect on people.

- The lack of different uses for special groups, including women, the elderly, adolescents and young people, has reduced their desire to attend the park. Also, the existing uses, including playgrounds and children's play areas are not of the desired quality.

- Lack of parking in the park is also one of the problems that have reduced the number of people coming to the park.

3.2 Interview with park users Questionnaire analysis

The visitor's questionnaire included some questions about their satisfaction with the existing conditions of the park, which included their general information such as age, gender, marital status and level of education. Also, their visits were evaluated daily, weekly and monthly. The total number of respondents to the questionnaire was 395 people. The respondent's age ranged from 10 to more than 35, with the highest number of respondents in the group (18-35) which was 65.2%. The gender included consisted of 64.1% male and 35.9% female. Another question asked was about the level of education, the people were different in the stage of education but more of them had bachelor certification which approximately 41.5%. To be more precise, about 55.1% of them were married and 44.9% were single. On the other hand, about 7% of people have visited the park daily, 21.8% weekly, 33.1% monthly and 38.2 yearly as shown (Figure 4).

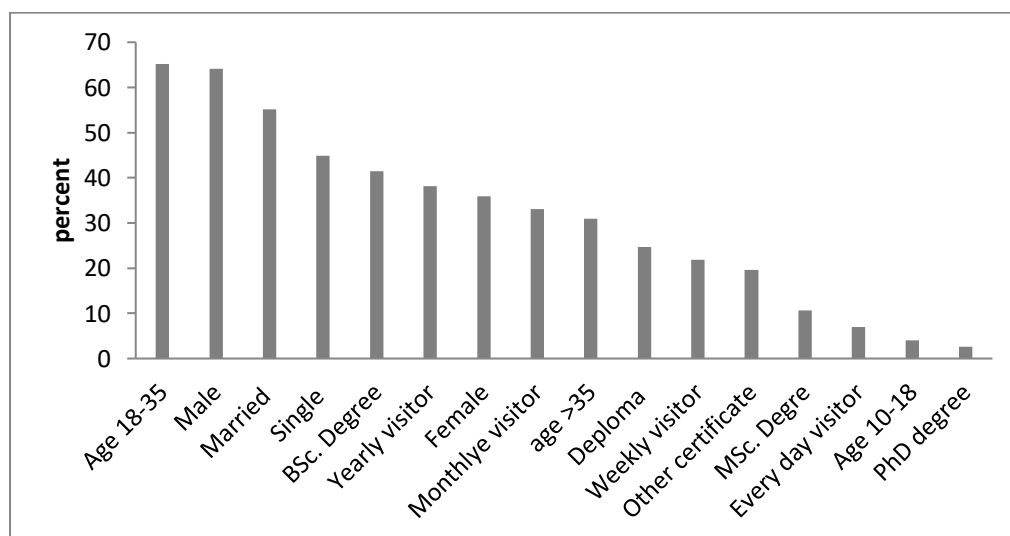


Figure 4: Review of respondents' personal characteristics (Source: Authors, 2021)

The purpose of this questionnaire is to examine the park conditions from the users' point of view and their satisfaction with the current conditions and their suggested points of view in order to improve the park. The questions and their satisfaction can be seen in (Table 1). As shown in the table we asked about devices and playgrounds, water and water fountains, parking, green spaces at the park, security the park along the day and night, restaurant, cafeterias and the public service, are the all ages at the park are comfort and the service are suitable for all ages ...et. The answers for all these questions are shown at the (Table 1) and the percentage of the responses.

As in (Table 1) about 74.19 of the response satisfied the fitness place unsuitable for ladies. Also, 73.28% are having note and disagree with the restaurant and the cafeteria. And about 62% of people don't agree with the water pool and foundations. About the devices and playground, approximately 59% of people think unsuitable for entertainments. Although 62.26% of people reckon the parking and the parking place unfit. On the other hand, 60.75% of responses like to have music programs and culture festival at this park. Another question and the user responses percentage are shown at the table.

Table 1: Questionnaire questions and user's response percentage (Source: Authors, 2020)

No.	Question	A lot %	In part %	Less %
1	Do the devices and playground suitable in this park for satisfaction entertainment?	5.5	35.89	58.61
2	Are water pool and fountains suitable in this park?	11.82	25.71	62.47
3	Are you satisfied with green space at this park?	24.84	55.61	19.55
4	Do you feel secure at this park?	21.6	50	28.4
5	Do you like the restaurant and the cafeterias are suitable at this park?	3.02	23.7	73.28
6	Are swimming pool and the club suitable for every age and genera?	10.45	39.61	49.94
7	Is the park suitable for enjoyment entertainment along night?	11.4	47.15	41.45
8	Is the park fitness place suitable for ladies and safe for visitors?	6.56	19.25	74.19
9	Are ladies feel enjoy full at the park	8.5	46.38	45.12
10	Do you like to have music programs and culture festival at this park?	60.75	26.72	12.53
11	Do you like; visit this park at the cool seasons?	11.92	31.64	56.44
12	Do you agree to have to peddler and vender at this park?	27	33.44	39.56
13	Is it suitable for children, adult and older?	18.36	55.47	26.17
14	Is lighting facility suitable along the night at this park?	14.51	42.22	43.27
15	Do the green space suitable according to beauty and quantity along with the all four seasons?	12.57	41.75	45.68
16	Are parking and parking places suitable for travelers?	11.72	26.02	62.26

At the end of the questionnaire, to find out the personal views of the respondents, they were asked; what factors increase their presence in the park and what changes are needed to improve the conditions of the park;

People that stay close to the park-like changing these factors at the park:

- Improve the parking and add the number of parking area for visitors.
- Design the parks are impiety and they don't have service still.
- Improve park security particularly
- The park does not have particular space for family activates like (party, picnic....et.)
- In the park some services like toilets are not enough for visitors.
- There is no bulletin board in the park.
- There is no public transport for visitors to the park.
- The services in the park are not helpful and should be better especially in the holiday and the seasons.

- Restaurants and café should open for longer hours
- Improve the play spaces particularly space for lady's game.
- Improve the lighting along the night and increasing the number of light around the roads and relaxing sites.
- Adding and improving the green spaces in the park by increasing shade plants.
- There are no enough seats in the park for a high number of visitors.
- There is not a particular space for picnic, party and festivals.

3.3 Design of an abandoned and unused part of the park

The southeast side of the park (Figure 3) remains abandoned due to lack of design and use of people and have an unsuitable appearance and this factor has reduced the amount of traffic to this part of the park and has caused an insecure atmosphere in this park. The research of this section is designed for design based on the point of view of people and respondents to the questionnaire, which is followed by the study objectives.

3.4 Goals and criteria

3.5 Crossing routes:

The zoning has been done in order to increase the traffic routes and the placement of sitting benches in a desirable and scattered manner throughout the section designed to rest and prolong the presence of people and increase public monitoring and reduce insecurity in the park (Figure 5).



Figure5: Overview section of the design (Source: Authors, 2021)

3.6 Security room

Next to the entrance door from the Northeast side of the park, a guard room has been considered to control traffic and increase the security of the park (Figure 5).

3.7 Toilet

Due to the size of the park, it is necessary to open water closets in the different parts of the park, which is also located in this part of the park (Figure 6-a).

3.8 Bicycle station

Due to the large area of the park and the wide walkways, visitors can use the bicycle station to rent a bicycle for sports and walking in the parking area (Figure 6-b).

3.9 Restaurants, cafes and buffets selling

The variety of food and service in the park will increase the presence of citizens. In this section, a restaurant, cafe and a buffet space are considered, and the interior of the buildings is also designed to serve and the surrounding area (Figure 6- c & d)



(a)



(b)



(c)



(d)

Figure 6: (a) Guard building (b) Toilet service (c) Bicycle station (d) Buffet selling food products



Figure 6: Restaurant and café (Source: Authors, 2021)

Pergola: The roofed pavilions in the park are suitable for use during the year and the lighting system is used for use at night. The fireplace in some pavilions is intended to increase the presence of people during the cold seasons of the year.

3.10 Picnic tables in the forest gardens

For the optimal use of the forest parts, picnic tables have been placed for the use of the people.

3.11 Vegetation diversity

- A good combination of deciduous plants and evergreens due to the stability of the green cover throughout the year.
- Planting perennial flowering plants and seasonal flowers to create variety and beauty.
- Planting shrubs and flowering trees in different seasons for beauty and variety.
- There are pergolas in the passageways on which various climbing and flowering plants are located.

3.12 Strengthen nesting and the presence of birds in the park and increase biophonic

Due to its large size, this park has the ability to nest birds. Hearing the birds singing in the park can have a positive effect on increasing the presence of people in the park. In this section, different plant species have been used for nesting and feeding birds.

3.13 Lighting system during the night

In order to create security and increase the presence of people in the night hours, a lighting system is necessary to create security and beauty. And the fountains are also illuminated.

3.14 Waterfall and drinking water in the park

Two fountains have been designed in the squares of this part of the park, which will cause people to gather, and the presence of people around it will increase due to lighting, living platforms, beautiful planting design, including a variety of flowering and aromatic plants (Figure 7).



Figure 7: Different views section of the design (Source: Authors, 2021)

4. CONCLUSION AND RECOMMENDATIONS

Based on the achievements of this research, it can be said that Shadi Park has potentials and strengths, which are mentioned in the following important cases:

- Park area
- Existence of old vegetation
- Adjacent to residential texture
- Convenient access
- No visual and noise pollution

Based on the above, it is expected that by improving the park based on studies and public opinion polls, favorable conditions will be provided for the widespread and stable presence of citizens in various traditional groups throughout the year.

In general, the following can be said as suggestions for improving the physical and service conditions of the park:

- Design and usability of abandoned areas.
- Organizing land uses and service equipment, including food stalls, cafes and restaurants, toilets and drinking water, mosques, etc.
- Increasing the equipment and furniture and its optimal distribution in the park, including benches, trash cans, pavilions and barbecues, etc.
- Entrance and access from different sections and parking.
- Improving the lighting and strengthening the security of the park through the guards, as well as lighting to increase the presence of people in the early hours of the night.
- Strengthening special uses such as children's playground in different traditional groups under 5 years old and 6 to 13 years old, sports spaces for teenagers and young people, amusement park, cultural center, library, space for the elderly and disabled, special space for women, bicycle station.
- Holding various cultural and artistic festivals in the park.
- Strengthening diverse vegetation (shady tree structure, flowering plants, species that are beautiful during different seasons) along with strengthening the presence of birds.
- Creating a favorable atmosphere for family parties and picnics.

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