Studying and Localization Urban Squares and Boulevards Emphasizing on Urban Furniture Approach: Case Study

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Available online at: www.isca.in, www.isca.me

Received 2nd February 2014, revised 16th April 2014, accepted 16th July 2014

Abstract

Over the decades, inadequate development of Iran and rapid growth of cities without providing required infrastructures have caused many negative outputs in different parts of cities. In this regard, organizing urban areas and public applications of them such as urban furniture would be considered as the useful achievements. These achievements aim in improving quality of urban areas and meeting different need of citizens. The present study has been aimed at studying and localization two concepts of urban squares and boulevards that would be considered as the most valuable elements of urban furniture. The case study would be conducted on Zahedan Iran. The present study has been in kind of scientific study considering its objective; it has been descriptive-analytical in terms of nature; and finally the study has been in kind of descriptivecomparative research. Data collection method has been through library, questionnaire, survey method, and analysis method. The applied method has been comparative-analytical method, through which urban squares and boulevards have been evaluated and adapted to common standards after selecting sample size through Cochran Equation and field perception in place. According to obtained results from t student-test and p-value of 0.000 and P<0.05, H0 would be rejected and both two hypotheses of "non-standard squares and boulevards"; and "inadequate localization of some squares and boulevards" have been confirmed. Moreover, squares and boulevards in Zahedan would have no effect on elegance of urban furniture. Applied materials in squares and boulevards have not been also adapted to climate of Zahedan. The author has offered that common standards of construction and localization of squares and boulevards and reinforcement of green space would be important elements of urban areas due to climate and usage of local plants of the region. Reinforcing and beatifying the two mentioned elements and finally providing a pleasant environment for spending free times for citizens and also supplying security for urban transportation have been also suggested by the present study.

Keywords: Localization, urban management, urban furniture, square, boulevard, gate, citizen, aesthetics, landscape, green space, urban areas.

Introduction

In the current urban life, a few people are not somehow involved in urban furniture. Urban furniture has organized a large part of activities in cities and causes also enhancement of quality of application of environment by citizens and enhancement of their welfare in streets, squares, pars, and other urban areas. Urban furniture is a series of facilities and equipment that can improve quality and efficiency of life in urban areas. The urban furniture is also responsible for conducting and controlling, security of communication, facility, information supplement, advertisements, beautifying, and entertainment in urban areas. Designing urban furniture is an interfiled issue and is a common section among different fields and domains. The main feature and characteristic of urban furniture is its public application and is more than everything in direct relation with mass people. Urban furniture of a city would be significant as one of the most tangible and available components of urban areas. Urban furniture has significant effect on organizing cities and would enhance also quality of application of public areas by citizens¹.

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In order to organize urban life and to meet different needs of citizens, some elements and instruments are required (urban furniture), so that they can provide activity, inactivity, entertainment, and security for citizens, similar to house furniture that provide life possibility in trapped space among walls. Furniture has applied aspect and is effective in both urban services and beautifying of urban spaces. Municipality has the main tasks and responsibilities in organizing urban furniture³. In cities, usually location and selection of urban furniture would not be considered significantly. In this regard, thought, design, and implementation would not be applied in proper manner ideas are mainly evaluated based on low costs. Hence, desirability, stability, and static competencies would be considered in margins.

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Localization of urban furniture is in fact finding and selecting a suitable space in terms of all aspects (efficiency, adaptation with environment, aesthetics, etc) for different kinds of urban furniture in public places. Accurate localization of urban furniture can lead to enhancement of efficiency and optimal use of furniture; instead, inaccurate localization would lead to reduction of efficiency and destruction of urban furniture⁴.

Urbanization and metropolis-orientation process is increasing around the world. Continuous urbanization and growth of metropolises has been changed into a challenging issue in developing countries⁵.

Environment management and planning is one of the solutions of current age in order to achieve sustainable development. Urban boulevards and highways, which have been produced through same rapid process of urban development, today are showing off as irrevocable elements of urban areas⁶.

Developed city is a common season of activities and movements of people. When they move from a place to another, street furniture would be changed into fixed points hat can control and reinforce movements and streams.

When discussing about square, one may remember rounded squares that vehicles are rotating around them. crowd and congestion and continuous hooting, integration of pedestrians with cars, and anxiety of people for crossing over the square are the main pictures that may be observed in urban squares. Since early current age, rounded squares under the title of "FalakehSq" have been replaced instead of historical valuable squares and classical squares have been destroyed because of physical operations and unprofessional construction of streets⁷.

Urban squares would be considered among important urban spaces that reinforcement of them has an effective role in improving general quality of city. The mentioned space has been since early age place of social interactions and still citizens use the place in wide range; although the place has been changed a lot during many years. Beautifying and reinforcing urban squares is in responsibilities of municipality. The place is in fact as a space for attendance of citizens and also as an element to give identity to a place. The element would be able to improve social relations of citizens and also would be able to act as a symbol and sign for city.

Hypotheses: Hypotheses of the present study have been designed based on objectives of the study and all dimensions have been covered. Two hypotheses have been presented for this study as follows: It seems that squares and boulevards of Zahedandon't have required standards forurban furniture. Localization of some urban squares and boulevards in Zahedan are inadequate.

Literature review: Gordon Cullen in urban landscape book has stated that urban landscaping is art of visual and structural integration of buildings, streets, and those spaces that would

construct urban area. He believes that urban landscape refers to any response to human behaviors, climate, safety factors, and in other words skillful interference in framework of improving capabilities of environment. Cullen believes that perception of every person about urban landscape would be resulted from visual perception, spatial perception, and environmental content that the person is not placed in it (Hosseini and Razzaghi⁹.

Hermann Knoflacher in his book "principles of planning and designing walking and bicycle riding" states that an updated information system should be existed in every station. He refers also to some elements of urban furniture including waterfall, floor coating, canopy, urban safety deposite boxes, and seating areas¹⁰.

Helen Dallas and Michelle Little Wood have presented a book under the title of "landscaping", in which they have investigated several elements of urban furniture. In their viewpoint, arrangement of urban furniture should be implemented accurately and exactly in order to ease transportation and provide security for people with sight limitation. They have also stated that today, designing outside of the building is also important. Lighting, flooring, rolls and railings, benches, stairs, ramp of trash can, etc are some elements of urban furniture.

Mumford states that city needs an area that can be adapted to social life organically; it means that it should be flexible, adaptable, and recoverable in all social conditions. He has emphasis on social cooperation, movement of thought, and importance of aesthetics in urban areas. He also believes that urban design is similar to reconstruction of human civilization. Hence, design of such areas should provide conditions for coexistence and cooperation in social life.

Rob Krier has considers urban place as a component of urban structure, which is limited, readable, and qualified of aesthetic characteristics. In his opinion, traditional concept of such areas has been eliminated in modern urbanization and classical urban areas have lost their original performance and significance. Markets, entertaining sidewalks, social ceremony squares, and religious squares have lost their symbolic content. Several goals of designing urban landscapes that refer to cultural concerns are as follows: providing a system of continuous but various urban landscapes; protecting human scale in height of buildings and spatial chain; providing meaningful and defined physic for urban areas with social and cultural performances, which can provide conditions for social relations and communications.

Zangi Abadi Ali and Tabrizi Nazanin have presented a book under the title of "urban furniture designing and planning" ¹¹. In their book, they tried to enhance identification of urban furniture through a wide view. They have discussed in this book on some modern achievements such as urban statues and birds' nest and have stated that crowded and polluted cities would make creation soul weak and would also change urban places into sick and unsightly places ¹².

Changizi has presented a study under the title of "Iranian urban furniture: lack of beauty, comfort, and sustainability", in which he has stated that urban furniture should be adapted to needs and desires of all citizens in different ages. Hence, designing and building them should be based on taste and need of tourists. Urban furniture is in rational relationship with public culture, dynamism and movement scale, and clear characteristics of citizens, and climate of considered area. General beauty, sustainability, and applicability are the most important features that should be considered in construction of urban furniture. According to situation of urban furniture, it could be foundthat to how extent welfare and comfort of people is important for trustees ¹³.

Methodology

Since the present study has been in kind of applied research and has been conducted in regard with welfare of citizens, has applied descriptive-analytical method. Library data and field studies have been applied for data collection purpose.

i. Library information that has been collected through studying documents in libraries, reference to statistical and demographic centers, sites, books, journals, thesis, and monthly journals, etc. ii. Field information that includes field observations and using statistics of field perceptions and questionnaires and also adaptation of standards with existed situation.

Sampling method: Since statistical population includes high geographical size and expansion and researchers would not be able to refer to all of them, hence, they have to select a series of them as sample and generalize obtained results for studied population. Sample is a number of individuals with similar characteristics and can introduce whole population. They would be also in consistence with population individuals.

Since population of the present study has been whole Zahedan city, in order to determine sample size, Cochran equation has been applied. In this regard, sample has been estimated in confidence level of 95% and allowed error has been considered 5%. Number of questionnaires has been determined in every region. 100 questionnaires have been distributed among citizens in every region. According to questionnaires of citizens and in order to ease comparison of urban squares and boulevards, 100 questionnaires have been also distributed among managers. Sample size has been estimated using Cochran equation as follows¹⁴.

$$n = \frac{\frac{t2.p.Q}{d2}}{1 + \frac{1}{N}(\frac{1}{d2} - 1)} - 1 \tag{1}$$

Where: n= sample size, t= confidence level, Q= probability of lack of feature Q=0.5, N= total number of population, P= probability of existence of feature p=0.5, d= degree of probable accuracy d=0.05.

Data analysis: After collecting required data from library, questionnaire, and given data of the study, data analysis would be conducted in form of descriptive-analytical method based on using quantitative data analysis methods. In order to provide facility and accuracy in the work, Arc GIs SPSS software, and ttest have been applied.

In order to analyze existed data in questionnaires, after testing validity and reliability of the questionnaires through Cronbach alpha, existed data of questionnaires have been explored and entered to SPSS in order to conduct required analysis. In order to conduct comparisons and also to answer hypothesis, t-test has been applied, which conforms or rejects secondary questions of the research.

Geographical location of Zahedan: Zahedan is located in east of Iran and near the boundary of Iran and two Pakistan and Afghanistan countries. The city is center of Zahedan Province. The city has been connected to Zabol in north; to Afghanistan in northeast; to South Khorasan in northwest; to Kerman in west to Iranshahr in southwest; to Pakistan in east; and is connected to Khash province in southeast. Expansion of Zahedan city is equal to 36581m^2 . In regard with position, the city has been located along geographical length of east 60° and 51min and 25sec and geographical width of north 29° and 30min and 45sec. height of the city from sea level is also equal to 1385m^{15} .

Zahedan is connected to different regions of the province through many communicative lines such as Nosratsabad-Bam direction; Zabol and Hormak-Mashhad; Khash-Iranshahr; Mirjaveh, and other secondary directions, especially railway to Mirjaveh direction. Zahedan is located at the end of Mashhad-Zahedan and Bam-Zahedan direction in 83km from common boundary of Iran and Pakistan¹⁶.

Results and Discussion

Necessity of proposed plans for squares and boulevards; Due to problems and defects for localization of squares and boulevards in Zahedan, author has applied information of urban furniture science and GIs software in order to present some solutions in form of proposed plans in three regions of municipality. Through this, -the study aims at prove inadequate location of them and propose some solutions in order to provide required standards for urban managers as much as possible, so that it can prove that through this guidelines of urban furniture science can be cleared and can also gain attention of urban programmers and managers to arrangement and localization of urban elements. Hence, proposed plans of the author in 3 regions, considering inefficiency of urban traffic controlling; beautifying; and urban identity announcement, have been as follows.

The main factors that have caused propose and suggestions for urban localization are as follows: In entrance of the city, gate has been located instead of square. Large number of boulevards in this city has been located in low-width streets with width less Vol. 4(6), 88-98, June (2015)

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than 35m. Gates have been located in crowded intersections of he city. In central streets of the city, gates have been located instead of the square. Moreover, adjacency of squares and boulevards has not been observed.

Effect of boulevards in beauty of urban furniture: Table-1

and figure-1 have indicated that more than 80% of citizens have evaluated green spaces of boulevards poor and very poor.

Table-2 and figure-2 have indicated that more than 76% of urban boulevards are poor and very poor in terms of green spaces in view of managers.

Table-1 Evaluation of green spaces of boulevards in view of citizens

Answers Region	Very good	Good	Intermediate	Poor	Vary poor	Total
Region 1	3	17	27	38	15	100
Region 2	0	13	27	32	28	100
Region 3	1	11	41	34	13	100
Total	(1.3)4	(13.7)41	(31.7)95	(34.7)104	(18.6)56	(100)300

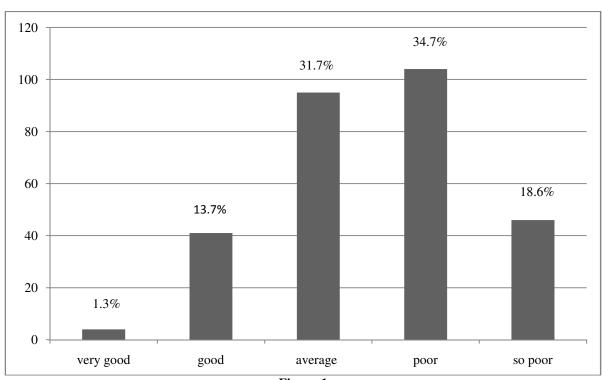


Figure-1
Diagram of evaluating green spaces of boulevards in view of citizens

Table-2
Evaluation of green spaces in view of managers

Answers Region	Very good	Good	Intermediate	Poor	Vary poor	Total
Region 1	0	4	4	4	6	18
Region 2	0	1	4	9	13	27
Region 3	0	1	11	0	16	18
Total	0	(9.5)6	(14.3)9	(20.6)13	(18.6)35	(100)63

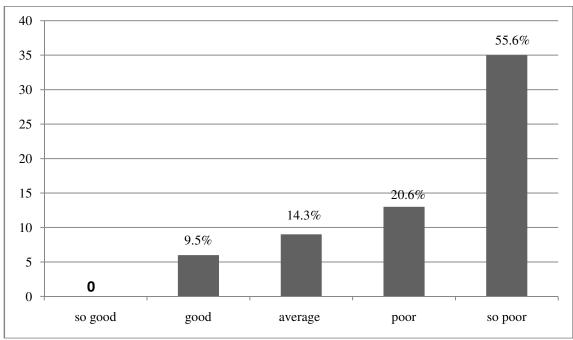


Figure-2
Diagram of evaluating of green spaces in view of managers

Table-3
Effect of boulevards in spending free times in view of manager

Answers Region	Very high	high	Intermediate	Low	Vary low	Total
Region 1	0	0	3	4	11	18
Region 2	0	0	3	3	21	27
Region 3	0	1	1	0	16	18
Total	0	(1.6)1	(11.1)7	(11.1)17	(76.2)48	(100)63

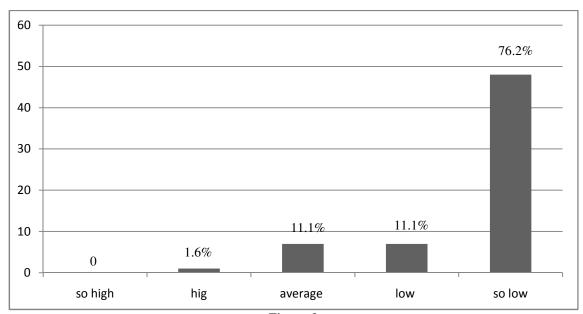


Figure-3
Diagram of boulevards' effect in spending free times in view of manager

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Table3 and figure3 have indicated that more than 87% of boulevards in this city have low and very low effect on spending free times by citizens in view of managers. It could be mentioned that the boulevards don't include various green space, security, and liveliness.

Table 4 and figure 4 have indicated that more than 51% of citizens believe that consistency of materials with climate conditions is in low and very low levels. It could be mentioned that consistent materials with Zahedan's climate have not been selected.

Table-5 and figure-5 have indicated that more than 97% of urban squares have been in intermediate, low, and very low levels in terms of consistency of squares' materials with climate in view of managers.

Table-6 and figure-6 have indicated that more than 90% of citizens believe that consistency of applied materials in boulevards with climate conditions is in intermediate, low, and very low levels in view of citizens. It could be mentioned that consistent materials with climate conditions have not been selected in Zahedan.

Table-4
Consistence of squares' materials with climate conditions in view of citizens

Answers Region	Very high	high	Intermediate	Low	Vary low	Total
Region 1	3	16	28	37	16	100
Region 2	0	14	28	32	26	100
Region 3	1	13	41	32	13	100
Total	(1.3)4	(14.3)43	(32.3)97	(33.8)101	(18.3)55	(100)300

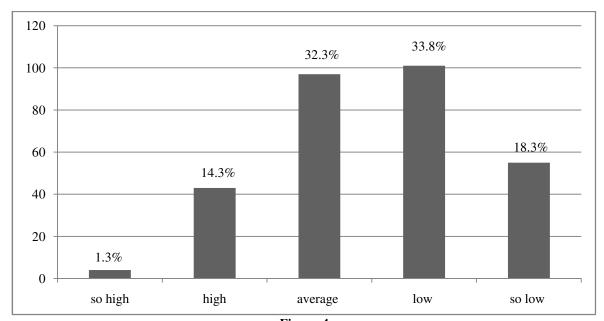


Figure-4
Diagram of squares' materials consistence with climate conditions in view of citizens

Table-5
Consistence of squares' materials with climate conditions in view of managers

Answers Region	Very high	high	Intermediate	Low	Vary low	Total
Region 1	0	0	6	1	8	15
Region 2	0	1	11	0	3	15
Region 3	0	0	1	2	4	7
Total	0	(2.7)1	(48.7)3	(8.1)3	(40.5)15	(100)37

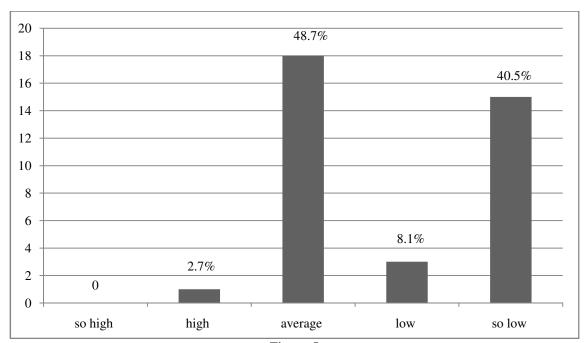


Figure-5 Diagram of squares' materials consistence with climate conditions in view of managers

Table-6 Consistence of boulevards' materials with climate conditions in view of citizens

Answers Region	Very high	high	Intermediate	Low	Vary low	Total		
Region 1	2	13	38	32	15	100		
Region 2	0	5	43	32	20	100		
Region 3	4	4	54	31	7	100		
Total	(2)4	(7.3)22	(45)135	(31.7)95	(14)42	(100)300		

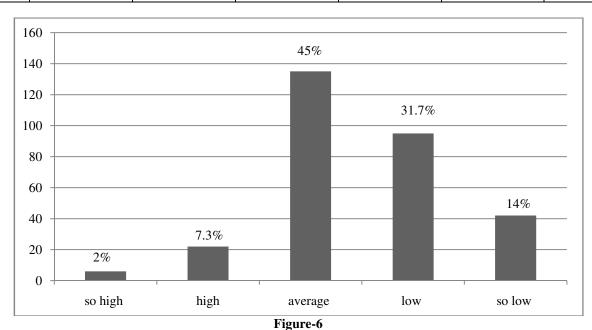


Diagram of boulevards' materials consistence with climate conditions in view of citizens

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Table-7 and figure-7 have indicated that more than 75% of urban boulevards have been in intermediate, low, and very low levels in terms of consistency of boulevards' materials with climate in Zahedan.

Testing hypothesis 1: In viewpoint of citizens: It seems that urban squares don't include required standards for urban furniture.

According to presented table-8 and 9 and t-test and also due to p-value p=0.000, squares and boulevards of Zahedan have not required standards and hence, H0 would be rejected. H0: squares and boulevards of Zahedan city include required

standards. H1: squares and boulevards of Zahedan city don't include required standards.

In viewpoint of managers: It seems that urban squares don't include required standards for urban furniture.

According to presented table-10 and 11 and t-test and also due to p-value p=0.000 (p<0.05), squares and boulevards of Zahedan have not required standards and hence, H0 would be significantly rejected. H0: squares and boulevards of Zahedan city include required standards. H1: squares and boulevards of Zahedan city don't include required standards.

Table-7
Consistence of boulevards' materials with climate conditions in view of managers

		01 00010 10110	***************************************			
Answers Region	Very high	high	Intermediate	Low	Vary low	Total
Region 1	0	0	7	7	4	18
Region 2	0	0	7	15	5	27
Region 3	0	0	1	6	11	18
Total	0	0	(23.8)15	(44.4)28	(31.8)20	(100)63

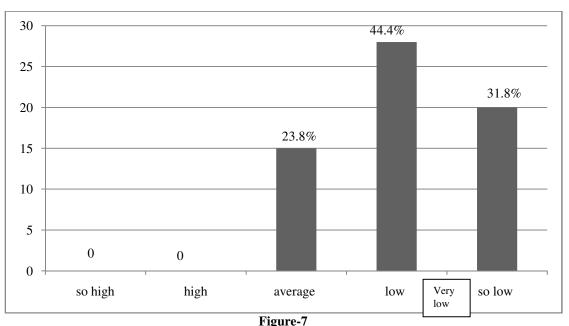


Diagram of boulevards' materials consistence with climate conditions in view of managers

Table-8
Distribution indices of t-test about standardization of squares and boulevards in view of citizens

Distribution indices of t-test about standardization of squares and bodie varus in view of entirens								
	Number	Mean	Standard deviation	Mean standard error				
Standard index	300	3.4700	0.69727	0.04026				

Table-9
T-test results aboutstandardization of squares and boulevards in view of citizens

		Test Value = 3						
	T-statistic	DF	Toot mogult	Maan annan	Mean error Confider			
	1-statistic	Dr	Test result	Mean error	Minimum	Maximum		
Standard index	11.675	299	0.000	0.47000	0.3908	0.5492		

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Testing hypothesis 2: In viewpoint of citizens: Localization of some urban squares and boulevards in Zahedan is inadequate.

According to presented tables-12 and 13 and t-test and p-value<0.05, localization of urban squares and boulevards is not adequate and H0 would be significantly rejected. H0: localization of urban squares and boulevards in Zahedan is adequate. H1: localization of urban squares and boulevards in Zahedan is inadequate.

In viewpoint of managers: Localization of some urban squares and boulevards in Zahedan is inadequate.

According to presented tables-14 and 15 and t-test and p-value<0.013, localization of urban squares and boulevards is not adequate and H0 would be significantly rejected. H0: localization of urban squares and boulevards in Zahedan is adequate. H1: localization of urban squares and boulevards in Zahedan is inadequate.

Table-10
Distribution indices of t-test about standardization of squares and boulevards in view of managers

	Number	Mean	Standard deviation	Mean standard error
Standard index	100	3.5146	0.50124	0.06315

Table-11
T-test results aboutstandardization of squares and boulevards in view of managers

		Test Value = 3					
	T-statistic	DF	Test result	Mean error	Confidence level 95%		
	1-statistic	Dr	rest result	Minimum		Maximum	
Standard index	8.148	99	0.000	0.51455	0.3883	0.6408	

P=0.000

Table-12
Distribution indices of t-test about localization of squares and boulevards in view of citizens

	Number	Mean	Standard deviation	Mean standard error
Standard index	300	3.2100	0.87184	0.05034

Table-13
T-test results about localization of squares and boulevards in view of citizens

	Test Value = 3						
	T-statistic	DF	Test result	Mean error	Confidence level 9	ce level 95%	
	1 -Statistic	Di Test result	Wieum error	Minimum	Maximum		
Standard index	4.172	299	0.000	0.21000	0.1109	0.3091	

P=0.000

Table-14
Distribution indices of t-test about localization of squares and boulevards in view of managers

	Number	Mean	Standard deviation	Mean standard error
Standard index	100	3.1952	0.60547	0.07628

Table-15
T-test results about localization of squares and boulevards in view of managers

	Test Value = 3						
	T-statistic	DF	Test result	Mean error	Confidence	ce level 95%	
	1-statistic	Dr	Test Tesuit	Wicali error	Minimum	Maximum	
Standard index	2.559	99	0.013	0.19524	0.0428	0.3477	

P=0.013

Conclusion

In order toprovide spirit and also to reinforce relations among citizens, current urban furniture should be diversified¹⁷. Urban squares and boulevards are the most significant and effective elements of urban furniture in terms of determining level and type of citizens' relations, aesthetics; and traffic and transportation process¹⁸. Hence, the mentioned elements should be significantly considered. Face to face ceremonies and other meetings in public places should be hold in such places that are desirable in terms of facility, security, and convenience¹⁹. They should be also responsible for meeting needs of their users, who are pedestrians²⁰.

The gates of cities, which are mainly responsible for removing traffics, should act in such way, so that the mentioned objective can be realized. Urban boulevards that have been designed for facility and satisfaction of citizens should be able to provide conditions for satisfaction and facility of citizens²¹. However, as it was mentioned before, no one of the mentioned issues is true about Zahedan city.

Hence, it could be mentioned that the mentioned city is so poor in regard with urban furniture, especially in regard with boulevards and squares, and should be significantly taken into consideration. According to previous studies in this regard, it has been found that no one has taken this issue into account and additionally, citizens and even managers and relevant officials in urban management have not still enough information about standards, nature, existence, and features of urban boulevards and squares. Hence, inadequate decision making would be occurred in urban designs and this has caused crowd, pollution, and bad landscape in Zahedan.

The present study has been aimed at investigating some concepts such as urban furniture, squares, and boulevards separately. The study has also introduced existed standards in this regard. Finally, the study has answered hypothesis and questions of the study due to conducted analysis processes.

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