Analyzing Problems and Effective Solutions in The Field of Urban Green Space Conservation and Maintenance

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Abstract

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The present study was conducted to analyze the problems and effective solutions for conservation of urban green space in Urmia city. The purpose of this study is practical and survey. The research tool was a researcher - made questionnaire. Using pilot test and calculating Cronbach's alpha, the reliability of the questionnaire was obtained. The population of the study consisted of 175 experts and activists of green space in Uremia city. Based on Cochran formula, the sample size was 128 people. Respondents were randomly selected and questionnaires were distributed among them. The results indicate that there is a positive and significant relation between economic, cultural, educational, social, environmental and managerial solutions with the advantage of conservation of urban green space in Urmia city. To predict the changes in the dependent variable, conservation and maintenance of urban green space by independent variables means economic, cultural, educational, social, environmental and managerial solutions were used. The correlation coefficients show the intensity of the relationship between dependent variables and independent variables. According to the calculated determine coefficient, 63 percent of the dependent variable changes, i.e., the advantage of conservation and maintenance of urban green spaces in Urmia city were determined.

1. Introduction

Today, a population of over 4 billion people, approximately 55% of the world's population lives in cities and urban areas (Shawky et al., 2023). The design and implementation of green space is a serious and effective approach to free people from the challenges of modernity in the 21st century. Concerns caused by industrial pollution and global warming, awareness of the impact of vegetation on the control of environmental crises and the health field make cities need more green areas. The population of cities is increasing every day; So it is likely that by 2050, more than 75% of the population of each country will be urban dwellers. Urban challenges and problems after the industrial revolution (such as population growth and acceleration of urbanization followed by an increase in economic and social needs) caused the loss of the ecological balance of cities and the destruction of gardens and farms in cities and suburbs. This issue is a wake-up call for city managers and even citizens to become aware of the disaster of environmental destruction and seek to protect and develop green spaces (Yang & Lee, 2008). The development of urbanization, technological advances and the trend towards machine life have caused the pollution of cities, the destruction of the environment and vegetation in and around cities (agricultural lands, gardens) and the loss of the ecological balance of the environment. To satisfy these needs, people created parks and artificial green spaces inside the cities (Naghizadeh, 2008). In order to achieve sustainable development, urban management is the most important tool. Urban management is formed from the organization of agents, forces and resources to manage affairs and respond to the needs of city residents and includes the functions of planning, implementation, supervision

and control. Public green spaces play an important role in people's quality of life due to their impact on their physical and mental health (Hakimian, 2014). One of the important factors in the evaluation of urban parks is the access of citizens to these parks (Alavi and Ahmadi, 2014). Access is an important factor that affects public spaces from different aspects. Access can be defined in different ways, and its objective and subjective aspects are very important. Physical accessibility and physical distance is still an important factor in developing countries (Lotfi and Koohsari, 2009). The amount of use of urban parks as one of the important public spaces can be related to physical access. Many studies have shown a positive relationship between physical activity and proximity to green spaces (Riaoux et al., 2016). Human impacts contribute to reducing biodiversity. Globalized human interventions cause the greatest loss of biodiversity (Cepic, 2022).

The only function and consequence of urban green spaces is not ecological. Urban green spaces have a social, economic and ecological role, such as social integration, reducing mental pressure, providing an attractive environment for raising children (Jonadeleh, 2016). The greenness of the living environment and the feeling of walking in residential areas make people enjoy life. Parks and urban green spaces have a positive effect on public health (Cohen et al., 2007). Yaghfouri et al., (2012) have come to the conclusion that the green space per capita is far from the standard of the Ministry of Housing and Urban Development. Also, its spatial distribution is very unbalanced and disproportionate.Ebrahimzadeh and his colleagues (2017) determined in their research that giving importance to the equal distribution of green spaces at the level of cities, so that all residents can use green spaces in the shortest time and with the least cost; It is important to pay attention to the population, culture, social and economic issues of the studied area in order to improve social interactions and develop the relations of residents.

The study of the Dutch Health Council showed that the presence of green spaces increases the use of public spaces, and the presence of green spaces and views has a positive correlation with communication and social ties in neighborhoods (Scotland Green space, 2008). The increasing physical growth of the city of Sara Monastery in recent years has caused the destruction of high-quality agricultural lands, the environment and severe climate changes and the intensification of desertification. (Hatamnejad et al., 2023). Peters et al., (2010) state that urban parks that include green spaces promote social solidarity more than non-urban green spaces. Urban parks are places where different ethnic groups talk together, and formal and transient interactions stimulate social solidarity; It was also stated that the design of the park, its location and the perception that people have of the park in combination with the cultural characteristics of different ethnic groups form opportunities for interactions between different cultures (Peters et al, 2010). Kabich came to the conclusion that the main challenges in Berlin's green governance are divided into three general categories, which are: 1- population growth and financial limitations in the municipal budget 2- lack of expertise 3- lack of awareness of the beneficiaries of the benefits of space Green. However, the concept of ecotourism services is a useful argument for promoting the protection of existing urban green spaces and provides communication and use of the benefits of urban nature at all levels of green space governance (Kabisch, 2015). The results of Morgan Hughey et al., research (2016) showed that identifying and correcting inequities in park quality may lead to the creation of equitable park environments across different city neighborhoods (Morgan Hughey et al., 2016). In the issue of environmental protection, factors such as economic, social, cultural, managerial and environmental factors can be mentioned. For this reason, in this research, the issues and problems as well as the effective solutions for maintaining and creating urban green spaces in Urmia city are investigated. The amount of urban green space in Urmia city is equal to 910 hectares. Unfortunately, despite the efforts and plans made by the trustees, there are issues and problems in the field of urban green space maintenance. Based on this, the researcher wants to identify the existing issues and problems and provide effective solutions to solve them.

2. Materials and Methods

This research is descriptive and survey in terms of its nature, and it is correlational descriptive in terms of examining the variables under study. The survey tool in this research is a questionnaire. The statistical population of this research is urban green space experts in Urmia city, whose number is 175 people. The sample size was determined based on Cochran's formula and the sample size was equal to 128 people. A simple random sampling method was used for sampling. In order to collect theoretical information as well as background studies, library studies and previous documents were used, as well as internet search in reliable scientific sites. The questionnaire was the main tool of data collection. The opinions of experts were used to obtain the validity of the questionnaire. Cronbach's alpha value was calculated to determine the reliability of the research tool. The average Cronbach's alpha was equal to 0.804. After collecting the information and coding and categorizing the questionnaires, the data was analyzed with SPSS version 22.

3. Results and Discussion
3.1 Personal characteristics of the respondents

The results showed that 62.5% of respondents are male and 37.5% are female. The findings of the research showed that the average age of the respondents was 32 years. In this research, the youngest respondent was 21 years old and the oldest was 57 years old. The findings showed that 89% of the respondents have bachelor's jobs and almost 11% of their jobs are responsible for urban green space departments. The findings showed that 61.7% of the respondents had a bachelor's degree and only 6.2% of the respondents had a doctoral degree. The results showed that the average job experience of the respondents was 15.2 years. The maximum work experience is 32 years and the minimum work experience is 1 year (Table 1).

Table 1. Describing the personal characteristics of the respondents

Variables		frequency	percent	Mean	St.d
Gender	Male	80	62.5	---	---
	female	48	37.5	---	---
Age	---	---	---	32.41	5.67
Job Experience	---	---	---	15.2	8.35
Education	Bachelor	79	61.7		
	M.Sc	48	32.8		
	Ph.D	8	6.2		

3.2 Prioritizing the attitude of the respondents in the context of urban green space problems in Urmia city

The findings of the research in the field of prioritizing the respondents' attitudes in the context of urban green space problems in Urmia city by calculating the coefficient of variation (CV) showed that the items of change in the use of green space and gardens with the value of the coefficient of variation 0.092, the lack of suitable areas for the development of green space at the disposal of the municipality with a coefficient of variation of 0.127, and issue of allocating small areas to green spaces and destroying gardens with a coefficient of variation of 0.145 are the most important items of the respondents' attitude in the field of urban green space problems (Table 2).

Table 2. Prioritizing the attitude of the respondents in the context of urban green space problems in Urmia city

Items	Mean	St.d	C.V	Rank
Changing the use of green spaces and gardens	4.02	1.16	0.092	1
Lack of suitable fields for the development of green space at the disposal of the municipality	4.81	0.61	0.127	2
Allocation of small areas to green spaces and destruction of gardens	4.74	0.69	0.145	3
Non-implementation of instructions and laws related to green space by related institutions	4.70	0.69	0.146	4
Absence of homogeneous and aligned strategies in related organizations	4.58	0.75	0.163	5
Drought	4.44	0.85	0.191	6
Citizens' lack of proper use of green space	4.60	0.89	0.193	7
The presence of non-human factors such as pests, diseases and unfavorable urban conditions	4.58	0.92	0.202	8
Absence of long-term planning and green space strategic plan	4.35	1.04	0.239	9
Citizens' lack of proper use of green space	4.02	1.19	0.296	10
The drying of existing gardens in the city due to lack of maintenance	3	1.22	0.406	11
Pollution of water, soil and environment due to the presence of polluting industries	2.99	1.23	0.411	12

3.3 Prioritization in the field of the advantages of conservation and protection of urban green spaces in Urmia city from the respondents' perception

The findings of the research in the field of prioritizing the respondents' attitudes regarding the advantages of conservation and maintenance of the urban green space of Urmia city by calculating the coefficient of variation (CV) showed that the items of reducing the ambient temperature and air conditioning with a coefficient of variation of 0.137 and the item of green spaces of centers that provide mental health of citizens with a coefficient of variation of 0.144 and the item of the best place to relax and relieve fatigue with a coefficient of variation of 0.150, respectively, the most important items of the advantages of the conservation and maintenance of the urban green spaces of Urmia city to be (Table 3).

Table 3. Prioritization in the field of the advantages of conservation and protection of urban green spaces in Urmia city

Items	Mean	St.d	C.V	Rank
Lowering the ambient temperature and conditioning the air	4.51	0.32	0.137	1
Centers providing mental health for citizens	4.62	0.66	0.142	2
The best place to relax and relieve fatigue	4.33	0.65	0.150	3
Environmental function	4.65	0.79	0.169	4
A place to spend leisure time, social and cultural gatherings	4.60	0.82	0.178	5
The foundation of organized unwritten relationships (social needs and group of friends)	4.57	0.82	0.179	6
Contribute to the significant absorption of atmospheric carbon through vegetation	4.27	0.81	0.189	7
Away from despair and despondency from humans and strengthening passion and hope	4.35	0.85	0.195	8
Improving the efficiency and functional efficiency of citizens (increasing productivity)	4.48	0.90	0.200	9
Renal oxygen production of cities	4.65	0.92	0.203	10
Reducing human stress and aggression	4.15	0.86	0.207	11
Increasing soil permeability against all types of precipitation	4.20	0.98	0.237	12
A suitable and prosperous place for the supply of various goods needed by tourists	4.30	1.05	0.244	13
A playground for the education of children's body and mind	4.61	1.18	0.255	14

3.4 Spearman correlation coefficient

Spearman correlation coefficient was used to investigate the relationship between the dependent variable of the research (conservation and protection of urban green spaces) and the research variables of economic, cultural, educational, social, managerial, and environmental solutions. The results showed that there is a positive and significant relationship between the economic solution and the conservation and protection of urban green spaces at the level of 5%. The results showed that there is a positive and significant relationship between cultural-educational, social, managerial, environmental solutions and the conservation and protection of urban green spaces at the level of 1%. Also, the results showed that there is a negative and significant relationship between the problems of urban green space and the conservation and protection of urban green space at the level of 5%. (table 4).

Table 4. correlation coefficient between research variables

Variables	r_s	P
Economic Approach	0.591*	0.03
Cultural-educational Approach	0.685**	0.000
Social Approach	0.720**	0.000
Management Approach	0.822**	0.000
Environmental Approach	0.742**	0.000
Problems	-0.605*	0.02

*= P≤0.05   ** = P≤0.01

3.5 Regression Analysis

In this research, multiple regressions were used to predict the dependent variable through independent variables.

Multiple regression analysis (ENTER) was used to predict changes in the dependent variable (conservation and protection of urban green spaces) by independent variables, i.e. economic, cultural-educational, social, managerial, and environmental solutions. The amount of multiple correlation coefficient (R) in this equation is equal to 0.794. According to the amount of R^2 (determination coefficient), the mentioned structures were able to determine about 63% of the changes in the dependent variable. Beta values were used to determine the importance of independent variables in the regression equation. Based on these values, it can be stated that social and managerial strategies have a more important role compared to other variables in predicting changes in the dependent variable of the research. The results of the analysis are shown in the tables 5. The equation of the regression line using B coefficients is as follows:

$$Y = 4.08 + 0.229x_1 + 0.690x_2 + 0.0621x_3 + 0.550x_4 + 0.372x_5$$

Table 5. Coefficients of the Regression Equation between the Independent and Dependent Variables

Variables	B	Standard Error	Beta	T	p-value
constant number (Constant)	4.08	1.52	-	2.68	0.000
Economic Approach (x_1)	0.229	0.113	0.201	2.02	0.000
Cultural-educational Approach (x_2)	0.690	0.238	0.318	2.88	0.000
Social Approach (x_3)	0.621	0.192	0.403	3.23	0.000
Management Approach (x_4)	0.550	0.150	0.390	3.66	0.000
Environmental Approach(x_5)	0.372	0.187	0.247	1.98	0.049
F=43.08		R=0.794	R^2=0.63	R^2_{Adj}=0.58	Sig.=0.000

4. Conclusion and Recommendations

The findings of the research in the field of prioritizing the respondents' attitudes about the problems of urban green spaces in Urmia city by calculating the coefficient of change showed that the items of changing the use of green spaces and gardens and the lack of suitable space for the development of green spaces and allocation of small areas to green spaces and destruction of urban gardens are respectively the most important issues and problems of urban green spaces in Urmia city.

The existence of problems always causes different challenges in the field of various activities. Lack of proper planning, excessiveness of some people in changing the use of agricultural land and green spaces to residential spaces and obtaining high profit in the meantime, are always one of the most important problems in cities. Even in some cases, the least amount of space is allocated to the construction of parks and gardens in the detailed planning of cities. In the city of Urmia, there were many mulberry orchards in the past in every corner and even near the city center. But now the least signs and traces of these gardens can be seen, and if they exist, they are very few and not more than one or two. If we follow the matter, we will find out that these gardens have been dried up by the owners or heirs of the deceased. Cases similar to this have caused the reduction of urban green space in Urmia city. Therefore, it is necessary for organizations, especially non-governmental organizations, to monitor and be more sensitive in this field and react if they see such cases.

On the other hand, custodian institutions such as the Urban Green Space Organization should be more careful in the field of monitoring and implementing their programs and should make more efforts in the field of protecting and maintaining urban green spaces such as parks, forest parks, etc. Research results with Salehi Fard and Alizadeh (2007); Hatamnejad et al., (2015) and Atiqul Haq (2011) are consistent.

The findings of the research in the field of prioritizing the respondents' attitudes regarding the advantages of the conservation and maintenance of the urban green spaces of Urmia city by calculating the coefficient of variation showed that the items of reducing the ambient temperature and air conditioning, provide mental health and the best place to relax and relieve fatigue were the most important advantages of conservation and maintenance of urban green space in Urmia city. As the results of the research showed, the respondents are aware of the importance of protecting and maintaining urban green spaces for most of the items. This reveals that the awareness of citizens in this field is high and they are aware of the existence of such spaces in cities and it is necessary to take necessary measures to increase the per capita green space in cities for citizens. Research results with Salehi (2013); Dunnet, (2002); Cohen et al., (2007) are consistent.

The results showed that there is a positive and significant relationship between economic, cultural-educational, social, managerial, environmental solutions and the conservation and maintenance of urban green spaces. As it was found out, it is necessary for the planners of urban issues to pay due attention to the mentioned solutions in the matter of protection and maintenance of urban green spaces.

Multiple regression analysis was used to predict changes in the dependent variable by independent variables, i.e. economic, cultural-educational, social, managerial, and environmental solutions. According to the amount of R^2, the independent variables were able to determine about 63% of the changes in the dependent variable. Based on these calculated beta values, it can be stated that social and managerial variables have a more important role compared to other variables in predicting changes in the dependent variable of the research. Therefore, managers and planners in municipalities and other departments should pay more attention to these two solutions, especially better management of projects both in design and implementation and maintenance. On the other hand, it is necessary to pay attention to social capital and use the powerful capacity of local and social participation of citizens to maintain and protect the urban green space. In order to improve the current situation, it is recommended that:

- Improving the level of social participation of citizens in the protection and maintenance of urban green spaces through centers for collecting ideas and holding festivals and collective calls for participation in tree planting programs, etc. in Urmia city.

- Distribution and distribution of newsletters and publications at the city level by non-governmental and municipal organizations at the level of Urmia city.

- Using compatible species and maintaining plant diversity in the parks of Urmia city.

- The use of new methods in the field of protection and maintenance of urban green spaces, such as irrigation, etc., at the level of Urmia city.

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