

Application of Reflective Photography Technique in Visual-Semantic Evaluation from Citizens' Point of View (Case Study: Urban Landscape of Shiraz) *

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Abstract

Semantic contradictions between the contemporary and historical urban landscapes have led to a crisis of meaning in cities. Shiraz, one of the metropolises of Iran, unfortunately, has undergone destruction in the modern era. This research aims to extract the meaning received by the citizens and compare the visual-semantic features of the city. Given this, a combination of photography with a structured questionnaire under the title of "Reflective Photography" has been utilized, with the assistance of "Photo Content Analysis" in the Atlas Ti 8 software. The results showed that the semantic parameters/factors "Sense of Place" and "Structure-Related Qualities" have the most repetition in both historical and contemporary urban landscape contexts and could be entirely beneficial to form a new meaning or strengthen the mental image. There is no meaningful link between meanings and the visual feature of photos, nonetheless, further developments should definitely consider attention to the "Sky View" and "Greenery".

Keywords: Urban landscape; Landscape meaning; Visual-semantic evaluation; Reflective photography.

1. Introduction

Generally, "Landscape" has been a concept that embodies the potential of an infinite chain in space and time. This term often includes outdoor spaces at any scale, in the present, past, and future (Stiles, 1994). Landscape has been described as a text that encompasses signs and meanings and is read and decoded by users. However, the experience of the observers and their perception of the city will change over time given the landscape is the reflection of social, economic, and temporal changes in its context. Therefore, it has surely been essential to pay special attention to the meanings received by individuals from an urban landscape since if the reading of the text is not perfect, undoubtedly an incomplete cognizing of the context of individuals' lives will be achieved. In the last few decades spatial structures of cities through rapid socio-economic development have witnessed the transformation of places so that the city images for a group of individuals have been hardly the same as what has been imagined by experts considering the 'Top-down' point of view (Shen, Xu, & Liu, 2021: 1) (Hu et al., 2021: 1). Barati also points out that the challenge facing the city on the threshold of entering the new era has been the meaning and mutual relationship between people and the artificial environment. Iran's urban planning system has been barely about perception and meaning. Urban planning in Iran assumes a human

being is separated from the environment and considers individuals as objects. (Barati, 2006: 6, 14).

Knowing the dynamic semantics aspect of urban spaces, which lies in the spatiotemporal patterns of human activities, can help urban planners and managers to find out how a city functions over time and space (Cai et al., 2019: 31). The meanings which have been shaped by observing the structure of the city and through perceiving the traits, characteristics, and features which in turn lead to shaping the images in someone's mind, which in turn will evoke particular meanings for the person by processing it in mind and match it with previous memories and experiences. The semantic context is tagged with a location that indicates the activities of individuals in places, which results in the formation of a specific human activity pattern there (Huang & Li, 2016: 1). Besides place indicators, socio-spatial components also work as visual displays of social connections, historical events, and memories (Bell & Dourish, 2004: 1).

In this research, Shiraz City is selected as a case study amongst Iran's metropolises. Like many cities, Shiraz city has changed due to the ongoing modernization and the destruction of historic structures and is currently facing the continuation of development and demolition. The continuance of this negligence to the perceptual and semantic aspects of the urban environment will prevent the identification with the place, and the

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mental layers of the citizens will be weakened, which will continue to disrupt/change the identity of a place.

This research evaluates the visual characteristics and meanings deduced from memorable images for citizens and shows the semantic dissimilarities. In this regard, the benefit of photos could be valuable in constructing new knowledge and correlation between researcher and participants. This technique utilizes a combination of photography and a structured questionnaire which is one of the photography methods called "Reflective Photography". Therefore, each respondent is asked to send a picture of the historical and contemporary landscape from the city (taken by themselves) that holds memories and meanings for them. More importantly, it conveys the meaning and concept perceivable from the sent pictures. Following the mentioned objective, this paper calls into question the following :

- 1) What is the relationship between the visual-semantic features of the urban landscape?
- 2) What differences can be revealed via comparing the visual-semantic characteristics of two urban landscape contexts (historical and contemporary)?

2. Research Background

Researchers have been utilizing qualitative methods to explore the range of place meanings participants allocate to places and the experiences through which meanings is created. A few researches analyzed social media and the textual and visual data they shared to obtain semantic features (Huang & Li, 2016) (Wakamiya, Lee, & Sumiya, 2011). Open-ended surveys inquiring of participants to describe memorable places and "explain what these places mean to them" have been used, and semi-structured interviews such as "How would you describe this place?" have been done (Jacobs & Buijs, 2011), and sometimes map-based approaches have also been implemented (Brown & Raymond, 2007). In addition, to receive the meaning of place and to clarify the experiences that define the place's meaning, a narrative approach was also conducted (Kudryavtsev, Stedman, & Krasny, 2012: 232; Worster & Abrams, 2005).

For example, even the selection and analysis of images can be considered as an approach (Barros, Degbelo, & Filomena, 2021). Locals may prefer pure and natural scenes to break out from the city, while non-locals may prefer diversity and lavish scenes (Shen et al., 2021). Early semantic feature extraction methods mainly identified objects. Recently, a neural network for semantic pixel segmentation was proposed, such as DCNN (Deep Convolutional Neural Network), FCN (Fully Convolutional Network), ResNet, DenseNet, and SegNet, which have been taken up to classify features or identify objects in photos (Ma et al., 2021: 3). Overall, researchers have utilized various methods to pinpoint the meaning of the place. Some researchers have employed quantitative methods such as surveys to measure specific place meanings. Some aimed to combine them with spatial data. In this attempt, they tried to pinpoint the meaning by

manipulating various algorithms and tools, and in a way, they sought to quantify the meaning and create a functional platform for future interventions in cities. Nevertheless, the application of reflective photography techniques and the investigation of visual features and the urban landscape meaning simultaneously have been less determined. Figure No 1 displays the methods and techniques operated in the studies of meaning throughout last 30 years. Content analysis of photos and labeling of places have been two procedures implemented in this research.

Landscape has been the meaning of the connection between people and the environment. According to Webster's dictionary, it has been defined as an area of natural scenery that could be observed at a glance (Swaffield, 2002: 142). By adding such attributes as natural, cultural, urban, and historical, the concept of landscape refers to a specific zone of the surrounding environment. The landscape has not been only utilized to refer to a mental experience with an artistic, aesthetic, and existential meaning but also has been considered a phenomenon that is analyzed and described by scientific methods (Latifi & Paknezad, 2021: 2). It is not visible or invisible thing. It is the interaction between what is being noticed and what is hidden (Capone, 2013: 63). Landscape has both, objective and subjective aspects. Altogether, it is a concept that embodies a perfect chain in space and time.

Generally, there have been two theories about the perception of the environment. One relies on perceiving sensory experience, and the other relies on the senses as active and connected systems. The first category illustrates how sensory data and the assumed units of perception take place in the brain. Empiricism notices this combination, and placement as the outcome of associations that have influenced the thoughts, and writings of individuals such as Walter Gropius, Louis Mumford, and Clifford Muller, and emphasizes the role of experience (Lang, 1987: 97). Various paradigms have been proposed for understanding and description of the perception and quality of landscape: the expert paradigm, the psychophysical paradigm, the cognitive paradigm, and the experimental paradigm. The cognitive paradigm has been similar to the psychological approach in multiple manners but addresses another set of intricate variables, such as defining mystery in the landscape. The experiential paradigm includes criteria of mindsets and emotions when experiencing the environment (Burley, 2006). In addition to these paradigms, other approaches such as the ecological approach, aesthetical formal approach, psychological approach, phenomenological approach (Daniel & Vining, 1983), cognitive approach (Pitt & Sube, 1979), direct approach (people's preferences about the landscape), indirect approach (evaluation based on the descriptive analysis of landscape components) are also being used (Briggs & France, 1980, Cited in Golchin and Irani Behbahani, 2013: 12).

The first attempt to study meanings by philosophers brought about the area of semantics called philosophical

semantics which examines the relationship between linguistic expressions and the phenomena they refer to in the external world. This can be traced to as far back as Plato's and Aristotle's works. Semantics was also formally used as a term by Breal in 1897. Ullman considers meaning to be a mutual relationship between mental image and word. Since meaning is not a static concept, a large part of the idea of meaning still depends on the context and the participants in the communicative action (discourse) (Sankaravelayuthan, 2018: 14). Semioticians try to trace meaning in the physical and sensual experience of the landscape or interpret how meaning and identity are reflected in visual design representations (Raaphorst, Duchhart, van der Knaap, Roeleveld, & van den Brink, 2017: 121). For making meanings, the main shapes have been placed in a specific dimension by the users. The more times a shape is set, the more meanings it has in that meaning dimension (Hart et al., 2018: 9). One of the approaches to examining the meaning is the interactive approach. The symbolic interactive approach to meaning includes 1) the beginning of human reaction towards objects, and other individuals depending on the meaning they have for them. 2) The

meaning of items that arise or derive from the social interaction process. 3) Meanings are modified by the interpretation of public usage through facing items they encounter every day. Therefore, it is not the major meaning and anyone's interpretation plays a crucial function in that notion (Rapoport, 1990: 61). The meanings of a place refers to the symbolic meanings that humans attribute to it. The place meanings can be derived by responding to descriptive questions such as "What does this place mean to you?" or "What kind of place is this? ." The meaning of place is a multidimensional structure and may reflect the environment, social interactions, culture, politics, economy, and individual's aesthetic perspectives (Kudryavtsev et al., 2012). In this research, direct and indirect approaches have been employed simultaneously. Through the "Reflective Photography Technique" and an online questionnaire, both the objective and subjective aspects of the urban landscape, i.e. the visual elements of the landscape and the meanings obtained from it, have been investigated.

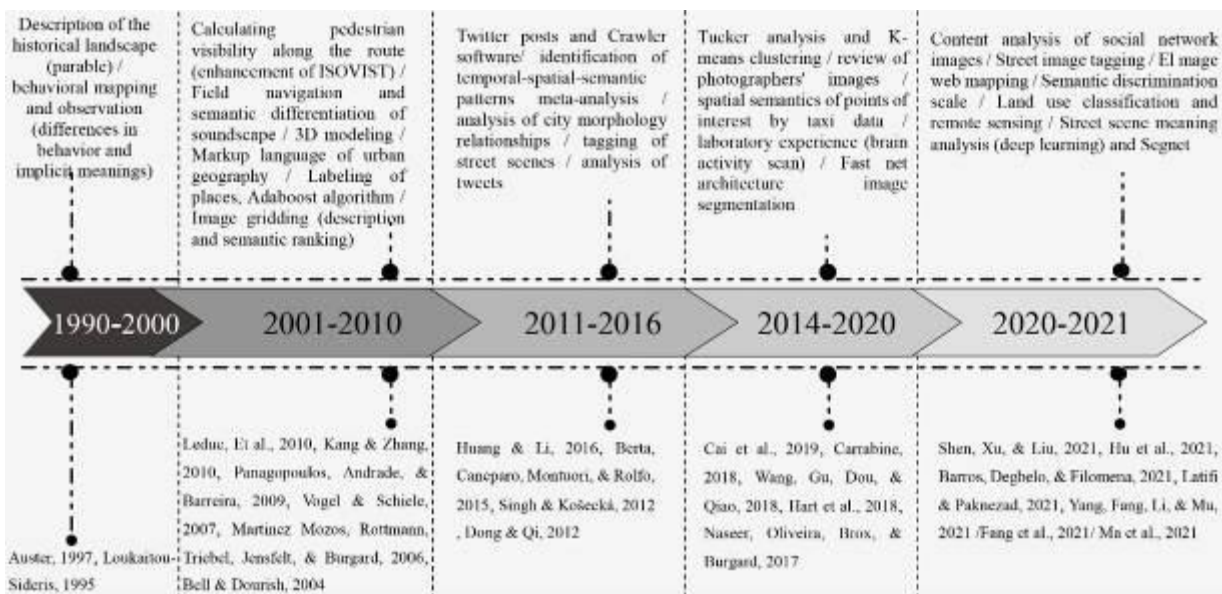


Fig. 1. Literature review and the methods and techniques used.

3. Theoretical Framework

1.3. Visual Components of the urban landscape

Undoubtedly, Physical features are at the fore in the "first image", while abstract and cognitive features are highlighted in the "real image" obtained from multiple experiences (Erçevik Sönmez & Erinsel Önder, 2019: 102). According to Vitik human mind receives and perceives information in three steps: in the first step, the single two-dimensional pattern; in the second step, the dimension and volume of the object, its color and brightness also appear at this step; In the third step, the symbolic aspects related to the function of that volume is

received (Vitik, 2011, quoted by Pakzad and Saki, 2013: 12). Considering all the incongruous and critical dimensions in landscape design, Lassus is also very fascinated by borders (Al-Hashmi, Saidi, 2010: 45). Edges or boundaries between coverage types act as crucial indicators of landscape complexity and fragmentation (Dronova, 2017). In landscape planning of urban spaces, surface, color, shape, and texture are perceptual features and characteristics (Sanjay Dhande, 2003: 885). From the early 1950s, Lassus studies the relationship between color and appearance. He suggests that the nature of everything is its place (Capone, 2013: 63). If the image tool is utilized to analyze the meanings,

it is necessary to address the basic concepts such as view, viewpoints, wide view, background, middle ground, and foreground:

- The background is a part of the landscape composition at a distance of 5 to 8 km.
- Middle ground is a part of the landscape between the foreground, the background, and its distance from the observer is usually between one and 6 kilometers
- The foreground is the front part of the landscape to the observer, which is located at a distance of 0.5 kilometers from the observer (Bell, 2019).

Variables such as viewing location, the field of view, viewing angle, viewing direction, and viewing distance have caused the study of visibility in the city to have many complications because most views in the city have all the variables (Conroy Dalton and Sheep Dalton, 2015: 141 cited in Chizfahmdaneshmandian, Behzadfar, 2020). The viewer's position, viewing distance, the composition of the landscape, visual fragility, movement of the viewer's eye, and the best viewing direction are likewise effective factors (Rafiani Khachak et al., 2013, Makhdoom, 2015, Sedaghati, Dartomi, 2015: 93, Corry & Nassauer, 2002, Vargues & Loures, 2008, Sundli et al., 2012). Number, position, direction, side, size, shape (form), sequence, texture, density, color, time, light, visual forces and visual gravity have been the variables

that Simon Bell considers for visual understanding of the scene (Bell, 2012: 66).

The perception of pleasantness also depends on the context. Different groups (such as adults and children, walkers and runners; rural, suburban, and urban dwellers) may differentiate the aspects of the environment they discover pleasant. Assessments of the environment that is different in terms of gender, age, economic status, race, or ethnicity may provide clues about the design of appropriate activity environments for each group. (Jack L. Nasar, 2008: 357) Figure No 2 illustrates the framework concept of this research. According to this diagram, to examine both objective and subjective aspects of the landscape, the assigned meaning was coded. On the other hand, landscape evaluation indicators (foreground, middle ground, background, presence of natural and artificial elements, human and human activity, and sky, color, sign and its location/direction of vision, proportions, time (day and night)) (Sanjay Dhande, 2003: 885, Bell, 2019, Rafiani Khachak et al., 2013) in all submitted images were analyzed.

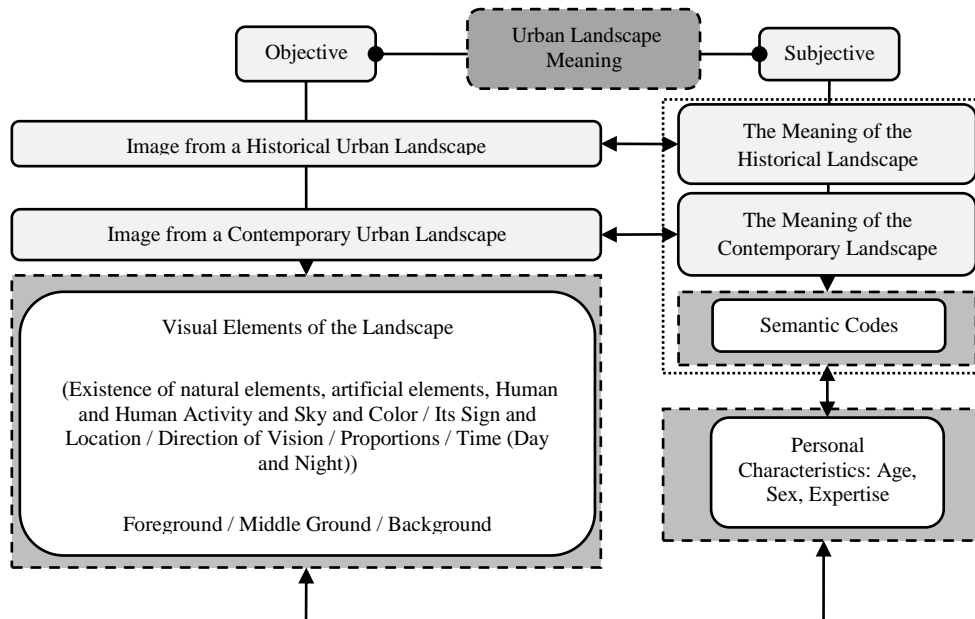


Fig. 2. Conceptual framework of the research.

4. Research Methodology

Image investigations had been implemented to evaluate the Urban landscape from the 1960s to the 1970s, emphasizing the subjective dimension of perception and utilizing the field survey method by Lynch (1960), Appleyard (1964), Asihara (1983), and Higuchi (1983) to find out how individuals understand the city (Cuthbert,

2006: 253). Implementation of research methods in visual perception studies such as cognitive mapping (Lynch, 2015), experimental, and visualization methods (Mambretti, 2011), computer models (Do & Gross, 1997), observation methods, semantic weighting methods, surveys, interviews emphasizes the study of urban space (Perovic & Folic, 2012: 925). Semi-structured interviews and hermeneutic analysis have also been used as research

tools to measure the impact of the sense of place on the created image of natural landscapes in the users' minds (Falahatkar & Aminzadeh, 2018: 6). Episodic encounters with physical and tangible aspects of place tied to social and symbolic values and the mapping process have provided a beneficial method for understanding the overlap between environmental factors and the social meaning of place (Evered, 2016: 691).

Simon Bell also emphasized the necessity of active landscape experience. He used to identify the key elements of the landscape by taking pictures and drawing a simple pencil picture based on the components of the landscape and how they have been organized (Bell, 2012: 11). Gordon Cullen also introduced the different perspectives seen by pedestrians (Serial Vision) in the continuation of spatial and visual observations (Cullen, 2012). James Corner also talks about the examination of representations and points to the marking of some aspects in perspectives as a technique in landscape evaluation (Corner, 1999: ix). On the other hand, the evaluative mental image and the direct approach proposed by Jack Nasar were conducted to the suggestion of using computer programs for rating, surveys, and online questionnaires (Jack L Nasar, 2000: 25). In the meantime, the Kaplans, emphasizing direct experience, provided a matrix of preferences and rated the scenes on a five-point scale (with the help of images) (Kaplan, Kaplan, & Ryan, 1998: 13). Monballio (1984) first suggested that landscape assessment techniques are generally divided into three classifications; Sensory (field evaluation of landscape visual appeal), Ranking or scoring methods, and statistical analysis techniques with multivariate regression employing user responses. Analyzing the relationships between visual quality and landscape structural features have been also an effective method in cognitive research (Darabi, Razavi, & Vaeziheir, 2017: 503).

Marks (2008) considered photos as a means of layering the past through experience. The use of photography in social studies and anthropological research was first proposed by Bateson and Mead (1942). In 1957 Collier used photography as a research tool; no scientists used the photographic process as a practical tool for data collection. One of the most widely used methods of using photos in conducted research has been to derive and presume their meanings. Photos have been also used of in the field of ethnography and visual sociology research. Reflexive photography was inspired by the work of Paulo Freire with 'coded situations.' The emphasis of this method is on the interaction between the environment and the person (Langmann & Pick, 2018). This technique was used to investigate the young individual's opinions about the urban landscape, and the results indicated that the participants concentrated more on the social and economic characteristics of the place than its aesthetic and, architectural ones. Global changes and urbanization

have been considered destructive forces that hurt the way of life (Gerodimos, 2018: 81). Investigating the advantages of photo-based methods, such as Reflective photography in tourism educational environments, has also been a topic of debate, and in a way, this technique has been considered a subset of participatory photography (Rodrigues, 2016: 65).

Figure No. 3 demonstrates this research process. Considering the need to combine the expert-oriented approach, and the subjective approach through a comprehensive view of the landscape, in this research, the visual-semantic characteristics of the urban landscape of Shiraz and their relationship have been evaluated with the tools of "Online questionnaire" and "Content analysis of photos". Shiraz city has been one of the metropolises of Iran, with 11 municipal districts and an area of about 240 square kilometers. The smallest region, the eighth district (the historical and cultural area), is the least developed area and has been denoted in light grey color in Figure 4. For this purpose, citizens were first asked to send a photo of the historical and contemporary urban landscape that took them and holds memories with an online questionnaire and then describe the meaning and concept created in their minds. As for contemporary landscapes, the criteria for considering them have been the changes that have taken place in the city in the last 100 years. Participants were selected from a randomly selected group of users in both the historical and contemporary city contexts. Considering that their number has been uncertain, according to Cochran's formula, 96 questionnaires had to be filled. For more certainty, about 240 questionnaires were sent to the citizens via social media, amongst them 104 questionnaires were completed and received within 1 month (August 2022). Next, to identify the semantic category mentioned by the citizens, quantitative and qualitative content analysis of the 208 photos (104 photos of the historical urban landscape and 104 photos of the contemporary urban landscape) was done, and the semantic variables of them were extracted with the Atlas Ti 8 software. Semantic codes extracted by the authors through examining the citizens' responses (the meaning that the historical and contemporary urban landscape of Shiraz has for them). After completing open and axial coding, categories were determined by combining similar codes. Overall, the Relationship between the visual features, and the semantic classifications was analyzed in SPSS software by Spearman's test.

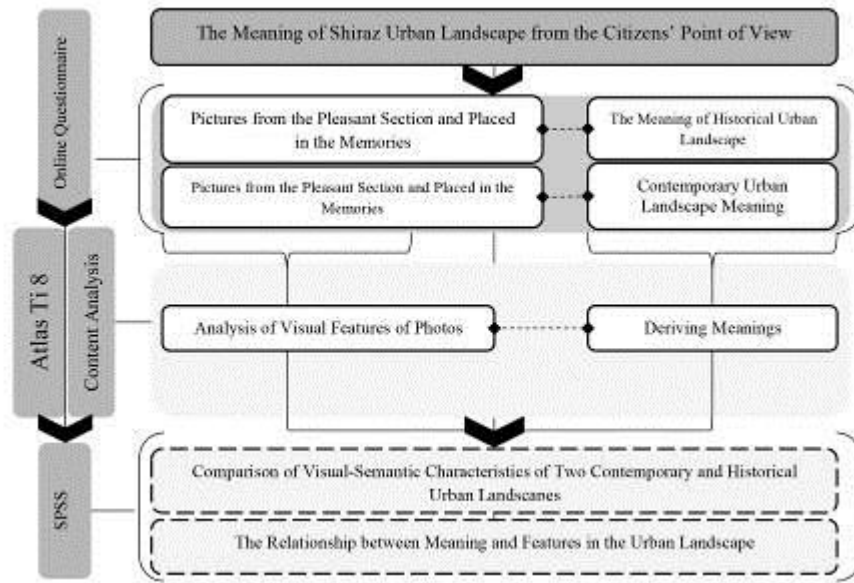


Fig. 3. Research process.



Fig. 4. Location distribution of photos submitted by citizens (source:google earth).

Amongst the respondents, 43% were men and 57% were women, and the different ranges of citizens' age were considered. The duration of residence of 81.7% of them in Shiraz city was more than 20 years indicating that the respondents had worthy lived experience in the urban context. Among the other demographic information asked are the level of education, occupation of individuals, and their field of expertise. 54.8% had a master and 22.1% had a bachelor degree. In general, most of the respondents had a bachelor degree or higher. 41.3 percent of them

were active in specialized fields other than architecture and urban planning, and the remaining specialized fields were in other sub-fields of architecture and landscape architecture and urban planning (urban design, urban management, urban planning). Most individuals were self-employed, students or employees with almost the same frequency. Most photos were from the historical urban landscape of the paths and historical houses, Hafez's tomb, the Zandiyeh zone, and the surrounding of the Arg of Karim Khan-e-Zand. The selected places from the contemporary urban landscape were the Shajarian pedestrian Path, Eram Street and Golha Garden. The figure below displays the location distribution of these photos.

5. Results

A) Analyzing the visual features of the submitted photos of the historical urban landscape

According to the conceptual framework diagram (diagram no. 4), the environmental-structural features were noticed in 104 photos extracted from the historical urban landscape. 61% of the submitted photos of the Shiraz historical urban landscapes had vertical proportions, and 87.5% of them were taken during the day. 53.8 % chose horizontal composition with a 1/2 proportion, and 29.8 % chose horizontal composition with a 1/3 proportion in framing. 72.1% of vertical composition was with a ratio of 1 to 2, and 20.2% of vertical composition was considered with a ratio of 1 to 3. Therefore, choosing the ratio of 1 to 2 or 1 to 3 in the composition has surely been more comprehensive.

Figure number 5 displays the location of the mentioned components. Considering different elements of the Built Environment (floor, facade, roof), Natural Components (greenery and heights), Sky, and Human Activity as defining elements of different scenes of the urban

landscape and based on the evaluations, 39.4% and 28.8% of the submitted historical urban landscape photos consisted of four and five types of surfaces. In 46.6% of the historical landscape, the Color Palette included brown, grey, blue, and green, and in 26% of them, other basic colors (yellow, red) were also added to the mentioned color mixture. Almost all images have three parts: foreground, background, and background. The Sign Element was present in 68.3% of the sent items, positioned in the background (40.4%) and the middle ground (27.9%), respectively. Natural components, including Greenery, and Heights were seen in the

background of 40.4% of photos, and in 24% of photos Greenery was in all three parts of the foreground, middle ground, and the background. Sky was placed in the background in 98.1% of the photos. In most of the submitted photos (61.5 %), Artificial and Built Environment components were seen together in the middle ground, foreground and background. The presence of individuals and the benefit of the environment plays an essential role in turning it into a place.

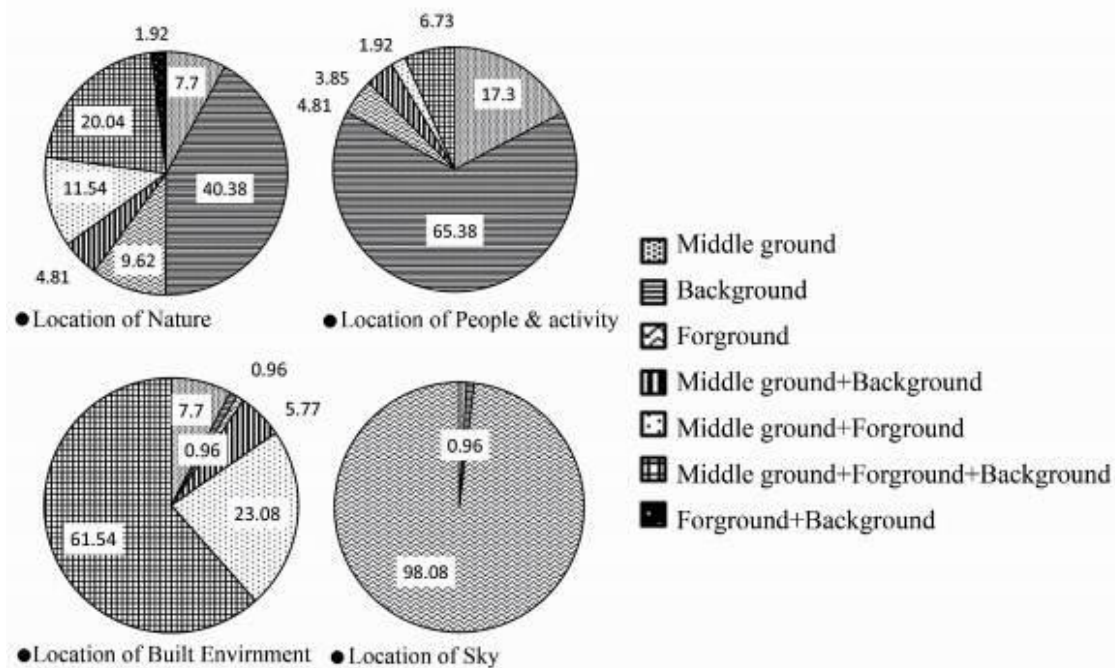


Fig. 5. Location of the Sky, Natural component, Human activity, and Built Environment among the submitted photos of the historical urban landscape

B) Analyzing the visual features of the submitted photos of contemporary urban landscapes

Analyzing 104 submitted photos of the contemporary urban landscape of Shiraz demonstrated that photos taken from the sidewalks, public gardens, and Eram Street of Shiraz expanded the connection between users and nature in the city. It should be mentioned that most of the new sidewalks are in district 6 and 10, which are districts with high urban prosperity. 82.9% of the submitted photos of contemporary urban landscapes of Shiraz City were taken during the day and vertical proportions were seen in 64.8% of them. In 50.5% of photos, the horizontal composition was chosen with a ratio of 1 to 2, and 21% had a horizontal composition with a ratio of 1 to 3 in framing. 70.5% of vertical composition with a ratio of 1 to 2 and 17.1% of cases are considered vertical composition with a ratio of 1 to 3. The presence of centrality was seen in 83.8% of the submitted photos. The evaluation of the Surfaces used in each scene indicated that four Surfaces (39% of the photos) and three Surfaces (32.4% of the

photos) constituted the contemporary landscape scene. In 55.2% of contemporary landscape, the Color Palette included brown, grey, blue, and green colors, and in 27.6% of them, other basic colors such as yellow, and red added to the dominant color combination.

It should be mentioned that almost all photos have three parts: foreground, background, and background. The sign element was only present in 38.1% of the posted items, which were often placed in the background (62.9%) and middle ground (21%), respectively. This result is similar to the results of the photos of historical urban landscape about the location of the sign. Natural components, including Greenery and Heights, have been noticed in 48.6% of cases concurrently in all three parts of the background, foreground, and middle ground. The Sky was in the background in 100% of the photos, and in the submitted photos (41%), Built Environment components were seen concurrently in all three parts of the middle ground, foreground and background. People and human activity have been in the background in 65.3% of the historical urban landscape.

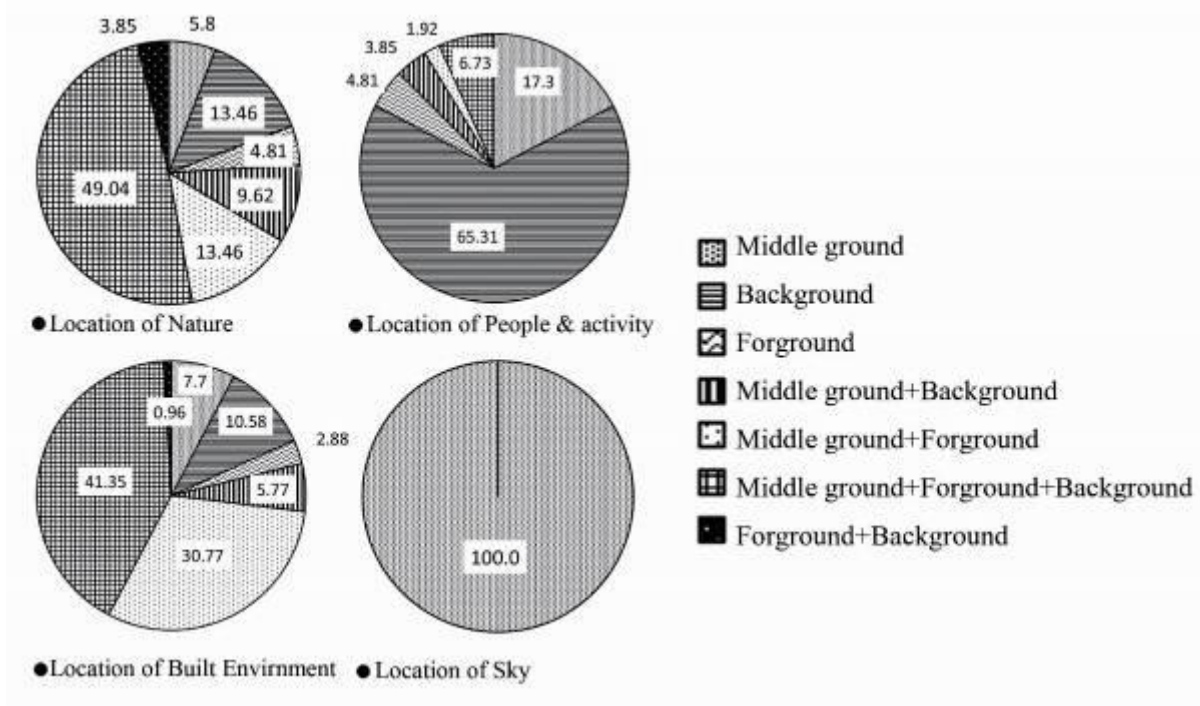


Fig. 6. Location of the Sky, Natural component, Human activity, and Built Environment among the submitted photos of the contemporary urban landscape

C) Comparison of the visual features of the historical and contemporary urban landscapes of Shiraz

The justification for choosing the ratio of 1 to 2 and 1 to 3 in the compositions and the centrality in the photo could be argued by the simplicity of adopting these compositions, and their special importance in the viewer's mind. The dominant Color Palette in the city is a combination of brown, grey, blue and green colors. The existence of vegetation and heights in the contemporary

landscape simultaneously in the background, foreground and middle ground indicate that modern cities developed with the existing gardens and green spaces. On the other hand, attention has been paid to the climatic comfort in the micro-urban open spaces. Table No. 1 demonstrates the comparative comparison of visual structural features in two contemporaries, and historical urban landscape. Figure number 7 also reveals examples of photos sent by citizens.

Table 1

Comparison of visual features in submitted Photos of historical and contemporary urban landscapes. (The items mentioned in each column were the maximum amount.)

Visual features of the environment	Historic Urban Landscape	Contemporary urban landscape
Proportions (vertical and horizontal)	Vertical (6%)	Vertical (64.8%)
Composition	Horizontal composition 1/2 (53.8%) Vertical composition 1/2 (72.1%)	Horizontal composition 1.2 (50.5%) Vertical composition 1.2 (70.5%)
The presence of centrality	72.1 %	83.8%
Number of Surfaces seen in each scene	Four and Five	Four and Three
Color palette	Brown, Gray, blue and green (46.6%)	Brown, Gray, blue and green (55.2%)
Time	Day (87.5 %)	Day (82.9 %)
Presence of sign element	68.3%	38.1%
Location of the sign	Background (40.4%)	Background (62.9%)
Vegetation location and heights	Background (40.4%)	simultaneously in the background, foreground and middle ground (48.6%)
Sky location	Background (98.1%)	Background (100%)
location of Built environment component	In three sections: background, foreground and middle ground (61.5%)	In three sections: background, foreground and middle ground (41%)
Presence of people and human activity	53.8% in the background	65.4% in the background
Priority of semantic classification Attached to the Photos	1) Components and elements of past architecture (31 codes) 2) Sense of place (22 codes) 3) Structure-related qualities (18 codes)	1) qualities related to the structure (18 codes) 2) Urban modernization and development (15 codes) 3) sense of place (15 codes)

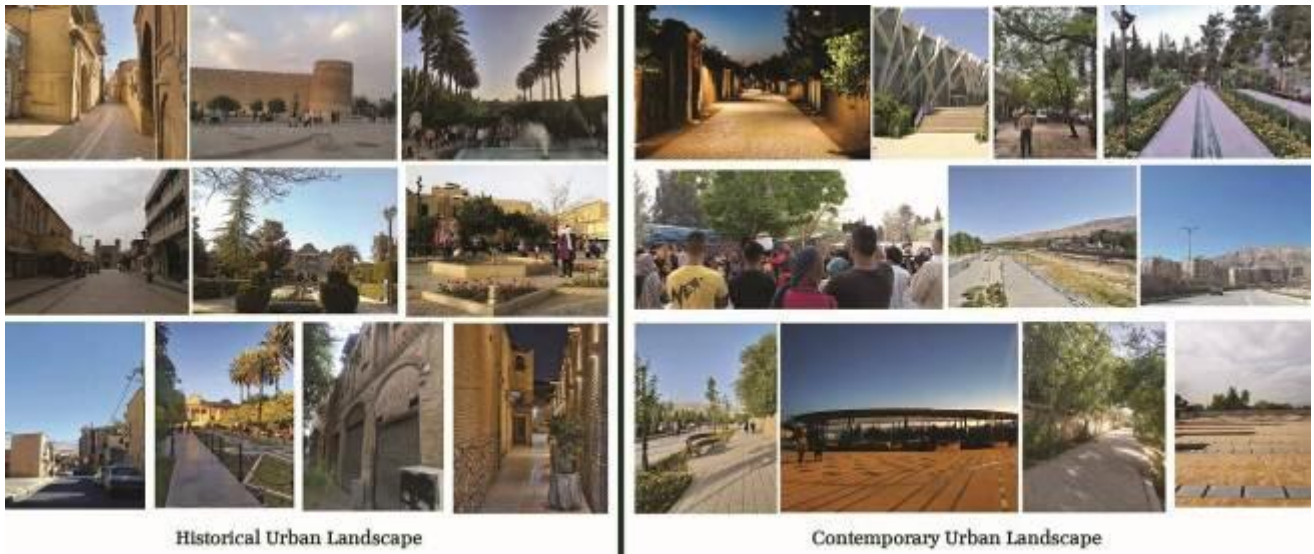


Fig. 7. Examples of Photos submitted by citizens.

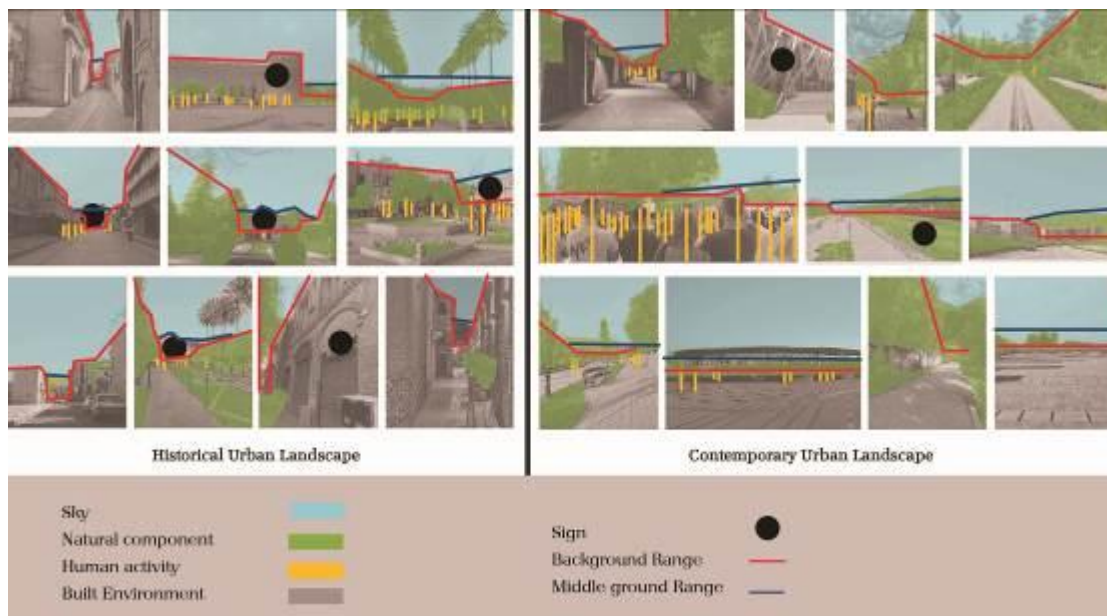


Fig 8. Examples of graphical analysis of Photos submitted by citizens.

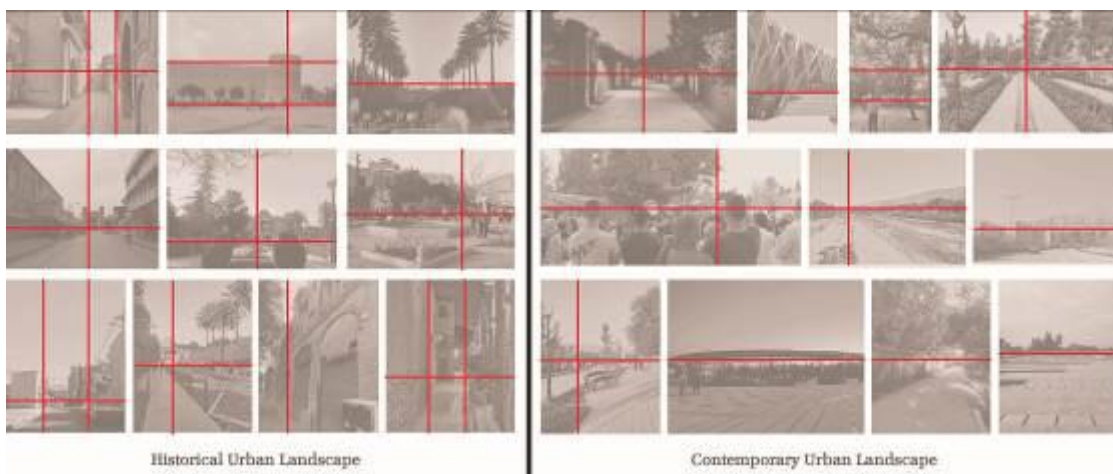


Fig. 9. Examples of graphical analysis (Composition) of Photos submitted by citizens

D) Comparison of the meaning of the historical and contemporary urban landscapes of Shiraz from the citizens' point of view.

Items mentioned by the citizens regarding the meaning received from the city context, each about the historical and contemporary urban landscape, vigorously were analyzed and coded through the content analysis method in Atlas Ti 8 software. The meaning of the historical urban landscape was determined with 180 codes, which were classified into 24 semantic categories. The nine semantic categories with the highest number of codes (the criteria for having nine codes or more) include I) Components, and Elements of past architecture (31 codes), II) Sense of place (22 codes), III) Qualities related to the structure (18 codes). IV) Individual and Collective memories (13 codes), V) Smellscape (12 codes), VI) Components and Elements of past urban planning (11 codes), VII) Evoking the history (11 codes), VIII) Physical Interconnection (11 codes), and IX) Individual, and Collective activities (9 codes). "Past architectural components and elements" such as historic houses, gardens, and architectural components have entirely been more effective in forming the received meaning from the Historical urban landscape. After that, the category "Sense of Place" with subcategories "Sense of Belonging", "Peace", and so on. Furthermore, the general structure of the historical landscape and the qualities related to it, such as "Beauty", "Order", and "Enclosure", etc. ranked in third place of meanings. Therefore, physical and structural components take priority in the Historical landscape meaning.

Through 157 codes, the meaning of contemporary urban landscapes was determined, and after categorizing them, 24 semantic categories were recognized. The eight semantic categories with the highest number of codes (the criteria for having nine codes or more) are respectively: I) Qualities related to the structure (18 codes), II) Modernity, and Urban development (15 codes), and III) Sense of Place (15 codes). IV) Components, and Elements of contemporary architecture (14 codes), V) People and their mental images (13 codes), VI) Nature and Greenery (11 codes), VII) Individual and Collective activities (9 codes), and VIII) Modern urban life (9 codes) has been formed. "Qualities related to the structure" with subcategories such as "Beauty", "Human scale", "Mystery", and "Being different", etc. was in the first place of meanings. "Urban Modernization and development" refers to the Pahlavi era and urban development. A combination of traditional and modern also refers to the lost innocence of the city. "Sense of Place" included the subcategories of "Peace", "Beauty", and "Pleasantness". In the meantime, the categories related to the components and elements of architecture and urban planning or the categories related to structural qualities among the meanings noted by the citizens took a noticeable percentage. Thus, the data had an ordinal scale, the Spearman's rank correlation coefficient demonstrated a weak relationship with a correlation coefficient of 0.276

between the presence of signs and proportions among the photos received from a Historical urban landscape. The location of built environment components has a moderately significant relationship with the vertical composition component (correlation coefficient 0.308). The vertical composition with a ratio of 1 to 2 was chosen more, which had a significant relationship with the centrality through the 0.715 correlation coefficient. Semantic classifications only have a meaningful relationship with the location of natural components, also in a weak way, and they do not have a meaningful relationship with other components of the conceptual framework. Examining the received images from a contemporary urban landscape indicated that the position of built environment components has a weak significant relationship with the position of an individual's presence and activity by a correlation coefficient of 0.254. The sign position and the centrality had an inverse relationship with a correlation coefficient of -0.320.

6. Discussion

After gathering the submitted photos of historical and contemporary landscapes, and the meanings given to them in the form of a questionnaire from the citizens, the Photos content analysis and analysis of their visual features revealed that they often had vertical proportions, which made it easier to take pictures quickly with a mobile phone vertically which has not been without consequence. The reason for choosing ratios 1 to 2 and 1 to 3 in the composition of the photo and the presence of centrality (in 72.1% of the photos) can also be in the simplicity of these proportions and compositions, as well as the emphasis on the photographed subject. The field of the sign position has been important in capturing, and in limited cases, the sign is positioned in the foreground. Signs in the historical landscape have been more effective in creating a memorable landscape, and the need to strengthen them as permanent elements in mind have been strongly noticed in the contemporary landscape. On the other hand, the element of signs in both contexts has been mostly observed in the background and middle ground, emphasizing the position of signs, and their relationship with their surrounding environment. People and human activity were in the background in more than half of the photos. This issue could be originated from respecting the privacy, and solitude of people in public and urban spaces.

Most of the submitted photos of the historical, and contemporary urban landscape were taken during the day, and this demonstrates that the nightlife was not strong enough to play a practical role in memories and forming the urban landscape meaning or the lighting in the city was not of good quality. Various surfaces (three and more) in the photos reveal the variety of surfaces in the urban landscape, which should be payed attention to in the development and renovations to maintain and amplify the diversity of these surfaces. In addition to the brown and grey colors, which have been the dominant color of the

physical and the built environment part of the city, in the color pallet of the submitted urban landscape; blue and green colors were also seen with an emphasis on the sky and greenery. Therefore, it has utterly been essential to pay attention to "Sky View" and "Presence of Greenery" in urban landscapes in future developments. The meanings received from the citizens revealed that the categories of "Sense of Place" and "Structure-Related Qualities" have priority in both urban landscape contexts, and their strengthening can be sufficient in forming a new meaning or strengthening mental images.

7. Conclusion

Ultimately, according to their knowledge and lived experience, individuals perceived the Historical urban landscape through the age of the building, its context, and its historical background. For this reason, buildings such as Eram Garden have been well known as Historical urban landscapes, while it has not been placed in the defined historical boundaries of the city. Some considered the tombs of Hafez and Saadi as a Historical urban landscape revealing that they consider the collective memory of those monuments to be historic, and ancient, even though their current state has been the result of the efforts of the last 100 years, especially the Pahlavi era. Thus, it reveals that not only the Historical landscape has not been limited to the historical context but also, the setting behind the Arg of Karim Khan-e-Zand has changed in recent years which has been redesigned after the modernization developments and turned into a city plaza, however, due to its historical context and the presence of the Arg of Karim Khan-e-Zand as an important historical sign, it is still being considered a historical context. And its historical values have not been diminished. What is the relationship between the visual-semantic features of the urban landscape In response to the first research question, examining the relationship between semantic categories applied to photos and other visual features of urban landscapes demonstrated that meanings only has a weak expressive relationship with the position of natural components, and there is no expressive relationship between meanings and other visual features. Broadly speaking the results exhibited that people's specialized field had no meaningful relationship with the visual-semantic features of the photos. Nevertheless, future researchers can investigate this issue more closely by emphasizing individual aspects. In response to the second research question, differences revealed via comparing the visual-semantic characteristics of two urban landscape contexts (historical and contemporary) showed that the number of levels seen in historical urban landscapes was more than in contemporary landscapes. In contemporary urban landscapes, it is often seen simultaneously in all three sections: foreground, middle ground, and background. This component often has seen in the background of the historical urban landscape. The semantic category of "nature and greenery" has played a role in forming the contemporary urban landscape,

however, this category was not seen among the first top ten semantic categories of the historical urban landscape. In the historical urban landscape, "historicity and association of history" played a role, which gave way to "modernity and urban development" in the meaning of the contemporary urban landscape.

This research is different from other research in that it analyses the landscape's objective and subjective aspects simultaneously (a comprehensive view of the urban landscape) and studies the visual features along with the meanings received through the reflective photography technique. Results could be beneficial for future research in the field of landscape meaning. This technique can open new perspectives in urban landscape analysis and evaluation. The reflective photography technique has been included in the group of interactive approaches, and it can be combined with rating methods in future analysis. In addition to this, the comparison of two contexts of the historical and contemporary urban landscape has received less attention, and the present study can shed light on the continuation of comparative research in the field of urban landscape

According to the results, the following strategies can be considered in the design and planning of urban landscapes.

- Dealing with structural qualities such as beauty, order, and desirable enclosure in the creation of urban landscapes
- Creating spaces with a desirable human scale
- Paying attention to the mystery and differentness of the urban landscape
- Strengthening the sense of place and creating peace in the urban environment
- Considering a platform for strengthening the sense of belonging and making memories in urban landscapes
- Enhance nightlife
- Paying attention to the view of the sky in urban landscape planning

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