

Aesthetic Preferences for Visual Quality of Urban Landscape in Derak High-Rise Buildings (Shiraz)

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Abstract

The purpose of this study is to extract the indices of Aesthetic preferences for visual quality of urban landscape in high-rise buildings which contribute designers to make better decisions for designing urban landscape. As the research focuses on the high-rise buildings, this study goal address the question as follows: 'What are aesthetic preferences in high-rise buildings? How can these preferences be developed and categorized?' To achieve this objective, the Derak district of Shiraz city was selected as a case study area using Photo grid method and then all high-rise buildings in this area were identified and analyzed. Aesthetic preferences data were evaluated by Q-SORT method with the psychophysical approach. Eventually, aesthetic factors have been presented in two main categories: 'primary and distinctive'. Findings lead to the development of APPD model which suggests that when the landscape design of a building moves toward distinctive factors, the degree of its aesthetic preferences increases.

Keywords: aesthetics, public preference, visual aesthetics, urban landscape, high-rise building, APPD model

1. Introduction

esthetics is a philosophical field which deals with subjects related to «the beauty» and consequently addresses issues arising from critical review of art (Robinson, 2011). This term was introduced by the publication of the book written by German rationalist philosopher, Alexander Baumgarten (1750), in Latin called AESTHETICA, as the domain of debates related to «sensory perception» and in other words, knowledge of cognitive sense. From the perspective of linguistics, the etymology of the term aesthetics in Greek refers to sensory perception, feeling and sensitivity (aisthêsis) and also the sensible (aisthêton) (Sauvanet, 2014). In Lalande's Technical and Critical Philosophical Dictionary, aesthetics has two meanings:

- 1) It is anything related to beauty, and whatsoever defines the nature of beauty.
- 2) It is a science that its subject is about judgment and verdict on the difference between the notion of ugliness and beauty (Behzad Far, Ilka, & Ilka, 2012).

Since the mid-seventies, aesthetics in the field of architecture and urban landscape has turned into one of the most fundamental issues and this question arises whether architects, urban and landscape designers are capable of solving aesthetics problems and the dilemmas related to them at their desks in ateliers? Different approaches have been adopted in recent decades to answers the aesthetic issues. Paying attention to public preferences is amongst the proceedings taken in this regard. The present study has been formed by this hypothesis that the visual aesthetic evaluation of high-rise buildings from the viewpoint of public preferences can lead to indices for designing urban landscapes. In fact, aesthetic indices derived from public preferences can help architects, landscape and environmental designers to achieve the patterns of high-rise designs, because these preferences are significantly aligned with the indices of expertise and professional aesthetics. Since this research's scope is high-rise buildings, so the present paper seeks to answer these questions: what are the public aesthetic preferences for high-rise buildings? How can these preferences be developed and categorized? In fact, the purpose of the present study is to obtain the aesthetic indices taken from public preferences in subjective and objective dimensions that can promote the understanding of architects, landscape and urban designers in urban designing and interventions. The method used in this research is descriptive analysis and field study. First, data was collected through library

resources, articles and Internet resources and filed survey with satellite pictures and maps were conducted to learn more about the studied site. In order to complete the required information, the status quo is recognized (environmental, physical, perspective and the landscape) through observation, photographs and interviews. The users' preferences in this study are identified using the methods of visual quality classification. In other words, the aesthetics of high-rise buildings are focused in this article by considering perceptual aspect and public preferences and to achieve this end, public preferences in buildings' visual landscape will be surveyed with psychophysical approach. To determine strategies and gain further understanding of the research process, theoretical framework of the research has been proposed in Figure 1.

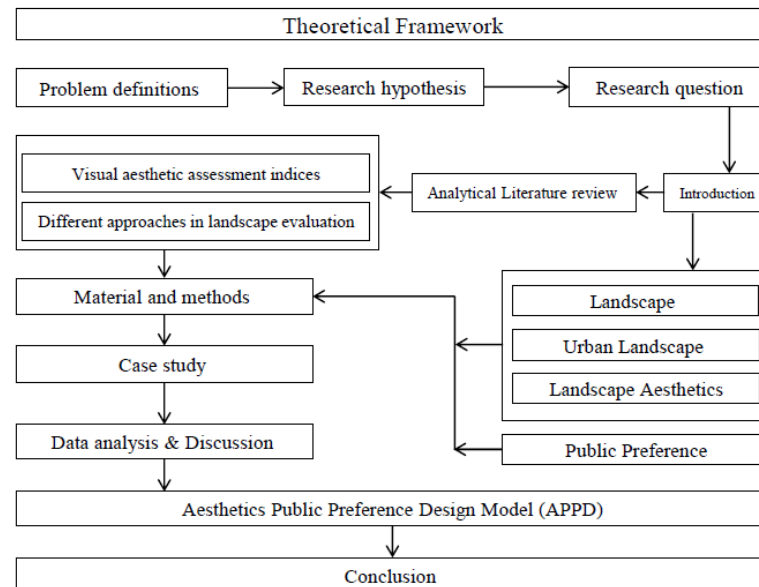


Figure 1. Framework of the research

1.1 Landscape

"Landscape is a kind of objective existence. A scene, whether natural or human, shall not be taken as landscape if it cannot be or will not be understood by people" (Yu, 1997). The European Landscape Convention (ELC) defines landscape as "an area, as perceived by People, which character is the result of the action and interaction of natural and/or Human Factors" (Council of Europe, 2000). Relationships between the characteristics of the landscape and the effects of these characteristics of individuals make the Landscape quality (Daniel, 2001). "Landscape characteristic refers to the unique aesthetic features that can distinguish one scene from another in a certain time and space ranges. It is the expression of the unique aesthetic features of the landscapes" (Yu, 2008). Visual landscape consisting of the visible properties of all the landscape phenomena and their structure. Daniel (2001) mentions that the visual quality of a landscape can be defined as "the relative aesthetic perfection of any landscape"; and the observer appreciation could be the appropriate method to measure the visual quality (de la Fuente de Val, Atauri, & de Lucio, 2006; Lothian, 1999).

In fact, the landscape has been widely known as a multi-layered concept consisting of different subjective and objective aspects.(Antrop, 2000; Hunziker, Buchecker, & Hartig, 2007; Nassauer, 2011; Naveh, 2000, 2007). Multi-layered relationships among people and the objective and physical environment around them, as well as the semantics associated with these environments can provide valuable knowledge to improve planning and the management of future landscapes (Carvalho-Ribeiro et al., 2013). As Lörzing (2001) points out, there are at least four layers of relationship between man and environment:(a) intervention – the landscape is what we make,(b) knowledge – landscape as associated with facts we know, (c)perception – the landscape is what we see (visual landscape), and(d) interpretation – the landscape which we believe.

1.2 Urban Landscape

In townscape, with an emphasis on objective aspects of environment, Gordon Cullen describes the urban landscape as follows: 'Townscape' is the art of giving visual coherence and organization to the jumble of buildings, streets and spaces that make up the urban environment (Cullen, 2003). Cullen's notion of the word "Townscape" was established based on the city framework with an emphasis on views in the city. He has

mentioned the importance of successive perception in the environment in his book. Regarding the urban landscape he notified: once a building is built separately in a location, it is only treated as an architectural experience, but if a large number of buildings are combined together, a new event occurs which is to be considered in the field of urban landscape; this new event is called the Art of Proportions (Cullen, 2003). Cullen's method in identifying landscape and its elements is «serial visions» and based on it, he introduces three main qualities; «sequence», «unexpectedness» and «complexity» and presents a number of indices and sub-qualities for them.

According to Raskin (1974), the urban landscape is not just an issue of urban design, but also planning and the issue of values, human goals, and recognition of social responsibilities by the whole society are of high importance (Golkar, 2003). In Lynch's opinion, three factors of perceptive, physical and operational ones in urban landscape are significant (Reza Zadeh, 2007). He rendered the concept of city's image by publishing a book entitled as «The Image of the City». Lynch described subjective aspects of the urban landscape in this book; thus if Cullen emphasized more on the objective aspects, Lynch had an emphatic focus on its subjective aspects (Lynch, 1960). From Golkar's point of view (2003), the urban landscape is the triple integration of objective landscape, subjective landscape and emotional landscape of the city which is the basis of behavior. In general, urban landscape is the result of the human contact level with the city and in this regard, not only do human beings affect the structure of the visual vista of the city through their activities on the urban landscape, the behavior and subjective perception of citizens are affected by contact with the urban landscape (Crow, Brown, & De Young, 2006).

1.3 Landscape Aesthetics

The landscape aesthetics value for human well-being has gained significant respect in public perception and also in socio-ecological research (Howley, 2011). Studies on landscape preference and landscape aesthetics have been carried out since the 1960s (Purcell, Peron, & Berto, 2001). Totally, Visual landscape research is an interdisciplinary approach important for architect and urban designer. It includes different type of disciplines such as (landscape) architecture and urban planning and design, (humanistic) geography, psychology And sociology, environmental ethics (Nijhuis, Van Lammeren, & van der Hoeven, 2011).

There are many theories, methods, and applications concerning landscape perception and Valuable overviews are given by Daniel and Vining (1983), Zube, Sell, and Taylor (1982) and Arthur, Daniel, and Boster (1977) as well as the more recent overviews of Lothian (1999), Scott and Benson (2002). In recent decades, a lot of effort has been put into explaining the components of landscape aesthetics as well as evaluating it. And the issues of evaluation and landscape beauty have been taken into consideration from different aspects. To evaluate the visual qualities of the environment and landscape, a variety of approaches and techniques are used (Table 1).

Table 1. Approaches presented by theorists for landscape assessment

Theorist's name	year	Main index	The presented approach
Arthur <i>et al</i>	1977	The evaluation of scenic beauty	<ul style="list-style-type: none"> • Descriptive inventories • Public evaluations • Economic analyses
Zube <i>et al</i>	1982	The evaluation of perceptive features	<ul style="list-style-type: none"> • The expert paradigm • The psychophysical paradigm • The cognitive paradigm • The experiential paradigm
Daniel and Vining	1983	The evaluation of perceptive features	<ul style="list-style-type: none"> • Ecological • Formal Aesthetic • Psychophysical • Psychological • Phenomenological
Nijhuis <i>et al</i>	2011	The evaluation of perceptive features	<ul style="list-style-type: none"> • Expert models • Public preference models: <ul style="list-style-type: none"> Psychophysical-approach Psychological-approach Phenomenological-approach

Amongst the existing approaches related to the nature of aesthetics, two general objective and subjective approaches were considered more than other approaches. A myriad of opinions have been presented respecting beauty's subjectivity or objectivity. There are different views on the idea that whether aesthetic judgment is related to the transmitter or the receiver's interpretation. Much effort has been made to fill the gap caused by thinking in terms of the separation of subjectivity and objectivity by some theorists such as Husserl, Heidegger and especially Norberg-Schulz, in order to use objectivity and subjectivity with each other for "things" based on phenomenology. But, what is perceived from the word Aesthetic today, is based on objective and subjective dimensions of beauty.

In «History of Aesthetics», Tatarkiewicz (2013) explains the issue and says: aesthetics is the study of aesthetic objects, but it includes the subjective aesthetic experience anyway. He continues that the study of objective beauty and artworks has gradually led to subjective issues. In his opinion, this dual aesthetic feature can be expressed through the contrast between nature-based beauty and human-based beauty. Studies show that regarding these two approaches for the urban landscape, first objective and then subjective approaches have been considered. For instance, picturesque with an architectural emphasis on visual-artistic aspects of landscape including attention to abundance and variety, human scale, naturalism and an organic system in form and color combinations, has been promoted by theorists such as Sitte (1945), Gibberd (1970) and Halprin (1966). However, urban beauty has gradually moved from the scope of objective, emotional and specialized emphasis related to visual qualities, i.e., form, color and texture to the field of perceptual/subjective studies of the urban environment. Stephen Kaplan believes that people's information, the amount of acquaintance with the landscape, orientation and the discovery of new information are significant in beauty preference (Kaplan, 1987). Eventually, landscape quality may be evaluated based on two conflicting paradigms: in a comprehensive research, Lothian (1999) compared two objective and subjective viewpoints:

Objectivist or physical paradigm include: landscape quality is an intrinsic physical attribute, assessed by applying criteria to landscape, subjectivity presented as objectivity Subjectivist or psychological paradigm include: landscape quality derives from the eyes of the beholder, assessed using psychophysical methods, objective evaluation of subjectivity.

He also categorizes the classification done by Zube et al. (1982) and Daniel and Vining (1983) under objectivist and subjectivist paradigm and offers the following table.

Table 2. Comparison of paradigms with landscape typologies (Adopted from Lothian, 1999)

Objectivist (physical) paradigm	Subjective (psychological) paradigm		
Zube, Sell and Taylor, 1982			
<i>Expert</i>	<i>Psychophysical</i>	<i>Cognitive</i>	<i>Experiential</i>
Daniel and Vining, 1983			
<i>Ecological Formal Aesthetic</i>	<i>Psychophysical</i>	<i>psychological</i>	<i>phenomenological</i>

In the 20th century, the objectivist paradigm has dominated in environmental management practice, whereas perception-based approaches (subjectivist paradigm) dealing with the public's judgment have dominated in research (Daniel, 2001) Individual preferences cannot be reflected in objective studies, because these approaches strictly focus on the composition of a landscape as well as on the form and configuration of its elements. However, in order to make landscape aesthetics assessment applicable in planning practice, objective approaches might provide the necessary simplification (Bastian, Krönert, & Lipský, 2006). de la Fuente de Val et al. (2006) suggested a synthesis of both paradigms in order to develop a comprehensive approach. (Frank, Fürst, Koschke, Witt, & Makeschin, 2013) And also the landscape preferences can vary between the users of the landscape on the one hand and policymakers or landscape experts on the other (Howley, 2011).

1.4 Public Preference

One area where quantification still plays a significant role in current assessment methodologies is in the assessment of public preference for scenic beauty. In the New Zealand and the United States, Statistical techniques such as regression analysis and Q-sort are still in use for analyzing public opinion samples in order to predict preference in terms of 'scenic beauty' (Limited, 2001). Im (1984) defines visual aesthetic preferences as an individual/group interest or lack of it toward the visual perspective of one place. Regarding the identification and evaluation of visual or aesthetic preferences of people, it seems necessary to pay attention to two points.

First, despite the research and studies conducted, Carlson (1993) believes that this field in the context of a common theory which is capable of adapting findings of the goals at different levels is still facing some shortcomings (Bitar, 2004). And second, according to Seung-Bin Im, a significant part of the studies carried out to assess visual quality or aesthetics, has been conducted in the field of natural environments. Only a limited number of such studies have been in connection with urban or semi-urban environments (Briggs & France, 1980).

1.5 Visual Aesthetic Assessment Indices

In design, the primary elements of visual communication include point, line, form, direction, tone, texture, scale, dimension and movement. Furthermore, the use of conflict or harmony technique as one of the visual communication have been proposed and some of them are as follows: unbalanced and balanced, asymmetric and symmetric, regular and irregular, complex and simple, fragmentation and unity, unpredictable and predictable, active and static (Dondis, 1974). As the regulatory principles for the visual system of the environment, Ching (2015) presents disciplines such as: axis - symmetry: bilateral symmetry, radial symmetry - hierarchy: by size, hierarchy by shape, hierarchy by placed location - rhythm: repetition in size, repetition in form, repetition in detailed features - given assumptions: line and surface and volume - transformation.

Daniel and Vining (1983) introduce forms, lines, colors and textures and relationship between them such as variety, harmony, unity and contrast as indices of «formal aesthetic». In general, Elements of Visual Design in the Landscape can be divided into three categories (Bell, 2004)(Figure 2).

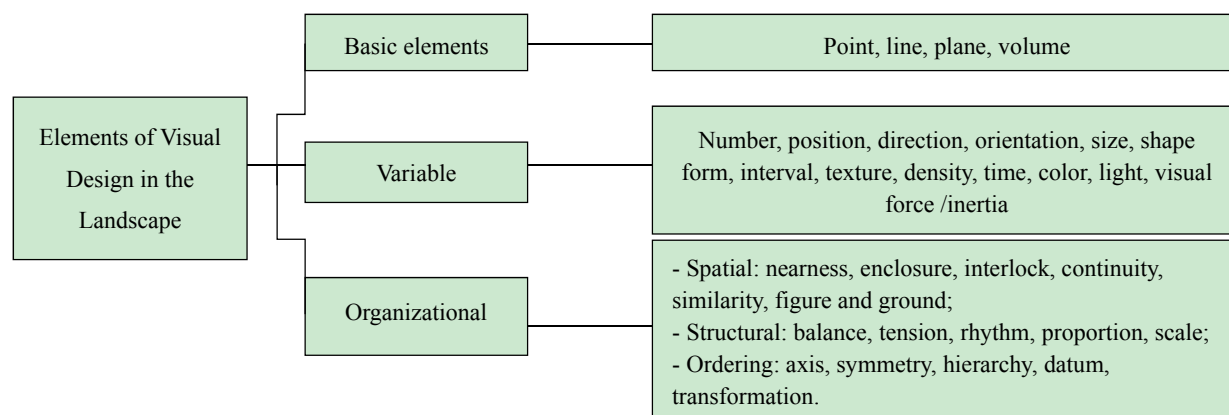


Figure 2. Elements of visual design in the landscape proposed by Simon Bell (2004)

2. Materials and Methods

The strategy used in this research is descriptive - analytical and field study. First, data was collected through library resources, Internet resources, and articles and in order to gain a better understanding of the studied site, field survey was conducted using satellite maps; pictures and case study were used for analysis. In this method, an optional network is considered on the base map in a way to provide a proper coverage of the site. Then, within each network, a picture which gives the most comprehensive information relative to the surface is placed. Thus, a perfect example of the city's visual character is obtained. Providing Photo grids for each city causes its visual character to be considered as a reference for future decision-making. Based on Photo grids of a city, a protective plan can also be provided for main views in the city. (Karimi Moshaver, 2014)

Table 3. The method of photo grid analysis (Adopted from Karimi Moshaver, 2014)

Visual analysis methods	criterion	Approach	objective	Instruments and Techniques	Analysis method
Photo grid	Macro	Physical Qualitative	current situation	Picture	Expert & fieldwork analysis

Along completing the required information, the status quo (environmental, physical framework and view and Landscape) was recognized through observation, photography and interviews. In this research, the users' preferences were accomplished using the visual quality classification method (Q-sort). (Aminzadeh & Ghorashi, 2007; Barry & Proops, 1999; Bulut & Yilmaz, 2008; Fairweather & Swaffield, 2002; Mok, Landphair, & Naderi, 2006; Previte, Pini, & Haslam - McKenzie, 2007; Webler, Tuler, & Krueger, 2001). Actually, Q methodology is receiving growing interest as a research technique. Its use of factor analysis and a well-defined methodological approach may appeal to quantitative researchers who need to investigate issues more commonly associated with qualitative techniques (Wright, 2013).

Q Methodology (or Q) was developed by William Stephenson in the 1930s. In fact, Q-methodology is a technique that enables researchers to firstly, identify and classify individual perceptions and beliefs, and secondly to categorize individual groups based on their perceptions (Khoshgooyan Fard, 2007). In Q-studies, individuals were chosen among those who had a particular relevance to the subject or owned special beliefs regarding it. The psychophysical approach was conducted in this study. In other words, the psychophysical approach is a testing general public or selected populations' evaluation of landscape aesthetics / properties by, for example, landscape architects and environmental psychologists, characterized by the use of photo questionnaires. In these studies the behavioral approach is the dominant methodology. Exemplary, International references include Appleton (1975) and Daniel (2001); (Nijhuis et al., 2011).

2.1 Case Study

A case study is Derak district located in the northwest of Shiraz, Center of Fars Province in the southwest of Iran. It is located within the city development plan, amongst the reasons for this area's selection is the density of multiple high-rise residential buildings in the region.



Figure 3. The area of Derak, Shiraz (left side) – Shiraz satellite map (right side)

According to the definitions & criteria of Housing and Urban Development in the Shiraz city, the building of ten floors and higher are known as high-rise buildings (Municipality, 2014). The reason for the selection of high-rise buildings as a case study is the importance of their role in the urban landscape and the symbolic role they play in the approach of urban design. In order to carry out this study, first, the high-rise buildings of Shiraz Derak district, the region ranging from Ehsan Bridge and Belt Bridge, were identified and selected. Then, photographs were taken from every building. Photographs were taken from the observer's point of view; in addition, an attempt was made to transfer the most physical information of the building to the observer. For interviews, photos were labeled from A to M (Fig. 4) and 70 users were asked to place them in a box labeled with 5 columns of very beautiful, nice, ordinary, ugly and very ugly according to their opinion and demand. To fill the questionnaire, those people were selected who were somehow associated with the Derak area. So people were either employed or resident in this area. In addition, an effort was made to have an even distribution of age and sex in them. Spatial distribution was considered too and the interview was done in different locations of the studied area. Then, the filenames of the photos placed in each column were written to be individually examined and evaluated later on.



Figure 4. Images of the case samples in the study area

3. Data Analysis and Discussion

The data obtained from questionnaires of every 70 users for each of the 13 images was recorded and was, separately, studied, evaluated and scored numerically (very beautiful +2, beautiful +1, ordinary 0, ugly -1, and very ugly -2) and the results of this study were set in a separate table. Accordingly, the score every photo got based on users' opinions, was calculated. High score of every image suggests photo's desirability and higher priorities of public preferences. In order to calculate the score of each photograph, the following

formula was used and the resulted findings are listed in Table 4.

$$N = \sum_{i=1}^5 n_i (3-i)$$

Total score of every photo = N

The number of selectors with the quality of very beautiful = n1

The number of selectors with the quality of beautiful = n2

The number of selectors with the quality of ordinary = n3

The number of selectors with the quality of ugly = n4

The number of selectors with the quality of very ugly = n5 (Golchin, Narouie, & Masnavi, 2012)

Table 4. Data analysis, rating images based on Q-SORT

Photo name	The number of the photo selectors of different qualities (from 70 users)					photo score = N
	Very Beautiful n1	Beautiful n2	Ordinary n3	Ugly n4	Very Ugly n5	
G	4	30	25	8	3	24
F	6	22	31	8	3	20
H	4	18	32	12	4	6
L	2	20	30	16	2	4
M	3	14	37	10	6	-2
I	4	11	39	8	8	-5
B	0	12	43	9	6	-9
D	3	12	36	11	8	-9
K	2	13	18	14	13	-23
J	2	4	32	25	7	-31
A	2	15	15	20	18	-37
C	1	4	30	25	10	-39
E	1	1	19	34	15	-61

After the assessment of public preferences, Photo G by gaining the highest score was the highest priority and photo E was the lowest priority in people's opinions. Since one of the goals of this study was to obtain indices for architectural design based on public preferences, so in the next step, objective and physical aesthetics were conducted under technical survey considering three priority ranges of first, middle and last in public preferences' point of view, therefore, the distinctive elements of these buildings that make a difference in public preferences' perspective were elicited and identified. In order to analyze the structures and attain the forming visual indices of every building, a panel of experts with the participation of local experts and university faculties was held.

<i>Factors of visual aesthetics</i>		<i>G</i> <i>first priority</i>	<i>B</i> <i>middle priority</i>	<i>E</i> <i>last priority</i>
Balance vs. (instability) 1, 2, 3, 4, 5, 29, 30				
Symmetry vs. (asymmetry) 1, 2, 6, 7, 8				
Regularity vs. (irregularity) 29				
Simplicity vs. (complexity) 14, 15, 16, 17, 18, 19, 20, 29				
Unity vs. (fragmentation) 27, 29, 31				
Economy vs. (intricacy) 29				
Understatement vs. (exaggeration) 29				
Predictability vs. (spontaneity) 29				
Activity vs. (stasis) 29				
Subtlety vs. (boldness) 29				
Neutrality vs. (accent , emphasis) 4, 5				
Transparency vs. (opacity) 29				
Consistency vs. (variety) 3, 5, 9, 10, 11, 12, 30, 31	Form			
	Color			
Scale 1, 2,6, 22, 24, 30, 32, 33				
Flatness vs. (depth) 1,6 ,13, 29				
Sequentiality , order vs. (randomness) 2, 6, 21				
Proportion 1, 2, 3, 4, 5, 7, 30				
Solids and voids 1, 6, 13				
Color 3, 6, 9, 22, 23, 24, 25, 30, 31	light			
	Dark			
Materials 9, 22	Stone			
	Brick			
	Metal			
	Cement			
	Hybrid			
Style 25, 26	Modern			
	Post-modern			

1-Zevi, 1957 *	12-Arriaza et al, 2004*	23-Reed et al., 2011*
2-Moghtin, 1992*	13-Trancik, 1986*	24-Henderik et al., 2008*
3-Waterman and wall, 2009*	14-Kaplam and Kaplan , 1989*	25-Heft and Nasar, 2000*
4-Kim, 2006*	15-Rapoport, 1990*	26-Stamps&nasar, 1997*
5-Graves, 1941*	16-Appelton, 1975*	27-White, 2002*
6-Lawson, 2001	17-Eisenman and Gellens, 1968*	28-Ching, 2015
7-Jacobsen and Hofel, 2002*	18-Leder, 2004*	29- Dondis, 1974
8-Webwer et al., 2008*	19-Berlyn, 1970*	30- Bell, 2004
9-Arnheim, 1954*	20-Frewald , 1990*	31- Daniel and vining, 1983
10-Bentley et al, 1985*	21-Nasar , 1998*	32- Gehl, 1996*
11-Smith et al, 1997*	22-Thomas , 2002*	33- Madanipour, 2010*
*Adopted from Ahmad Nia and Atun (2016)		

Figure 5. Objective factors of visual aesthetics applied in priorities of first-middle-last

The factors in figure 5 are gained according to the study and general overview of the basic literature of the case. Since there wasn't a limitation in determining the definition scope of aesthetic factors, so an effort was made to use the sources and feedbacks of numerous scholars. Therefore, the comprehensiveness of evaluation factors of

the random cases is to be considered more carefully. As it can be seen in figure 5, some components such as complexity, movement, boldness and being three-dimensional, have caused G building to be distinguished among other buildings, and some components such as balance, order and arrangement are primarily common in the diverse range of buildings. In fact, it cannot be claimed that the absence of distinctive indices is a proof of a building's ugliness, but their existence creates a kind of aesthetics and distinction which encompasses public preferences.

According to the results obtained from public priorities, aesthetic components of high-rise buildings can be divided into two primary indices and distinctive components in order to get the public preferences. Primary indices include those that are effective in the primary visual aesthetic of high-rise buildings in a way that the existence of these indices in buildings can cause visual aesthetics of them. While distinctive components are effective and determinant in aesthetics of high-rise buildings, they can also cause the objective observer to see the building differently, in addition, some factors such as color and materials can be participated in both categories based on design style (Figure 6).

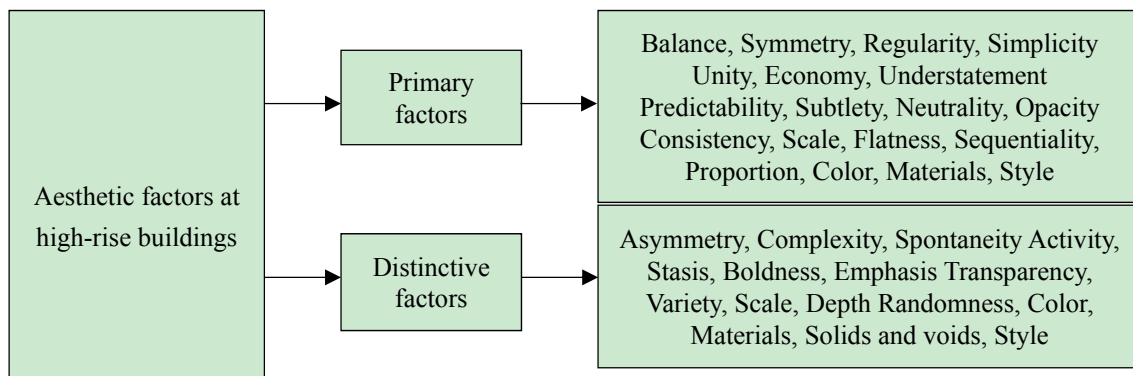


Figure 6. Primary and Distinctive factors of aesthetics in high-rise buildings

So it seems the role of the primary factors in the aesthetic judgment by the observer is a preliminary and low-effect. In fact, the characteristics of the primary factors will not distinguish an eligible building from the others. According to assessments made and the classification of public preferences, the authors of this research concluded that the components such as asymmetry, dynamism and motion in each building can distinctively influence on the analytical mind of the observer.

Finally, with regard to the basic and distinctive indices, Aesthetics Public Preference Design model (APPD) is presented in Figure 7.

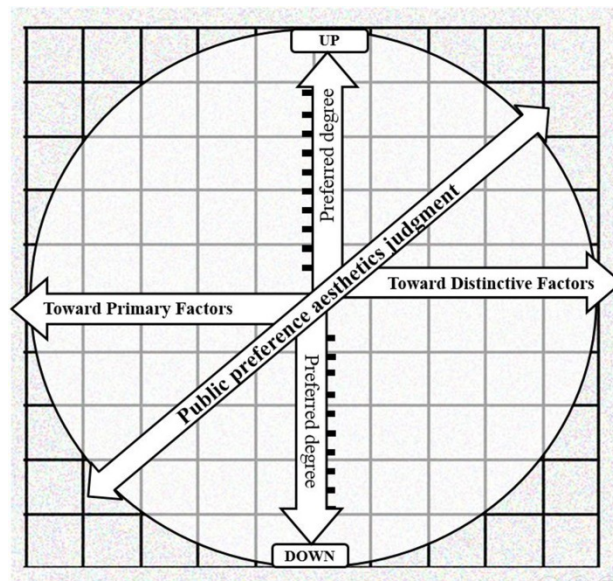


Figure 7. Aesthetics public preference design model

In this figure, the horizontal axis consists of aesthetic indices in double contrast, oriented towards the preliminary and distinctive factors. Aesthetic judgments of public preferences are presented as a diagonal axis. The vertical axis shown in Figure is aesthetic grading of public preferences as Up-Down grading which covers the qualitative and unquantifiable range. While the tendency moves up in the axis, preference degree increases and while the desire moves down in this axis, the preference degree reduces. Therefore, in APPD model, public aesthetic judgment is presented as a qualitative judgment with the non-quantitative measure.

4. Conclusion

The survey conducted in high-rise buildings in aesthetic public preferences' perspective led to the development of two main basic and distinctive indicators for urban landscape design. To reach this aim, photo grid was used and every high-rise building in the area was selected. Aesthetic evaluation of people was done using Q-sort method. APPD model showed that public preferences of visual aesthetic tend toward distinctive factors. The forte of APPD model roots in this fact that landscape and environment designs can lead to expert design using categorization of aesthetic assessment indices which contain patterns of aesthetics public preferences in themselves. In fact, in this model, aesthetic factors derived from environmental theorists were applied to scrutinize public opinions in aesthetic assessment. Therefore, it can be suggested that this model is a synthesis of expert-centered and public-centered methods that has both objective and subjective approaches (See Table 2).

We hope that utilizing APPD model leads to the physical design of buildings in the urban context which in addition to being relevant to public preferences has the ability of adaptation or differentiation with the surrounding environment. By expanding this study, the development of strategies for urban landmark designs, elements, squares and public urban spaces that require visual distinction is possible. How to design urban context and background, being in harmony with the surrounding environment and nature, or creating double visuals in urban design, can also be surveyed in future researches.

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