

Research Article

Studying the Causes of Weakness in Urban Space of Iran Relying on Accessibility and Vitality (Case Study: Hamadan)

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Abstract: This study investigates the causes of weaknesses of urban spaces in the cities of Iran. In fact, this research seeks the aims of evaluation and measuring the reasons of weakness in urban spaces regarding two factors of accessibility and vitality. Urban space is a phenomenon organized by information manifested in various forms, functions and meaning. It is the context of forming and improving social life, representing culture and urbanization of a culture. The importance of the issue is to the extent that magnificent cities of the history are recognized by their urban spaces. It's clear that improper function of these spaces represents weakness of urbanization. Due to the fact, accurate studying of urban spaces in Iran represents that function of these spaces in Iran and presence of population in it is only limited to daily fix and they can't attract people more. This research studies two effective factors in urban spaces: accessibility and vitality; using library and field study of Hamadan city to find the causes of weakness in urban spaces of Iran. Results of the current study indicated that factors as not locating urban spaces, its improper proximity with residential spaces and social problems of Iran cities are the most significant causes of weakness in these spaces. This report can be considered as an important approach in management of urban spaces positioning in city plans of Iran and other similar Middle East countries to prevent weakens accessibility and incompetency of these spaces.

Keywords: Accessibility, proximity, social activities, urban spaces, vitality

INTRODUCTION

When it comes to talk about the town, in fact we are speaking of the place that provides economic, cultural, and social interaction of their citizens; this place is generally called urban space. Considering magnificent cities of the world, it is considered that the cause of this glory is their dynamic and vivacious urban spaces which cause active cooperation of inhabitants in urban area. Regarding this fact, weak social interaction of people and absence of people in cities of Iran is clearly observed. This issue will remove urban spaces and replace it with private houses and fields. In his book "Creation of Architecture Theory", Lang (1987) says "environment induces some special behavior to citizens". Therefore, it's presumed that one of the factors causing weakness in Iranian city spaces is inappropriate access to these spaces, unattractiveness of these spaces to citizens, or lack of vitality.

Public spaces may be able to provide a variety of accessible opportunities to people and become a means of enhancing the quality of living in the urban environment (Goodmann, 1968).

Lynch (1984) defines characteristics of an appropriate city, including vitality and accessibility. This research aims to quantitate and measure variables acquired from viewpoints of experts and reviewing literature, to investigate accuracy of the hypothesis on the effect of poor access and lack of vitality on weakening urban spaces in Iran. Hamadan city was selected as a case study, since it's one of the historical cities of Iran and a symbol of the innovative thinking city in Iran; spatial system of which is disrupted and changed early this century, which influence variables of our research (Lynch, 1984).

MATERIALS AND METHODS

The following steps were followed during research: initial question, exploratory studies, research question, analytic modeling, analyzing data and conclusion (Kiwi and Lokawan, 2007). Correlation analysis and questionnaire were used to codify analytic model. The main hypothesis of the research is that weakness of urban spaces in Iran cities is due to poor access and

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lack of vitality in these spaces, that is acquired by investigating aspects related to access and vitality.

Importance and role of public space: Before defining the concept of urban space, first we shall clarify the meaning of the term “space”, since urban space is a space and a part of human peripheral space. The concept of space itself is not obvious. The concept is much more than simple explanation of physical or natural space that is discussed implicitly; it refers to 3-dimensions of the word, i.e., frequencies, separations and distances between people and objects (Fokouhi, 2004). From anthropological point of view, understanding space is conceptualized in different organizations, which differ based on culture and subcultures. From anthropological view, the main question about space is understanding mechanisms used in specified spaces to live and continue living in the environment, human life in space, and continuing relation with interactions (Gratz and Mintz (1996). Urban space, as a subset of the concept of space, is not excluded from category of space. That is, social and physical aspects of city have dynamic relation with each other. In fact, urban space consists of social and physical spaces (Madanipour, 2000). The concept of space and urban space is formed during social thinking history and in the form of classical and modern theoretical schools. For instance, from view point of Aristotle, space is a collection of places and a dynamic context with different qualitative aspects. These aspects and that context, adjusts space with action authenticity and systematize it (Nordberg Shultz, 1975). An urban space can be studied based on different environmental, geographical, and architectural approaches. Urban spaces considered as a scene in which general activities of people occur. Streets, squares and parks of a city form human activities. These dynamic spaces in contrast with static and inactive spaces such as work place and living places constitute the main and vital elements of a city, and supplies motion networks, contact centers, and public spaces for recreation (Lynch, 2002). The concept of urban spaces is defined in the form of human-social objectives and in compliance with the human objectives and social activities. Urban spaces, including streets, squares, etc. are means to strengthen group work spirit, face to face interactions, closed, organism and identified space. Main function of city is hidden in group activities and frequency of public areas of the city, a context for displaying social life of various people and social groups. Urban space is a common context in which people do functional activities and ceremonies that relates members of the society, a scene in which group life of people is displayed. Urban space is a space which we share with strangers, the people who are not our relatives, friends and coworkers; a space for

politics, religion, business and sport; a space for peaceful coexistence and impersonal encounters, in general urban spaces can be regarded as public realm (Salehi, 2008). Urban space is nothing but daily life of citizens that is understood every day, consciously and unconsciously, during way from home to work (Pakzad, 1997).

Much of the urban design and planning literature stresses on the importance of public space (Glazer and Lilla, 1987; Vernez Moudon, 1992; Sorkin, 1992; Tibbalds, 1992; Worpole, 1992). Additionally, Rogers most recently argues that great cities are known for their great public spaces and one measure of any city’s greatness is its ability to provide recreation, natural beauty, and signature open spaces for its citizens (Rogers, 2003). Moreover, open spaces help to build people’s confidence or increase cohesion (Braza, 2003). Public spaces in the developing countries turn into left-over spaces as a result of the rapid growth (Harnik, 2003). However, necessity of investigating and studying urban space problems of these countries has attracted researchers more than ever.

Main variables affecting the accessibility of public spaces: Spaces accessibility is defined as “the freedom or ability of people to achieve their basic needs in order to sustain their quality of life (Lau and Chiu, 2003). Bertolini states that an accessible public space is thus one to which many different people can come, but also one where many different people can do many different things: it is an accessible node, but also an accessible place (Bertolini, 1999; Bertolini and Djist, 2003). According to Talen, accessibility to all forms of public space can be measured and used as an indication of the degree of public space dispersion. Dispersed spaces are more preferable than concentrated spaces. Talen (2000) distances between residents and public spaces, when interrelated with the theory of maximizing access to public spaces and minimizing walking distance, is the proposition that public spaces should be well integrated within the residential fabric. In due course, location and design of public space can play a significant role in bringing people together (Calthorpe, 1993). Levinson (1998) suggests that accessibility is shaped by the product of two measures, a temporal element (the travel time between two points) and a spatial element, reflecting the distribution of the activities under question. Gratz and Mintz (1996) argue that a public space will be empty of people most of the time if a user population does not live nearby. In the course of this, access to a public space depends on travel time and/or proximity (Erkip, 1997). According to Whyte (2000), the accessibility of a public space can be judged by its connections to its surroundings, both visual and physical. A successful public space is easy to get to and get through; it is visible both from a distance and up

Table 1: Effective factors on accessibility to urban spaces, (Pasaogullari and Doratli, 2004)

Variable	Measuring element	Way
Dispersion	Areas allocated to public spaces and space between public spaces and houses	Questionnaire (acquiring travel time)
Proximity	Proximity	Questionnaire (determining whether urban space is observable from living place)
Ways and means of accessibility to urban spaces	Types of street sidewalk; Public transportation and private cars	Determining type of street and their way of accessibility; Determining sufficiency of sidewalks and public transportation; Determining value of private car owning and their effect on accessibility

Table 2: Investigating characteristics of vitality and their measurement from view point of theorists and authors

Theorist	Criteria of vitality	Measuring way
Kevin lynch	Ecological and biological characteristics of urban spaces	Questionnaire (measuring comfortable space from viewpoint of users)
Jacobs	Diversity in application, physical and activity in urban space	Questionnaire (measuring types of activities)
Paumier	Hosting many people; proximity to retail centers in a way to attract and activate people	Questionnaire (studying various members using these spaces)
Gehl	Optional and social activities in extended range of time	Studying diversity and nature of behavior of users (questionnaire) Recording time table of users from the space (questionnaire)

close. For instance, local streets are preferable to major arterials, and the presence of sidewalks is seen as a way to encourage links between private and public spaces (Talen, 2000). Apart from these, the availability of public transport or having private cars is also considered as enhancing the accessibility of public spaces (Lau and Chiu, 2003). On the other hand, “a public space is accessible to everyone regardless of residence, physical abilities or financial resources. They should be sited in such a way that every resident is equitably served. Moreover, accessibility should not be based on an idealized healthy adult but rather on a senior with a cane, a mother pushing a stroller or an eight-year-old riding a bicycle” (Harnik, 2003).

Based on the above-mentioned discussions, and their relation with objectives of the research, 3 variables of dispersion, proximity, and accessibility ways are determined as means used in this research to study accessibility to urban spaces (Table 1).

Livable public spaces: Vitality and viability are considered as characteristic of big and small successful downtowns (Cowan, 2005). Lynch describes vitality based on human-oriented criteria: “to what extent the form of city supports vital functions, biological needs and human abilities and how it makes survival possible” (Lynch, 1984). In his classification, Lynch considers mainly biological and ecological criteria and considers vitality only with this approach; he ignores social and cultural factors that are as significant as ecological one. Therefore, to achieve a vital and dynamic environment, the issue can be regarded from more extended view to offer more complete classification (Khastou, 2010). In his book “Creating a Live Downtown”, Paumier, describes effective factors on vitality of a successful and live public center as follow: “a successful public space should host many people, besides, be near retail centers and attract and activate people” (Paumier, 2007). Jacobs, describes

four main conditions in creating diversity in streets and urban spaces and vitality of the city:

- The area have more than two main functions
- Blocks usually be small
- The area should be a combination of buildings with various ages and conditions
- There should be sufficient compact density of people, ignoring the cause of their presence (Jacobs, 1961).

In first condition, he talks about diversity of application, in second and third ones about physical diversity, and in forth condition about diversity in activity; in fact, he believes diversity makes vitality (Khastou, 2010). However, another important factor effecting vitality of city is diversity in application and activity, and physical diversity. Yohn Gehl (1996) believes that vital spaces are places in which “optional” and “social” activities occur in extended range of time. Other researches indicate that traffic mitigation (Bonanomi, 1990), and reducing street noise pollution (Amphoux, 1998), are factors that play significant role on vitality of streets and revitalization of urban space. Table 2 lists criteria that can be used to measure vitality of used space.

After assessment of urban spaces by approach of accessibility and vitality, we have achieved to a theoretical frame work just like Fig. 1.

Case study, questionnaire test and collecting urban space characteristics of the case study (sample case):

The map of Hamadan was drawn in 1927 by Karl Frisch, German urban engineer, which lead to destruction of urban fabric. He proposed the idea of building an extended square in downtown, known as Imam Khomeini Square (formerly Pahlavi Square). Unfortunately, in this idea, destruction of valuable

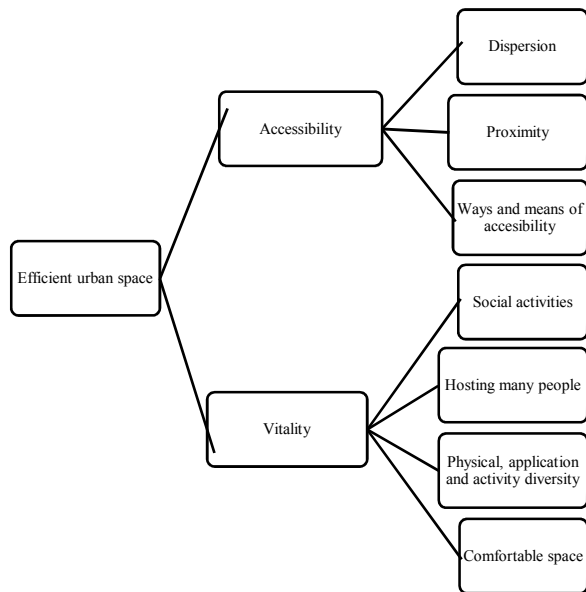


Fig. 1: Effective factors on urban spaces based on accessibility and vitality approaches

textures and buildings and streets and confection of organic order of city were not considered. The plan disturbed texture of bazaar and Grand Mosque of the city which were regarded as the social and religious centers, and lead them to margin and cut-off their relation with other fabrics of the city. Some parts of bazaar were destroyed and shopkeepers of these places were transferred to other parts and bazaar lost its former coherence. One of the main disadvantages of these streets was that building Ekbatan Street split Ancient hill of Hegmataneh and caused irreparable losses to this old fabric. In 1952, the first map was prepared after drawing streets. In this plan, it's observed that only the main square and streets are prepared and there is no sign of ring ways. In 1956, square was formed and streets were drawn directly. After these years, by passing of time streets were extended and city was developed in margins and towns were structured and connected to city (Marjan Consultant Engineers, 1966). It's worth to note that by development of city, preparing its comprehensive and detailed plan was started in 1966, and performed since 1973. It can be regarded as an activity that has significant effect on city landscape. The effects of these plans were not less than plan of Karl Frisch (Mouzhdar Advisory Engineers, 1984). The plan of Karl Frisch makes centralization of urban space in downtown of Hamadan, which has many effects on using urban space of the city. In this research, selecting 48 central quarters of Hamadan and using questionnaire, the aim is to study effective factors on urban spaces of Iran.

Table 3: Demographic characteristics of statistic sample in Hamadan

Characteristics of research sample		Amount	%
Gender	Female	47	48.9
	Male	49	51.1
Age	18-10	9	9.37
	19-25	32	33.33
	26-40	29	30.20
	41-65	26	27.08
	Jobless	5	5.20
Occupation	Free	28	29.16
	State work	14	14.58
	Housewife	18	18.75
	Retired	3	3.12
	Student	28	29.16
	Illiterate	1	1.04
Education	Primary school	7	7.29
	Guidance school	7	7.29
	Diploma	40	41.66
	University	41	42.70
Owning private car	Yes	49	51.04
	No	47	48.95

Statistical analysis and demographic characteristics of under study space: The research method is deductive-inductive and applicable type. From an aim standpoint the method is applied which lead us to knowledge. The information was gathered by standard questioner. Reliability and viability was controlled by appropriate test. In total 96 people, of whom 51% were males and 49% were females, were questioned the most frequency related to their age were 20 to 30 years which are 40% (Table 3).

RESULTS AND DISCUSSION

First hypothesis: Accessibility of various activities in a public space is affected by Dispersion, Proximity, and Ways and means of accessibility.

The correlation test used for testing this assumption and rate of correlate for every component with depend variable compute, at the follow the results of correlations are represent.

Relationship between dispersion and accessibility: There is a direct significant relationship between accessibility and dispersion ($p < 0.01$). The findings show that the rate of correlation between them is equal to 0.73 (Table 4).

Relationship between proximity and accessibility: There is a direct significant relationship between accessibility and proximity ($p < 0.01$). The findings show that the rate of correlation between them is equal to 0.84 (Table 4).

Relationship between ways and means of accessibility to urban spaces and accessibility: There is a direct significant relationship between accessibility and Ways and means of accessibility ($p < 0.01$). The findings show that the rate of correlation between them is equal to 0.66. Based on Friedman test, ranking the variable related to accessibility are represented in the Fig. 2 (Table 4).

Table 4: Analysis of statistic tests of accessibility

Variable	Sig	Pierson correlation coefficient
Accessibility and disperse	-	0.73
Accessibility and proximity	-	0.84
Accessibility and ways and means of access to urban spaces	0.000	0.66

Table 5: Analysis of statistic tests about vitality, authors

Variable	Sig	Pierson correlation coefficient
Comfort space from viewpoint of users and vitality	-	0.50
Physical diversity and vitality	-	0.26
Hosting many people and vitality	-	0.39
Social activities and vitality	-	0.69

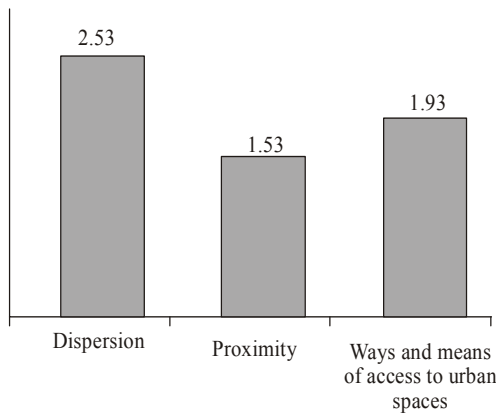


Fig. 2: Ranking the variable related to accessibility Based on Friedman test

Based on analysis, it was considered that in part of access to urban spaces, all variables of the study have meaningful relation with accessibility. It was also considered that proximity to urban spaces is weak in Iran cities. After the factor of proximity, the main weakness in accessibility was about ways and means of accessibility; dispersion has better condition compared to two other factors.

Secondary hypothesis: vitality criteria are affected by comfortable space from view point of users, physical diversity, applicability and activity, hosting many people and proximity to retails, and optional and social activities in wide range of time.

The correlation test used for testing this assumption and rate of correlate for every component with depend variable compute, at the follow the results of correlations are represent.

Relationship between comfortable space from view point of users and vitality based on Kevin Lynch's model: There is a direct significant relationship between utilization and comfortable space ($p < 0.01$). The findings show that the rate of correlation between them is equal to 0.50 (Table 5).

Relationship between physical diversity, application, activity and vitality based on Jacob's model: Based on correlation coefficient, the relation between physical diversity, application, activity and vitality is approved.

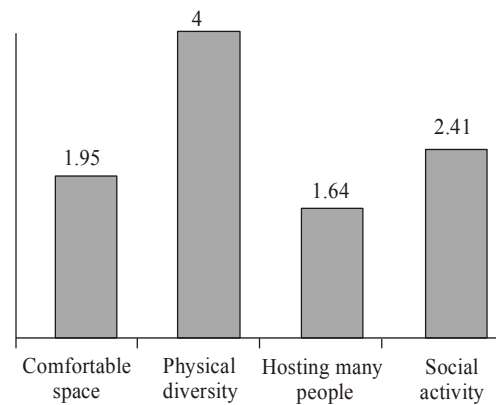


Fig. 3: Ranking variables related to vitality based on Friedman test

The rate of correlation between them is 0.26 and in meaningful level of 0.99 ($p < 0.01$) (Table 5).

Relationship between hosting many people and proximity to retails and vitality based on Paumier's model: Based on correlation coefficient, the relation between hosting many people and proximity to retails and vitality is approved. The rate of correlation between them is 0.39 and in meaningful level of 0.99 ($p < 0.01$) (Table 5).

Relationship between optional and social activities in wide range of time and vitality based on Gehl's model: Based on correlation coefficient, the relation between optional and social activities in wide range of time and vitality is approved. The rate of correlation between them is 0.69 and in meaningful level of 0.99 ($p < 0.01$).

Based on Friedman test, ranking the variable related to measuring vitality are represented in the Fig. 3 (Table 5).

After studying variable of vitality collected based on the ideas of experts, it was considered that the weakest criterion of vitality is weak hosting of many people and lack of proximity to retails based on Paumier's model. Then, uncomfortable space from view point of users based on Lynch model is determined as vitality reduction factor with average score of 1.95. The other variable influencing weakening of urban space is weak social activities (Yahn Gehl)

with average score of 2.41. The variable of physical diversity, diversity of application and vitality based on Jean Jacob's model was in better condition than the other variables in Iran urban space.

CONCLUSION

As it was mentioned, this article studies cause of weakness in urban spaces and their failure in Iran cities relying on reviewing and measuring two qualitative elements affecting these spaces. Based on literature and studying thoughts of experts in this area, sub-variables of these factors were acquired (Table 1). Results of the analysis show that non-proximity of urban spaces to residential environment cause unwillingness of citizens to these spaces, and inappropriate infrastructure in ways and means of accessibility intensifies these problems. Therefore, inappropriate positioning of urban spaces in city plans of Iran weakens accessibility to them and results in non-functionality of these spaces. The main factor of weakening vitality of urban spaces is lack of hosting all social members by urban spaces, the cause of which is rooted in cultural and social structures of cities in Iran. The other factor of reducing vitality of these spaces is uncomfortable spaces which are resulted from weakness in designing and saving these places by responsible organizations.

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REFERENCES

- Amphoux, P., 1998. *La Notion D'ambiance*. Irec-Epel, Lausanne.
- Bahreiny, H., 1998. *Urban Planning Process*. Tehran University Press, Tehran.
- Bertolini, L., 1999. Spatial development patterns and public transport: The application of an analytical model in the Netherlands. *Plan. Pract. Res.*, 14(2): 199-210.
- Bertolini, L. and M. Djist, 2003. Mobility environments and network cities. *J. Urban Design*, 8(1): 27-43.
- Bonanomi, L., 1990. *Le Temps Des Rues*. Irec-Eple, Lausanne.
- Braza, M., 2003. *Parks, Community Gardens and Open Space in Urban Neighborhoods*. Retrieved from: <http://www.neighborhoodcoalition.org/Smartgrowth/article.asp?art>.
- Calthorpe, P., 1993. *The Next American Metropolis*. Princeton Architectural Press, New York.
- Cowan, R., 2005. *The Dictionary of Urbanism*. Streetwise Press.
- Erkip, F., 1997. The distribution of urban public services: The case of parks and recreational services in Ankara. *Cities*, 14(6): 353-361.
- Fokouhi, N., 2004. *Urban Anthropology*. Ney Publication, Tehran.
- Gehl, J., 1996. *Life between Buildings: Using Public Space*. 3rd Edn., Arkitektens Forlag, Copenhagen.
- Glazer, N. and M. Lilla, 1987. *The Public Face of Architecture*. Free Press, New York.
- Goodmann, W., 1968. *Principles and Practice of Urban Planning*. International City Manager's Association, Washington.
- Gratz, R.B. and N. Mintz, 1996. *Cities: Back from the Edge: New Life for Downtown*. Preservation Press, Wiley, New York.
- Harnik, P., 2003. *The Excellence City Park System: What makes it Great and How to Get There*. The Trust for Public Land Pub, Washington, DC.
- Jacobs, J., 1961. *The Death and Life of Great American Cities*. Vintage Press, New York.
- Khastou, M. and N. Rezvani, 2010. Effective factors on vitality of urban spaces: Creating a vital urban space relying on the concept of walking shopping center. *Hovyate Shahr J.*, 4th year, 6: 113-138.
- Kiwi, R. and C. Lokawan, 2007. *Research Method in Social Sciences*. Translated by Nikgozar, A., 2nd Edn., Toutya Publication, Tehran.
- Lang, J., 1987. *Creating Architectural Theory*. Van Nostrand Reinhold Co. New York.
- Lau, J.C.Y. and C.C.H. Chiu, 2003. Accessibility of low-income workers in Hong Kong. *Cities*, 20(3): 197-204.
- Levinson, D.M., 1998. Accessibility and the journey to work. *J. Trans. Geogr.*, 6(1): 11-21.
- Lynch, K., 1984. *Good City Form*. MIT Press, Cambridge.
- Lynch, K., 2002. *Theory of Good Form City*. Translated by Bahreiny, Tehran University Press, Tehran.
- Madanipour, A., 1992. *Design of Urban Space: An Inquiry into a Socio-Spatial Process*. Wiley, West Sussex.
- Madanipour, A., 2000. *Designing Urban Space*, Translated by Mortazaei. Urban Processing and Planning Co. Publication, Tehran.
- Marjan Consultant Engineers, 1966. *Comprehensive Plan of Hamadan, Housing and Urbanism Organization of Hamadan*.
- Mouzhdar Advisory Engineers, 1984. *Development and Civil Plan of Hamadan*. Housing and Urbanism Organization of Hamadan.
- Nordberg Shultz, K., 1975. *Being, Space and Architecture*. Translated by Hafezi, M.H., Tehran University Press, Tehran.
- Pakzad, J., 1997. *What is Urban Design*. Abadi.
- Pasaogullari, N. and N. Doratli, 2004. Measuring Accessibility and Utilization of Public Spaces in Famagusta. *Cities*, 2004.03.03.

- Paumier, C., 2007. *Creating a Vibrant City Center*, (ULI) Urban Land Institute. Washington, D Public Land Pub, Washington, DC.
- Rogers, W., 2003. *The Excellent City Park System: In What Makes it Great and How to Get There*. (Edn.), P Harnik. The Trust for.
- Salehi, E., 2008. *Environmental Characteristics of Secure Urban Spaces*. Architecture and Urbanism Research Center, Tehran.
- Sorkin, M., 1992. *Variations on a Theme Park: The New American City and the End of Public Space*. Hill and Wang, New York.
- Talen, E., 2000. *Measuring the public realm: A preliminary assessment of the link between public space and sense of community*. *J. Arch. Plan. Res.*, 17(4): 344-359.
- Tibbalds, F., 1992. *Making People Friendly Towns: Improving the Public Environments in Towns and Cities*. Longman Press, Harlow, Essex.
- Vernez Moudon, A., 1992. *A Catholic approach to organizing what urban designers should know*. *J. Plan. Literature*, 6(4): 331-349.
- Worpole, K., 1992. *Towns for People: Transforming Urban Life*. Buckingham University Press.
- Whyte, H.W., 2000. *How to Turn a Place Around*. Projects for Public Space Inc.