



Psychological Influence of Advertising Billboards on City Sight

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Abstract

The most important contributions of metropolitan cities to modernity is its noise pollution and visual, and structural disturbances in urban life. Due to the fact that these cities have entered into a new world that has not experienced any of its principles before it has tested the urban structure and has a proper connection between the needs of the inhabitants and even the dominant tradition and culture. City billboards and advertisements have doubled the visual disturbances in this new sovereignty of urbanization; this kind of visual pollution causes mental confusion and reduces the intellectual concentration of individuals, and its effects and consequences is progressing through time. The images in the city's atmosphere, including buildings, streets, traffic signs and commercial and exterior signs of buildings and stores, various billboards and urban furniture, and other elements that are exposed to the public, have different colors which have different psychological effects on viewers. Color as one of the most important visual elements can have an active and influential effect on the general public's perspective of the city and its psychological effects on its citizens. The question is whether a suitable solution could be made to regulate the types of commercial billboards and, thus, provide psychological comfort and safety for citizens. This study has used library resources, internet data and survey method and analysed them after observing and investigating the collected data and the analysis of colors in advertising billboards and their layout along with their psychological effects, especially in the intersection of the crowded streets of Mashhad. In addition to searching for major problems in urban advertising in terms of environmental qualities, the researchers have tried to provide appropriate solutions to the challenge through visual comfort components and their evaluation. The results of this research show that the promotion of the level of visual components, including color in advertising, and in particular at the intersection of streets and congestion of traffic signs and warning signs, has a profound effect on urban landscape. Accordingly, encouraging the use of appropriate advertising equipment and providing appropriate solutions for organizing and institutionalizing urban advertising, will enhance its quality and create order and beauty in the environment, and thus provide visual comfort to citizens.

Keywords: Psychological Influence of Color; Visual Pollution; Urban Advertising; Visual Comfort.

1. Introduction

In general, the world around us is made of two important visual elements. These two elements are the form and color, each of which is dependent on one another. Color is the most intuitive landscape element in visual perception [1]. Generally speaking, when a person sees an object, 80% of the attention is attracted by color while only 20% by shape. Between 20 seconds and 2 minutes later, 60% by color and 40% by shape. 5 minutes later, 50% by each.10 Therefore, color is called the first “vision” of humans. Color research is a complex topic, as color has no form or space. Only the wavelength of light determines color property. The human eye has the function of distinguishing the color, finding the boundary and recognizing the space. Forms, materials and colors harmonized with the surroundings and frequently enhanced them. The landscape color design not only reflects the humanities and art, but also causes the emotional and aesthetic change in human heart. The social challenge is to provide solutions to improve both of these and to find

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adequate indicators that measure them. The need to preserve and improve the landscape is based on human appreciation of it [2]. Color in urban design has become an important issue in city beautification, city image, and architectural design. Each city and/or geography, even civilization may present different colors, which help to define and describe that location, time and architecture.

The physiological and psychological effects of colors on people make it one of the most important visual elements, which, in case of using it improperly and inefficiently, causes visual distortion, confusion and loss of mental relaxation in urban space. The undesirable use of colors and the lack of lighting in cities cause visual pollution, color, light in urban environments that induce disorder, stress, disproportionality, ugliness, and domination of materiality and quantity of human life. Color-in-context theory suggests that colors may also carry abstract psychological meanings which can be grounded in both biological and cultural sources (eg, the repeated pairing of color and abstract concepts in culture). For example, red may convey the concept of danger, while green and blue can convey success and creativity, respectively [4]. Colors may evoke certain emotional responses while suppressing others. For example, color "red" may be stimulating, while it increases blood pressure and heart rate [3]. Therefore, it is important to pay attention to the cultural and climatic backgrounds of each area before choosing a color.

The combination of color means the putting two or more colors along with each other, in a way to express a definite and certain sense. The combination of color, shape, extent, and contrasting relationships are all factors that define determinants in creating the concept and expression the state [4]. Harmony in color is like harmony in music notes, and it creates a harmonious, eye-catching harmony like a piece of music. Designers are required to use harmonious, coherent, meaningful and beautiful design elements to achieve goals such as proper function, visual aesthetic, spatial harmony, and the positive and effective environmental and emotional impact of designing environmental advertising. All elements and components are closely interrelated with the qualitative and semantic influences that space in an optimum plan. Human perception serves the visual function to distinguish and mix colors type in space, recognize and dim color borders [2]. Ecological valence theory suggests that a color will remind the viewer of a specific object that is typically associated with the color. For example, people associate blue with a clear sky and brown with rotten food [5]. However, harmonious image adjustment has yet to be investigated, despite its practicality and usefulness in various applications [6].

The purpose of this study is to explore the efficiency and purposeful use of color in urban advertising, the importance of color in urban spaces, the principles of color use and the promotion of mental health of citizens. Therefore, for a more detailed study the intersection of the crowded streets of Mashhad has been chosen. The status of advertising through observation and photography has been identified, and the component of color has been examined in visual comfort, and finally suggestions have been made to improve the quality and improve its perspective.

2. Theoretical Framework

A review of the conducted researches on the role of urban advertising in the quality of urban space indicates that a change in urban advertising can affect the quality of urban space. As described by Kuller, 7 colors help to simplify occasions as they are descriptive terms. In his study, the effects of color-mood associations in terms of visual complexity are examined while emphasizing the complex relation between humans and color. Colors may evoke certain emotional responses while suppressing others. For example, color "red" may be stimulating, while it increases blood pressure and heart rate. Color, as an interior design element also has effects on well-being, productivity and emotional responses. In their study K wallek et al. 8 investigated individual sensitivity and importance of color on productivity. They proposed that "productivity" is highly dependent upon individuals' stimulus screening ability and exposure time to interior colors [3].

A recent research has found that color-concept consistency is a useful perceptual feature in visual communication. Participants would benefit from the color of bins in an object-discarding task if the colors and objects are strongly associated [5] As Setsuko and Katsura showed in their research, a major merit of the image scale is that it enables analysis of color combinations. For example, very few designs have only 1 color, and the same base color has a different look depending on the accent colors, making it important to assess the image of color combinations as a whole. The Image Scale System is also a heuristic method in the field of psychology, and while it will not necessarily derive an absolute correct answer, it shortens the time it takes to find an answer [7]. Observance of the principles and foundations of environmental graphic design has made citizens away from the maladjustments, ugliness, disorder and visual pollutions that metropolitan cities are faced with them nowadays. It will help them to reach the most suitable and beautiful spaces in urban environments. Graphic arts should be used by urban planners and architects as a branch of visual arts to create high-quality urban spaces.

All forms of environmental advertising that are taking place in the city's urban environment and affecting the city's privacy and landscape and urban environment, and a license must be obtained from the municipality for the construction of advertising structures, which is a part of urban advertising. Although many advocate the emergence of advertising

simultaneously with the emergence of mass media, advertising has evolved since the Industrial Revolution as a marketing communication tool and has become an art and science. Urban advertising is the constructive component of urban landscape and it is the main factor of advertising in the recent era, and it is the latest of it; a city which has its own business background and the basis for advertising, has a booming economy. This type of advertising includes slogans, paintings, design and attaching posters, announcements, leaflets, statues and inscriptions in various fields of cultural, social, political, economic, commercial, etc., which is done at the city level and by government agencies, organizations, popular institutions, associations, institutions and companies as well as citizens. Urban advertising is divided into two categories: fixed and mobile. Signboards, billboards and advertising on walls are part of a steady urban advertising, and bus advertising is a typical example of urban mobile advertisement.

Urban signs and billboards are part of urban facilities that are outside of closed spaces and their main function is to transmit messages from individuals, groups and institutions to other citizens in the form of signs, whether written or images. Billboards are part of a city landscape that is introducing goods or services with their color, form, scale, and positioning, and sometimes they advertise a particular commodity against other goods; but the main points that are neglected in this definition is that the overall appearance and functional characteristics of the billboards in different physical and cultural contexts have different meanings. It can be said that many of the signs in the physical and cultural terms that are meaningful, interpreted, and give meaning to the environment. The billboards, which are part of the urban landscape, should have four aspects of artistic-decorative, functional, context, and sustainable.

- A. The artistic-decorative aspect: which often creates beauty in the environment.
- B. The functional aspect: Includes introducing a product, advertising and the conveying concepts.
- C. Context aspect: Includes communication with the physical, cultural and historical context.
- D. Sustainability aspect: Includes physical stability and social sustainability.

There should be several standards and principles of aesthetics in order to improve the quality of visual elements used in the designing billboards:

- **Size**

An outdoor advertising, which the length and width is determined by its type and location (on the street or highways), such as billboards, in single-faced, double- faced, three- faced, three- faced shutters, revolving, on the body of the highway bases and the circle, and so forth, are visible from distances. Three- faced banners can be used in large sizes for outdoor advertising and in smaller sizes in the interior spaces. An urban digital advertising displays of a large size of 63 square meters is produced.

- **Lighting**

The first condition for any visual perception and one of the most common phenomena around humanity is light as a natural element that is present in industrial and urban life today. The environmental graphics make the space and the living environment more beautiful and more refined and give order and coherence to urban environment. Using light in cities as one of the environmental graphics tools is increasing day by day by organizations and institutions. Light is an important factor that the designer must consider it and make the necessary predictions for day and night vision. For example, a special lighting or light box can be used at night. In an environment that has been used to promote good light, it has attracted more audience attention and has a tremendous effect, and adds to the environmental beauty.

- **Color**

Nowadays, traffic and the related problems, the growth of crash statistics and traffic violations, have portrayed an unpleasant image of the culture of Iranian society in the minds of the world. Drivers are faced with a variety of environmental advertisement and a wide range of information and data in different places, such as streets, highways, squares, pedestrian bridges, metro and taxi stations and bridge decks. Sometimes they get confused due to the density, accumulation and non-observance of standards and the diversity of concepts. Experts believe that the colors are affecting the performance of drivers at the advertising levels whose most part belongs to advertising boards, visual pollution, driver distraction, accidents and offenses, and so on. The use of cold colors in dense spaces is more relevant to the audience and is more suitable for drivers, and the use of colorful and busy images, large, hot and high-quality are far more dangerous.

Table 1. The amount of color absorbed by the eye

Color	Observance (%)
Orange	4.12
Red	6.18
Blue	17.0
Black	4.13
Green	6.12
Yellow	12
Purple	5.5
Gray	7.0

The red color is visible from a distance due to its long wavelength, and more quickly alerts the viewer about the danger. This color also increases the circulation speed of the body due to the warmth that it transmits to the viewer, which increases the speed of human body reaction to risk. Yellow has a dual nature, but the most important thing about that is its high brightness, which makes the eye locate it very quickly and be cautious. Green is used for help and safety, security and health, it is the color of nature, and nature is the healthiest environment that surrounds humanity. According to this ancient pattern, the human mind instinctively feels safe and comfortable in dealing with green. The blue color is used to inform you of things that does not need loud shouting. As a result, blue can be used to illustrate it, because this color creates a sense of calmness and sense in the human mind.

Table 2. Classification of the text and background color

Classification	First color (text)	Second color (background)
Black on yellow	31.1	33.1
Yellow on black	34.1	40.1
Green on white	35.1	30.1
Red on white	36.1	26.1
Black on white	36.1	32.1
White on blue	36.1	37.1
Blue on yellow	36.1	39.1
Blue on white	37.1	35.1
White on black	40.1	35.1
Green on yellow	40.1	38.1
Black on orange	40.1	40.1
Red on yellow	41.1	38.1
Orange on black	41.1	40.1
Yellow on blue	41.1	42.1
White on yellow	41.1	45.1
Black on red	42.1	45.1
Blue on orange	42.1	45.1
Yellow on green	42.1	46.1
Blue on red	43.1	40.1
Yellow on red	44.1	50.1
White on red	47.1	43.1
Red on black	48.1	43.1
White on orange	48.1	45.1
White on green	48.1	54.1
Orange on white	50.1	50.1
Orange on blue	52.1	60.1
Yellow on orange	52.1	62.1
Red on orange	54.1	64.1
Red on green	57.1	50.1
Green on orange	58.1	47.1

City is the only factor, seen by millions of people from every class, and watching it should be fun. If this city is full of visual pollution, it has a negative effect on human mood, and it will make watching the city unpleasant, against Lynch idea. However, it should be noted that the confusion of the environment could be surprising and pleasant; but it should be as much as that it does not eliminate the overall clarity of the environment and the visual comfort [8].

Visual comfort can be described in places that, due to the quality and quantity of information they are providing, are used in a healthier, safer and more desirable manner, and have higher formal and social monitoring. Visual comfort is one of the key components of human environments, because city is a great home for living. As a home must have the attributes and benefits to make living comfortable and relaxed, the city must also have qualities and features to provide comfort, relief and security. Likewise, a city should have a warm, intimate and pleasant environment like a home to provide a decent living [8].

3. Method

In this study, the way of dealing with the subject in the research stages was finding the problem and descriptive expression (written and visual). The research method is descriptive-analytic and evaluating specifically. Observation and survey were the main tools of research along with sufficiently using documentary and library studies. Finally, some suggestions are given in the form of a strategy for improving and upgrading the quality of urban landscape at the understudy intersections with a special approach to the role of color in urban advertising are presented using the table of strengths, weaknesses, opportunities and threats.

4. Study Area

Mashhad (Iran) as the capital of Khorasan Razavi province has an area of 204 square kilometers, located in the north east of Iran. The metropolis of Mashhad, with about 3 million people, has the second highest rank in the urban hierarchy of Iran. In terms of municipal divisions, this metropolis is divided into 13 municipal districts. The study area is located in district 1 of the municipality of Mashhad. This area is one of the most crowded urban areas of Mashhad, because it has a functional combination of business and service activities. Due to the type of service provided in these streets, people from all social classes commute there.

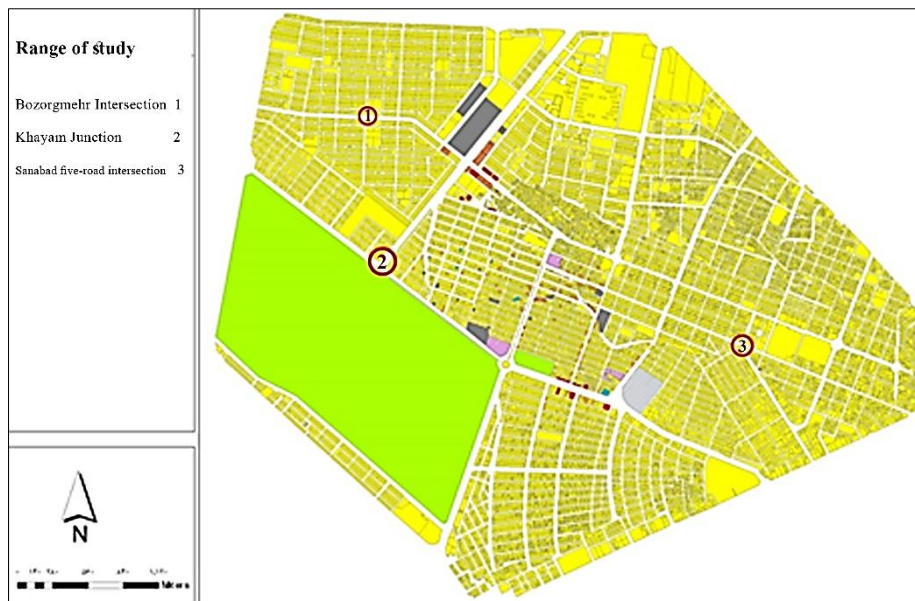


Figure 1. Study Area

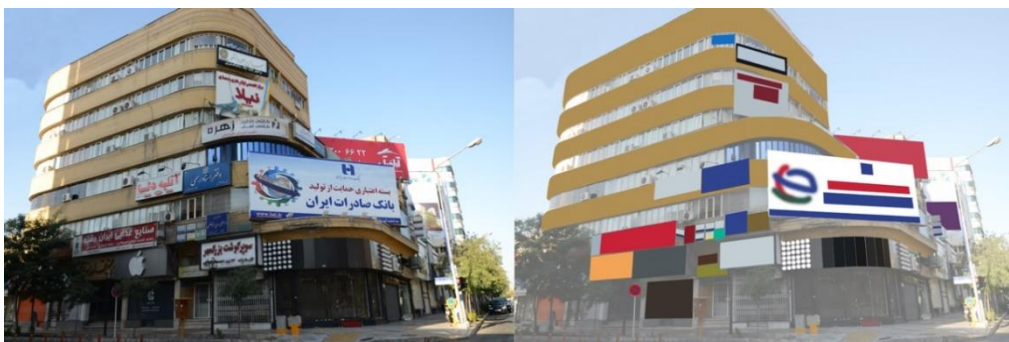


Figure 2. Bozorgmehr Intersection, Color Composition

Table 3. Evaluating criteria

Evaluating criteria	Explanation
The billboards theme	The signboard and the introduction of various organizations
Type	Quite different and diverse
Dimensions and Form	The dimensions of the billboards are completely different, and their shape is generally rectangular
Installation method	Installation on a different height and on the body and glass of the building and suspended in front of the building
Proportions	There are no proportions in their size
Writing style	Different fonts of sizes and layout are even used in a class
Visual elements	Images limited to the sign of the shop or company
Billboard color	Unbalanced with different user types and different types of organizations. The voidance of used colors similar to the traffic signs and lights are not observed due to the fact that the boards are installed at the intersection of the street.
Billboard lighting	Light box, spotlight and many with no lighting at night
Identity in billboard design	The nature of the signs in their design is not clear; for example, the Delsa gallery and protein shop are quite similar.
Color harmony in the billboards	Color is designed completely different and adjacent colors are not considered
Wire and beam of electric lights and billboard's base	There is a limited number in this area that does not interfere

**Figure 3. Sanabad five-road intersection, Color Composition****Table 4. Evaluating criteria**

Evaluating criteria	Explanation
The billboards theme	Billboards and commercial and cultural advertising banners
Type	banner
Dimensions and Form	Square and generally rectangular shape
Installation method	Installation at a different height on the body of the building and suspended at high altitudes
Proportions	There are no proportions in their size
Writing style	Different fonts are used with different sizes and layout
Visual elements	Multiple images have been used for ads
Billboard color	Unbalanced with different user types and different types of organizations. The voidance of used colors similar to the traffic signs and lights are not observed due to the fact that the boards are installed at the intersection of the street.
Billboard lighting	Locational lighting
Identity in billboard design	It is weak in terms of design and match the form and content
Color harmony in the billboards	Color is completely different from the point of view of colors and adjacent colors are not considered
Wire and beam of electric lights and billboard's base	The base of the power light at this point has created an unpleasant view



Figure 4. Khayam Junction, Color Composition

Table 5. Evaluating criteria

Evaluating criteria	Explanation
The billboards theme	Billboards and commercial and cultural advertising banners and traffic signs
Type	Banner, Metal sign, light box, urban digital advertising displays
Dimensions and Form	Generally rectangular shape
Installation method	Installation at a different height
Proportions	Dimensions of billboards are fairly proportional
Writing style	Different fonts are used with different sizes and layout
Visual elements	Multiple images have been used for ads
Billboard color	Unbalanced with different user types and different types of organizations. The voidance of used colors similar to the traffic signs and lights are not observed due to the fact that the boards are installed at the intersection of the street.
Billboard lighting	Locational and digital lighting
Identity in billboard design	It is weak in terms of design and match the form and content
Color harmony in the billboards	Color is completely different from the point of view of colors and adjacent colors are not considered
Wire and beam of electric lights and billboard's base	The base of the power light at this point has created an unpleasant view
Arrangement	

5. Conclusions

Visual comfort in cities requires the observance of several criteria, most notably are; the elimination of visual pollution, light and color, and paying attention to visual qualities. Obviously, the careful consideration of urban managers and designers, on the one hand, and the increase of awareness and promotion of the visual knowledge of business owners, on the other hand, are effective and necessary factors to consider in order reaching the ultimate goal- which is, the optimal visual comfort of the city.

Considering the visual aesthetic criteria, the urban signs of organizations and advertising and comparing them with the surveys can be summarized in the following points:

- The location of installation, height and how to install the billboards are reviewed and standardized.
- Avoid installation of many billboards and congestion.
- A proper design should be done to reduce the visual pollution of the beam, the base of billboards and cables and additional elements.
- Carefully select the color in the design, and do not use warning and danger colors, such as red, yellow in the adverts near the intersection.
- To avoid interference with the color of the signs with warning signs, the board can be fitted with a color-coded box that does not interfere with the lights and symbols.
- Do not install any banners, posters and other advertisements on the body of the foundations and walls surrounding the main boards as well.

- Organizations' boards should be integrated and organized, and there should be a special location and preset for each commercial or office shop and their display is not smaller or larger than the specified location.
- The variety of diminished letters, notes, and thumbnails is deleted, and the color of the text, the image and the field, as well as the adjacent colors, are carefully selected so that all the billboards form a harmonious, symphonic and beautiful collection, and in addition to their informative roles they make the environment look beautiful.
- The color of the writing should be in line with the color of the background by choosing the color of the billboards, so that it can be read from a suitable distance.
- It seems that providing a comprehensive plan for designing and installing commercial and cultural advertising billboards and even signs and traffic signs by municipalities or related organizations can create a sense of aesthetics and security in the environment.

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