The Effect of Landscaping and Building Facades on Perceptual-Behavioral Features of Citizens

Sara Azma*1, Roxana Katanchi2

Abstract

Objective: Perception could provide the first or the most fundamental layer for recognition and hence, studying it should be prior to any other layer like layers of cultural world and especially, the real world. One of the categories, in which cognition becomes important, is the urban landscape and its designation to improve perceptual perceptions of audiences to enhance items such as sense of belonging and recognition of space and orientation. Therefore, the main purpose of this study is to investigate physical factors affecting urban bodies and its impact on perception and behavior of citizens and considering the gap in this field.

Method: The method used in this study is interpretive and in form of qualitative analysis of available references on urban landscape and perception of citizens. The data collected through library research. The procedure is based on classification and content analysis in this study.

Results: Landscaping and city walls could lead to emergence of perceptions such as perception of attractiveness and emotions of space, perception of identity and sense of belonging, perception of useful information, perception of hidden order and reagent of life stream, living at the streets, explicit transfer of performance message and perception of urban diversity in citizens.

Conclusion: The results obtained from this study could lead to recognizing the relationship between designation and environmental psychology in designing urban landscape and desirable perception of citizens about the environment and the interaction between designation strategies in designing the facade that could finally lead to promotion of quality of the environment and mental comfort and satisfaction of citizens.

Keywords: Perceptions, Urban landscape, Environmental psychology, Building facade.

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Introduction

The issue of environment and human has always been one of the most important issues considered in environmental psychology and has been manifested in micro, macro and middle structures. The interaction could encompass from a building and its interior space to a surrounding site and finally, an urban structure. Effects of environment on human and human perceptions could be explained as determinism, liberalism and environmental probabilism (Emamgholi et al, 2012: 34).

Assessment of the function of all human senses in the quality of environmental landscape could lead to designations motivating these senses in human and as a result, more attractiveness of the environment in view of people (Dodange Ghareaghaji and Mohammadi, 2016). The surrounding environment of people is full of potential information (reality). At first, people perceive some part of the realities in form of actual information (objectivity). Then, the people organize some judgments based on their perceptions and make subjectivity from the environment based on the judgments. The subjectivities are fundamental factors in human behavior (Pakzad and Bozorg, 2012: 45) (quoted from Modiri, Noorollahi and Oskuyi, 2014: 78).

Since early 60's, the issue of environmental perception has been considered as an important interdisciplinary topic and has been developed from different dimensions. Perception is the process of gaining information from the surrounding environment and is also an active and systematic topic (Lang, 2007) and returns to direct responses shown by human senses to structure or forms (Nasar, 2011). Perceptions include collection, organization and understanding of environmental information (Carmona et al, 2003). Nasr (2011) believes that types of environmental perception theory have had some ideas for urban design: Theory of Adaptation Level (people adapt themselves to the level of dominant stimulants); ecological approach to perception (considering the environment composed of meaningful structure and stimulants) and probabilistic functionalism (evaluation of people about people has some probabilities, which have always been existed along with the physical properties of the environment) (quoted from Feizi and Asadpour, 2013: 110).

Moreover, another important factor helping more perception of urban spaces in mind of citizens could be architectural forms and models. These forms transfer abundant meanings and feelings in addition to beauty. Consideration of form is disclosed when it is observed that at the current status of cities, inattention to it has led to visual turbulences at the environment, so that the chaos and turbulences could affect mind of people negatively and result in lack of presence of the people (Kaboli Farshchi, Gholampour, Mabhoot and Ahmadi Rastegar, 2013).
In general, there are two approaches in the field of aesthetics evaluation of urban environment: the first approach is visual (objective) approach that believes that aesthetic is in nature of the landscape. In this approach, it is believed that landscapes created based on general rules of aesthetics could be understood as beautiful landscapes in view of people (Scraten and Hospers, 2010: 79) (Rorty, 1990: 83) (Shuttleworth, 1979: 14). Moreover, the second approach in aesthetic evaluation is based on subjectivity and attributes the perception of aesthetics of a landscape to mind of individuals and factors dependent on individuals (Scraten and Hospers, 2010 79) (Holm, 2006: 342) (Solomon, 2005: 900) (quoted from Aminzadeh Goharrizi, Sharifi and Forughifar, 2014: 74).

In general, there are 3 main movements in urban spaces and roads, which could create different environmental and psychological conditions to perceive the features of surrounding area and aesthetic qualities of the environment. The 3 types of movement include car movement, pedestrian movement and movement with public transport vehicles. Mixture, combination and constant transformation of the 3 movements has led to the creation of different spatial and perceptual conditions for urban people looking at urban spaces from different landscapes (Mahdizadeh, 2006). However, something that is considered as static object and could affect perception of citizens is the discussion of urban bodies and landscapes. Objective elements, along with subjective concepts, could form urban landscape. For a newcomer supervisor in an urban space, the objective form and for a resident of site, objective and subjective forms could specify position of the person in that area. The factors and indices affecting quality of urban landscape include objective elements (facade, wall, urban furniture, permeability, closeness, skyline, readability, mixed and variety of applications, integration) and subjective elements (security, memories, sensory richness, sense of belonging and spatial identity and social solidarity) (Mireh et al, 2012). Hence, it seems that there is a special correlation between urban landscape and urban facade and bodies and perception of citizens.

Various definitions are existed for landscape (e.g. Lang, 2007; Taylor, 2006; Mahmudi, 2006; Mansuri, 2003; Farjami, 2006; Golkar, 2006; Brake, 2008). Urban landscape is considered in macro scale when the supervisor observes the whole city or vast part of it with the presence in special place. In this scale, urban landscape is certainly in relation with natural, cultural and historical features of city, which is overall combination of urban fabric and its deployment, building masses, main open spaces, color, skyline form or indicator natural elements (Mohmeli Abyaneh, 2011: 96), which is emphasis on urban bodies in this study.

As urban landscape could transfer some information to human mind through visual senses and could stimulate the imaginations of people, it could hence affect visual perceptions of citizens.
of the environment and changing their behaviors. Therefore, it seems logical to explore such relationship in urban field. This study tends to discover the relationship and the effect of urban landscape and landscaping on sensory and visual perceptions of citizens. To this end, content analysis of the research theories and models is conducted in this field and they have been classified at the end.

**Literature review**

In field of effect of urban landscape and walls, some studies have been conducted and some of them are closely related to this study.

Lashkari et al (2016) has conducted a study in field of factors affecting perception of quality of urban public spaces of Mashhad and have found that in perception of quality of public spaces, there is significant correlation between trends affected by individual and social features of users and perception of environmental concepts (Lashkari, Rafi'ian and Andalib, 2016: 449).

Maleki and Ahmadi (2013) have conducted a study to investigate the visual quality of urban landscape of Ilam, urban views, façade attachments, neglected facades, skyline, horizontal and vertical lines, materials and terraces are identified as factors affecting the visual quality of the city (Maleki and Ahmadi, 2013: 5-10).

Feizi and Asadpour (2013) have conducted a study on perception of citizens of view of high-rise buildings and have proposed 4 strategies to improve perception of citizens in urban high-rise projects: a) paying more attention to innovative and creative aspects of physical design of high-rise buildings b) using materials with various and creative color and composition in façade designation c) visual harmony with natural and physical urban fabric d) preservation of understandable concepts and meanings and identity of high-rise buildings and avoiding construction of buildings with no identity (Feizi and Asadpour, 2013: 107).

The results obtained by Faraj Mohammadi and Eskandari (2012) have shown that improvement of the relationship of 3 issues of aesthetics (color, form and elements) and regulations and methods of urban management supervision methods in design and maintenance of building facades and interaction of urban design thoughts, architecture, landscape architecture, urbanization, environmental psychology and public perception of right attitude to building façade could finally lead to improvement of environmental quality and improvement of urban landscape (in local levels to urban levels and special buildings) (Faraj Mohammadi and Eskandari, 2012).
The results obtained by Sayafzadeh, Mire'ie and Node Farahani (2013) have shown that there is a significant correlation between two variables of spatial identity and urban landscape quality and the variables show response to increase and decrease in each other (Sayafzadeh and Node Farahani, 2013: 29).

Torkashvand and Majidi (2013) have conducted a study on the perception of urban signs and its effect on urban landscape and found that the said criteria could be classified in two main groups including "differentiation compared to surrounding fabric" and "common inference among users" (Torkashvand and Majidi, 2013: 5).

Rashnofar and Sadeghi (2015) have found that different elements could be effective in the field of identity and social issues of citizens in relation with urban spaces and one of the most important elements used in urban architecture and landscape could be urban signals (Rashnofar, Sadeghi and Arefi, 2015).

According to the relevant studies in field of effect of urban landscape and landscaping on perception of citizens, it could be mentioned that comparing the results of this study with the cases conducted in Tehran could lead to development of results and theoretical consensus and finally, a qualitative conclusion could be presented in this field as one of the main objectives of the research.

Table 1: the relevant studies in field of urban landscape and perception of citizens

<table>
<thead>
<tr>
<th>Row</th>
<th>Authors</th>
<th>Results related to urban landscape</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lashkari et al (2016)</td>
<td>There is a significant correlation between trends affected by individual and social features of users and perception of environmental concepts.</td>
</tr>
<tr>
<td>2</td>
<td>Maleki and Ahmadi (2013)</td>
<td>Urban landscapes, façade attachments, skyline, horizontal and vertical lines, materials and terraces as factor affecting visual quality</td>
</tr>
<tr>
<td>3</td>
<td>Feizi and Asadpour (2013)</td>
<td>a) paying more attention to innovative and creative aspects b) using materials with various and creative color and composition in façade c) visual harmony with natural and physical urban fabric d) preservation of understandable concepts and meanings</td>
</tr>
<tr>
<td>4</td>
<td>Faraj Mohammadi and</td>
<td>improvement of the relationship of 3 issues of aesthetics and regulations and methods of urban management supervision methods in</td>
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<tr>
<td>Eskandari (2012)</td>
<td>design and maintenance of building facades</td>
<td></td>
</tr>
<tr>
<td>5 Sayafzadeh,</td>
<td>There is significant correlation between two variables of spatial identity and urban landscape quality</td>
<td></td>
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<tr>
<td>Mire'ie and</td>
<td></td>
<td></td>
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<tr>
<td>Node Farahani</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2013)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Torkashvand and Majidi (2013)</td>
<td>Existence of two main factors of &quot;differentiation to surrounding fabric&quot; and &quot;common inference among users&quot; in perception of urban signals</td>
<td></td>
</tr>
<tr>
<td>7 Rashnofar and Sadeghi (2015)</td>
<td>Importance of urban signals to improve identity and social affairs of citizens in relation with urban spaces</td>
<td></td>
</tr>
</tbody>
</table>

**Methodology**

The methodology refers to the means or way to determine this issue that how a research statement is confirmed or rejected. In other words, methodology is the framework of searching operations or measures to realize research objective to test the hypothesis or answer research questions (Bazargan, sarmad and Hejazi, 2006).

Data collection method: As methodology always follows the research topic, the study has used a main method for purpose of data collection: library and documentary method.

Method: In this study, applied method is qualitative method in kind of descriptive-analytical method and data collection method is library and field research. In this method, the author has used the most important instrument that is note taking. Through referring to all identified references previously, important and required points have been written on the checklists, but with mentioning the information of applied references. Then, the observation and interview are used and finally, qualitative content analysis is used to analyze the input data (Statistical Yearbook, Unesco 1998:116).
Research variables

The research variables in form of a conceptual model and the way of measurement of variables are presented as follows:

a) Dependent variables including
   Perception of citizens
b) Independent variables include:
   Physical view, building facades and urban body

Research questions

To conduct this study, at the first, relevant questions are the topic are presented, so that the research could be extended based on these questions and the desired goals are achieved. The questions are as follows:

- What is the role of urban body and landscape in formation of perception of citizen?
- What is the effect of building façade and urban body on positive or negative perception of citizens?

Results and discussion

The relationship between landscaping and perception of citizens about urban environment

There are two concepts in urban space: One concept is urban landscape observed physically and the other one is urban view that means effect of urban space on spirits and mentality of citizens. The effect
is directly taken from building facades. Creating and improving the attachment of three points of aesthetic aspects such as color, form and element and regulations of urban management interference in designation and maintenance of building facades and the interaction of urban design thoughts, architecture, landscape architecture, urbanization, environmental psychology and public perception of proper attitude to building façade are important, which can finally lead to improvement of environmental quality and urban landscape and view from local to urban levels and special buildings (Eskandari, 2014).

Analysis of different perceptual theories shows some general concepts. Perception is neither a passive action nor an absolutely creative action.

Principles of priority of perception: perception could provide the first or the most fundamental possible layer for cognition and hence, studying it should be prior to any other layer like layers of cultural world and especially the world of sciences (Spielberg, 1969: 544). Sensory perception is not an action, but also it is a field creating all actions. Merleau-Ponty believes that neither experimental scholars nor followers of rationalism have been able to observe the right about the interference of body in perceptual experience (Piravi Vanak, 2010: 96). Sensory perceptions don't supply themselves as an event at the world that the issue of causality could be applied on it (ibid: 96). Perception is multi-foundation and the role of movement in environmental perception is important. People learn to consider the differentiation between details and general elements of environmental elements using the experiences. The attitude of people to the environment is based on previous destinies and experiences and finally, the hypothesis is doubtable that perceptions could be determined absolutely with outside incentives. In addition to theories about perception, various dimensions have been recognized till now for perception. For example, Itelson (1978) has identified 4 various dimensions for perception and believes that the 4 dimensions act simultaneously: Emotional dimension, cognitive dimension, interpretive dimension and valuation (Bibak Sereshkeh, 2015: 5).

Figure 2: Components of urban landscape perception and landscaping (Feizi and Asadpour, 2013: 112)

Urban body view, as a constructive part of urban view, could surround the urban spaces and could create diversity, along with harmony, and provide a pleasant environment for citizens. In exterior building facade,
in addition to aesthetics and its special concepts, factors such as technical issues and sustainability, environmental issues, economic and cultural issues are also in special position and could have a significant effect on the desirability and improvement of visual quality of urban landscape (Haeri, 2014: 1).

The findings of Tazieh et al (2015) have shown that the more the difference of height codes of buildings in a horizon are, the more irregularity of the urban horizon line could be and the more difficult the perceptions of the urban view for citizens would be (Tazieh, Sheikh and Sepehrifar, 2015).

Moreover, lateral surfaces have also formed volume of exterior skin of the building as secondary facades and observance of principles of proportion and harmony as the primary principles of architecture should be binding on this surface, so that it could introduce the building and its function. These surfaces forming the building could be considered as a part of urban view and the lines caused by these surfaces could form some parts of skyline and because of being exposed to eyes of viewers, they should have special proportion and harmony with other surfaces and should have details and information for mind of audiences. It could be claimed that the first and the most important expectation from streets is readability and facility of perceiving them and dynamic and easy presence at these spaces (Jafari and Ramezani, 2013).

Moreover, urban landscape with 3 dimensions including emotional, cultural and ecological dimensions (Sheibani, 2010: 20) (quoted from Tazikeh, Sheikh and Sepehrifar, 2015) is a new type of urban fluid identity that is directly correlated to perception.
Visual dimension is also considered as an effective aspect of buildings at the city that plays a key role in urban views. Some of the most important criteria for evaluation of visual effects of high-rise buildings are as follows (LVMF, 2009):

The scale, size and volume of the building in relation to the urban landscape

1. Manifestation and materials (such as texture, color, scale, etc.)
2. Effect on skyline
3. Obstruction of landscapes or any damage to the façade frames or signals
4. Help formation of view corridors to façade frames or signals
5. The harmony and visual relationship with the surrounding area
6. Effects at night/lighting and its effect on the environment or surrounding signals (Karimi, 2012: 75).

Effects of perception of citizens about urban landscape in Tehran

As existence of forms of walls plays key role in urban space and citizens at the first pay attention to building forms to visit an environment, they should gain an appropriate metal image about the environment and this could be possible if the space has vitality and diversity. The urban environment and spaces should have the ability to meet needs of citizens since the physical appearance of urban space could affect spirits of individuals. Through observance of an object (form and pattern in environment), a special subjectivity and image is created at first in mind of people with having no information about the object. People combine the image with their previous experiences to gain special feelings about the object. In other words, people always reach from objectivity to subjectivity and from subjectivity to emotions. For example, when entering a new city, as the city has not been observed previously, although no image exists about that place, people have always some experiences about previously observed places and the experiences could affect human subjectivity and mental image (Davarinejad Moghaddam and Rahimian Moghaddam, 2016: 10 and 14).

In rest of this research, some examples of effects of façade and viewing and urban landscape on the perception of citizens in view of theorists in this field are presented. The viewing could be sometimes appeared in walls and in form of wall painting (mural).
Table 2: perception indices of urban viewing and case study of Tehran

<table>
<thead>
<tr>
<th>Author</th>
<th>Public perception</th>
<th>Viewing quality</th>
<th>Tehran case study</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Urban area</td>
<td>Picture descriptions</td>
</tr>
<tr>
<td>Cullen (1961)</td>
<td>Perception of attractiveness and emotions of space</td>
<td>Dynamicity and vitality</td>
<td>Receiving citizens in business facade or use</td>
<td></td>
</tr>
<tr>
<td>Lynch (1960)</td>
<td>Perception of identity and sense of belonging</td>
<td>Sense of belonging</td>
<td>Using colors and differentiation using repetitive patterns</td>
<td></td>
</tr>
<tr>
<td>Rappaport (1981)</td>
<td>Perception of useful information</td>
<td>Desirable complexity</td>
<td>Using advertising billboards in body</td>
<td></td>
</tr>
<tr>
<td>Jacobs (1961)</td>
<td>Perception of hidden order and reagent of life stream in streets</td>
<td>Order in irregularity</td>
<td>Same and repetitive patterns with various details</td>
<td></td>
</tr>
<tr>
<td>Venturi (1977)</td>
<td>Transparent transfer of function message</td>
<td>Transparency</td>
<td>Transparency of building in introducing religious use</td>
<td></td>
</tr>
</tbody>
</table>
Here, according to the relevant literature, some solutions are presented to improve desirable perception of citizens about viewing and urban landscape:

Table 3: presenting solutions for designation in urban viewing and landscape based on field studies

<table>
<thead>
<tr>
<th>Perceptual effects of viewing</th>
<th>Relevant variables of viewing and urban landscape</th>
<th>Perceptual effects on citizens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental satisfaction</td>
<td>Combined urban landscape in viewing area</td>
<td>- Mental security should be related to width and proportions of streets and physical factors in margins of viewing so that it is not unbalanced more than usual.</td>
</tr>
<tr>
<td></td>
<td>Background buildings in neighborhood of façade and wall</td>
<td>- Environmental attractiveness in the margin of viewing plays role in satisfaction of citizens and the green elements and appropriate furniture should be combined.</td>
</tr>
<tr>
<td></td>
<td>No visual pollution in adjacency of facade</td>
<td>- The sense of belonging to a place and public participation could affect the vitality of their living place and could be related to their satisfaction of viewing and protection by residents.</td>
</tr>
<tr>
<td>Encouraging</td>
<td>Existence of public places</td>
<td>- Usefulness in viewing; for example,</td>
</tr>
<tr>
<td>social interactions</td>
<td>like urban furniture to stop around the landscape</td>
<td>showing special use or special event is required</td>
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<tr>
<td></td>
<td>Being airy and social actions in the space beside the view area</td>
<td>- Existence of appropriate activity and physic in consistence with the view to encourage citizens</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Variety of activities and cultural and age diversity of citizens could affect desirability of the viewing in terms of ability to provide vitality from different aspects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The existence of main roads for presence of people and green roads and increased interaction of people with each other and increased effect of viewing on them.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sense of security</th>
<th>Existence of some places in margin of view to have calm and safe hours</th>
<th>- Using important nodes, signals, edges and walls in margin of viewing to have the ability of localization and paying attention to it</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Providing ethical security in margin of walls</td>
<td>- Possibility of visual influence in limit of viewing from surrounding area</td>
</tr>
<tr>
<td></td>
<td>Effect of viewing on easy access to destination</td>
<td>- Location of viewing in intersections and spaces with the possibility of stopping there</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Using lighting and highlighting the area, at which the façade and landscape is existed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Possibility to attend in night activity beside the facade and movement of people</td>
</tr>
</tbody>
</table>

| Attachment to the place | Creating sense of attachment and belonging | - About sense of attachment and belonging to place of view, some |
Trend of people to go beside the wall

<table>
<thead>
<tr>
<th>Tendency to stop beside the wall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health around the place and wall</td>
</tr>
</tbody>
</table>

items are involved as follows:

- Location, functional factors, environmental and aesthetic factors
  - Regional identity and antiquity of the landscape plays key role in increasing or decreasing attachment to the place
  - Using meaningful signals around the place or using cultural elements could affect the designation of the landscape.

Conclusion

Facade of each building could affect the formation of urban collection, at which the building is located. If the facade and view of a building are designed regardless of other buildings, homogeneity of urban view would be destroyed. The facade of each building could affect whole urban space, at which it is located and the effect could be on the body of streets and squares. If facade of a single building is designed regardless of other buildings and urban elements, the uniform appearance of urban space could be destroyed. The conflict between urban dimension and individual expression of façade could be destroyed, if the building is considered as a component of the city and its interactions with the surrounding area is multidimensional. As the main objective is finding answers of research questions, the results are presented in form of relationship and effect of two main research variables:

According to obtained results, it could be mentioned that viewing and urban walls could cause perceptions such as Perception of attractiveness and emotions of space, Perception of identity and sense of belonging, Perception of useful information, Perception of hidden order and reagent of life stream in streets, Transparent transfer of function message and Perception of diversity in cities. This is only a small part of such behavioral effects on audiences extracted from theories of scholars and classified in this study.

In the final section of the study, some factors are identified through field observations including Environmental satisfaction, Encouraging social interactions, Sense of security and Attachment to the place, which could be especially improved through viewing and wall painting in citizens.
For further studies, it is suggested to the scholars to distribute the proposed model in this study among citizens in form of questionnaire and provide exact reports in this field quantitatively. The questionnaire could be distributed among citizens and experts separately and in cluster manner and be studied in form of causal-comparative study.

The limitations of this study could be difficult access to all relevant researches such as theses that are not referred and just books and articles in this field are referred.

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