APPLICATION OF LENS MODEL IN MEASURING RESPONSES OF URBAN SCULPTURE BETWEEN DESIGNERS AND NON-DESIGNERS

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Dedicated to
My lovely husband, Hassan

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ABSTRACT

Public art as an element of urban project is created, selected and located in public spaces by designers. Being in a public domain, another group, which have an interest for public art, is the lay-public or the non-designers. The differences, which do exist between the aesthetic appraisal of designers and non-designers, have created a disparity of affinity for public art. This study compared the similarities and dissimilarities of preference and emotions of designers and non-designers for 24 colored photographs of urban sculptures as public art in Tehran. It examines which symbolism, physical, and conceptual properties of urban sculptures are associated with the global impressions and affective responses of the two groups. "Affect Grid" as a single item instrument was used to measure the emotional expressions of the respondents with two dimensions of 'pleasure' and 'arousal'. The inferential processes of the research findings were described through the Brunswiks' "Lens Model" to conclude which variables contribute to each group's appreciations. As previous studies have shown, this study confirms that there are significant dissimilarities between the evaluation responses of both groups. The divergences of the two groups were derived from the overall definition of research variables. Although there is correlation between two groups in some of the research variables, they did not define the variables in the same way. The result was used to explore the extent of disparities between designers and non-designers agreement in utilization of research cues. Traditionally, there is a suggested element of homogeneity in design decision-making among designers but this study showed that the designers are more heterogeneous than non-designers group in appraisal of urban sculptures. Since the basis of the disagreements between both groups is related to different meanings of research variables for each group, this research suggests that using pictorial instruments are more appropriate for this kind of measurement.

ABSTRAK

Sebagai elemen projek perbandaran, seni awam direka oleh perekabentuk, dipilih dan diletakkan dalam ruang awam. Oleh kerana seni awam terletak dalam ruang awam, kumpulan yang mempunyai minat mengenainya adalah orang awam atau kumpulan bukan perekabentuk. Perbezaan antara kumpulan perekabentuk dan bukan perekabentuk tentang penilaian estetik telah mencipta jurang perbezaan keakraban kepada seni awam. Kajian ini membandingkan kesamaan dan ketidaksamaan kecenderungan dan nilai emosi terhadap 24 gambar arca berwarna sebagai seni awam di Tehran antara perekabentuk dan kumpulan bukan perekabentuk. Kajian ini menyelidik ciri simbolisma, fizikal dan konsep arca yang berkaitan dengan pandangan global dan tindakbalas efektif antara dua kumpulan tersebut. Kaedah "Affect Grid" telah digunakan bagi mengukur ekspresi emosi responden melalui dimensi "keseronokan" dan "keterujaan". Proses andaian hasil penyelidikan telah dibentangkan melalui 'Lens Model' Brunswick sebagai kesimpulan terhadap pembolehubah mana yang menyumbang kepada penilaian bagi setiap kumpulan. Merujuk kepada kajian sebelum ini, kajian ini mengesahkan bahawa terdapat ketidaksamaan yang jelas antara penilaian kedua-dua kumpulan. Gabungan antara kedua-dua kumpulan itu adalah hasil daripada definisi keseluruhan penanda kajian. Walaupun terdapat perkaitan pembolehubah kajian antara kedua-dua kumpulan, mereka tidak mendefinisi pembolehubah secara sekata. Hasil penyelidikan telah digunapakai untuk meneroka setakat mana ketidaksamaan antara kumpulan perekabentuk dengan bukan perekabentuk dalam penggunaan tanda kajian. Secara tradisi, ada cadangan elemen keseragaman dalam menentukan keputusan rekabentuk dikalangan perekabentuk tetapi kajian menunjukkan perekabentuk bersifat sekata berbanding bukan perekabentuk dalam menilai arca bandaran. Oleh kerana asas ketidaksetujuan antara kedua kumpulan berkaitan dengan kepelbagaian makna pembolehubah bagi setiap kumpulan, kajian ini mencadangkan penggunaan perkakas piktorial kerana ianya adalah lebih bersesuaian bagi pengukuran jenis ini.

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LIST OF ABBREVIATIONS

AF	–	Affect Grid
BA	–	Bipolar Adjectives
EPA	–	Evaluation, Potency, Activity
ICC	–	Inter-Class Correlation
IRA	–	Inter-Rater Agreement
IRR	–	Inter-Rater Reliability
LME	–	Lens Model Equation
MST	–	Multiple Sorting Techniques
SBW	–	Standard Beta Weight
SD	–	Semantic Differential
STD	–	Standard Deviation
Sig	–	Sigmoid Value

LIST OF SYMBOLS

β	–	Standard Beta Weight
$ICC(1,k)$	–	ANOVA, One Way Random
$ICC(2,k)$	–	ANOVA, Two Way Random
$ICC(3,k)$	–	ANOVA, Two Way Mixed
R	–	Multiple Correlation Coefficient
R^2	–	Coefficient of Multiple Determination
r_{12}	–	General Agreement
ρ	–	Sigmoid Value
r	–	Pearson Correlation
SD_s	–	Standard Deviation of Samples
SE	–	Sample Error

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CHAPTER 1

INTRODUCTION

1.1 Overview

The quality of urban environment can be improved through art in public domains. Broadly, the term of public art has been applied to describe the visual artistic expressions in public spaces. Public art simply has been defined on the aspects of its accessibility within public open spaces.

In relation to the artistic designing elements in urban environment, various forms can be involved. Some of the examples in urban environment include the statue of a memorable person, free form sculpture, and wall paintings. More contributions of art can be observed in landscape and architectural constructions. These artistic forms are as street furniture, fountain, signage, building doors and windows, column, and the like, which have effect on the visual quality of urban environment.

Among all public art forms in urban landscape and architectural design, the most important forms of using public art in cities, is urban sculpture. The urban sculptures allow different functions in urban design as adding beauty and meaning to the environment, attracting environment by commemorating a person or events, offsetting the danger of visual monotony of urban spaces, increasing the civic identity and pride of citizens. However, improving the quality of cities is not the only significant role of public art in built environment. It also has substantial contributions in public domains such as urban regeneration, mitigating the environmental, social, psychological, and economic problems.

The public art can have an affect on cities in term of aesthetic qualities. The satisfaction of its audiences from art design elements that place in cities is one significant factor to this aim. The dislike urban sculpture has a negative effect as

vandalism, crime, drug abuse, littering and decrease using of the space and quality of people's life. When the aim is the improvement of urban quality by using art, it needs to determine the approaches in which art can be pleasing to the people. The important phase to this aim is knowledge on the public demands and awareness of the differences between those that make and place public art within public domain and public. The understanding of the existence disagreements between the preferences of public and who are responsible for art installations help the procedures to be familiar what are pleasing in the eyes of people and themselves.

The art in urban public space is belonged to all people which live, work and walk in it. The urban sculpture project can be successful only if people are interested in it. The Richard Serra's Tilted Arc in New York City's Federal Plaza is a very good example of the public art failures which after some years was taken away. It makes the designers alert what kind of public art should be designed, selected, and placed in urban environment. The designers should pay more attention on what works of art provide pleasing and displeasing responses of peoples as are entitled in the built environment as non-designers. Increasing the awareness of public art designers on the public demands in relation to the urban sculptures is very important. Therefore, designers should consider seeking knowledge on the public demands for high design quality of urban sculptures.The enhancement of the public satisfaction is the main aim for the designers of public art, while are going to increase the quality of urban public spaces.

1.2 Research Background

From Hershberger (1969) to more recent studies (Llinares *et al.*, 2011), there has been a considerable issue in the built environmental research to examine the evaluation and interpretation of design professionals and non-designers. The study of the similarities and differences between the designers and non-designers' responses to the built environment has developed in different objectives and related measurement methods. As a result, it has been confirmed that there are considerable disparities between the preference, emotion, and cognition of design experts (architects, planners, designers) and the public at large.

The issue of dissimilarities between the viewpoints of environmental designers and non-designers hold distinctive aesthetic attitudes towards architectural design.

The dissimilar standpoints between the responses of these two groups may provide unfavourable design projects by designers. There is evidence of what designers have preferred while have received the negative reactions of non-designers. For instance, the Clock Tower building in San Francisco, which from the viewpoint of architects is 'fresh and innovative', public perceived it as 'abomination' stimuli (Brown and Gifford, 2001). In the field of public art, also there are some examples of differences between designers and non-designers. For example, the monumental sculpture of Richard Serra's Tilted Arc in New York, or unsatisfactory role of public art in mitigation of the Phoenix freeway problems (Blair *et al.*, 1998). Such situations have occurred, when designers do not have enough knowledge on public satisfactory parameters.

In this regard, a substantial research has been developed concerning the alerting of designers to favourites of public. The designers have appeared to be unaware of the observers' pleasure on what a delightful building looks like (Gifford *et al.*, 2002). Mostly, it has been shown that instead of thinking of public's responses, they evaluated buildings with their own criteria. This result has been supported by findings from research undertaken about prediction of non-designers by designers in ratings of conceptual properties of modern buildings (Brown and Gifford, 2001). One of the problems of existing differences between the design professionals and non-designers lies in the lack of information in designers about the non-designers' liking or disliking. Therefore, conflict arises when design professionals are not familiar with the non-designers' reaction for what they proposed in environment.

The issue of difference between the design professionals and non-designers can be relevant to the knowledge and experiences that designers accrued in training schools. Within the training schools, the design professionals may be socialized when attached the values to environment. This reveals them as a more homogeneous group than non-designers in architectural evaluation. The individual differences like age, gender, and education have been highlighted to make the non-designers' diffusion in ratings (Gifford *et al.*, 2000).

It can be suggested that the professional education process establish distinctive aesthetic attitudes of research stimuli. The structure of knowledge provides differences between the designers in the first year of education and final year. For instance, as they are sorting distinctive architectural styles, Erdogan *et al.* (2010) showed that professional planning education processes bring much knowledge for the final year students. The designers in the final year of education are more different than fresh designers in ratings of visual research stimuli. These findings supported the existence

of differences between designers and non-designers. The differences occur, when designers as a group has been practiced and experienced to like or dislike particular aspects of research stimuli (e.g., Wilson, 1996).

Many researches, which deal with this hypothesis that designers and non-designers differently evaluate the environment, have addressed the issue of "communication problem" between the two groups. The absence of common language between designers and non-designers establish disparities between their words when attribute meanings to visual research stimuli. This is especially more relevant when the studies have focused on interpretation of two groups. For example, Karmanov and Hamel (2009) described an experience between the students of landscape architects and the students of psychology for evaluation of gardens' designs. The expert group holds different commentaries based on their professionalism on concepts and connotative values of design, which taught, while simple vocabularies used by the non-architect group.

The solution to this problem is in the understanding the aesthetic preference of a certain object by the responses given to it by designers and non-designers. The responses explain the ways that design professionals and non-designers perceive or feel an object. In measuring the similarities and disagreements between designers and non-designers, it is important to consider the evaluation of responses of two groups in relation with the properties of an object. The evaluative reactions that encompass the liking or disliking responses constructs on the non-evaluative responses that is called by Goldman (1995) as "base properties" and by Nasar (1994) as "content variable' (Olascoaga, 2003). In the Goldman theory, the 'base properties' contribute to the aesthetic value of a work, which involves three properties as 'formal', 'expressive', and 'representational'. In the Nasar (1994) on categorization of aesthetic properties, two content variables are identified in the context of urban design as the 'formal' aesthetics and 'symbolic' aesthetics (Galindo and Hidalgo, 2005).

In this regard, the question is that what properties or cues evoke pleasant ratings of designers and non-designers for visual research stimuli. The aesthetically pleasing features that might have influenced the evaluative quality of an object between the designers and non-designers are as the symbolism characteristics (Lamit, 2003, e.g.,), physical attributes and cognitive properties (e.g., Gifford *et al.*, 2002, 2000). The degree to which a symbolism, physical, and conceptual property matches the designers and non-designers' responses, is a challenge in environmental studies.

The role of emotional responses is important in the comparison of the aesthetic appraisal of an object between designers and non-designers and its importance lies in the liking and disliking of research stimuli (Gifford *et al.*, 2000). Therefore, the value of an object lies in the challenging of the preference, affective, and cognitive experiences in the appreciation of 'base properties' (Fenner, 2008; Olascoaga, 2003). Different appreciation of 'formal', 'expressive', and 'representational' properties of environment elicits different liking or disliking responses.

Generally, most of studies which compare the evaluation, preference, and perception of design professionals and non-designers have been concentrated on façade. It is only in recent years that the study of aesthetics in built environments has been more focused on landscape (e.g., Karmanov and Hamel, 2009). However, there have been few attempts to compare the preference and emotional responses of designers and non-designers of urban sculptures.

1.3 Problem Statement

Due to the importance of urban sculpture in public spaces, the knowledge on the aesthetic appreciation of art products by its audiences could be the effective installations in urban environments. However, the complexity of relationship between the appraisal of audiences and the properties of urban sculptures such as symbolism, physical, and conceptual is an important problem that should be considered. Moreover, it has been explained that there is disparities between the interpretation of designers, which create the artworks and those who are not designers. Another problem is that whether or not there is the agreement within groups of designers and non-designers in ratings of the urban sculptures' properties. Based on the two groups responses, the preference and emotional responses of designers and non-designers needs to be measured whether or not is related to the symbolism, physical, and conceptual properties of urban sculptures. The problem statements of this research are as follows.

- What is the level of consistency within designers and non-designers groups in responses of urban sculptures?
- What are the similarities and dissimilarities between designers and non-designers in definition of the symbolism, physical, and conceptual properties of urban sculptures?

- What are the similarities and dissimilarities between the preference and emotional responses of designers and non-designers in relation to the symbolism, physical, and conceptual properties of urban sculptures?

1.4 Research Goal

The purpose of this research is to examine if and to what extent the preference and affective responses of designers and non-designers are related to the symbolism, physical, and conceptual properties of urban sculptures. This study could reveal the similarity and differences between the designers and non-designers in global impression and emotional responses to the properties of urban sculptures. This study make aware to design professionals in the built environment area to existing differences between the aesthetic appraisal of themselves and non-designers. It aim to improve the visual quality of urban environment by measutring the similarity and dissmilarity of designers and non-designers preferences and emotion of urban sculptures.

1.5 Research Objectives

The main aim of this study is to measure the relationship between preference and emotional responses of designers and non-designers to symbolism, physical, and conceptual properties of urban sculptures. The three objectives that are drawn out of the research questions are as follow:

- To identify the level of consistency within designers and non-designers groups in responses of urban sculptures.
- To present the similarities and dissimilarities between designers and non-designers in definition of the symbolism, physical, and conceptual properties of urban sculptures.
- To investigate the similarities and dissimilarities between the preference and emotional responses of designers and non-designers in relation to the symbolism, physical, and conceptual properties of urban sculptures.

1.6 Scope of Study

In order to explore the aesthetic appreciation of designers and non-designers of urban sculptures, the following scopes have been considered as:

- Symbolism, physical and conceptual properties of urban sculptures in Tehran.
- Measuring of emotional impressions with two bipolar adjectives of pleasure and arousal.
- Public urban environment of Tehran includes of parks, streets, and squares.
- Selecting professional designers and non-designers as research participants.

1.7 The Significance of Research

The intention of this research is to provide information on the aesthetic appraisal of designers and non-designers for urban sculptures. Although there have been some investigation on the two groups evaluations in the field of built environment by other researchers, none of them provide detailed information about the global assessment and emotional responses of these two groups for urban sculptures. This research, not only compares the two groups' evaluation of urban sculptures, but also presents the similarity and dissimilarity of two groups on definition of the proposed properties of urban sculptures. Moreover, in order to underestand the groups level agreements, the base of similarity and differences between the two groups in relation to the symbolism, physical, and perceptual properties of urban sculptures is presented. The lens model approach adequately is used to show graphically the relation between the related cues to the global assessment and emotional responses of both groups and the general level of their agreement in utilization of cues to their responses.

1.8 Thesis Organization

This thesis is prepared in six chapters. The chapter 1 presents an introduction to the research and highlights the research problems and objectives. Chapter 2 is a comprehensive literature review about the public art, theoretical construct of aesthetic value, and identifying the viewpoints of designers and non-designers in the field of built environment. Chapter 3 presents the framework of research methodology. In

chapter 4, the analysis of research results is presented. Chapter 5 contains discussion on the research results. Finally, chapter 6 is the conclusion of the thesis with some suggestions for future works.

1.9 Summary

This chapter presented the introduction to art in public open spaces. It provided the research background, the problem statement, goal, and research objectives. Moreover, the scope of research and its significant are presented in this chapter. The next chapter presents the research background in more detail.

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