Examining the Order of Urban Blocks from the Perspective of Environmental Perception in Comparison between 2 Districts: Khaneh-Esfahan and Mardavij of Isfahan*

Mohammad Massoud¹ , Mahmoud Ghalehnoee² and Mahmoud Shookouhi³**

¹ Associate Professor of Urban Design, Architecture and Urban Development Faculty, Art University of Isfahan, Isfahan, Iran.

² Associate Professor of Urban Design, Architecture and Urban Development Faculty, Art University of Isfahan, Isfahan, Iran.

³ Ph.D. Student of Urban Design. Architecture and Urban Development Faculty, Art University of Isfahan, Isfahan, Iran.

ABSTRACT: When a designer is dealing with organizing urban blocks in designation of districts in the projects of urban design (particularly ground preparation plans), there are numerous guidelines and patterns for the order of blocks from different views such as energy, efficiency, permeability, security, social interaction, etc. However, there is no guideline and pattern available to the designer regarding the order of blocks from the perspective of environmental perception. A designer, facing organization of the order of urban blocks, does not have access to required comments from the environmental perspective and has no idea about which kind of order is appropriate for the blocks from this perspective. According to the defined problem, the question arises that which type of order (simple or complex) is more appropriate in the process of designing a district and from the perspective of environmental perception. Has Mardavij district, with its simple order, acquired functionality from the perspective of environmental perception, or is this functionality more highlighted in Khaneh Esfahan district, with its complex order? To reach an answer for the research question, thorough examination has to be done so as to which one of the above-mentioned districts has provided the required perceptions for a district. Therefore, this study is aimed at identification of proper order for the purpose of designing a district from the perspective of environmental perception of 2 districts, namely Khaneh Esfahan and Mardavij, by utilizing descriptive-analysis method, and with the help of using cognitive map drawing technique as well as interviewing inhabitants of both districts. The conclusion was reached that Khaneh Esfahan district, with its complex order, features concepts such as coziness, calm, and friendliness; and therefore, this complex order is more appropriate for a district from the perspective of environmental perception.

Keywords: Order, Urban block, City Imge.

INTRODUCTION

Urban space is one of the major issues in urban design, which is regarded as one of its byproducts. One of the common classifications regarding such spaces is their performance scale that is divided into 2 main categories, namely, neighborhoods and city spaces.

Each of those scales have to bear their own meaning, for example, neighborhood scale spaces have to be cozy, calm and friendly while city scale spaces have to be legible, dynamic and sociable (Pakzad, 2006).

The above mentioned concepts are influenced by various factors such as functionality of the land use, density, details of urban scape, transportation, and traffic.

One of the components of artificial environment which affects such characteristics is the order governing urban blocks. Urban blocks have been studied so far from different perspectives, for instance, Jane Jacobs (1961) states that the smaller urban blocks lead to higher levels of social interactions. Ian Bentley et al (1985) assert that smaller urban blocks add more permeability to urban spaces. Gordon Cullen (1961) considers the blocks in organic textures visually more desirable than blocks in grid textures. Also another research shows that smaller blocks have higher effects on the quality of pedestrians. In this study, 3 factors, namely, the size of blocks, the depth of components, and the width of streets are examined (Sevtsuk et al., 2016).

A set of studies undertaken on urban blocks so far provides guidelines and instructions for urban designer in order to use them in projects related to common places to design urban blocks, but the point that is not already considered is examining the effect of the order for urban blocks on environmental meaning, such as coziness, calm, and friendliness that are required characteristics for the spaces of neighborhood scale. Therefore, from the perspective of theoretical points of view, there is a gap in the knowledge about the effect of the order of blocks on environmental meaning, and the main focus of the research revolves around this theoretical gap. Accordingly, there are no required guidelines in order for the urban designer to use for designing blocks from the perspective of environmental meaning. On this basis, two types of urban texture are to be compared in this article, namely, Mardavij with simple order, and Khaneh Esfahan with complicated order, and the question arises that which type of order is appropriate for textures with the scale of neighborhood from the perspective of environmental meaning.

Upon explanations provided, this research is aimed at examining the effect of the order of urban blocks on environmental meaning carved on the mind of citizens in 2 above mentioned places, and finally, the appropriate order based on examination of the effect of this order on the of design of a place from the perspective of environmental meaning to be recognized.

LITERATURE REVIEW

Studies regarding city image and environmental meaning in urban design date back to Lynch (1961). Based on psychological theory of Kurt Levine, Lynch studied three cities, namely Boston, Jersey City and Los Angeles. He provided interviews with inhabitants of these cities, and moreover, he asked them to draw a map of their city. Lynch compared the results of the interviews and cognitive maps with the reality of the cities and finally concluded that city image includes two parts of cognitive maps and meaning, and finally based on the conclusion that meaning is not a task of the urban designer and that it does not have a common basis among citizens, he decided to rule it out from his studies. Other scholars (Kaplan & Kaplan, 1989; Naser, 1994; Naser, 1998; Wohlwill, 1976; Lang, 2011; Chiang et al., 2014), contrary to Lynch, proved that meanings too have a lot of mental elements in common among citizens which are important.

Based on this common mentality of the citizens in environmental meaning, Appleyard studied Siedad Guayana City and stated that after forming a schema of the city in citizen's mind, people give it a meaning, and rate some places as good or bad (Appleyard, 1976). In a similar method, Hanyo (1993 &1995) studied Tokyo and a place in Colombus Ohio, and Naser (1998) examined Knoxvill and Chattanooga. Hanyo asked the citizens of these cities to express which part of the city includes exciting, stressful, relaxing, or boring properties, and Nasar asked them to express which part of the city they like more and which part they do not, alongside with explaining their reasons. Indeed, Naser and Hanyo were looking for identifying environmental meaning in the studied cities (Nasar, 1998). One of the common points in all research related to city image is that it is considered as influenced by both human and environmental factors. In various studies, the effects of these factors are studied. Michelson confirms the effect of age and various stages of life in forming schema of the environment. Hart (1979) and Evan (1980) examined the effect of gender on city image and reached differences between images of men and women about urban spaces. Appleyard (1976) and Steinitz (1968) studied the effect of social groups (literacy-income level) on city image and concluded that there is no conceptual difference among social groups.

However, in examining environmental factor, it is noticeable that Lynch (1961) and Appleyard (1976), state that landuse are of high importance in city image due to their benefits. Nasar (2008) and Kaplan et al (1982) mentioned that the façade are effective on image in 2 ways. First, perimeters with consistent, coordinated walls, and second, when the building is distinguished from the context due to reasons such as height, color, materials or the architectural style. Lynch (1961) identifies the structure of the city as an effective factor on image, and Linda and Hartig (2015) consider vegetation in case of being dense as another effective factor on image.

But the factor that is important for this research is the examined scale in city image and environmental

meaning. Image has a hierarchy of information that people deal with. People have images about region, city, neighborhood, streets, houses, and their components of their homes. The details of image increase with lowering the range of studies. Plans of the districts contain more specified elements rather than cognitive maps in the scale of the city (Nasar, 1994; Trieb, 1974).

Appleyard (1976) is highly focused on scale of image and examines the effect of governing system of urban blocks on cognitive maps (this study is briefly expressed in introducing the research areas).

However, what is important in this article is examining the effect of the order of urban blocks on environmental meaning. Mardavij and Khaneh Esfahan places have simple and complicated order, respectively. These places are to be compared and finally the more appropriate order for blocks in functional scale of the place from the perspective of environmental meaning figured out.

THEORETICAL FUNDAMENTALS

The process of cognition and perception of the environment is a psychological progress. According to Gestalt theory, when a person enters a new area, he/she perceives the general items of the environment, and subsequent contacts leads to perceiving the details, and the image completes gradually. Then, and during the next psychological procedures, the contact between such images are formed, and the schema that is rated from the cityscapes is created in human mind which is called the city image. This image is the foundation of any action and reaction between people and the urban environment and the way it is formed goes through psychological processes. This process includes three main stages, namely: 1.contact, 2.perception, and 3.cognition (Pakzad, 2012; Grutter, 2004; Lynch, 1961; Nasar, 1998).

In subjective imaging and creating cognitive maps from urban areas, the process is consistent with psychological stages (interaction, perception, cognition), and in each phase, byproduct of the process is different in connection with urban areas. When the urban area submits its information to human, and cityscape is conceived by people, then it is time to form the city image.

People order what is learned from the environment (received by common senses), and other than the components of the environment, order or relationship between them is also imaged in their mind and gives it meaning, so this foundation is a basis for any kind of action and reaction between human and environment (Lynch, 1961).
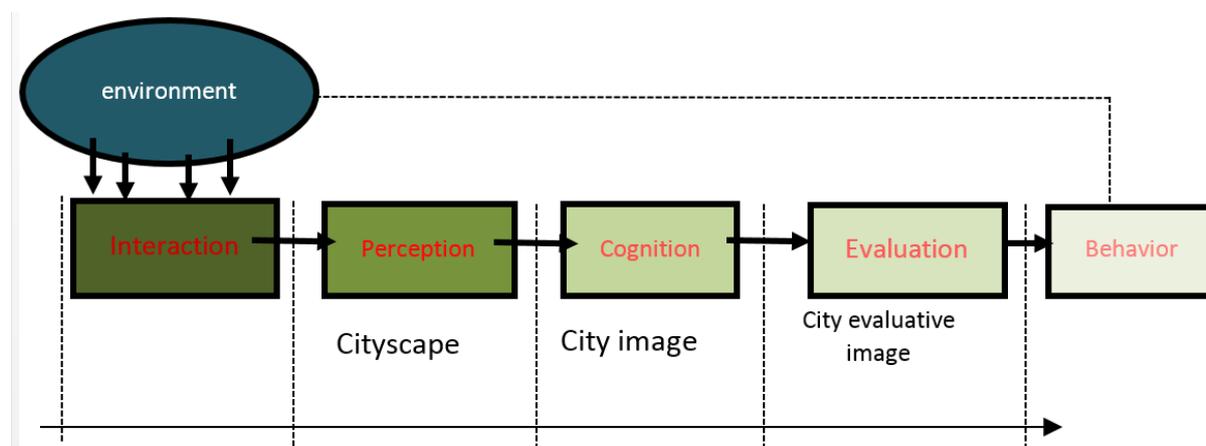
Fig. 1. The Process of Environmental Recognition (Trieb, 1974; Lewin, 1936 & Nasar, 1998)

Nasar states, "subjective evaluative image provides a psychological structure that includes subjective measures of feelings regarding environment, i.e. evaluative image includes 2 variables: physical aspects of the city (cognitive maps) and evaluative reaction of human" (Nasar, 1998, p. 31).

David Miller (environmental psychologist) combines the plot of cognitive process with human feelings about the environment (which is the same meaning stated by Lynch) and describes it in a different method but in the same structure. He considers environment as the sender of the information and states that such information is sent towards human from the environment in the form of different variables, and people conceive these information according to their personalities, identities, objectives, experiences and values (Quoted from Nasar, 1998).
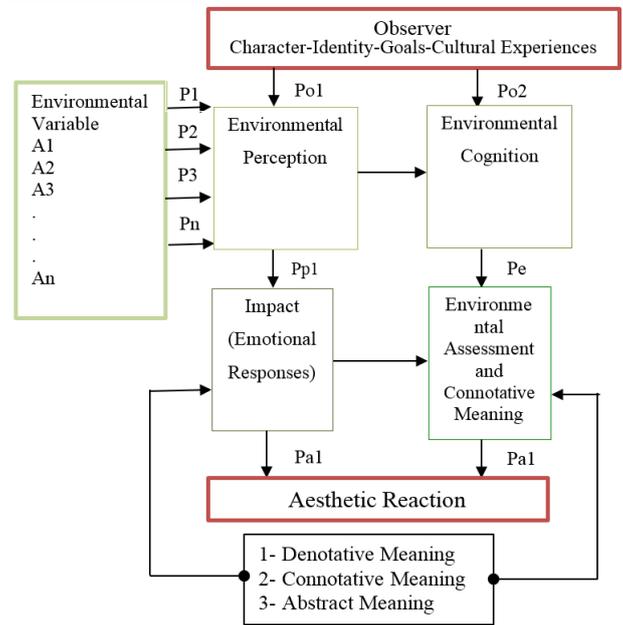
Fig. 2. Miller's Environmental Recognition (Nasar, 1998)

At initial stages of this process, people show a preliminary reaction to the environment that is called introductory selection that occurs related to common, denotative environmental characteristics (such as appearance, ratios, rhythm, color) (Kahneman, 2011). Miller called this introductory selection as emotional responses. Indeed, Miller's model is a combination of cognitive as well as emotional processes of human beings regarding the environment and the emotional part (or the meanings mentioned by Lynch), with Rappaport's classification, is better interpretable than other concepts. Rappaport classifies concept in three levels:

1. Denotative meaning: the lowest level of meaning that is compatible with understanding the issue, such as environmental recognition of a street as a commercial axis.

2. Connotative meaning: middle level of meaning that indicates emotional values such as judgment or deduction about commercial axis; for instance, the quality of calmness or excitement of a commercial axis.

3. Abstract meaning: the highest level of meaning

that is created based on cosmology, general cultural framework, ideology and philosophical systems as well as criticism.

Among these three levels, connotative meaning is important, because this level of meaning affects the behavior of citizens and is regarded as part of the tasks of urban design (Rappaport, 2013). In Miller's model, connotative meaning is formed in the field of environmental recognition. Upon the content provided, it can be said that scholars such as Miller and Nasar mostly emphasize on meaning that stems from the environment in citizens' mind; according to studies provided, we can introduce the components of city image as follows: 1. Cognitive maps, 2. meaning (a. denotative meaning, b. Connotative meaning).

Variables of Study

As mentioned previously, it is possible to divide spaces into 2 categories, namely neighborhood and city scale, and any of them has to embrace some characteristics. These characteristics are noted in Table1.

Table 1. Characteristics of Spaces in Neighborhood and City Scales

City Spaces	Neighborhood Spaces
Dynamicity- Flexibility –Nostalgia – Safety-Fluency –Entertaining -Spatial Appointment - Glory – Robustness- Segregation- Acceptability – Legibility- Individuation	Calmness – Friendliness – Safety-Coziness-Strange-Phobia – Unique

(Pakzad, 2006)

Among characteristics mentioned in neighborhood scale, qualities such as calmness, friendliness and coziness can be considered as connotative meaning, which are introduced as dependent variables of the research.

The order of urban blocks, however, is considered an independent variable; blocks are divided into 2 main categories:

1. Blocks with grid (square and rectangle) structure and simple order.

2. Blocks with non-grid structure and complex order.

METHODOLOGY

In the studies of city image like studies in other fields, it's possible to use various methods. In this regard, it is required to bring compatibility between methodology and its objectives. Research provided in this file is known as "post-occupancy". POEs are common studies that evaluate the structure of the environment from the perspective of social and behavioral aspects. POEs provide feedback about the effect of physical environment on mind, and they can set the ground for valuable insights about correcting existing situation as well as designing future environment (Mc Andrew, 2013).

Common techniques among scholars in terms of city image are also divided into 2 categories based on the components of city image. First, techniques called non-verbal methods that are used for cognitive maps, and second, techniques called verbal methods, used for meaning parts. In non-verbal methods, the citizens are asked to draw a map of the city or a part of it, and such maps are analyzed and compared, and finally, common parts of maps are introduced as cognitive maps of the city or part of it. In non-verbal methods, there are 2 options: first, the scholar is looking for the meaning of studied perimeter in citizens' mind (e.g. Appleyard, 1976). Second, the scholar is looking for special meanings of the studied area, and if the answer is positive, its level has to be determined (e.g. Nasar, 1998). In first mode,

the citizens are asked to describe the area, and in second mode, they are asked to provide explanations regarding that special meaning, and finally, standard questions are asked to rate that meaning (Lynch, 1961; Appleyard, 1976; Nasar, 1998: Chiang et al., 2014). In this study, and based on what is common in city image studies, first the cognitive map technique is used to determine the range of research in order to determine whether this range is affected by independent variables (the order of the block) or not. In the next phase, questions regarding dependent variables (intended meaning of local scale) are asked from the inhabitants, and the results will be compared.

In this regard, the method of data collection is so that in each district, some points and 1 out of each 5 pedestrians are selected. According to Piaget's psychology, people gain mental preparation to create images about their ambient environment since age of 15; therefore, if the age of that pedestrian is above 15, the person is selected based on gender to respond that questions. If the respondent was in good psychological condition, he/she would be selected for interview.

The Realms of Study

In selecting the range of the research, first, it was tried to select limits based on environmental factors influencing the city image. Selection was so that in all environmental factors influencing the city image (such as landuse, appearance, vegetation, scale, density), the areas would be alike and the only difference would be in terms of the order of urban blocks and communication network (independent variable). In this phase, 6 districts are in the list of research areas, and these areas were reduced to 2 districts based on Appleyard's studies. According to Appleyard's studies, cognitive maps are classified into 2 main groups. First group is spatial elements, and second group is sequential elements, and any of these groups have 4 sub-sets. Spatial elements contain cognitive maps related to small parts, even urban blocks (Appleyard, 1976).
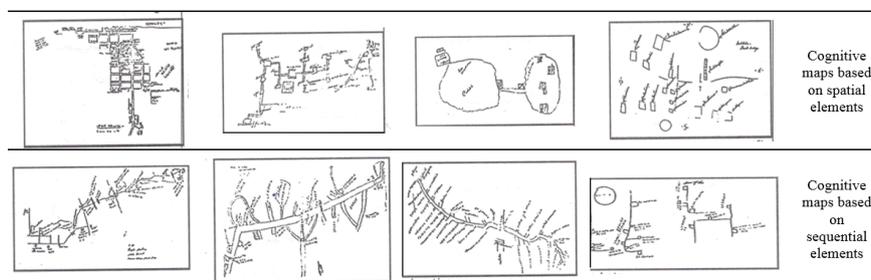
Fig. 3. Types of Cognitive Maps (Appleyard, 1976)

According to the objectives of the study, that is examining the order of urban blocks, cognitive maps with spatial elements are out of the scope of this study because they are in scale beyond urban blocks. However, in cognitive maps with sequential elements, 2 subsets, namely branch-ring, and network subsets are more affected by the order of blocks and communication networks; branch-ring cognitive maps are related to areas with complex order of blocks, and network cognitive maps are related to areas with simple order of blocks,

with grid network. Therefore, from 6 selected areas, first 30 inhabitants out of each area were asked to draw a map of the intended areas. After analyzing the maps, it was found out that cognitive maps of Khaneh Esfahan and Mardavij districts are of branch-ring and network type, respectively; therefore, 2 cognitive maps out of 6 selected areas were more affected by the independent variable of this research, and were selected as final districts of this study.
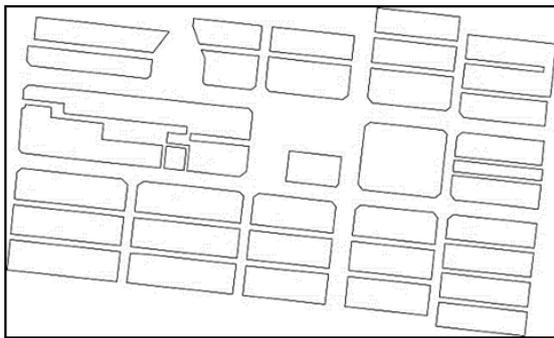
MARDAVIJ by Simple Order
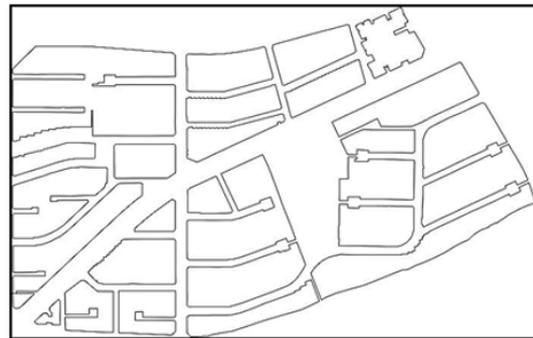
KHANEH ESFAHAN by Complex Order
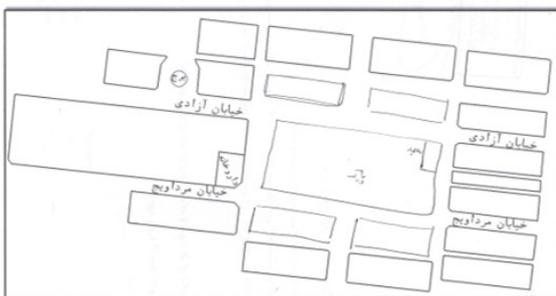
A Sample of Cognitive map Drawn by MARDAVIJ Residents
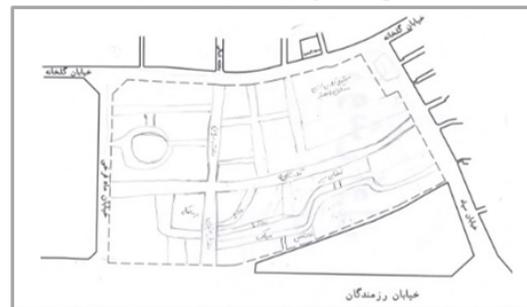
A Sample of Cognitive Map Drawn by KHANEH ESFAHAN Residents

Fig. 4. Realm of Research

DISCUSSION AND CONCLUSION

In this research, like what is common in city image studies, residents of 2 studied districts were asked to describe coziness, friendliness and calmness of their district. In order to measure the variables of the study accurately, this was accomplished in multiple phases:

1. The location of variables: first, the residents were asked to describe the area specified on the map in terms of coziness, calmness and friendliness, and then, determine which part of the area is regarded cozier, friendlier and calmer.

2. The level of feelings about the variable in direct question: in the next phase they are asked to determine the level of coziness, calmness and friendliness in the determined area in the spectrum of "very low", "low", "medium", "high" and "very high".

3. The level of feeling about the variable in indirect question: finally, they are asked to answer standardized questions resulted from the definition of research variables. Questions are provided in Table 2.

116

Table 2. The Process of Designing Standardized Questions

Designed Question	Operational Definition	Definition	Dep. Var.
To what extent outer spaces (street, alley, square, etc.) of the perimeters are considered as belonged to him/herself as 2nd yard	To what extent the respondent belongs intended spaces to him/herself and feels sense of possession	Inhabitant of the places feels possession there, considers it as its own space and also himself belonged to that place. In this mode, spaces of the place are immediate component of living place, considered as 2nd yard.	Friendliness
To what extent there are outdoor spaces (street, alley, square, etc.) in which it is possible to be visually protected from strangers	To what extent the respondent feels cozy in created spaces of intended area	Besides calmness, local spaces must be cozy, far from urban noises that also could be called protected. Obviously, this place is hard to open to aliens.	Coziness
While walking in outdoor spaces (street, alley, square, etc.) of intended place, you consider its noise as low	To what extent the respondent feels calm in created spaces of intended area	In spite of commotion governing on our streets, most citizens expect calm residential place. Most preliminary factor playing main role in providing calmness of a place in low disturbing noise.	Calmness

(Pakzad, 2006)

In 1st part of first question, the residents of Khaneh Esfahan district were feeling more cozy, friendly and calm in district rather than Mardavij inhabitants. The residents of Mardavij asserted that due to fluent traffic in the district, and because every site of the district is visible by others (especially strangers) almost everywhere in the specified perimeter, they feel less cozy and friendly in this district. In 2nd part of first question, residents of Mardavij only consider the local park as a calm and cozy place (only in quiet hours), and indeed, they almost did not feel anywhere as a friendly place; but in Khaneh Esfahan area, most places arouse this feeling in people, especially in areas with more complex order of blocks. The feelings of people about 3 variables of study are shown in the following plans. It is noteworthy that in Khaneh Esfahan map, places are shown in which people feel cozier, calmer and friendlier.
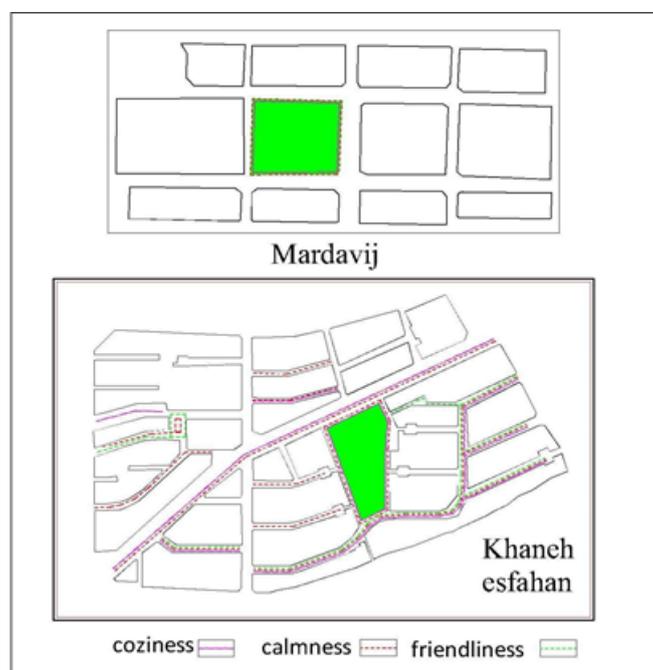
Fig. 5. The Feelings of Respondents Regarding the Variables of Research in the Area of Study

But in 2nd stage, questions ask the residents to describe their feelings about research variables; results are shown in fig. 6.
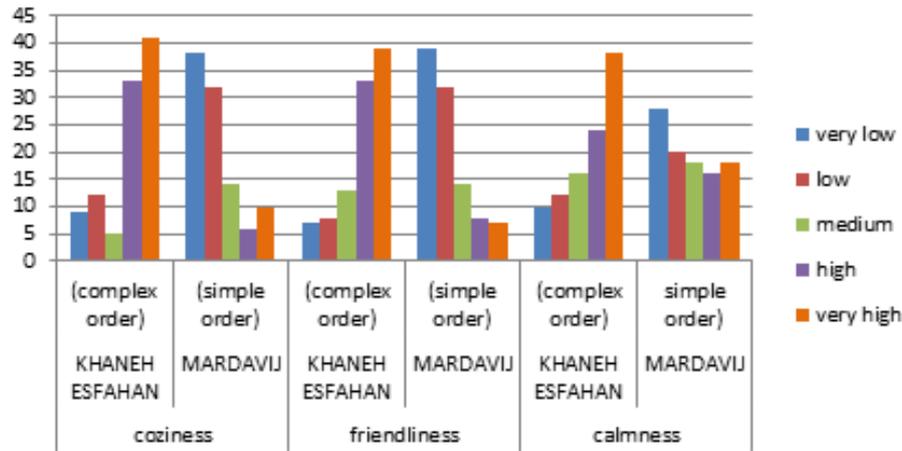
Fig. 6. Plot of Response Percentage of Residents to the Questions of 2nd Stage – The Level of Feelings of Inhabitants Regarding Dependent Variables of Research

Finally, standardized questions (provided in table 2) were asked to measure the variables of the study from the residents of intended places. The level of responding for residents of each place is provided according to measured spectrum in table 3.

Table 3. Percentage of Response from Residents to Questions of 3rd Part – Standardized Questions

Question	1st Question		2nd Question		3rd Question	
Measured Variable	Calmness		Friendliness		Coziness	
Perimeter	MARDAVIJ (Simple Order)	KHANEH ESFAHAN (Complex Order)	MARDAVIJ (Simple Order)	KHANEH ESFAHAN (Complex Order)	MARDAVIJ (Simple Order)	KHANEH ESFAHAN (Complex Order)
Very low	23	10	41	5	30	5
Low	25	10	34	10	40	16
Medium	12	18	10	5	10	5
High	19	20	12	41	6	23
Very High	21	42	7	39	14	51

From table 3, it can be deduced that:

• KHANEH ESFAHAN perimeter is calmer than MARDAVIJ with 62 percent of "high" and "very high" responses.

• KHANEH ESFAHAN perimeter is friendlier than MARDAVIJ with 80 percent of "high" and "very high" responses.

• KHANEH ESFAHAN perimeter is cozier than MARDAVIJ with 74 percent of "high" and "very high" responses.

Regarding measuring dependent variables of the study, it was tried to pass on a 3-stage process. First, the residents were orally asked to describe their place in terms of coziness, calmness and friendliness. Interviews were recorded and then reviewed, and among these quotes, it was deduced that Khaneh Esfahan place is cozier, calmer and friendlier than Mardavij. Finally, the respondents were asked to determine coziest, calmest and the friendliest point on the map, and perimeters with more complex order in Khaneh Esfahan had more references for 3 studied variables. In 2nd and 3rd stage, the variables were directly and indirectly measured based on standardized question, respectively, and the results of these 2 phases were consistent and shows that Khaneh

Esfahan is cozier, calmer and friendlier place.

It has to be noted that the process of recognizing the environment, is a psychological, complex process that is formed under influence of numerous human and environmental factors. In this research, an attempt was made to minimize the influence of human as well as environmental factors, except the independent variable (the order of block), through choosing similar areas (regardless of order) and the method of selecting respondents. However, because all factors are not controllable and the manipulating independent variable is out of reach of researchers, results of studied areas are provided, and it is suggested that other researchers test the subject of this article in other geographical points, and in case of repeating results, then we can generalize them more confidently and consider them as the principles of urban design.

Nevertheless, according to the point noted in research objectives, this project is aimed at examining the relation between meaning of neighborhood scale and the order of urban blocks. Now, after providing data analysis, it is to be said that the areas with complex order of blocks are able to provide meanings to neighborhood scale (coziness, friendliness and calmness), and areas with simple order of blocks lack such mentioned meanings. The results of the research show that urban designers in design urban projects, especially ground preparation, have to use complex system of ordering blocks, with non-grid network where looking for more coziness, friendliness and calmness.

REFERENCES

Appleyard, D. (1976). *Planning a Pluralistic City.* Massachusetts: MIT Press.

Bentley, I., Alcock, A., Murrain, P., & Mcglynn, S. (1985). *Responsive Environments*. London: Oxford Press.

Chiang, Y.C., Nasar, J.L., & Ko, C.C. (2014). Influence of Visibility and Situational Threats on Forest trail Evaluations. *Landscape and Urban Planning*, 125(3), 166-173.

Cullen, G. (1961). *The Concise Townscape*. London: Architectural Press.

Evane, G. (1980). Environmental Cognition. *Psychology Bulletin*, (88), 259-287.

Grutter, J. (2004). *Aesthetic der Architecture*. (J. Pakzad, & A. Homayun, Trans.) Tehran: Shahid beheshti university press.

Jacobs, J. (1961). *The Death and Life of Great American Cities*. MIT Press.

Jeodicke, J. (1985). *Space and Form in Architecture*. Stuttgart: Karl Karmer Verleg.

Kahneman, D. (2011). *Thinking, Fast and Slow*. New York: Farrar Giroux & Strauss.

Kaplan, R., & Herbert, E. J. (1989). *Familiarity and Preference: Across-cultural Analysis*. In J. L. Nasar (Ed.), Environmental Aesthetics: Theory, Research and Applications. Cambridge,UK: Cambridge University Press.

Kaplan, R., & Kaplan, S. (1989). *The Experience of Nature: A Psychological Perspective*. Cambridge, UK: Cambridge University Press.

Kaplan, R. (1973). Predictors of Environmental Preference: Designers and Clients. *Environmental Design Research*, 1(1), 265-274.

Kaplan, S., Kaplan, R., & Herzog, T. (1982). The Prediction of Preference for Unfamiliar Urban Places. *Population and Environment*, 5(1), 43-59.

Lindal,P., & Hartig, T. (2015). Effects of Urban Street Vegetation on Judgments of Restorationlikelihood. *Urban Forestry & Urban Greening*, (14), 200-209.

Long, J. (2011). *Functionalism Revision: Architectural Theory and Practice and the Behavioral Sciences*. England: Ashgate Publishing Limited.

Lynch, K. (1961). *The Image of the City*. MIT Press.

Mc Andrew, T. (2013). *Environmental Psychology*. (G. Mahmoodi, Trans.) Tehran: Zarbaf.

Nasar, J. L. (1998). *The Evaluative Image of the City*. Michigan: University of Michigan.

Nasar, J. L. (2008). Assessing Perceptions of Environments for Active Living. *American Journal of Preventive Medicine*, (34), 357-363.

Nasar, J. L. (1994). Urban Design Aesthetics: The Evaluative Quality of Building Exteriors. *Environment and Behavior*, (26), 377-401.

Nasar, J. L. (2008). Assessing Perceptions of Environments for Active Living. *American Journal of Preventive Medicine*, 34(4), 357-363.

Pakzad, J. (2006). *Guide the Design of Urban Spaces in Iran*. Tehran: Ministry of Housing and Urban Development.

Pakzad, J. (2012). *An Introduction to Environmental Psychology for Designers*. Tehran: Armanshahr.

Pazhouhanfar, M., & Kamal, M. (2014). Effect of Predictors of Visual Preference as Characteristics of Urban Natural Landscapes in Increasing Perceived Restorative Potential. *Urban Forestry & Urban Greening*, (13), 145-151.

Rappaport, A. (2013). *Means the Built Environment*. (F. habib, Trans.) Tehtan: Pardazesh Barnamerizi Shahri.

Sevtsuk, A., Kalvo, R., & Ekmekci, O. (2016). Pedestrian Accessibility in Grid Layouts: the Role of Block, Plot and Street Dimensions. *Urban Morphology*, 20(2).

Stamps, A. E. (2004). Mystery, Complexity, Legibility and Coherence: A Meta-analysis. *Journal of Environmental Psychology*, 24(48), 1-16.

Steinitz, C. (1967). Congruence and Meaning: *The Influence of Consistency between Urban form and Activity on Environmental Knowledge*. Ph.D thesis. MIT, Cambridge Mass.

Trieb, M. (1974). *Stadtgestaltung Theorie und Praxis*. Bertelsmann: Durchges.