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# INFLUENCING FACTORS ON PERFORMANCE OF SOCIAL BEHAVIOR SETTINGS AT PARKS AND GREEN SPACES OF TABRIZ

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**Abstract:** Parks and green spaces are significant areas that are necessary to reduce citizens' mental and moral pressures more than ever. So, as for the importance of parks and urban green spaces, consideration of influencing factors on performance of these areas as citizen's social behavior setting is basically significant. This research seeks to answer the question of how citizens' behaviors are distinctly the same in terms of gender, age and social and economic characteristics in urban parks. The population of this research is represented by those who go to the parks and green spaces of Tabriz metropolis. The Cochran's formula was used to select a sample of 400 subjects who were specified by a simple random method. The reliability of the questionnaire was calculated at 0.902 using the Cronbach's alpha formula while the research data was analyzed via the descriptive-inferential approach. The implementation of factor analysis model reduced the 62 variables of citizens' social behavior to 23 variables and 4 factors. In considering the effects on citizen's behavior in parks, these factors in order of preference are: social-psychological, physical-structural, economic and environmental. These four factors can explain 85.272% of the citizen's social behavior. The stepwise regression test results showed that all the analyzed variables, referring to the performance of citizen's social behavioral setting in parks and urban green spaces, are positively and meaningfully correlated. The independent t-test results showed that the urban park performances as behavior setting register significant differences between men and women. In this sense, the conclusions of the paper highlight the need to consider the complex needs of the residents in the designing and execution process of urban parks and green spaces.

**Key Words:** *performance, social behavior setting, park, green space, gender*

## Introduction

The need to establish social relations in urban settings contributes to the engagement with social and city-made spaces with respect to cognitive interactions, behavior and emotional formats, and one of its results is the belonging to location (Dobbs et al. 2014, Filipan et al. 2017). The successful design of green spaces and urban parks is effective in increasing the citizen satisfaction together with the quality of the living environment (Xu et al. 2017, Ngesan et al. 2018). In the absence of the required standards, patterns and citizens' behavior setting will be disrupted (Douglas et al. 2017). Urban spaces, especially residential districts, have evolved during the last half-century due to globalization; they have undergone dramatic changes (Middel et al. 2015, Shin et al. 2017). Urban development has happened in risky and vulnerable conditions for the developing communities and it has disrupted the people's connection to the life environment (Chiesura 2004, Nordh et al. 2011, Du et al. 2013). Citizens are exposed to the polluted and industrialized space of cities, and this situation has caused citizens' stress (Jennings et al. 2016). These spaces are places and settings for recreation and rest for the benefit of the citizens, in order for them to escape from the problems of urban life (Loukaitou-Sideris 1995, Stefansdottir 2018).

We may recognize the importance of urban parks, especially in metropolitan areas, when we

conclude that urban citizens are functionally separated from the natural environment. Such separation has made them both morally and mentally sick, conducting to increased crime and villainy in the urban environment, in such a way that we may understand better the formation of the life machine (Thompson 2002, Potestio et al. 2009). In other words, parks and urban green spaces have constructive socioeconomic and ecological roles (Ignatieva et al. 2011). These spaces are advantageous for the treatment of mental illnesses, they represent a desirable environment to nurture children, and for social integration, to maintain comfort and to generally contribute to improving the quality of urban life (Galea et al. 2005, Colding and Barthel 2013).

Additionally, urban parks are settings for the residents' spiritual, mental and behavioral recovery (Balram and Dragićević 2005, You 2016). Therefore, the citizens' needs and requirements are basically important and they must be studied in the designing process of parks and green spaces (Borer 2006, Coombes et al. 2010, Kong et al. 2010). In other words, the social, cultural, psychological, economic, and natural dimensions of urban areas, especially within large metropolitan centers, must be considered in constructing parks and green spaces as the most effective urban setting for the citizens (Chiesura 2004). Accordingly, parks and urban green spaces have a mutual influence and effect while people impact the environment through their behavior due to cultural, social, economic, and personal dimensions; people change and organize the environment to satisfy their physiologic and social needs (Zube 1995, Saldivar-Tanaka and Krasny 2004, Harnik 2006).

On the reciprocal relationship between the environment and people, Barker (1968), co-founder of the theory of ecological psychology, observes that when we are in different behavioral settings we undertake specific social roles then we match our future behavior; meanwhile, we try to organize the environment to be compatible with our behavioral needs (Blanchard 2004). Referring to the human behavior consistent with the environmental conditions, it was the first time that Barker (1968) used the term behavioral setting in developmental psychology when analyzing the social environment in the issue of children's physical psychology; then, other scientists and theoreticians in different disciplines, such as architects, urban designers, sociologists, criminologists, lawyers and so on, focused on this research problem and developed it (Baranowski et al. 2002, Malheiros and Vala 2004, Bresnahan et al. 2007, Noar et al. 2008, DiClemente et al. 2013, Toutakhane and Mofareh 2016). According to Barker (1968), for public spaces such as parks, green spaces and children's playgrounds, there are some constructive elements of behavioral setting for persistent activities in a place, and the pattern of individual behavior correlates with the structure of the place in a third-dimension arrangement of place-behavior, so that social behavior represents the outcome of symbiosis between the first and the second element. The highlight is that physical and behavioral dimensions of behavioral settings have a specific relationship (Barker 1968, Cosco et al. 2010). Moreover, Pearson (2012) and Bertram and Rehdanz (2015) observed that the behavioral setting is a small social unit formed by the sustainable incorporation of an activity and a place so that to meet the essential performances of the behavioral environment (Sanchez et al. 2017).

Also on the dimensions of the social behavioral setting in public environments, there is a relationship between the utilization of these spaces, the sense of ownership and the fixation to the space which is created through visual and mental connection (Wendel et al. 2012, Honold et al. 2016). In general, the behavioral setting is a physical space with practical and organizational objectives. The human behaviors in a behavioral setting are dependent upon the physical dimensions of the environment but also upon the collective behavior (Cosco et al. 2010, Guéguen and Stefan 2016). Tappert et al. (2018) observed that isolationism and reduced social interactions are the most important issues that threaten urban citizens' social life, therefore, people need these spaces to strengthen social interactions while complying with the social needs of the urban residents is an undeniable principle for cities.

In this regard, urban parks are both developed for recreation and for eliminating the fatigue of

citizens. Furthermore, urban parks are directly related to the usage pattern and type of users' behavior in a space; they are both places for social interactions and areas where the citizens' organize their behavioral patterns (Carrus et al. 2015, Whitburn et al. 2018). On the effect of parks on the citizens' behavioral patterns, in an investigation, Liu (2012) demonstrated that citizen's behavioral patterns, including personal, social, space, and environmental behaviors, are influenced by their presence at park. Also, Balram and Dragićević (2005) concluded that citizens simultaneously play two vital roles within parks, as they respond to received signs and messages from the environment and they send additional signs and messages to the other people who are in such spaces as social elements and as main formation components of the behavioral environment (Barthel et al. 2015).

Referring to the lack of similar research on the influencing factors of the performance of parks and green spaces in relation to citizens' social behavioral settings in the Tabriz metropolis, the general objective of this research is to answer the following questions: which are the influencing factors on the performance of behavioral settings in urban parks and green spaces? How much is gender impacting the behavior setting variance of performance in urban parks and green spaces?

## Methodology

### *Study area*

Tabriz metropolis is located in the north-west of Iran, more exactly in the west of east-Azarbaijan province and at the end of the east-south plain. The city's altitude above sea level is 1348 m. Its weather is dry steppe with warm and dry summers and cold winters. Based on the last census report, its population is of 1 741 655 people and it is the fifth most populous Iranian city. More than 96.5% of citizens are Azari speakers. Also, the main religion of the people of this city is Shia-Islam (98.64%). Tabriz metropolis is the administrative, communicational, political, cultural and military center of west-north of Iran and there are some several national universities located there. Tabriz is also the largest economic hub of west-north and Azari regions. Widespread heavy industry is centralized in Tabriz. Because Tabriz is developed in industry, many people from other cities migrate to Tabriz to find job opportunities.

There are 138 parks of different sizes located in Tabriz. Among them, 46 are neighborhood parks, 53 are district parks, 27 represent area parks, 7 zone parks, and 5 others are urban parks. In 2011, there was an average of 14.8 $m^2$ of park per capita in Tabriz. Across Iran, the mean is of 9 $m^2$ per capita. But, according to the global standard of 20 to 25 $m^2$/capita, the situation in Tabriz is not better enough (Toutakhane and Mofareh 2016). And, it is estimated that an average of 180 000 citizens and passengers of Tabriz metropolis spend around 3 hours of their daily time in different parks of various scales.

### *Social assessment of parks and green spaces*

This research is both descriptive and inferential in its approach, using correlation methodologies. In fact, the main objective of this research is investigating the presence or absence of correlation between the elements of Tabriz metropolis parks in regulating the citizens' social behavior, together with recognizing the importance level of each variable and with surveying the effects of these elements according to population gender. Data is drawn from the surveyed visitors of parks and green areas in Tabriz. The surveys were conducted in Elgoli, Mashrooteh, Azerbaijan, Baghmisheh, Einali, Eram, Khaghani, Shams Tabrizi, Shamim Paidary, and Valiasr parks. The number of people that visited the parks mentioned above within a month is: N=214535. Given the large number of parks and green spaces in Tabriz (a total of 617 parks and green spaces of small and large scales) and the impossibility to distribute the questionnaire in all of these places, we have chosen these 10 parks and green

spaces as random sample. The criteria for the selection of the case studies was simple random until the chance to be chosen was equal and all of the parks in Tabriz of small and large scales were included (Fig. 1, Fig. 2).



*Fig. 1* **– Parks in Tabriz**
*Source: Author (2018)*

Also, the 400 subjects of the study survey were selected based on the Cochran formula via the simple random sampling method (Bartlett et al. 2001). Survey results were classified in two types of documentary (secondary data) and survey (primary data). The questionnaire and the oral interview were used for survey. The total number of variables that were used in this research was 64 variables. A five-choice (Likert 5 Option) questionnaire was used to measure the variables. In the scoring stage, because a group of questions were designed in a negative aspect by the SPSS software, we coded questions again. So the questions' answers are: 5=completely agree, 4=agree, 3=no idea, 2=disagree and 1=completely disagree. Variables used in this study followed from the variables used in previous research (Table 1).

A panel of experts supported the face validity of the questionnaire. A pilot study was conducted in the same area with 50 questionnaires, then the reliability of the research questionnaire was obtained, and it was 0.902 by using the specific Cronbach's alpha formula (Helms et al. 2006) and the SPSS software. Finally, according to the theoretical foundations of the research, the data were collected through the questionnaire, for studying the influencing factors on citizens' satisfaction of performances of parks and urban green spaces as behavioral settings, and we

**Independent variables used in this research**

| | |
|---|---|
| Sex($A_1$), Age($A_2$), Education($A_3$), Family($A_4$), Trust in others($A_5$), Sense of place($A_6$), Social interaction(A7),Feeling of security($A_8$), Motivation ($A_9$),Sense of need($A_{10}$) Intimacy($A_{11}$),Compatibility($A_{12}$), Sense of jolly and happiness($A_{13}$), Satisfaction of the park($A_{14}$), Conflicts resolution ($A_{15}$), Addicted peoples' footwork($A_{16}$), Presence of the police agents ($A_{17}$), Rape($A_{18}$), Memories retrieve($A_{19}$), Satisfaction of management and behaviors of park personnel($A_{20}$), Saving($A_{21}$), Income, The diversity of sources of income($A_{22}$), Consent of adequacy($A_{23}$), Revenue and expenses($A_{24}$), Job satisfaction($A_{25}$), Costs of entrance utilization of park facilities($A_{26}$), Entrance cost to the park($A_{27}$), Finding a suitable place in the park, Finding a playground for children($A_{28}$), Diversity($A_{29}$), Diversity of access points to the park($A_{30}$), Satisfaction of park facilities ($A_{31}$), Satisfaction of recreation facilities in the park ($A_{32}$), Access to parking($A_{33}$), Quality of streets in the park($A_{35}$), Access to parking ($A_{36}$), Removal of blind spots in the park($A_{37}$), Comprehensiveness of Park services($A_{38}$), Arrangement of furniture($A_{39}$), Proper view($A_{40}$), Visual quality of vegetation($A_{42}$), Appearance quality of roads in the park($A_{43}$), Proper location of canopies($A_{44}$), Signs and signboards($A_{45}$), Proper coloring($A_{46}$), Facades of shops, Entertainment centers and trade centers($A_{47}$), Landscape of fountains and waterfalls($A_{48}$), Views of lighting($A_{49}$), Reflection of sunlight by tools in the park($A_{50}$), Environment pollution($A_{51}$), Environmental health($A_{52}$), Wind directions($A_{53}$), Rain(A54), Freezing in cold seasons($A_{55}$), Vernacular materials($A_{56}$), Sewage disposal($A_{57}$), Climate comfort($A_{58}$), Plant diversity($A_{59}$), The quality of drinking water($A_{60}$), The quality of lawn and flower planting ($A_{61}$), Noise pollution($A_{62}$) | (Potestio et al. 2009, Coombes et al. 2010, Thompson et al. 2012, Wendel et al. 2012, Lachowycz and Jones 2013, Wolch et al. 2014) (De Sousa 2003, Barbosa et al. 2007, Coutts et al. 2010, Bertram and Rehdanz 2015) (Jokimäki 1999, Li and Wang 2004, Caspersen et al. 2006, Sandström et al. 2006, Chen et al. 2009, Kong et al. 2010, Rutt and Gulsrud 2016) (Heynen et al. 2006, Sister et al. 2010, Veitch et al. 2012, Barthel et al. 2015, Rupprecht et al. 2015) |

analyzed the variables by computing the factor analysis test and the stepwise multivariate regression. Therefore, the factor analysis test was used to summarize data and information, while the stepwise linear regression was used to anticipate the behavior of the dependent variables.

In this study, we used several statistical methods to analyze the data of the questionnaire as follows: 1. The factor analysis model was used to categorize the variables of the research as well as to identify the factors that had the most impact; 2. A multivariate regression test has been used to prove or reject the research hypotheses; 3. The T test was used to examine the differences between the two groups of the studied population (men and women) about the type of behavior in the park environment.

The objective of the factor analysis is to reduce the numerous variables to components for the improved analysis (Tobias and Carlson 1969, McDonald 2014). In general, the factor analysis includes the following steps: formation of data matrix, calculation of correlation matrix, extraction of factors, factors time, naming the factors (Williams et al. 2010). Mostly KMO or Kaiser-Meyer-Olkin (Williams et al. 2010) was used for the statistics calculation and its value is fluctuating between 0 and 1. It has been used to eliminate the differences of concerning indices. Whenever KMO is lower than 0.5, the data are not suitable for the factor analysis. If the value is between 0.5 and 0.69, the data are average, but when the index is greater than 7, the correlations between the data are suitable for the factor analysis (Williams et al. 2010).
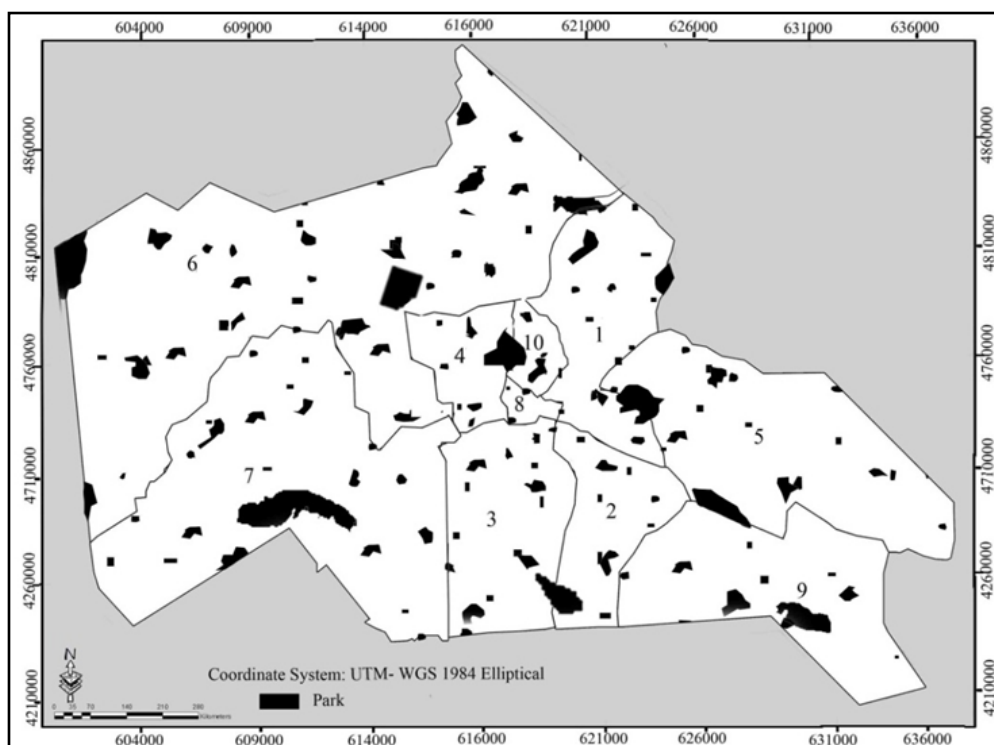
*Fig. 2* **– Geographical location of parks and green spaces in the Tabriz metropolis**
*Source: Author (2018)*

The statistical results were obtained by enforcing the factor analysis model based on the studied indices which showed that the KMO standard is equal to 0.837 and it supports the factor analysis model and it expresses its suitability for research (Table 2).

*Table 2*

**The result of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test**

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | | 0.837 |
|---|---|---|
| Bartlett's Test of Sphericity | Approx. Chi-Square | 3425.210 |
| | df | 400 |
| | Sig | 0.000 |

*Source: Author's calculation (2018)*

Finally, the standards were classified through the factor analysis test and the multivariate regression test. The following hypotheses were tested:

- It seems that there is a correlation between the social, psychological, structural, environmental and economic factors with the type of citizenship behavior in parks and green spaces.
- It seems that there is a difference between gender and the behavior type of the citizens in urban parks and green spaces.

## Results

The surveying results on the characteristics of the 10 parks investigated in this study are presented in Table 3.

*Table 3*

**Characteristics of the 10 parks studied in Tabriz**

| Park | Area Size (Meters) | Design type | Elements in the park | Type of Use |
|---|---|---|---|---|
| Elgoli | 54675 | Artificial | Tree, flowers and bushes, playground, recreational facilities, shopping malls, 5 star hotel, historical spaces and museums | Recreation, exercise, tourists |
| Azerbaijan | 32254 | Artificial | Tree, flowers and bushes, children's play space, family rest, morning exercise, 3D cinema, multi-purpose hall of crisis management | Recreation, morning exercise, tourists |
| Baghmisheh | 42568 | Artificial | Green area, restaurant and coffee shop, shopping complex, chapel, toilet, waterfront | Recreation, morning exercise, tourists, shopping |
| Einali | 45696 | Artificial & Natural | Mountaineering, nature riding, sleigh rides, cable car | Recreation, exercise, tourists, shopping |
| Eram | 25478 | Artificial | Hotel, campgrounds, car parking, day market, vegetation, coffee shop, theater & cinema, waterfront | Recreation, exercise, tourists, shopping |
| Khaghani | 32102 | Artificial | Green area, restaurant and coffee shop, shopping complex, chapel, toilet | Recreation, exercise, tourists |
| Shams Tabrizi | 33521 | Artificial | Green area, waterfront restaurant and coffee shop, shopping complex, chapel, toilet, multi-purpose hall of crisis management | Recreation, exercise, tourists, shopping |
| Shamim Paidary | 45202 | Artificial | Statue of the celebrities, tree, flowers and bushes, playground, recreational facilities, | Recreation, exercise, tourists |
| Valiasr | 39620 | Artificial | Carousel, bird garden, exhibition, shopping centers, children's playgrounds, wellness equipment, vegetation, flower show, coffee shop | Recreation, exercise, tourists |
| Mashrooteh | 17425 | Artificial | Exhibits, shopping malls, libraries, children's play equipment, fitness equipment, vegetation, flower show, coffee shop, bike rental | Recreation, exercise |

Based on the survey findings, 53% of the respondents were men and 47% of them were women. In terms of respondents' age distribution, the most frequency rate was of 41.50% for the 30 to 40 years old people. 25.50%, 18.50% and 12.75% of the respondents had the bachelor's degree, diploma and the guidance school degree, respectively, and the park frequency rate was of 24.50%, 18.50%, and 12.75%, respectively. Also, the number of the weekly visits to the park – 3 times per week – had the highest frequency distribution rate and it was of 49.50%. The results about the traveled distance for getting to the park is represented by the average traveled distance according to the park type, and it is of 448 m for district parks, 985 m for neighborhood parks and 1.56 km for zone parks. In addition, according to the results, 34.33% of people use cars, 17.25% use bicycles and 48.42% walk the distance from

home to get to the park.

Finally, in conjunction with the visit motivation to the park and urban green spaces, the highest frequency distribution rate was of 28%, followed by 21.75% and 17.50%, for refreshment, children's play and contact with the green space, respectively.

As mentioned, at the first step of the factor analysis model implementation, 62 variables were identified in relation to the performance of behavioral settings at parks and metropolis green spaces. The obtained calculation results are shown in Table 4 while some variables were omitted from the cycle of the model.

*Table 4*

**Eigenvalues and variance of the dependent variable**

| Model | Total | Value (r) | Variance | % Variance |
|-------|-------|-----------|----------|------------|
| $A_{10}$ | 4.554 | 0.856 | 0.711 | 7.54 |
| $A_{16}$ | 4.520 | 0.842 | 0.768 | 7.362 |
| $A_6$ | 4.463 | 0.730 | 0.846 | 7.399 |
| $B_6$ | 3.155 | 0.743 | 0.890 | 6.109 |
| $B_7$ | 3.321 | 0.699 | 0.872 | 6.102 |
| $A_{18}$ | 3.222 | 0.687 | 0.870 | 5.778 |
| $A_{13}$ | 3.144 | 0.665 | 0.726 | 5.706 |
| $A_{14}$ | 2.443 | 0.644 | 0.917 | 5.693 |
| $C_1$ | 2.524 | 0.634 | 0.905 | 4.459 |
| $C_3$ | 2.365 | 0.628 | 0.871 | 4.243 |
| $C_5$ | 2.249 | 0.619 | 0.884 | 3.240 |
| $C_{10}$ | 2.201 | 0.617 | 0.804 | 2.707 |
| $C_7$ | 1.952 | 0.612 | 0.953 | 2.685 |
| $C_{14}$ | 1.754 | 0.581 | 0.954 | 2.543 |
| $C_{18}$ | 1.621 | 0.578 | 0.915 | 2.372 |
| $C_6$ | 1.428 | 0.575 | 0.865 | 2.235 |
| $A_1$ | 1.360 | 0.556 | 0.687 | 2.188 |
| $A_2$ | 1.275 | 0.549 | 0.986 | 2.175 |
| $A_3$ | 1.189 | 0.539 | 0.745 | 2.171 |
| $D_{13}$ | 1.124 | 0.533 | 0.675 | 2.164 |
| $D_{11}$ | 1.109 | 0.527 | 0.963 | 2.017 |
| $D_{12}$ | 1.085 | 0.525 | 0.753 | 2.010 |
| $D_8$ | 1.052 | 0.520 | 0.761 | 2.006 |

*Source: Author's calculation (2018)*

Based on the obtained results, among the 23 entered variables to the men's group model and the 24 entered variables to the women group, 9 of them were social-psychological variables, 2 of them were economic variables and 4 of them were environmental variables. In the next step, we calculated the specific vectors of all non-zero eigenvalues. Indeed, the specific vectors are among the loading corresponding to every index of the concerning factor which is named load factor. In the factor analysis, indices are connected together, and we use the indices with a correlation coefficient higher than 0.520. Using the varimax rotation, the 62 variable were reduced to 23 for men and 24 for women; the four factors obtained can explain 86.15% of the

Variance changes for men and 89.63% of the Variance changes for women.

This result indicates that the factor analysis and the studied factors in both of the groups are satisfactory. In this analysis, the percent of variance for the first factor, the second factor, the third factor and the fourth factor is: 86.09, 5.46, 2.26 and 0.93, respectively. And for the women's group, it is: 77.27, 6.14, 3.21 and 3.01, for the first, the second, the third and the fourth factors, respectively.

As identified variables in the research method, naming the four factors extracted from the analysis model was done for the social-psychological, economic, physical-structural, and environmental indices that are the same for both the men's and the women's group. Among social-psychological indices, the sense of need, the footwork of addicted people, and the sense of belonging to a place had the highest rate of significance, while the level of education, the sex and the age had the lowest significance rate. Also, the economic factor had two indices of loading including: the entrance cost to the park and the cost of utilization of park facilities. For the loading indices of the physical-structural factor, we can also say that the indices of finding a suitable place, the variation of access areas, and the consent of recreation facilities had the highest rate of meaningfulness, but the indices of waterfronts, and quality of the roads inside the park had the lowest significance rate. Finally, for the environmental factor, the variables of climate comfort, environmental health, freezing of parks and environment pollution had the first and the fourth priority rates, respectively (Table 5).

*Table 5*

**Final factors extracted from the factor analysis model**

| Factor | Used Indicators | Specific value | Cumulative variance- - (%) | Factor name | Factor Rating |
|--------|-----------------|----------------|----------------------------|-------------|---------------|
| 1 | $A_{10}$, $A_{16}$, $A_6$, $A_{18}$, $A_{13}$, $A_{14}$, $A_1$, $A_2$, $A_3$ | 24.692 | 40.380 | Socio-psychological | 1 |
| 2 | $B_6$, $B_7$ | 7.628 | 12.211 | Economical | 3 |
| 3 | $C_1$, $C_3$, $C_5$, $C_{10}$, $C_7$, $C_{14}$, $C_{18}$, $C_6$ | 15.309 | 24.484 | Physical -structure | 2 |
| 4 | $D_{13}$, $D_{11}$, $D_{12}$, $D_8$ | 3.638 | 8.197 | Environmental | 4 |

*Source: Author (2018)*

The first factor explains 39.380% of the variance for the men's group and 41.63% for the women's group, and it is introduced as the most important factor, because, by considering the nature of the loaded indices and with the 24.692 eigenvalue for men and 23.84 for the women's group, it has the highest impact among the four factors. And it is named as a social-psychological factor and it indicates that the concerning indices of the factor are meaningfully correlated. The eigenvalue of the next factor is 7.365 for men and 6.368 for women which calculates and explains 12.652% of the variance for the men's group and 12.32% of the variance changes for the women's group. The factor has two loaded indices, thus, it is named as economic factor based on the loaded indices on the second factor. The eigenvalue of the third factor is 13.328 for men and 11.524 for women which calculates and interprets 25.147% of the variance changes for the men's group and 22.653% for the women's group. Therefore,

based on the indices, we can name it physical-structural factor. The last loaded factor in the analysis model with 4 loaded indices and with a 6.365 eigenvalue explains about 8.542% of the men's group variance. With a 7.685 eigenvalue, it also explains 10.987% of the women's group variance and it enters the environmental indices. In total, the four above mentioned factors are loaded with 23 loaded indices for men and 24 for women which cover 85.272% of the variance variations of the men's group and 87.63% of the variance variations for the women behavior in urban parks and green spaces. Therefore, we can say that the social-psychological indices, physical-structural indices, economic and environmental indices significantly impact the performance of social behavior settings in parks and green spaces of metropolises. According to the analysis results, economic factors are very important, and only with two loaded indices they are very capable and effective on the performance of social behavior setting at parks and green spaces of metropolises.

Using the method of the stepwise linear regression test, the obtained variables, based on the beta standard including social-psychological, economic, physical-structural, and environmental variables, had the highest shares in the variations of the named dependent variable (performance of social behavioral settings).

The results show that the predictor variables predict 87% ($R^2=0.87$) of the variance of the dependent variable. The coefficient of determination suggests that there have been other affecting variables on the performance rate of social behavioral settings that have not been studied. They have been excluded from the factor analysis model and, also, at the final step, the results of the unilateral variance analysis show that the regression and the linear relationship of the variables are meaningful (Table 6, Table 7). Referring to the obtained calculation data of the estimation equation, the final model of multivariate regression is meaningful.

*Table 6*

**Regression coefficients for explaining the relationships of four variables and the performance of social behavioral settings**

| Step | Variable name | Regression coefficient | Coefficient of determination $R^2$ | Coefficient of determination justified | Value (f) | Value (p) |
|------|---------------|------------------------|-----------------------------------|----------------------------------------|-----------|-----------|
| 1 | Socio-psychological | 0.874 | 0.798 | 0.605 | 174.74 | 0.000 |
| 2 | Economical | 0.796 | 0.676 | 0.551 | 161.43 | 0.000 |
| 3 | Physical - structure | 0.667 | 0.511 | 0.463 | 154.69 | 0.000 |
| 4 | Environmental | 0.583 | 0.473 | 0.389 | 121.65 | 0.000 |

*Source: Author (2018)*

The obtained results of the data analysis on the explanatory power of the concerning variables to the social-psychological, economic, physical-structural and environmental dimensions explain their effect on the performance rate of behavioral settings (Table 7).

*Table 7*

**Coefficients of entered variables to the final regression equation for explaining the influencing factors on the performance of social behavioral settings**

| Predicted variables | Not Standardized coefficients | | Standar-dized coeffi-cients | Calcula-ted t | Value (p) |
|---|---|---|---|---|---|
| | Stand-ard error | Login factor | (β) | | |
| Constant number (Intercept) | 3.01 | 32.8 | - | 8.65 | 0.000 |
| Socio-psychological | 0.531 | 8.65 | 0.669 | 7.80 | 0.000 |
| Physical-structure | 0.663 | 6.32 | 0.573 | 5.64 | 0.000 |
| Economical | 0.799 | 3.43 | 0.499 | 3.65 | 0.000 |
| Environmental | 0.698 | 4.51 | 0.389 | 3.83 | 0.000 |

*Source: Author (2018)*

*Table 8*

**Independent t test results in relation with the performance of parks and green spaces as women and men behavior setting**

| | Leneva test for Equal of Vari-ances | | t-test for Equal of Mean | | | | |
|---|---|---|---|---|---|---|---|
| | f | sig | t | df | Sig (2-tailed) | Mean dif-ference | Std Error difference |
| Equal Var-iances assumed | 8.652 | 0.003 | 0.875 | 24 | 0.257 | -48.0000 | 0.58724 |
| Equal Var-iances not assumed | | | 0.745 | | 0.262 | -48.0000 | 0.56573 |

*Source: Author (2018)*

The stepwise results (Table 8) entered to the final regression model in terms of the importance of the concerning variables to the four research hypotheses showed that the concerning variables to the social-psychological factors, physical-structural factors, economic and environmental factors had the greatest correlation and effect on the performance of behavioral settings at parks and green spaces of metropolises.

At the end, the independent t test was used for surveying the related variables differences of citizen's social behavior setting in the use of parks and green spaces. The results showed that there are significant differences between sex and behavior setting in parks and green spaces at a 0.262 level with 0.745 amounts.

**Discussion**

As discussed on the current research, urban spaces, especially metropolis spaces, are too overcrowded and they are confronting with polluted air, noise pollution and social malformations, while often becoming boring for the citizens. Thus, the urban residents choose

urban parks and urban green areas as resorts and revitalization places for spiritual and mental peace. As mentioned before, the people and the environment have mutual effects for their interactions, therefore parks and urban green areas must be designed so that to provide peace and serenity for the citizens more than ever.

The objective of this paper was to analyze the influencing factors on the performance of social behavioral settings at parks and green spaces of Tabriz metropolis. The descriptive results showed that men's and women's visits to parks and green spaces are approximately equal. In terms of education, the majority of subjects had a bachelor's degree. Also, the mean age group of 30 to 40 included the most motivated people who went three times a week to the parks for peace and revitalization.

The results of the factor analysis showed that the social-psychological factor had the greatest percentage in explaining the performance of social behavioral settings at parks and urban green spaces. Then, the physical-structural factor, the economic factor, and the environmental factor were the next priorities, respectively. The obtained research results are compatible with those of Lee and Park (2013) for the relative importance of the four factors. In this regard, we can say that citizen social and psychological features and men's and women's psychological features must be focused in the designing process and park management, by considering this to improve the performance of such spaces. For example, this is important in the case of considering the official religion of Iran that is Shi Islam and the emphasis on no mixing men and women because of women's mandatory hijab in public places. Taking into account the psychological features of men and women will improve the performance level of urban parks and green spaces as citizens' behavior setting. The results of the research analysis and the stepwise linear regression test showed that the concerning variables of the social psychological factor had the greatest rate of correlation with the dependent variable. Finally, the results of the independent t-test showed that there are significant differences between the women's and men's understanding of urban parks and green spaces.

The physical-structural, economic and environmental variables have the next priority by following the results of the factor analysis model. These findings are compatible with those of Parker and Nilon (2008), Maas et al. (2009). Accordingly, we can say that parks are places where people with different cultural, social and economic features are gathered, so that every citizen has different needs and requirements depending on his or her personal traits while they interact with society and environmental spaces differently.

However, despite the existing differences of citizens' needs and requirements, there is a consensus and unity on which we can focus in the planning process in order to satisfy the majority of the citizens and to increase the success rate of urban plans and projects. Parks and urban green spaces are social behavioral settings for the residents which should be considered by the urban managers. We can increase the attraction of parks by focusing more on the sociocultural and psychological traits of people such as their beliefs, their sense of place, their identity, and on their anthropological features such as age, gender, level of education, family status, financial status, economic situation, the amount of income, the variations of income resources; but also on environmental and physical aesthetic factors, such as furniture arrangements in the parks, proper utilization of environmental elements, quality of vegetation and green space. Moreover, the research findings of Rosol (2010) on the involvement of citizens' needs and requirements in the designing process of parks and urban green spaces have been limelight for planners and managers. Also, the citizens' participation is increased at the same rate in the maintenance and protection process of such spaces. Furthermore, according to the results of this survey, the needs and behavior patterns of space users must be considered.

Improving the environmental quality of urban public spaces such as urban parks and green

spaces is not a mono-dimensional issue, so all economic, social, environmental, and psychological components should be considered. So we can conclude that improving the environmental quality effect of its elements on spaces and behavior patterns in urban parks is not only conceptual and of technical quality, but it is associated with qualitative concepts like the physical environment quality, and the verity of social spaces and interactions through social activities, spatial dependence and urban environment quality.

Effective elements on the environmental quality of public places such as urban parks have a bilateral relation with their users' behavior patterns. On the other hand, behavior settings are more determinist than the physical environment patterns. As a result, the compatibility of behavior and environment is to present the user's merit in spaces and their imparted features. Analyzing urban parks as behavior setting gives rich recognition of the human behavior. Such analysis provides information about individual and group differences and about behavior patterns that can make designers free from the stereotype of people and their activities. So, planning and urban designing must not clash directly with public places presents and urban park users' behavior patterns or want to change or correct behaviors. But it must try to improve urban parks quality by using the existing tools and the effective techniques in order to design urban park spaces in a way that provide the necessary conditions for an increased environmental quality of parks in the future.

## Conclusions

Regarding the research findings, the following practical suggestions are important for the performance improvement of behavioral settings at parks and green spaces of metropolises.

Sociocultural, economic, anthropological needs of the residents must be comprehensively and completely analyzed in the designing and execution process of parks and green spaces of metropolises, including serious consideration to the psychological features of women and men in the context of their religious beliefs.

Environmental elements such as climate, humidity, gradient, rain, light and radiation, and the reflection of sunlight should be considered in the design and implementation of the processes of parks and green spaces of the city, so that these components can be used to increase the exhilaration of citizens in the used parks.

Technical and physical rules and regulations must be observed in the designing process of parks and urban green spaces, including: locating, access areas, furniture arrangement, visual quality, environmental health and so forth. Therefore, we must try to promote urban park design standards in the metropolitan Tabriz. Some areas must be provided for the citizens' active and constructive participation before, during and after the execution of designs and we must continually attract citizens and motivate them for their physical, financial and intellectual participation within urban areas. Generally, a systemic approach must be adopted for the immersive and horizontal prevention of manner-oriented conflicts in the designing process of parks and green spaces of metropolises.

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