Infographics and Routing of Tourism Sites of Tourist Cities

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Abstract

The contemporary world is a space full of messages, and information that is exchanged constantly. All the urban visual effects (whether in open spaces or huge images, or in closed public places), have a special visual expression power that defines how they can be used in the field of environmental graphic design. Large and tourist cities face many problems. Problems related to tourist may arise in communicating tour guide such as the weakness of the information system in identifying tourist sites, the lack of adequate facilities on sites such as maps, movies and educational boards. In tourist cities, one observes that environmentally graphic elements is not used and have no vitality and designed related to the urban texture. The present study, attempts to design and present a model based on informative environmental graphics to determine the specific route of tourism in order to know the space of urban tourism sites. Considering that the purpose of this research is to use the capabilities and functions of environmental graphics in the historical space of tourist cities and finally to provide a model to determine the routing infographic, so in terms of purpose it is practical - development. When studies done related to the scientific principles of environmental graphic design with aesthetic language as an effective tool in facilitating the routing of tourists and paying attention to special tourist routes, it is also based on descriptive-analytical research method. The environmental graphics at Naghsh-e Jahan Square do not respond to the rapid growth and development of this tourist site. This is because in many cases not only it does not convey information to the audience, but causes confusion and difficulty. Most of the environmental graphic factors in Naghsh Jahan Square are not in their proper place and therefore have lost their features and have only made this space more crowded. Therefore, with the proposed model of this research, domestic and foreign audiences can become more familiar and use the facilities and attractions of tourist sites.

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1. Introduction

Today, the tourism of historic cities is one of the most important tourist activities in the world, with its rapid growth has become multi-purpose. The development of tourism and related entertainment will be effective factors in shaping the pattern of historical areas development and their historical heritage and will provide economic, social, cultural and environmental benefits for tourists. Ancient monuments in historical cities are an integral part of the city structure and the destination of many commercial trips, tourist, recreational and cultural (Timothy and Wall, 1995). Meanwhile, cities with ancient textures, due to the existence of elements and valuable historical spaces such as bazaars, caravanserais, mosques, Hosseiniyahs (or worship places), etc., can attract many foreign and domestic tourists as a suitable place (Khakpour and Kamandari, 2014). One of the most important steps in determining the urban tourism space is to determine the specific tourist routes. It can be said that, the urban tourism space is a space where tourism resources are located and the behavioral model of tourists is a function of components such as attractions, accommodation, facilities and services, which is very important in how to access and navigate these components in tourism space. So the signs of access and routing as infographics should be located on the routes of walking and passing tourists. One of the powerful tools in building culture and influencing citizens' public opinion that belongs to environmental graphics. The contemporary world is a space full of messages, and a lot of information that is exchanged constantly. Everything that is used with the help of visual elements and the use of extensive knowledge of the visual arts and the use of fine arts facilities in the community and attracts the attention of the audience is in the field of environmental graphics (Abdolhosseini, 2006). Based on the latest scientific research, informational billboards should be interesting in terms of aesthetics and effective and implementing in the field of communication (Norouni, 2005). Therefore, to complete the definition of environmental graphics, it should be considered as one of the main pillars of social and urban life. The presence of design and visual arts in everyday life is possible through environmental graphics. Environmental graphic is the most effective tool for influencing the behavioral patterns of urban human life. Environmental graphic is a community phenomenon that can be analyzed with respect to visualization space, national, ethnic and cultural features, social agreement, ethical and traditional, and political and economic branches of the society (Abdolhosseini, 2006).

2. Literature Review

Study by Movahed et al., 2002, recognizing the model of Isfahan's tourist space using GIS system, has analyzed the characteristics of Isfahan's historical texture and the problems caused by the pressure on this texture using GIS and points to the need to pay attention to the central part of the city.

Providing a spatial model for determining the specific routes of urban tourism (e.g. Shiraz city) (Heidari Chianeh et al., 2014). This dissertation has analyzed the behavioral patterns of tourists in choosing tourism routes. In this study, optimal tourism routes have been proposed by changing the tourist behavioral pattern in prioritizing travel and selection attractions.

Identifying and evaluating the problems of ecotourism guides (Case study: Ecotourism guides in Tehran province), by Hashemi, et al., 2014. In this article, the researcher seeks to answer the

question that what problems exist for the activities of ecotourism guides and how important each of these problems is according to the guides.

Locating tourist site in Bandar Abbas to create a tourist atmosphere by (Taheri Bajgan et al., 2014), studied the tourist site location in Bandar Abbas city to create tourist atmosphere using Analytical Hierarchy method and GIS and assessing the geographical layer of Bandar Abbas. The main challenge in urban tourism management of Bandar Abbas is the lacks the appropriate standards and criteria for the construction of tourism sites.

Investigating the Influential factors of interactive banners on tourists (Faiz et al., 2014), examined the effective advertisement of interactive banner to attract foreign tourists and the statistical population was the international tourists who have experience using the Internet.

Review and Evaluation of Urban Tourism Sites (Case Study: Urmia City) (Hataminejad et al., 2014). The study examines the tourism sites of Urmia using tourism criteria.

2.1. Distinguishing the Present Study with other Studies

After reviewing and analyzing the sources and research background on spaces or tourist sites with tourist attractions, it was observed that in some research, is in connection with the importance and necessity of determining tourist spaces, recognizing the model of tourist space, spatial model to determine specific tourist routes, identifying and evaluating the problems of ecotourism guides, and optimizing the establishment of infrastructure and facilities to these spaces, but there is no statement regarding the role of environmental graphics in facilitating the routing of tourists in these spaces. Since the tourism industry has service nature, therefore has the fundamental role and importance of tourists in the quantity and quality of services provided. The issues related to environmental graphics in tourism and infographic routing play an effective role in guiding and meeting the needs of tourists. In the present study, by prioritizing to informational patterns in tourist routing in the city, an attempt has been made to provide a framework for determining and designing the tourist movement pattern, to determine the optimal infographic in the tourist routes.

2.2. Research Objectives

In the present study, the following objectives are considered:
- Studying the functions and scientific principles of environmental graphic design with aesthetic language as an effective tool in facilitating the routing of tourists.
- Expressing the necessity and importance of paying attention to the access process to sites and special tourist routes.
- Providing a model for determining the infographic in facilitating the guidance of the tourist to special tourist routes.

2.3. Research Questions and Hypotheses

Explaining the key research question, sub-questions which express the structure and various aspects of the key question and indicate the dimensions and variables of the research; also, the expression of research hypotheses with news sentences:

1. Today, in the historical cities of Iran, how to determine the information of special tourist routes? And what are the parameters and criteria in this process?

2. How do the existing infographics in Naghsh-e Jahan Square meet the needs of domestic and foreign tourists?

3. Methodology

This is an applied-developmental research in terms of purpose. In the present study, the analysis of urban tourism routes was done using the descriptive-analytical method. The research process is such a way that the necessary information has been collected with the help of library and field studies.

Considering the purpose of this research is to use the capabilities and functions of environmental graphics in the historical space of tourist cities and finally to provide a model for determining the routing infographic, so in terms of purpose it is applied-development research. When the study aim is related to the scientific principles of environmental graphic design with aesthetic language as an effective tool in facilitating the routing of tourists and expressing the necessity and importance to special tourist routes, it is also based on descriptive-analytical research method. The statistical population includes all tourists who visit the historical and tourist sites of the city, and field observation evidence the number of routing infographics that are available to guide them to the desired sites. The case study is the Naghsh-e Jahan Square of Isfahan as tourism sites.

After conducting the field observations, photograph and documenting the current situation of the routing system and information billboards and routes in Naghsh-e Jahan Square, an attempt was made to provide an optimal model of environmental graphics in routing and informing the locations of Naghsh Jahan Square. Therefore, based on the data extracted from the current situation of the field environmental graphics in the form of documents, first all the dimensions of the environmental graphics routes in the form of field observations and images were examined and described, and then the pathology of each these available information elements based on standard graphical environmental patterns were examined.

Meanwhile directly observing the mentioned area and the main routes that lead the tourists to record the documentary, by considering this point that the subjective issue of environmental graphics was informative and routing has used photography and field observations as important tools in field survey, especially in the field of Naghsh-e Jahan Square, and focusing on its importance in urban research and studies. Noting down the observations was another tool used to record observations. The preparation of the research area sketch was another measure to record information from Naghsh-e Jahan Square, which draws the three separate axes that end at the destination of Naghsh Jahan Square from three different sources and follow the paths of Naghsh Jahan Square. Maps are provided to better percept the research area and to determine what quality is the information infographic and route in the routes for the tourists who intend to enter the Naghsh Jahan Square, and visit its various parts and then exit from the place.

Finally, the use of infographic information and routing in guiding tourists to Naghsh Jahan Square was analyzed. Consequently, the author's observations of the current information graphics in Naghsh-e Jahan Square routing were expressed in relation to the basic components of environmental graphics, and the infographic study and routing in Naghsh-e Jahan Square as a tourist site was assessed. Continuation of the analysis in order to prove the research hypothesis: Informative graphics (infographic) in a dynamic and creative way in a compatible action that can be perceived directly with the environment and through this the audience can find information about places and routes without wasting time and to be guided in the right direction, field observations of the current situation of informational graphics in Naghsh Jahan Square, as well all routes from Isfahan that end to the square were discussed as case studies. In the end, by presenting the images in which, in order to facilitate the guidance of the tourist toward the paths of Naghsh-e Jahan Square, a review and an appropriate model were suggested.

4. Theoretical Foundation of Research

Since today the inhabitants of cities are facing lot of images and patterns, they will have difficulty in finding their paths without the help of clear graphic images. An environmental graphic artist who works with architectural engineers and traffic planners to create simple and comprehensive images of destinations is required to organize urban chaotic images with the right marking techniques. Based on the latest scientific research, informational boards should be interesting in terms of aesthetics and effective and applicable in the field of communication (Norouni, 2005).

Environmental graphics tries to help different science, such as urban landscape design, industrial design, sociology, communications, and scientific technology, to present new and creative experiences of space and form to the audience in order to create the best function in terms of communication expression and aesthetical values. Generally, the environmental graphic of each element is considered as one of its main elements; and the identity and nature of the place should be pointed out in the design of symbols, selection of letters, execution and materials and final structure. Also, idea, thought, and visual element in dynamic and integrated relationships serve to express the index and functions of the desired environment and convey their thoughts and content to the audience (Rashvand, 2014).

4.1. Routing

To the set of signs that guide us in choosing the best routing and origin and destination, transportation, and traffic challenges, is called as the navigation system. Some elements of this set are signs, text, and some are visual that has a direct relation to the subject and others have abstract designs. This set of signs and symbols can be a substitute for asking verbally from individuals about the destination. In designing of this type of sign, what is very important is that the clarity and simplicity of the rapid transfer of information, and the more ambiguous the sign, the more unsuccessful is the result. A variety of navigation signs can be informative, identifying, educational, legal, or promotional (Rashvand, 2014).

In designing the Santa-Monica city routing system, the constructive elements of urban visual identity such as colors and signs of the city have been used in a desirable manner. In this system, along with background welcome signs and place introduction, have used new signs of the city, fonts and colors of its visual identity. In addition to creating harmony in the graphic elements of the city, these signs are used as media to promote the visual identity of the city (Sedaghat and Khezrian, 2017) (Fig 1).

Fig 1 Santa-Monica city routing system, designed in harmony with the components of the city's visual identity and utilizing the city sign in its design. (Source: www.sussmanprejza.com)

What is very important in the visual performance of environmental graphics is the method of presentation and how to design a set of visual factors in the final context and structure, and the capabilities and values of expression, depends on the form of presentation in the environment. In an environmental graphic set, all the visual expression values refers to the nature and meaning of the place and in relation to it takes a unique shape. From design to implementation stage, it should be with an approach to the space and environment of the goal and express their identity and content. The concept of identity is focused on the ability to re-recognize and generalize all visual elements to the content and index of the intended place in order to obtain the characteristics and personalities of each set and place, independent and unique expression. The visual identity of a cultural and educational complex should express the concepts and values appropriate to its content and function. In complex and industrial factory, all the elements that form the environmental graphics must be subjected to its function and concepts, and each element in the association with another element must create a unified and integrated set affected by its subject so that various visual factors in the audience's mind points to the meaning and related continuous results (Rashvand, 2014).

Fig 2 ACMI Cinema Complex of Australia. (Source: www.environment.com/acmi-signage)

5. Case Study

Isfahan is a city with many tourist attractions and a rich historical and cultural background, which has always been as one of the tourism hubs of the country, and Naghsh-e Jahan Square has been selected for the present study. Naghsh-e Jahan Square consists of four main elements: the Abbasi Grand Mosque, Sheikh Lotfollah Mosque, Aali Qapoo Palace and the Caesarea Gateway, and the pavilions that make up the body of the square (Fig 3).
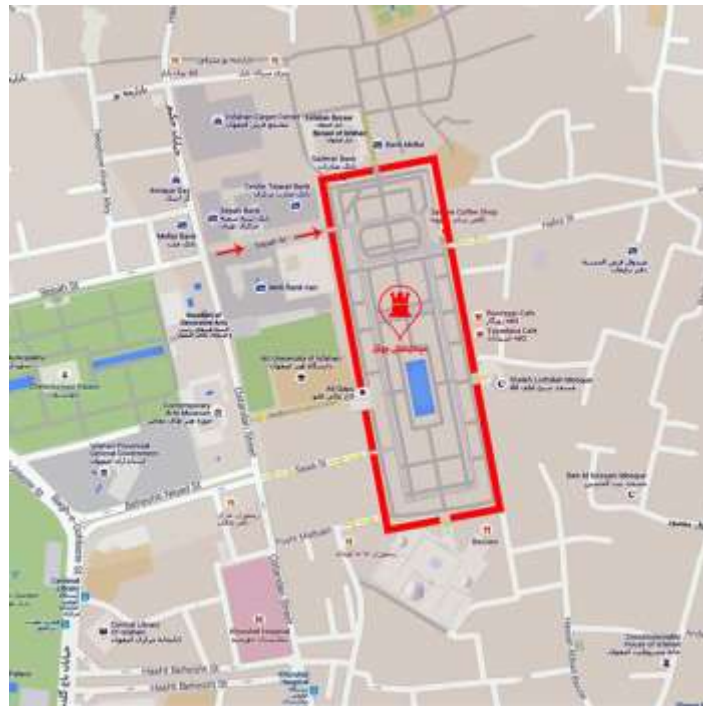

Fig 3 Naghsh-e Jahan Square of Isfahan (Source: Author)

6. Analysis of Contemporary Graphical Environment in Naghsh-e-Jahan Square

6.1. Contemporary Entrances to Naghsh-e-Jahan Square

At present, according to the new passages that have been created, it is possible to reach the Naghsh-e Jahan square on foot from 15 points (Fig 4).
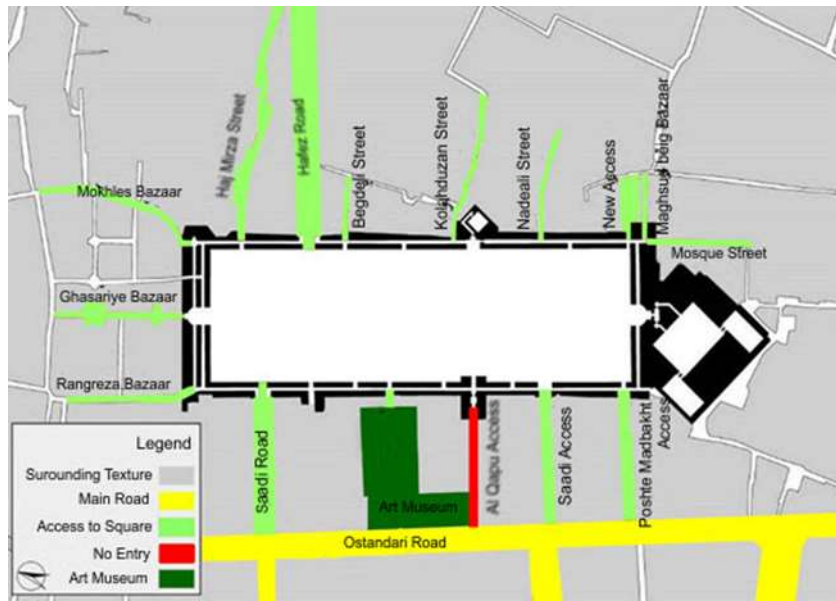
Fig 4 Fifteen access routes to Naghsh-e Jahan Square (Source: author)

7. Research Findings

7.1. Problems of Environmental Graphic Information and Routing of Naghsh-e-Jahan Square

In addition to analyzing on the cases done, the problems of this historical location can be categorized as in Table 1.

Table 1 Problems of environmental graphic information and routing of Naghsh-e Jahan Square (Source: Author)

Functioning of standard information and navigation systems	Environmental graphics status of Naghsh-e Jahan Square according to field observations
Audience ease of accessibility	- Naghsh-e Jahan Square signs are mostly installed at the main entrances of the city. - Route signs are not installed near the square and it is not easy to access from the middle of the city. - Two-name signs (Naghsh-e Jahan and Imam Khomeini) cause misguidance. - Tourists cannot be guided in the right way from the start to the end of the route in Naghsh-e Jahan Square. - Proper information and introduction in the Square with creative methods does not create motivation and desire to be present in the place. - Routing is very time consuming.
Installation of navigation maps in the initial locations and entrances of the desired spaces	- No map or navigation system has been installed in the entrances of Hafez and Sepah streets. - Entrances lack any elements and symbols of environmental graphics. - No information system is observed so as to provide the Square space in a comprehensive and visual way, to help navigation, to determine the

	route and to show the important elements of the Square in the image. - At this point of the entrance to the square, the tourist has no idea or image of his position in this space.
Installation of posters and direction signs in suitable and visible places and at appropriate heights	- There is no sign poster or information system inside the open space of the square. - Using paper for information and routing. - The signs have been erased or removed by the shop keepers and have no element for routing. - A number of sidewalks do not have names and signs. - In many cases, the distance between the installation locations of the signs on the street is longer distance and confuses the address seeker. - The installation location of billboards has been done without paying attention to the correct standards.
Simple and clear design of signs	- Numerous information signs do not coordinate in design. - In the design, there is no special and creative sign that indicates the historical and cultural identity of the Square.
Simple and readable fonts for the general public	- Traffic signs and multilingualism are not in good condition in the square. - The dimensions of the billboards and their writing are designed without considering the perspective view. - The posters do not follow a harmonious writing pattern. - The fonts of the billboards are different from each other.
Correct and understandable use of signs and text together	- Signs and text do not follow a specific design system. - In the Square space, no design has been done so that information and messages are not conveyed in symbolic language, signs and text.
Clear and distinctive color and related to the concepts and goals of the place	- The colors of the billboards are not designed according to a pattern in accordance with the cultural and historical atmosphere of the Square. - Sometimes the billboards appear in the form of white backgrounds, blue font and orange lines, and elsewhere in the form of neon signs with a completely different system and without consistency. - There are different types of billboards with different colors, dimensions and text for passages.
Proportion of the type of structures used should be in line with the characteristics and geography of the environment	- The material of furniture, furnishings and urban equipment in this entrance include trash cans, benches, long green bars, speakers and other item are not in harmony with the characteristics of the Square and have distorted the view of the entrances. - The entrance walls has been damaged and repaired with uncoordinated materials. In this entrance, poor designs and the way they are

	presented have created a lot of visual disturbances that these visual chaos severely disrupt the mental security of the audience. - The enclosing enclosure of entrances consists of modern commercial shops and unrelated to the Square space and forms a completely different business route with the historical identity of the Square. - The material of the environmental graphic elements in the Square does not induce the historical atmosphere and does not correspond to the identity of the site.
Organizing the maps according to the function of the environment	- Information of historical location guide and the quality of written information, providing location maps and multilingual signs for foreign tourists are not seen in the Square. - There is no specific and independent guide Square under the title of guidance and information system. - The site space shows the lack of a guidance and information system that shows a strong and significant connection between Naghsh-e Jahan Square and the ancient texture around the square, which is reflected in the index paths and pedestrian accesses to the Square.

In view of the above mentioned text, unfortunately, informational and routing environmental graphics in the historical texture of Naghsh-e Jahan Square, without considering the culture, historical space and tourism, and with a small number of elements of urban furniture can be seen as inconsistent, consequently does not induce the traditional, cultural and historical identity of the space.

It should be admitted that, the beauty element, as the most important factor in creating space and urban furniture, has received less attention on this site and in some cases has been neglected. Informative and routing environmental graphics patterns are as old-fashioned, distorted, without aesthetic pattern, diverse, misleading. The predominant aspect of these elements is consumerism, which, in spite of principles of aesthetics, has somehow disturbed the visual order and aesthetic of this Square.

Today, the environmental graphics of Naghsh-e Jahan Square cannot respond to the rapid growth and development of this tourism site. Because, in many cases, not only it causes confusion and difficulties but also it does not convey information to the audience. Most of the environmental graphic factors in Naghsh-e Jahan Square are located in their proper place, and therefore has lost their properties and has only made this space more crowded. Therefore it is necessary to think for a solution as soon as possible.

8. Conclusion

As mentioned above unfortunately, informative and navigational environmental graphics in the historical texture of Naghsh-e Jahan Square, without considering culture, historical space and tourism, and with a limited number of urban furniture elements can be seen as inconsistent, consequently it does induce the traditional, cultural and historical identity of the space.

It should be admitted that, the aesthetic element, as the most important factor in creating space and urban furniture, has received less attention on this site and in some cases has been neglected.

Informative and routing environmental graphics patterns are old-fashioned, distorted, without an aesthetic pattern, diverse, misleading. The predominant aspect of these elements is consumerism, which, in spite of many principles of aesthetics, has somehow disturbed the visual order and beauty of this Sqaure.

The present environmental graphics of Naghsh-e Jahan Square cannot respond to the rapid growth and development of this tourism site. Because, in many cases, not only it causes confusion and difficulties but also it does not convey information to the audience. Most of the environmental graphic factors in Naghsh-e Jahan Square are located in their proper place, and therefore has lost their properties and has only made this space more crowded. Therefore it is necessary to think for a solution as soon as possible.

Since the research problem was to determine the infographic pattern of the city's tourist space and to organize the tourist routing spaces along with the visual features of the infographics for the audience who are not very familiar with the social space and language and tourist place, therefore, the author has proposed model, so that the domestic and foreign visitors get familiar with facilities and attractions of tourist sites as much as possible and to utilize them.

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