

Identifying Mechanisms in Increasing the Participation of Residents in Protecting Vertical Urban Green Space in Tehran

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ABSTRACT

Residents in the Region 7 of Tehran Municipality in Iran were surveyed in order to explore their perception about the mechanisms increasing the participation of residents in protecting urban vertical greens spaces. The methodology used in this study involved a descriptive and quantitative research. The total population for this study was 140 respondents who attended the plant clinic classes in region 7. Based on the results of the study, the direct involvement of residents in developing vertical green spaces was the main mechanisms which increase the participation of residents. The city hall meeting between residents and authority was found out to be the least important mechanisms.

Key words: Plant Clinic, Vertical Urban Green Spaces, Tehran, Mechanisms, Participation

Introduction

Urban greening is, by definition, an integrated process that requires a high level of institutional capability to plan, execute and maintain green areas throughout a city and its environments [4].

In recent years, integrative and strategic approaches have been developed and implemented across the globe to promote and develop tree-based resources that cater for multiple urban demands [5].

Evidence shows that even small efforts to increase the knowledge of urban residence about the importance of green spaces can have big results. Therefore, it is necessary to remove the impediments faced by urban population and provide basic information in urban areas to enable the spread of green spaces.

One method is to train and inform the urban population about the importance of green spaces in their daily life would arguably encourage individuals to participate in activities related to the development of green cities. Each country establishes their strategies based on the cultural, economic and political environment [3].

Historically, participation in urban green spaces at the local level has been limited to management tasks assigned by the project administrators, without any prior input as to the stakeholders own priorities, ideas, skills, knowledge, aspirations or resources. Projects in this situation often fail, since the local resource users may not have much of a stake in them if they feel their opinions are neither welcomed nor valued [4].

Vertical expansion of green space is now one of the most important issues in the development of metro areas in the world. The new trend toward promoting more vertical green spaces has been the cornerstone of discussion among policymakers [6].

Tehran as the largest metropolitan city in Iran with more than 11 million population faces the challenges of growing need for more green spaces. Based on the report by Tehran Parks and Green Space Organization, in recent two decades about 1500 parks were built and urban and peri-urban forests respectively amount to 7,000 and 35,000 hectares, and the green space per capita of Tehran amounts to 7.5 square meters. According to the provisioned programs for 2007-2010, 2,000 hectares

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of urban green spaces will be established, if the necessary credit is provided, and the urban green space per capita would hit 9.5 square meters [9].

Region 7 with 1536800 square meters is located in the central part of city and considered among the business and economic regions in Tehran. Based on the latest statistics, the total population is 308445 and 20 persons live in each square meter. In term of green spaces, the amount of green spaces in this region is 190743 square meters and there are 21 parks located in this region.

As so much of the success of urban greening depends on public participation, it is crucial to inform people of the how and why of these projects. Clearly, if communities are to be partially responsible for maintaining green spaces, they will have to know how to take care of their resources and what to do if they have problems. Equally important is informing people of the environmental benefits of their projects which, together with recreational benefits, may be the motivating factors for public participation. Within the government, participation and communication are just as important, whether at the national or municipal level. Although national governments are not usually involved in the specifics of urban greening programs, they can greatly facilitate the country-wide goal attainment by setting policy objectives, time tables, and standards, and by providing institutional and network support to regional and local governments that do not have the funds to develop such resources on their own [4].

People's habits when using parks and gardens are greatly influenced by the type of citizen. This demonstrates therefore how important targeted multifunctional planning and design of green spaces is. Despite the absence of public action in terms of providing information, encouraging participation and promoting awareness in this sector is very crucial [7].

However the level of participation by beneficiaries may differ among the people based on their socio demographic characteristics. Several studies have shown that participation may depend on individual characteristics such as age, gender, marital status, household size, incomes and knowledge level [1].

Given the key role of residents in protecting vertical green spaces, examining methods that increase their participation in protecting may be critical for policy makers and city authorities. The research question for this study is: what are the perceptions of urban population about the methods to increase their participation in protecting vertical green spaces in the Tehran?

Materials and methods

The methodology used in this study involved a descriptive research and included the use of descriptive analysis as data processing methods. The

research population included all participants in the plant clinics in region 7 of Tehran municipality (N = 140). A pilot study was conducted with 30 persons who had not been interviewed before the earlier exercise of determining the reliability of the questionnaire for the study. Computed Cronbach's Alpha score was 81.5%, which indicated that the questionnaire was highly reliable.

Measuring respondents' attitudes towards methods influencing the participation of respondents has been achieved largely through structured questionnaire surveys. Data were collected through interview schedules. Content and face validity were established by a panel of experts consisting of faculty members at Islamic Azad University, Science and Research Branch and some specialists in the nanotechnology. Minor wording and structuring of the instrument were made based on the recommendation of the panel of experts.

For measurement of correlation between the independent variables and the dependent variable, correlation coefficients have been utilized and included a Pearson and Spearman test of independence.

Results and discussion

Table 1 summarizes the demographic profile and descriptive statistics. The results of descriptive statistics indicated that majority of respondents were female with a mean age of more than 45 years old. Less than half of respondents had earned a bachelor degree and more than 84 percent owned their place of residence.

Table 2 shows the results of respondents' perception about success of plant clinics in changing their attitudes, skills and knowledge about vertical urban green spaces. The highest mean number refers to knowledge about protecting green spaces (mean=4.18) and the lowest mean number was skills about protecting green spaces (mean=3.71).

The results of respondents' view about the mechanisms to increase participation in protecting vertical urban green spaces in Tehran are presented in Table 3. The highest mean number refers to direct involvement of residents in developing green spaces (mean=4.40) and the lowest mean number refers to meeting in city halls by authorities to inform residents about importance of green spaces (mean=3.50).

Pearson and Spearman coefficient was employed for measurement of relationships between the perception of respondents about participation in protecting vertical green spaces as dependent variable and independent variables. Table 4 displays the results which show that there was relationship between dependent variable and attending workshops and Meeting with authorities to discuss the green spaces related subjects as independent variables.

Discussion:

Successful protection of urban green spaces by residents will depend on participation of beneficiaries. The results demonstrated that their direct involvement in urban green space projects is the most important mechanisms which increase their participation.

The results show that authorities should explore ways to increase the participation of residents in planning, implementing and evaluation of green spaces. The lack of support from residents may hinder the sustainability of green spaces. Hosseini and Laing [3] citing Wolf, [10] that indicated the knowledge about the benefits and services of green spaces can be used in the political management process in developing green spaces...

The results also show that more awareness and knowledge about the importance of urban green spaces widely needed by residents. In this regard, education classes and packages could inform residents about the benefits and encourage their participation in protecting urban green spaces. The results of study by Esmaeeli, [10] about the perception of residents in Tehran about role of green spaces in clean environment show the educational classes influenced the skills and knowledge of residents.

Sarvari, [9] in a comparative analysis of two regions in Tehran metropolitan area reported that educational classes in plant clinics in two regions have changed the attitudes of residents about importance of urban green spaces.

The results of this study demonstrated that success of green space projects will depend on the informing population about benefits, and in this regard the authorities should provide accurate and on time information.

Conclusion:

The perception of residents about the mechanisms that influence the participation in protecting vertical urban green spaces was discussed in this article. The role of urban green spaces in improving the quality of life in cities has been the subject of debate. It is evident that a significant number of the resident in Tehran has yet to be familiar about the social, economical and health benefits of urban green spaces in their daily life. In this regard, mechanisms that increase their participation in protecting the green spaces should be carefully identified and examined.

Table 1: Personal Characteristics

Sex	Female (75%)	Male (25%)
Age/year	Mean=45.64	
Place of Birth	Tehran (75%)	Others (25%)
Degree	Bachelor Degree (45%)	
Main Occupation	Housewife (42.0%)	
Type of Residence	Own (84.0%)	Rental (16.0%)

Table 2: Means of respondents' views about success of plant clinics in changing their attitudes, skills and knowledge about vertical urban green spaces (1=strongly disagree; 5=strongly agree).

Variables	Mean	SD
Knowledge about protecting green spaces	4.18	0.59
Attitudes about protecting green spaces	4.05	0.56
Skills about protecting green spaces	3.71	0.85

Table 3: Means of respondents' views about the mechanisms to increase participation in protecting vertical urban green spaces in Tehran (1=strongly disagree; 5=strongly agree)

Variables	Mean	SD
Direct involvement in developing green spaces	4.40	0.64
Visit to sample green spaces	4.11	0.80
Identifying potential and available resources	4.10	0.74
Formal and organized linkages between residents and authorities	4.02	1.03
Developing appropriate educational and informative programs	3.91	0.70
Distributing printed materials for residents	3.67	0.75
Holdings educational classes and workshops	3.57	0.96
City halls meetings with residents	3.50	0.90

Table 4: Correlation measures between independent variables and dependent variable

Independent variables	Dependent variable	R	p
Visiting the exhibition and sample green spaces	role of plant clinics in increasing the participating in protection of green spaces	0.126	0.138
Distributing printed materials	role of plant clinics in increasing the participating in protection of green spaces	0.055	0.516
Attending workshops	role of plant clinics in increasing the participating in protection of green spaces	0.180*	0.033
Meeting with authorities to discuss the green spaces related subjects	role of plant clinics in increasing the participating in protection of green spaces	0.298**	0

**p<0.01, *p<0.05

It is important to point out that there is no single and appropriate intervention for developing and protecting urban green spaces and in view of the numerous and varied constraints and opportunities, there is need to develop location- specific strategies.

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