

# Evaluating Urban Environmental Quality; Case Study: Districts 2 and 3 of Maragheh City\*

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## ABSTRACT

The increasing social-cultural, economic, physical, and environmental problems across the world in the second half of the 20th century which are caused by the accelerating urbanism growth and the failure to present an inclusive plan have degraded the quality of the urban environment in cities, particularly in developing nations. For this reason, urban environmental quality has been a topic of interest in human and environmental studies over the past years. Quality is evaluated not just by the objective environment but also by people's perception of the environment to which they belong. The main objective of this study was to evaluate the urban environmental quality of Districts 2 and 3 of Maragheh City, Azerbaijan, Iran. The study fell under applied research and used a descriptive-analytical method. The components under study were social, economic, functional-physical, and environmental components, which were analyzed by the SPSS software, a one-sample T-test, stepwise regression, and one-way ANOVA. Findings showed that in all studied components, the mean quality of the urban environment was less than a value of 3 in both districts. The review and comparison of the means of all environmental quality indexes in both districts revealed that District 3 of Maragheh City experienced better environmental quality indexes than District 2. Also, multiple regression results showed that the social index ( $\beta=0.404$ ) and the economic index ( $\beta=0.311$ ) had the highest and the lowest impacts on the environmental quality of the city's Districts 2 and 3, respectively. This study is the first work undertaken to investigate the quality of the urban environment from all dimensions, particularly from a subjective dimension.

**Keywords:** Evaluation, Urban Environment, Social and Economic Components, Physical and Environmental Components, Maragheh City.

\* This article is taken from the master's thesis of the first author entitled "Assessment of the Quality of the Urban Environment, Case Study: Districts 2 and 3 of Maragheh" and was carried out with the guidance of the second author and the advice of the third author in 2023.

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## 1. INTRODUCTION

Over the last hundred years or so, when urban communities encountered problems of different nature, various research endeavored to offer and explain definitions and concepts concerning the environmental quality in different social, physical, and economic aspects, thereby providing solutions to tackle the challenges that could arise. Meanwhile, urban plans have involved urban environmental quality and ways to effectively improve its desirability (Taghvaei, Maroufi, and Pahlavan 2012). According to the literature, the concept of quality under the heading of “urban environmental quality” has embraced people’s social needs and the ways to meet them in domains that would define life for individuals (Rafieian, Moludi, and Pourtaheri 2010). As a Western Asian country, Iran has been grappling with the fast challenge of urbanization and the high pace of changes in urban contexts (Ranjbaria, Alizadeh, Babaieghdam, and Alizadeh 2014). All urban problems have one specific component called “Environmental Quality”. More accurately, the majority of environmental challenges are rapidly becoming urban problems. Recently, sustainable environmental and quality of life aspects, as well as healthy community characteristics, have led researchers to pay more attention to urban and residential environments (Azhang 2010). Currently, cities across Iran are suffering from some life quality-related problems, including economic, social, physical, infrastructure, and environmental issues, which are directly and mutually related to urban environmental quality (Radjahanbani and Partovi 2011).

In this connection, [urban] planners see the environmental quality as a major element in determining social and regional policies, arguing that this topic of interest is associated with such components as quality of life, diverse social spaces, activities’ physical characteristics, spatial configurations, and urban identity (Rafieian, Asgari, and Asgarizadeh 2002). Modern societies are, meanwhile, characterized by life quality (Pacione 2003), which may be a function of environmental quality. Environmental quality in cities is mainly described by the quality of life in different aspects, the undeniable role of the residential environment in human life, and the gathering of people, which is influenced by predominate residential conditions (Rohtenberg, Stauber, and Weaver 2015). The term urban environmental quality involves a variety of dimensions interacting with the living environment (Krishnan and Firoz 2020). Therefore, it is crucial to expand theories on urban environmental quality and relevant characteristics (Brown 2003).

As a historical city in the Iranian province of East Azarbaijan, Maragheh has seen a rising population rate and an expanding urban structure over the last few years, with its older and central neighborhoods suffering from problems that have degraded their

urban environmental quality. To this end, this article aimed to investigate part of the central areas and districts of the city (particularly Districts 2 and 3) to evaluate their environmental qualities from different angles. The study then answers the following questions:

1. How is the area under study evaluated by social and economic components?
2. Do Maragheh City’s Districts 2 and 3 enjoy desirable environmental and physical-functional components?

## 2. THEORETICAL FOUNDATIONS OF THE STUDY

The first UN Habitat Conference was convened in 1976 to identify environmental quality, determine ways to meet human needs, and establish social justice. Human needs were discussed, including food, housing, occupation, health, honor, individual achievement, and the fair distribution of developmental revenues (Bahreini 2010). In this connection, Lynch stressed the mutually effective relationship between urban environmental quality and citizens’ quality of life, suggesting that an urban planner presents a conducive framework that enhances the physical environmental quality, which would eventually improve the human’s quality of life (Golkar 2002). Put simply, environmental quality refers to a set of factors that account for the citizens’ material and mental needs and thus provide comfort and satisfaction for them (Mahdizadeh 1999).

Urban environmental quality is seen as an aspect of the quality of life, involving the sense of well-being, comfort, and satisfaction with physical, spatial, social-economic, environmental, and symbolic factors in living environments. In other words, environmental quality is not only concerned with meeting human material needs but is also concerned with reviving and improving their social potential and development within urban contexts. These factors, needless to say, will influence humans’ social behavior (Rafieian, Asgari, and Asgarizadeh 2002). Urban environmental quality depends on the quality of urban infrastructure and how well they are managed. Urban environmental quality is also characterized by a physical environment (managing rainwater, air quality, green spaces, sound, traffic, etc.), housing amenities (utilities, healthcare, sewage dump, etc.), and the social environment (society, independence, social actions, the sense of satisfaction, and social security) (Kamruzman, Isla, and Sarwa 2007). Urban environmental quality is defined as some social, economic, cultural, and spatial-physical conditions in the city environment that reflect the citizens’ (non) satisfaction with the urban environment (Shamaei and Pourahmad 1998). Quality indicators such as health and security, together with comfort and environmental attraction, could generate deep senses of environmental quality in the mind (Van Kamp

et al. 2003). Different dimensions, components, and indexes are used to evaluate and analyze urban environmental quality as social economic, physical, and environmental components are being considered by the literature (Mostafavi et al. 2015). In some cases, objective and subjective components have also been examined (Rezaei, Moazzen, and Nafar 2014).

### 2.1. Literature Review

In the article, “Measuring Urban Environmental Quality in Borazjan Neighborhoods”, Sarrafi and Mohammadi (2017) used 16 indicators under 4 main criteria to evaluate Borzajan’s urban environmental quality in 2017. The authors also used two documentation and survey methods to collect data. Next, they applied the multi-indicator decision-making techniques (analytic network process) and GIS methods such as reclassification and weighted overlay indicators to analyze the results. Findings showed that working areas, urban zones situated next to flood watercourses, unofficial areas, urban decay areas, and old and emerging neighborhoods see a lower environmental quality. The authors concluded by offering some suggestions to enhance the environmental quality (Ranjbarnia et al. 2014).

In the article “The Qualitative Evaluation of Citizens’ Satisfaction with Urban Environment (Case Study: Tabriz’s Ten Districts) Using Descriptive-Analytical Method”, Arzhanghi and Mohammadi (2020) found that the urban environmental quality of these areas was highly dependent on structural and infrastructure quality, as well as right management. They also concluded that the citizens’ environmental quality of perception was influenced by individual, socioeconomic, and demographic elements (Arzhanghi and Mohammadi 2020).

In the article “Urban Environmental Quality (Ardabil City’s District 4)”, Khosravi, Papi, and Balideh investigated the environmental quality of District 4 of the city of Ardabil. In this applied and developmental study, the authors used a descriptive-analytical method to demonstrate that residents were dissatisfied with urban environmental quality, with the average quality of the urban environment being lower than the medium range (Khosravi, Papi, and Balideh 2019).

In the article “Urban Environmental Quality (Case Study: Boroujerd City’s Andisheh Town) Using the Descriptive-Analytical Method”, Javanbakht

Bolloorani et al. (2021) concluded that the area under study did not enjoy an environmental quality, suggesting that residents had poor access to facilities required (trading units, schools, etc.) and the area was suffering from some poor security-social characteristics (Javanbakht Bolloorani et al. 2021).

In the article “Spatial-Temporal Analysis of Urban Environmental Quality in Tehran”, it was demonstrated that urban environmental quality is a criterion that helps measure the capacity of an environment to deal with the needs of an urban population. Also, urban environmental quality can be evaluated by modeling the separate domains of a specific residential region, like the physical environment, constructed areas, infrastructure, natural hazards, etc. Findings showed that 1) The spatial pattern of Tehran’s urban environmental quality was in a northern-southern direction; 2) urban environmental quality in spring and summer was higher than in winter and autumn, and 3) air quality and vegetation indicators are the most influential indicators in mapping and modeling (Mouratidis 2021).

In the article “Urban Planning and Urban Environmental Quality”, it was concluded that the fast pace of global urbanization has led to better urban environmental quality in cities and made this subject a key issue in urban planning (Ibid). This article investigated seven potential components of travel, leisure, labor, social relations, residential welfare, affective responses, and health.

### 3. METHODOLOGY

The study was applied and fell under descriptive-analytical research. To collect data, library, documentation, and field surveys were used. The statistical population of the study consisted of the citizens of Districts 2 and 3 of Maragheh City. The sample size was calculated to be 380 people using the Cochran formula. Out of the 380 people, 160 people were from District 2 and 220 people from District 3. These subjects were also provided with questionnaires, also. Sampling was made randomly from citizens of over 15 years in the city of Maragheh. Cronbach’s alpha was used for the questionnaire’s reliability. One-sample T-test and stepwise regression were also used for data analysis.

$$n = \frac{\frac{z^2 pd}{d^2}}{1 + \left(\frac{z^2 pd}{d^2} - 1\right)} = 380$$

**Table 1: Cronbach’s Alpha Coefficient of each of the Environmental Quality Indicator**

Components	Item No.	Cronbach’s alpha coefficient
Physicla-fuctional	18	0.75
Economic	14	0.73
Environmental	18	0.86
Social	19	0.81
Total indexes	69	0.78

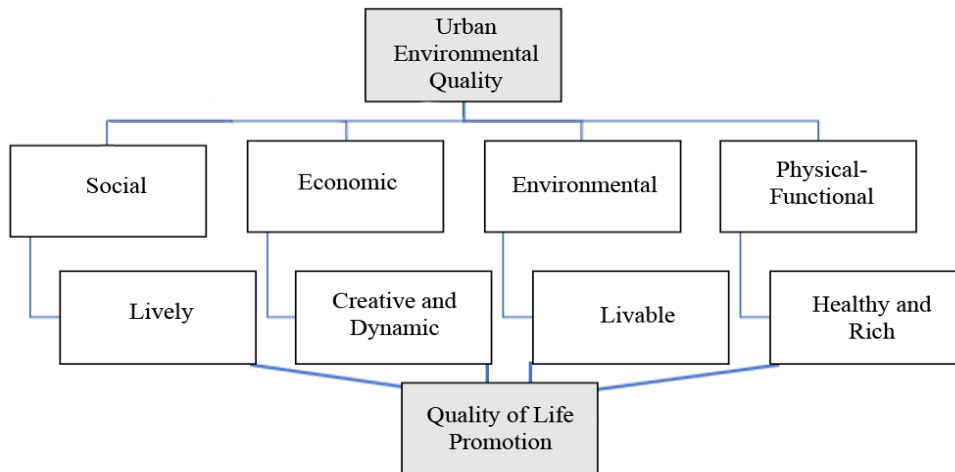


Fig. 1. Conceptual Model of the Study

#### 4. AREA UNDER STUDY

Second To Tabriz City, Maragheh is the second-largest city in the province of East Azarbaijan, Iran. This city has an area spanning 2597 hectares and has an average gross population density of 57 people per hectare. Structurally, the city of Maragheh has a checkered shape, as cited in the last developmental structures. The older fabric of the city follows a relatively organic structure, with the primary core of the city formed and expanded east of the Sufi Chai

River (Mobaraki 2018). District 2 is located inside the city's beltway area, and is bordered to the north and east by Janbazan Blvd. to the south by Owjadi St., and to the west by Khaje Nasir St. Following District 3, District 2 of Maragheh ranks the second highest net population density. District 3, however, encompasses part of the central fabric area and the old core of the city. This district has an area of 133.7 hectares, accounting for roughly 4.45 of Maragheh City's total area.

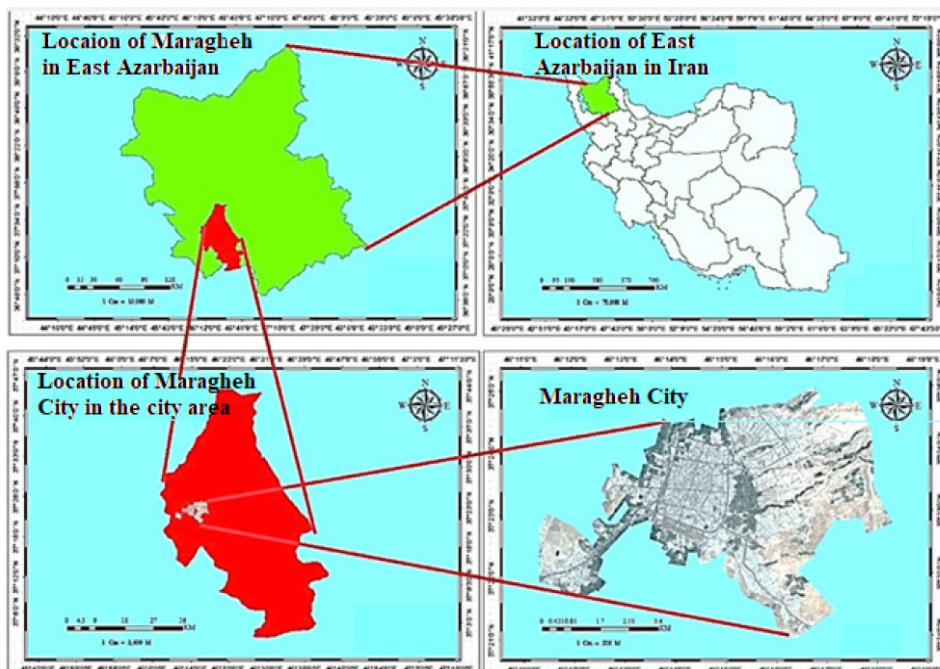


Fig. 2. Geographical Location of Maragheh City in the Country and the Province

## 5. FINDINGS ANALYSIS

This section analyzes the components influencing urban environmental quality in Maragheh City separately.

### 5.1. Evaluating Physical-Functional Components in the Area Under Study

Table 2 gives the mean of each of the criteria used

to measure the physical and functional components of the area under study. Because the questionnaire's items are based on the five-option Likert scale, they are numbered from 1 to 5. Item 1 is the lowest (the worst situation) value and item 5 is the highest (the best situation) value, while item 3 is the mean and the standard score.

**Table 2: One-Sample T-test of Physical and Functional Components**

Physical and Functional Components' Items	Sample Size	Mean	SD	Deviation Error
Adequate Public Services	380	2.55	0.595	0.031
Parking Lot	380	2.02	0.737	0.038
Appropriate Public Transportation	380	2.22	0.844	0.043
Housing Quality	380	2.73	0.65	0.033
Buildings' Beautiful Form and Façade	380	2.28	0.736	0.038
Mixed Land Uses	380	2.36	0.637	0.033
Urban Furniture Quality	380	1.39	0.621	0.032
Urban Spaces' Readability	380	2.63	0.639	0.33
Safe Pedestrian Zones	380	2.17	0.790	0.041
Appropriate Traffic Signs	380	2.60	0.668	0.034
Access to Work and Activity	380	2.67	0.730	0.037
Access to Drug Stores	380	2.39	0.813	0.042
Access to Banking Services	380	2.42	0.833	0.043
Park and Green Spaces	380	1.70	0.754	0.039
Office, Trading, and Service Land Uses	380	2.06	0.599	0.031
Appropriate Garbage Collection System	380	2.25	0.734	0.038
Clean City	380	2.45	0.670	0.034
Providing Optimal Services by Offices and Institutions	380	2.29	0.659	0.034

Findings showed that out of the 18 criteria for measuring the physical and functional situation of the area under study, the highest mean pertained to housing quality at a mean rate of 2.73, followed by the sub-criterion of residents access to the workplace (a mean rate of 2.67), whereas the lowest mean rate

pertained to the sub-criterion of urban furniture quality (a mean rate of 1.39), followed by the sub-criterion of parks and green spaces (a mean rate of 1.70). Table 3 below gives the mean rates of each of the sub-criteria for measuring the physical and functional situation.

**Table 3: Mean of the Physical-Functional component by each of the Areas under Study in Maragheh City**

Physical-Functional Component	District 2		Sample Size (160)	
	Mean	SD	Sig.	Diff. of Mean
	2.25	0.288	0.000	-0.75
Physical-Functional Component	District 3		Sample Size (220)	
	Mean	SD	Sig.	Diff. of Mean
	2.33	0.322	0.000	-0.67

According to the table, concerning the physical-functional component, the environmental quality of District 3 of Maragheh City (a mean rate of 2.33) is better than the environmental quality of District 2 of the city, with the physical index of the environmental quality of District 2 being undesirable than District 3.

## 5.2. Evaluating Economic Components in the Areas Under Study

According to Table 4, out of the 14 criteria for measuring the economic situation of the area

under study, the highest mean pertained to the sub-criterion of economic activity at a mean rate of 3.54, followed by the sub-criteria of women's activity in the economic sector (a mean rate of 3.41), wholesale and retail centers (a mean rate of 3.24), and good shopping malls (a mean rate of 3.10); the lowest mean rate, however, pertained to the sub-criteria of urban land and housing prices (a mean rate of 1.68), followed by the sub-criteria of the necessary facilities for attracting tourism (a mean rate of 1.72) and costs of life (a mean rate of 1.73).

**Table 4: One-Sample T-test of Economic Components' Items**

Economic Components' Items	Sample Size	Mean	SD	Deviation Error
Fair access to economic opportunities	380	2.43	0.648	0.033
Good shopping malls	380	3.23	0.750	0.038
Are costs of life desirable in this area?	380	1.73	0.682	0.035
Attraction and amenities for tourism attraction	380	1.72	0.817	0.042
This area is home to working and living units (residents are busy working at home such as supermarkets on the ground floor)	380	2.87	0.819	0.042
Access to fair opportunities for using facilities	380	2.34	0.610	0.031
Adequate number of jobs for the residents	380	2.45	0.642	0.033
Residents' fair access to economic opportunities	380	2.22	0.597	0.031
Numerous wholesale and retail centers	380	3.28	0.678	0.035
Numerous economic activity centers	380	3.54	0.678	0.035
Low unemployment rate	380	2.24	0.706	0.036
Women's activity in economic sectors	380	3.41	0.677	0.035
Trading and recreational activities	380	3.10	0.699	0.036
Acceptable land and housing prices	380	1.68	0.671	0.034

According to Table 5, concerning the economic component, the environmental quality of District 3 of Maragheh City (a mean rate of 2.61) is better than

the environmental quality of District 2 of the city, with the economic index of environmental quality of District 2 being undesirable than District 3.

**Table 5: Mean of Economic Component by each of the Areas under Study in Maragheh City**

Economic Component	District 2		Sample Size (160)	
	Mean	SD	Sig.	Diff. of Mean
	2.59	0.259	0.000	-0.407
Economic Component	District 3		Sample Size (220)	
	Mean	SD	Sig.	Diff. of Mean
	2.61	0.284	0.000	-0.394

## 5.3. Evaluating Environmental Components in the Areas Under Study

According to Table 6, the highest mean pertained to the sub-criterion of diverse spaces at a mean rate of 2.96, followed by the sub-criteria of desirable climate (a mean rate of 2.73), the absence of stinky smells (a mean rate of 2.62), and satisfaction with pathways'

non-flooding (a mean rate of 2.32); the lowest mean rate, however, pertained to the sub-criterion of smelling pleasant fragrances due to the presence of diverse and fragrant plants (a mean rate of 1.09), followed by the sub-criteria of the urban furniture quality (a mean rate of 1.22) and natural scenery (a mean rate of 1.23).

**Table 6: One-Sample T-test of Environmental Component's Items**

Environmental Components' Items	Sample Size	Mean	SD	Deviation Error
Desirable urban image and landscape	380	2.19	0.676	0.035
Pathway non-flooding	380	2.32	0.821	0.042
Absence of stinky smells	380	2.62	0.856	0.044
Absence of disturbing sound (sound pollution)	380	2.17	0.887	0.045
Diverse spaces	380	2.96	0.632	0.032
Natural scenery	380	1.23	0.508	0.026
Desirable climate during the year	380	2.73	0.591	0.030
Fragrant smells in different seasons of the year (due to the presence of different and pleasing plants)	380	1.09	0.321	0.016
Good illumination in urban spaces	380	2.19	0.738	0.038
Desirable areas of parks and green spaces	380	1.72	0.727	0.037
Urban spaces' attractivity for residents	380	2.13	0.689	0.035
Shades of street trees for pedestrians	380	2.17	0.801	0.041
Good places for walking	380	2.02	0.681	0.035
Are there attractive building facades in this area?	380	2.20	0.657	0.034
Street trees, boulevard paving, greenery, and sidewalks attract and encourage more people to walk on the streets (the welcoming of the environment).	380	1.36	0.556	0.029
Good urban furniture	380	1.22	0.499	0.026
Popular efforts to clean the city	380	2.20	0.894	0.046
Necessary infrastructure for disposal of surface water	380	2.17	0.641	0.033

**Table 7: Mean of the Environmental component by each of the Areas under Study of Maragheh City**

Environmental Component	District 2		Sample Size (160)	
	Mean	SD	Sig.	Diff. of Mean
	1.92	0.277	0.000	-1.077
Environmental Component	District 3		Sample Size (220)	
	Mean	SD	Sig.	Diff. of Mean
	2.09	0.261	0.000	-0.914

According to Tables 6 and 7, concerning the environmental component, the environmental quality of District 3 of Maragheh City (a mean rate of 2.09) is better than the environmental quality of District 2 of the city, with the environmental index of the environmental quality of District 2 being undesirable than District 3, as the mean rate of both areas shows a rate of 1.92.

#### 5.4. Evaluating Social Components in the Areas Under Study

According to Table 8, the highest mean pertained to the sub-criterion of the sense of belonging at a

mean rate of 2.99, followed by the sub-criteria of the neighborhood's conducive environment for children's growth (a mean rate of 2.82), and feeling honor of one's neighborhood or "considering the neighborhood as one's home", (a mean rate of 2.81. Whereas the lowest mean rate pertained to the sub-criterion of collective sense (a mean rate of 1.49), followed by the sub-criterion of people's failure to cooperate with the municipality in neighborhood plans (a mean rate of 1.80).

**Table 8: One-Sample T-test for Social Components' Items**

Social Components' Items	Sample Size	Mean	SD	Deviation Error
Feeling a sense of place in the living place	380	2.99	0.683	0.035
People's active participation in public meetings and ceremonies	380	1.89	0.813	0.042
People's collective sense and participation	380	1.49	0.699	0.036
People's forbearance against violations of social values and norms	380	2.38	0.754	0.039
Feeling honor to one's neighborhood	380	2.81	0.624	0.032
Trust in one's neighborhood	380	2.63	0.675	0.035
Neighbors' sound pollution	380	2.63	0.857	0.044
Women's sense of security	380	1.83	0.683	0.035
Observance of women's rights	380	2.32	0.638	0.033
No place for mobs	380	2.69	0.717	0.037
Conducive environment for children's growth	380	1.82	0.700	0.036
People's participation in implementing municipal plans	380	1.80	0.854	0.044
Do you consider your neighborhood as your home?	380	2.81	0.592	0.030
I consider the streets and alleys of my neighborhood free from crimes (such as house burglary, mobile phone theft, pickpocketing, etc.).	380	2.52	0.760	0.039
Are there any different public spaces to allow people to interact with each other?	380	1.79	0.676	0.035
Respecting traffic rules	380	1.85	0.724	0.037
Good social interactions between citizens	380	1.89	0.756	0.039
Do educational facilities have good quality?	380	2.42	0.746	0.038
Trust in the neighborhood's tradesmen and businessmen	380	2.65	0.741	0.038

**Table 9: Mean of Social components by each of the Areas under study in Maragheh City**

Social Component	District 2		Sample Size (160)	
	Mean	SD	Sig.	Diff. of mean
	2.33	0.413	0.000	-0.673
Social Component	District 3		Sample Size (220)	
	Mean	SD	Sig.	Diff. of mean
	2.39	0.299	0.000	-0.615

According to Tables 8 and 9, concerning the social component, the environmental quality of District 3 of Maragheh City (a mean rate of 2.39) is better than the environmental quality of District 2 of the city, with the environmental index of the social quality of District 2 being undesirable than District 3, as the mean social index of the environmental quality shows a rate of 2.33.

### 5.5. Stepwise Regression for Investigating the Contribution of Environmental Quality Evaluating Indexes

Stepwise multivariate regression was used to investigate the relationship between the variables

and how they affect each other. According to the stepwise multivariate regression, the four variables of the study entered the equation as influential factors. As the environmental quality of Districts 2 and 3 of Maragheh equaled 1, in a linear combination with the entered variables, this value indicates a more coherent relationship between the independent and dependent variables.

**Table 10: The Entered Variables and Contribution of each of Urban Environmental Quality Variable in the Stepwise Regression Model**

Dimension Stages	Environmental Quality				
	The Variable Entered the Model at each Stage	Multiple Correlation Coefficient (R).	Coefficient of Determination (R <sup>2</sup> )	Modified Coefficient of Determination	Standard Error
First Step	Environmental	0.772	0.595	0.594	0.139
Second Step	Physical-Functional	0.882	0.779	0.777	0.103
Third Step	Social	0.958	0.917	0.917	0.062
Fourth Step	Economic	1	1	1	0.000

According to Table 10, the first independent variable entering the model was the environmental index with a correlation coefficient of 0.722 and an R<sup>2</sup> of 0.595. In the second stage, the physical-functional index entered the model, with the correlation coefficient, and R<sup>2</sup> increasing to 0.882 and 0.779, respectively. In

the third stage, the social variable entered the model, with the correlation coefficient and R<sup>2</sup> both increasing to 0.958 and 0.917, respectively. In the last stage, the economic variable saw its R<sup>2</sup> increasing to 1. These four variables could explain 100% of the dependent variable-related variance.

**Table 11: Stepwise Regression Model Analysis Method**

Model B	Unstandardized Coefficients		Standardized Coefficients	Sig.
	Std. Error	Beta		
1	(Constant)	1.060	0.054	0.000
	Environmental	0.615	0.026	0.722
2	(Constant)	0.670	0.045	0.000
	Environmental	0.420	0.022	0.527
	Physical	0.344	0.019	0.493
3	(Constant)	0.419	0.030	0.000
	Environmental	0.290	0.015	0.364
	Physical	0.302	0.012	0.434
	Social	0.261	0.010	0.422
4	(Constant)	0.212	0.000	1.000
	Environmental	0.250	0.000	0.314
	Physical	0.250	0.000	0.359
	Social	0.250	0.000	0.404
	Economic	0.250	0.000	0.311

Concerning the role of independent variables in predicting regression equations, Beta values, previously standardized, were used. Beta methods enable us to make decisions on the relative

significance of [beta values]. Larger Beta values reveal their relative values in predicting the changing nodes in relationships.

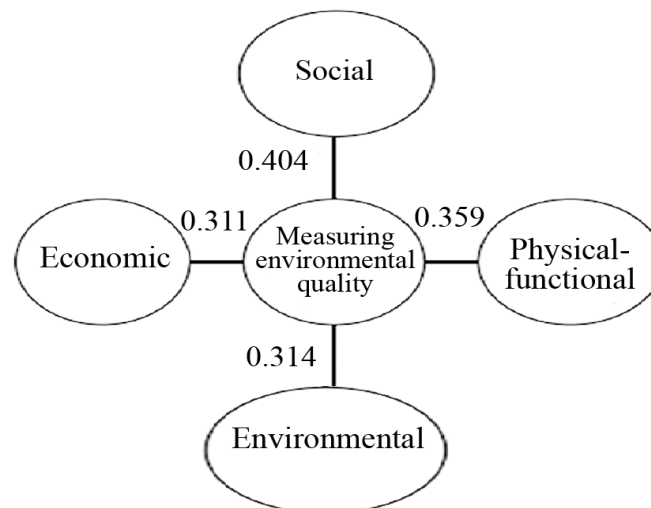


Fig. 3. Diagram of Beta Values for each of the Criteria of Measuring Environmental Quality

According to Table 11 and Figure 4, the social index ( $\beta=0.404$ ) and the economic index ( $\beta=0.311$ ) had the highest and the lowest impacts on the environmental quality of Districts 2 and 3 of Maragheh.

## 6. CONCLUSION

Theories on urban quality and relevant indexes are increasingly becoming popular in urban planning domains. Meantime, the development of urban environmental quality is believed to have a significant effect on citizens' sense of satisfaction with life in the city, minimizing existing abnormalities in society, the citizens' sense of ownership, and establishing a collaborative environment among people. Urban environment and developments in this connection have profound implications for cities, as central areas of cities are grappling with problems that engender a lower urban environmental quality. According to the results, the total mean of the physical-functional component was 2.28, showing a difference of -0.711 with the mean under consideration. The total mean of the economic component was 2.58, being smaller than the standard value of 3. According to the environmental component, the 18 criteria used to measure this index in Districts 2 and 3 of Maragheh showed a mean rate of less than 3. The total mean of the 19 items of the social component was 2.33, considered to be the second index of the environmental quality compared to other indexes. Findings showed that as regards all components under study, urban environmental quality of both districts was lower than the average rate of 3. Meanwhile, the review and comparison of all mean indexes of environmental quality in both districts revealed that District 3 of Maragheh City experienced better environmental quality indexes than District 2. Also, multiple regression results showed that the social index ( $\beta=0.404$ ) and the economic index ( $\beta=0.311$ ) had the highest and the lowest impacts on the environmental quality of the city's Districts 2

and 3, respectively. The following are suggested to increase urban environmental quality in Districts 2 and 3 of Maragheh City.

1. Creating public green spaces and parks for citizens in District 2;
2. Creating a playground for children to meet their recreational needs in District 2;
3. Improving and using durable materials in pedestrian zones' pavement in District 2;
4. Increasing the number of trash bins and locating them in Districts 2 and 3 well;
5. Using separate trash bins to collect recyclable garbage in Districts 2 and 3;
6. Focusing on street illumination and historical artifacts in District 3;
7. Focusing on sculpture attraction in District 3;
8. Converting the pathway between Beheshti St. to the Mosalla in District 3 into a pedestrian zone to make the environment look beautiful and to reduce visual pollution;
9. Creating nodes and gathering areas in Districts 2 and 3 to improve residents' social relations and encourage them to participate in social and cultural plans;
10. Transferring responsibilities including providing plans, managing, and executing them in Districts 2 and 3;
11. Enhancing public transportation services in Districts 2 and 3;
12. Equipping public spaces in the districts with parks and illumination, CCTV surveillance cameras, and guardians;
13. Expanding urban furniture, including street furniture, and parks in Districts 2 and 3;
14. Making pedestrian zones in Districts 2 and 3 safe and secure, and
15. Providing applicable designs and using durable materials and colors in the exterior and the interior of buildings in Districts 2 and 3.

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## CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

## MORAL APPROVAL

The authors commit to observe all the ethical principles of the publication of the scientific work based on the ethical principles of COPE. In case of any violation of the ethical principles, even after the publication of the article, they give the journal the right to delete the article and follow up on the matter.

## PARTICIPATION PERCENTAGE

The authors state that they have directly participated in the stages of conducting research and writing the article.

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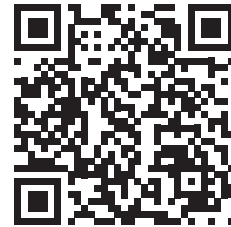
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