

CASE STUDY

New urbanism approach and urban space in megacities

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ABSTRACT: New Urbanism design principles have been adopted for many urban planning efforts in recent years. The purpose of this paper is studying the structure and space of Shahid Beheshti Square as one of the most important and old squares of Tabriz from the view of new urbanism principals. In order to reaching this purpose the data were collected through a questionnaire distributed among peoples that attend in Shahid Beheshti square and an Exploratory Factor Analysis using Principal Component Analysis was carried out and to reaching to the accurate data interview used as supplementary method. The results show that among the new urbanism design principles, Increased Density is the only principle that observed in study area and Green Space, Mixed Housing and Connectivity are the principles that have the low factor load. Actually the urban space in square is not designed based on new urbanism principles and failed to satisfy the satisfaction of the people to the use of space.

KEYWORDS: *Urban Space; New Urbanism; Factor Analysis; Tabriz*

INTRODUCTION

The theory of New Urbanism started as a movement in the field of urban design in the USA in 1980 to enhance the pedestrian movement in the neighboring units (Carmona, 2010; Duany *et al.*, 2001). New Urbanism design has been promoted as an alternative to possibly counter certain adverse societal outcomes of conventional sprawling development (Talen, 2005). New urbanism design principles have resonated and been incorporated within the goals and agendas of individuals and organizations from other fields, including environmental protection, sustainable development, historic preservation, growth management/smart growth, transit, pedestrian and bicycle planning, and main street programs (Bohl, 2000). Ideas related to new urbanism designing principles consists of traditional designing principles proportional to humanistic position in cities. At the same time, most

of today programming methods especially in third world aren't responsible for human's physical, psychological and mental needs and ignore humanistic position and scale. Therefore regarding to the fact that most of problems of nowadays cities are due to mechanical outlooks instead of humanistic outlook in cities, change programming point of views and urban designing towards humanistic new urbanism is necessary (Ford, 1999). In Iran, in spite of having rich urbanization in the past, trivial researches had been done about using traditional principles of urbanization in new urbanism approach and most of cities in our country face with unfavorable results of zoning, inefficient street systems, lack of open space, low quality of architecture, low quality of social life, unbalanced between growth of housing and employment. According to wealth of Iran's traditional urbanization as a suitable bed for using new urbanism approach appropriate with environmental and social

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condition of different cities of our country, it seems that its use will provide opportunity to solve most of available issues in cities of our country in order to enhance quality of life (Rahnama *et al.*, 2012). Eastern Azarbaijan is one of the 31 Provinces of Iran with a population of over 3,724,000 people (Statistical Center of Iran, 2014), and with centrality of Tabriz. Tabriz is the fourth major city of Iran by population over 1,500,000, the second industrial city of Iran after Tehran (Ghanbari and Shojaeivand, 2015).

This study has been carried out in Shahid Beheshti square of Tabriz in 2016. Shahid Beheshti square is one of the most important and old squares of Tabriz that is located in main east-west route of Tabriz and besides the Historic Blue Mosque as IPAC project to revive old historical contexts. Transportation issue and metro line is one of the factors that led to paying attention to this square (Fig. 1).

Thus, the purpose of this paper is studying the structure and space of Shahid Beheshti square as one of the most important and old squares of Tabriz (which has recently been under construction) from the view of new urbanism principals.

New urbanism aspires to provide an alternative to suburban sprawl while revitalizing existing towns and cities in a manner consistent with traditional urbanism (Leccese and McCormick, 2000).

Advocates call for a return to a grid pattern with narrow streets and short blocks. Garages should be located on alleys behind houses and commercial

structures and all buildings should have gregarious and friendly facades where they face the street. Each neighborhood should have a “small town” commercial node within walking distance of most residences. Apartments should be allowed over shops and on some of the blocks closest to the center of town so as to provide a wider range of rents than is usually found in new suburbs (Fig. 2). Schools, parks and civic structures should also occupy prominent positions near the center of town. In short, the new urbanism suburb should be as a classic small town or city of the early twentieth century (Ford, 1999).

Herbert Muschamp, has described New Urbanism as the “most important phenomenon to emerge in American architecture in the post–Cold War era” (Muschamp, 1996; Bohl, 2000). More Researchers linking New Urbanism with literature on environmental and community psychology, social ecology and capital, urban morphology, and subfields within the broad area of environment and behavior studies (Plas and Lewis, 1996; Bothwell *et al.*, 1998; Kim, 2000; Moudon, 2000; Khakzand and Babaei, 2016). The appraisal of New Urbanism is most often focused on its physical design, while analysis of its social goals is limited. This is not difficult to explain: Establishing a link between the physical design of cities and social goals like “sense of community” and “equity” is difficult (Talen, 2002).

New urbanism provides various residual uses from apartment to single houses and villa which can support

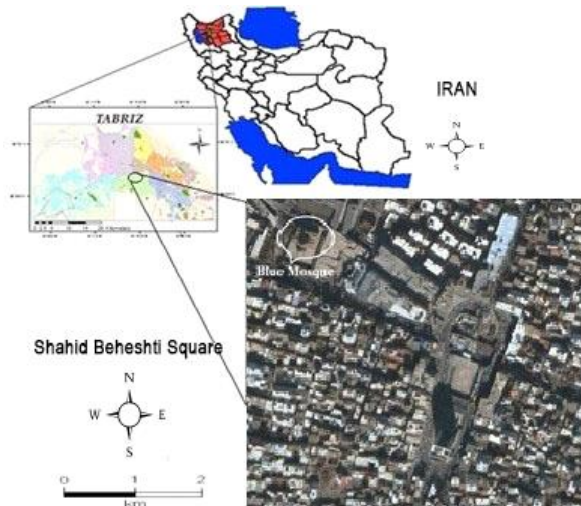


Fig. 1: Shahid Beheshti Square location in Tabriz



Fig. 2: Apartments allowed over shops and Garages located on alleys (Lincoln Institute)

people with different income classes. Its purposes are to support natural and residual units, connection of neighboring units with surround environment is considered and it also supports urban centers and open spaces for all citizens (Morris, 2008).

According to a study by Deitrick and Ellis (2000), three types of New Urbanism applications involving inner-city neighborhoods, neighborhood infill and community refill. Concept of territorial definition in urban space, including the private space of a person's home; the public space of streets, parks, and playgrounds; and the transitional areas in between the public and private spheres. In Modernist, the transitional areas created by balconies, arcades etc. were eliminated in favor of uniform open public space that belonged to everyone and no one (Gehl, 1987; Newman, 1996; Whyte, 1988; Sadeghi and Panahi, 2016).

New Urbanism emphasis on the creation of small urban public spaces and semipublic and semiprivate transitional areas in order to controlling crime, encouraging neighboring, and increasing the personal connection between residents and their homes.

Principles of new urbanism

New urbanism continued to grow gradually in the direction of reforming the various aspects in urban planning and urban design. It influenced in urban areas according to standards of urban design. This theory comes to reform the built environment. This trend fosters the quality of life and place making. In addition, it retrieves the thought of urban communities. These communities include various activities within a short walking distance. New Urbanism provides walkable places, which give many options for people living an urban lifestyle in comfortable and enjoyable places. It drives the communities towards the utopian city, within the variety of uses, people, forms and meaning (Kelbaugh, 2001). New Urbanism emphasizes the urban neighborhood as the basic building block of new and infill development. New Urbanism takes the form of traditional neighborhoods characterized by smaller increments of buildings, blocks, and open spaces and an interconnected network of streets, sidewalks, and transit lines that can be woven into the existing fabric of cities. The main principles of new urbanism are as follow (CNU and HUD, 2000):

Walk ability

Most of uses should locate in distances suitable for walking from house to office. Street design should done

appropriate for pedestrians (buildings adjacent to sidewalks, streets having greenbelt around them, street lots, hidden parking spaces and lots, low speeds of cars and Making pedestrian streets without presence of automobiles. This is often a square of a green, and sometimes a busy or memorable street corner. A transit stop would be located at this center.

Connectivity

Connected street network that distribute traffic and make walking easy. Hierarchy of narrow streets, bolivars and lanes Walking network and public realm with high quality which make walking more satisfying. Most of the dwellings are within a five minute of the center.

Mixed use and diversity

Mix of shops of sufficiently varied types to supply the weekly needs of a household, offices, apartments and houses around design, mix use in quarters diversity of people from different ages, classes, cultures and races.

Mixed housing

Different models, sizes and costs of housing units will be closer to each other.

Quality architecture and urban design

Emphasis on beauty, aesthetic, human welfare and create location, determine place of use and civil places in community in a special way, architecture with humanistic scale and beautiful environment is caused to make human spirit convenient.

Traditional neighborhood structure

Distinctive and distinguishable edges, public space in center, importance of designed, public realm and open space quality as civic art, including variety of uses and congestions in walking distance.

Increased density

Building of residential units, shops and mire and closer services that caused to make walking easy, in order to enhance resources and services and to create convenient, desired and satisfied place for living.

Smart Transportation

A high quality network of railway systems connect cities, towns and neighborhoods, which encourage to use bicycle and walking. The design which support pedestrian and emphasis on walking as a way for daily use.

Sustainability

Environment friendly technologies that respect environments and natural systems values. Energy efficient, less use of fossil fuels. More walking, less driving.

Quality of life

In reality, by reducing single use and make it more efficient, neighborhood units with ability to walk make better. Basic factors that new urbanism movement emphasis on it and create human made environment include: Neighboring units, Activity fields, Ways of access. The most important structures which are mentioned for designing basic factors appropriate with new urbanism principles include: streets, blocks, buildings and open spaces.

MATERIALS AND METHODS

Research methods refer to systematic collection of data (Ghuri and Gronhaug, 2005). Appropriate research methodology is reliable and generates valid results when applied correctly to a specific research topic. A research can be either quantitative or qualitative. Quantitative research represents opinions and concepts that are easily transformed to quantitative form, for example numbers. Qualitative research describes real life and its phenomenon's. It concentrates on words and observation to express reality and describe people in natural situations (Amaratunga *et al.*, 2002). The purpose of this paper is studying the structure and space of Shahid Beheshti square as one of the most important and old squares of Tabriz from the view of new urbanism principals, in order to reaching this purpose the data were collected through a questionnaire distributed among peoples that attend in Shahid Beheshti square and Interview as a qualitative method. The empirical study was carried out by means of a self-instructed questionnaire. These 130 questionnaires were randomly applied to public in Shahid Baheshti square as one of the most important and old squares of Tabriz that is located in main east-west route of Tabriz and besides the Historic Blue Mosque as IPAC project to revive old historical contexts.

In continue in order to reaching to the accurate data interview used as supplementary method. According to the literature review the 11 new urbanism design principals perceived as factors, in order to answering to this question that which principals of new urbanism design principals adopted in Shahid Baheshti square. A five-point Likert Scale was used as the response format for these 11 factor

items with assigned values ranging from 1 "strongly disagree" to 5 "strongly agree". The process entails the reduction of the data through the application of PCA to the set of assessed sections, that in order to achieve this, an Exploratory Factor Analysis using Principal Component Analysis in SPSS 22.0, was carried out. Cronbachs Alpha reliability test was performed to further stabilize the questionnaire and Kaiser's (1974) overall measure of sampling adequacy indicating that the data are appropriate for the Principal Components Model, Values of 0.6 and above are required for a good factor analysis (Wang *et al.*, 2006).

RESULTS AND DISCUSSION

In order to answering to this question that which principals of new urbanism design adopted in study area, we used from Exploratory Factor Analysis using Principal Component Analysis in SPSS 22.0 According to the results of testing in Table 1, the reduction of the 11 factors of new urbanism design principals into one factor, that accounting for 41.9 % of the total variance (KMO=0.78) was obtained through PCA with Normalized Varimax Rotation. Increased density in Shahid Beheshti square is the only factor that got from the reduction of Exploratory Factor Analysis. So according to the results of this study the factor of increased density among the factors of new urbanism design principals adopted in square and Green Space, Mixed Housing and Connectivity are the principles that have the low factor load.

The term of increased density is the Building of residential units, shops and closer services that caused to make walking easy, in order to enhance resources and services and to create convenient, desired and satisfied place for living. But based on interviews with people in the survey was carried out, they are as rigid and spiritless density noted. In other words, the space in the study area is not ideal and does not meet the satisfaction of the space. In land use planning, urban open space is open space areas for "parks", "green spaces", and other open areas. The landscape of urban open spaces can range from playing fields to highly maintained environments to relatively natural landscapes. They are commonly open to public access, however, urban open spaces may be privately owned. Green Space or open space, protected areas of undeveloped landscape. The benefits that urban open space provides to citizens can be broken into three basic forms; recreation, ecology, and aesthetic value. But only aesthetic aspects that have been used in square (Fig. 3). Connectivity means the connected street network that distribute traffic and make walking

easy. Hierarchy of narrow streets, bolivars and lanes Walking network and public realm with high quality which make walking more satisfying. But also according

to the results of survey and Fig. 4 Connectivity and Walking easy in Shahid Beheshti square have not satisfied people as users of the urban space.

Table 1: New Urbanism design principles Factor Analysis

New urbanism design principles	Factor Load	Mean	Cron. Alpha
Walk Ability	0.676	3.11	
Connectivity	0.617	2.56	
Mixed Use & Diversity	0.788	3.31	
Mixed Housing	0.615	3.45	
Quality Architecture & Urban Design	0.711	3.46	
Increased Density	0.812	3.87	0.89
Traditional Neighborhood Structure	0.634	2.58	
Peoples Participation	0.679	3.37	
Green Space	0.613	2.31	
Smart Transportation	0.769	3.47	
Sustainability and quality of life	0.714	3.18	



Fig. 3: Green Space in Shahid Beheshti Square



Fig. 4: Connectivity and walking in Shahid Beheshti square

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CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest regarding the publication of this manuscript.

REFERENCES

- Amaratunga, D.; Baldry, D.; Sarshar, M.; Newton, R., (2002). Quantitative and qualitative research in the built environment: application of "mixed" research approach. *Work Study*, 51(1): 17-31 (**15 pages**).
- Bohl, Ch. C., (2000). New urbanism and the city: Potential applications and implications for distressed inner-city neighborhoods. *Hous. Policy Debate*, 11(4): 761-801 (**41 pages**).
- Bothwell, S.E.; Gindroz, R.; Lang, R.E., (1998). Restoring community through traditional neighborhood design: a case study of Diggs Town public housing. *Hous. Policy Debate*, 9(1): 89-114 (**26 pages**).
- Carmona, M. T., (2010). *Public places- Urban spaces: The dimensions of urban design*. Architecture Press, New York.
- CNU and HUD., (2000). *Principles for inner city neighborhood design*. (**38 pages**).
- Deitrick, S.; Ellis, C., (2000). New Urbanism and inner-city neighborhood revitalization in Pittsburgh. In 96th Annual Meeting of the Association of American Geographers, Pittsburgh. 4-8 (**5 pages**).
- Duany, A.; Plater-Zyberk, E.; Speck, J., (2001). *Suburban nation: The rise of sprawl and the decline of the American dream*. North Point Publication, San Francisco.
- Ford, L.R., (1999). Lynch revisited: New urbanism and theories of good city form. *Cities*, 16(4): 247-257 (**11 pages**).
- Gehl, J., (1987). *Life between Buildings*. Van Nostrand Reinhold, New York.
- Ghanbari, A.; Shojaeivand, B., (2015). People's Attitudes towards Participation, Place Attachment and Urban Tourism. *Plas, J.M.; Lewis, S.E., (1996). Environmental factors and sense of community in a planned town. Am. J. community Psychol.*, 24(1): 109-143 (**35 pages**).
- Rahnama, M.R.; Roshani, P.; Hassani, A.; Hossienpour, S.A., (2012). Use principles of new urbanism approach in designing sustainable urban spaces. *Int. J. Appl. Sci. Technol.*, 2(7): 195-203 (**9 pages**).
- Sadeghi, A.R.; Panahi, N., (2016). Role of environmental rights in the urban design of public places. *Int. J. Hum. Capital Urban Manage.*, 1(3): 169-182 (**14 pages**).
- Statistical Yearbook (2014). According to the Censuses of 2011. Available at: <http://www.amar.org.ir>
- Talen, E., (2002). The social goals of new urbanism. *Hous. Policy Debate*, 13(1): 165-188 (**24 pages**).
- Talen, E., (2005). *New Urbanism and American Planning: The Conflict of Cultures*. Routledge, London.
- Wang, Y.; Pfister, R.E.; Morais, D.B., (2006). Residents' attitudes toward tourism development: A case study of Washington, NC. In *Proceedings of the Northeastern Recreation Research Symposium*. 411-418 (**8 pages**).
- Whyte, W.H., (1988). *City: Rediscovering the center*. Bantam Doubleday Dell publishing group, New York.