




## Article

# Art in Urban Spaces

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**Abstract:** This study investigates the effect of art on promoting the meaning of the urban space. After considering the semantic dimension of the urban space and the mechanism of transferring the meanings of art through the views of experts, a model is presented for examining the art's cooperation in promoting urban space meaning. In the first stage, the categories of space meanings influenced by art were extracted using the qualitative method of interpretative phenomenological analysis, and by examining 61 in-depth interviews in 6 urban spaces eligible for urban art in Tehran. In the second stage, these categories were surveyed in these spaces through 600 questionnaires after converting to the questionnaire items. Based on the results, “experience and perception capability”, “social participation”, and “relationship with context” were the main themes of the semantic relationships between art and urban space. Further, the lower scores related to the theme of “social participation” in the quantitative investigations indicate that this theme was weaker than the other themes in promoting the meaning of the urban space through the art in the selected urban spaces.

**Keywords:** urban development; urban space; urban design; aesthetics; art; built environment; perception; interpretative phenomenological analysis; sustainable urban development; social data; urban planning



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## 1. Introduction

Contemporary art has widely entered the public spaces of cities since the 1960s [1], however, its role in urban space, its relationship with space, and its users have always been controversial [2]. Miles [1] referred to the dichotomy between the role of the aesthetics of the art in a space, and its semantic function, and believed that an attitude beyond aesthetic judgments should be considered in order to determine the role of art in the social and value areas of public spaces.

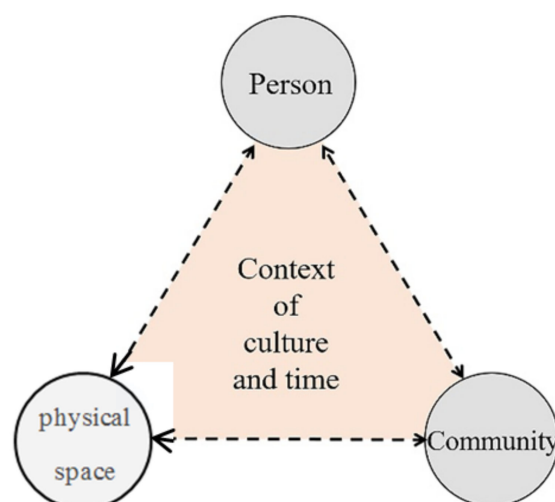
A large number of studies have been conducted in various fields in order to examine the semantic functions of art in the urban space—such as strengthening identity and historical continuity in spaces [3,4]; creating social links and strengthening collective identities [2,5]; creating social equity and inclusion [6–8]; enhancing the sense of “self” and place attachment [9,10]; increasing the perception and imageability of the space [11–14]; the role of art in placemaking [15,16]; and the impact of art on cultural and social regeneration [17].

The major part of the literature in this field has sought the meaning of urban art in art production, or that of the artworks themselves (their symbolic role). Further, the role of audiences, their experience of art, and their partnership in meaning creation are less discussed [18–20]. Massey and Rose [16] examined the role of art audiences and their participation in creating new dimensions of places by using place theories. Regarding the audience's role in creating art's meaning, Hall [9] referred to the more practical Audientia project, considering the meanings of art to audiences by using creative, interpretive, and

qualitative methods. He concluded that people mostly refer to the meaning raised by social engagement with the work of art, rather than its symbolic meaning. Further, there is a difference between the perceptions of people with the demands of institutions and the perceptions of academic individuals. Other studies have been conducted on the role of the audience in the perception of art [21] or the participation of the audience in the art production process [22], which mainly focus on the meaning of art, rather than the effect of art on the meaning of a space. The interaction of art and space is less considered in creating meaning. In addition, these studies failed to provide comprehensive and practical principles for improving the meaning of a space. Therefore, this study aims to provide a comprehensive and practical framework for the meaning-making of spaces by art, in which all semantic aspects of the art (meaning related to the art itself, and the meaning associated with the relationship of the audience to art) are involved. In this regard, the mechanism of meaning-making, and how art influences this process, were first studied, and then this mechanism was elaborated using field research in Tehran.

### 1.1. The Meaning of the Urban Space

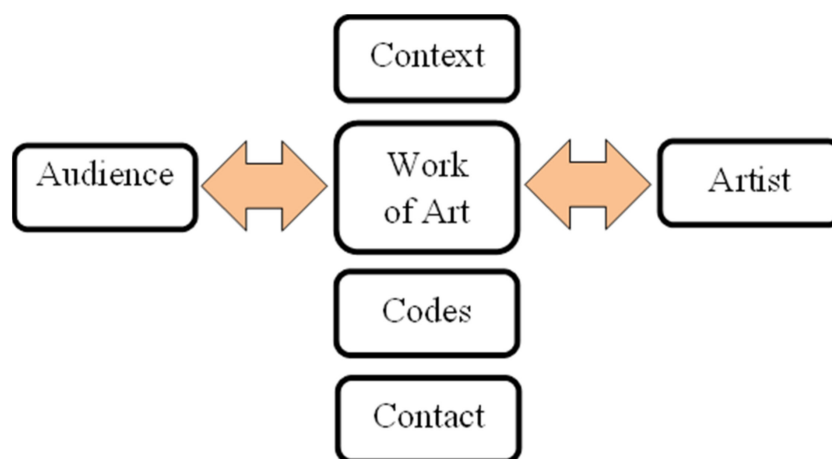
The studies conducted on the meaning of the environment revealed two categories of influential factors on the meaning of urban spaces: the first category is related to the factors in whose context the meaning of space is formed, while the second category is the poles around which meaning is created based on Gustafson's [23] place meaning model. The contextual factors include cultural context and time. In the same vein, a large number of studies have investigated the influence of culture on the meaning formation of urban spaces [24–26]. Furthermore, time is regarded as a factor through which meaning is deepened and intensified [27,28]. The “person” is one of the poles around which meaning is formed, and through experience links the space with some processes, such as identification, resulting in attaching to spaces [29–33]. The community is another pole, which has been proposed by many scholars as a source of collective meanings of spaces [34,35]. Many spatial definitions exist in the physical space context. In fact, the physical concept of the spaces usually provide audiences with possible suggestions [36–40]. Therefore, the meanings of spaces are formed over time, and in the cultural context of the community, around the person, community, and physical space poles. Although the definitions may favor one of the poles, they usually cannot be formed independently of the other poles in the environment [23]. Figure 1 displays the poles and contexts that form the meaning of urban spaces, based on the basic model developed by Gustafson [23].



**Figure 1.** The poles and contexts that form the meaning of urban spaces.

### 1.2. Urban Art and Transfer of Meaning

The semantic function of art is considered from different aesthetic and philosophical perspectives, and other aspects. Ahmadi [41] used Jakobson's [42] model of linguistic communication to sum up these views, and a model for how to transfer meaning through art by considering art as a tool for establishing relationships. Based on this model, which is the basis for further analyses, the meaning of art is first formed by the artist, and then it is received by the audience, and influenced by the historical and social fields (context), the cultural semiotics system (code), and the art transfer medium (contact), as shown in Figure 2.



**Figure 2.** Diagram for transferring meaning through art.

With the advent of art in the public areas of cities, the coordinates of the factors influencing the meaning of art change due to the impact of the local conditions. In this regard, authorities and institutions should be considered in interpreting the meaning of art in urban spaces [1]. On the other hand, the audience of the art becomes public with the generalization of art [2]. Therefore, the cultural context, personal and collective audience, and the artist and authorities all influence the transfer of meaning through urban art. Regarding the assumption that the art is effective in the meaning of the space, the meaning-making factors of the urban art affect the spatial meaning-making poles. Figure 3 illustrates this effect further, based on Gustafson [23] and Ahmadi [41].

- Artists and authorities/physical space

Art has a layer of representation that reflects the physical aspect of the work of art. This layer is under the relative control of the artist. Under the influence of authorities (including influential individuals, institutions, and organizations in political and social affairs) and in the field of culture and society, the artists reflect their desired meanings in this layer.

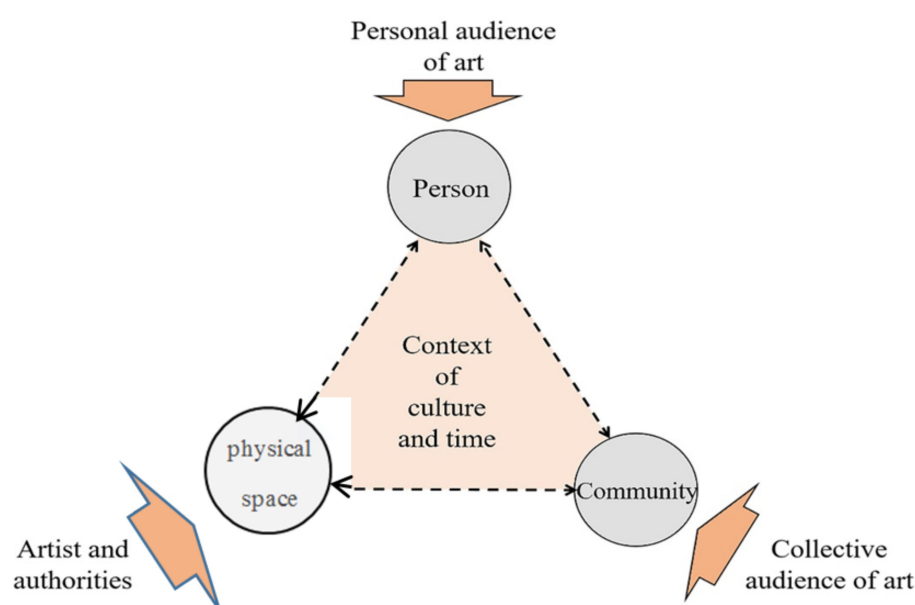
- Personal audience/person

Art can be effective in strengthening a person's relationships and shaping their lived experience in urban spaces, and impart meaning related to the space in an individual's mind and strengthen their sense of "self" [2]. These meanings are the direct result of the individual's experience of the art, and are linked to their feelings and emotions. These meanings are deep, influential, and lasting, but they require a direct, immediate, and everyday connection of the person with the art.

- Collective audience/community

Urban art creates collective meaning through processes and events, such as festivals, that generally reflect shared social values [17] in a way that no longer represents the past as a memorial monument, but is expressed as part of a discourse in the present [43].

Based on Figure 3, “artists and authorities/physical space”, “personal audience/person”, and “collective audience/community” are regarded as the main themes in the interactions of art with space, which indicates how the constructive dimensions of urban art influence the meaning-making poles. In other words, the artists and the authorities, by influencing the physical aspects of urban art, affect the space meanings around the pole of physical space. Furthermore, the collective audience influences the space meanings around the community pole, by participating in establishing social meaning in relation to the urban art. A person, through his or her individual experience of the urban art, affects the space meanings around the pole of the person. In the following study, field research was designed to clarify the above model.



**Figure 3.** The diagram of how urban art influences the meaning of urban spaces.

## 2. Methodology

A mixed-methods approach was used to examine the effects of urban art on the meaning of urban spaces. In a mixed-methods approach, both quantitative and qualitative approaches are used, either concurrently or sequentially [44]. In addition, an exploratory approach was used in the mixed-methods research. This sequential mixed-methods approach, which is used to develop or test the results of the qualitative stage, aims to influence the first method (qualitative) together with the second method (quantitative) [44]. In other words, in the first stage, the effect of urban art on the meaning of urban spaces is studied by using qualitative methods, and its main indicators are extracted, while these indicators are surveyed in the study area in the second stage.

It should be noted that the ethics committee of the institute at which this study was conducted has approved these research methods.

### 2.1. Scope of the Study

Tehran is a city that has attracted a variety of art to its urban spaces during recent decades; however, this has often been a top-down process. The context of its effects has received less attention. In many cases, works of urban art (especially murals) have been considered to be a cover for the ugliness of the city, and the temporary beautification of the city has been considered by the authorities. The location of the works is in many cases inadequate, and there is not even the possibility of physical access, nor enough time to read or interact with the works (for example, artworks on highways). The responsible institutions in this field are very limited, and it is not possible for private institutions to



operate. The process of selecting and creating the artworks is under the complete control of government institutions, and is closed to the people and to society.

In the present study, six urban spaces were selected, in order to examine the effects of art on the meaning of these spaces (Figure 4). The similar functional scale, relative dispersion in the city, and the diversity in the urban arts have been the most important criteria for selecting these spaces.



(A) Ritual elements, Imam Hossein Square



(B) Mural Painting, Vanak Square



(C) Ferdowsi statue, Ferdowsi Square



(D) Azadi Tower, Azadi Square



(E) Temporary visual works, City Theater



(F) Permanent visual works, House of Artists

**Figure 4.** Some of the artworks available in the selected urban spaces. Items (E,F) can only be experienced while walking. Item (C) can only be experienced while driving. Items (A,B,D) can be experienced while either walking or driving.

The reason for choosing Tehran is that this city has more urban spaces containing urban art compared to other cities in Iran. The following criteria were considered in selecting these urban spaces:

- Adaptation to the subject and objectives of the research: the urban spaces in question should correspond to the proposed definition of urban space, and include (at least) one of the forms of public art.
- Comparability: relatively identical scales (in Tehran) in terms of perception and function can make spaces comparable in terms of semantic aspects.
- Covering all aspects of research: variety in the types of art located in the spaces can be effective in discovering different aspects and dimensions of the semantic relationship between art and space.

- Considering research constraints: research time constraints should be considered in order to limit the number of spaces.
- (A) Imam Hossein Square: This is one of the main squares in the eastern zone of Tehran, which has been important in the past as a traffic junction and activity center. In recent years, this urban space has become a ritual square as a result of the improvement and organizing plan. Based on this plan, the space of the square is devoted to pedestrians and religious ceremonies, and the designed metal elements are used as symbolic elements of religion (Figure 4A).
  - (B) Vanak Square: This is a square with administrative and commercial functions, located in the northern zone of Tehran. The urban art in this square takes the form of two murals around the square. Occasional visual artworks and street music are the temporary art manifestations of this square (Figure 4B).
  - (C) Ferdowsi Square: This square, with commercial and traffic functions, is located in the center of the city, and is regarded as one of the oldest squares in Tehran. This square has three statues of Ferdowsi, a well-known Iranian poet, so far. The first statue of Ferdowsi was placed in the square in 1945, and the most recent statue has been located there since 1959 (Figure 4C).
  - (D) Azadi Square: This is the largest square in Tehran, and is located in the western zone of the city. This square was built along with a tower, called Shahyad Tower, in 1970 to commemorate the King of Iran, and was later renamed to Azadi (freedom) after the Islamic Revolution in 1978. The Azadi Tower is an artwork known as the symbol of the city of Tehran, which has always been the site of many collective events (Figure 4D).
  - (E) City Theater: The City Theater complex, as the first modern theater hall in Iran, was opened in the city center of Tehran in 1967. A vast urban space in its front is the venue for street theater. Additionally, modern visual works are established in this space (Figure 4E).
  - (F) House of Artists: This is a cultural complex located in the central zone of Tehran. The area and the building within are historic, having been abandoned until 1999, and has dedicated to cultural activities since reconstruction. The open space is the venue for many artistic events. Furthermore, there are permanent and temporary visual artworks in this space (Figure 4F).
  - (G) Figure 5 demonstrates the locations of these urban spaces in Tehran

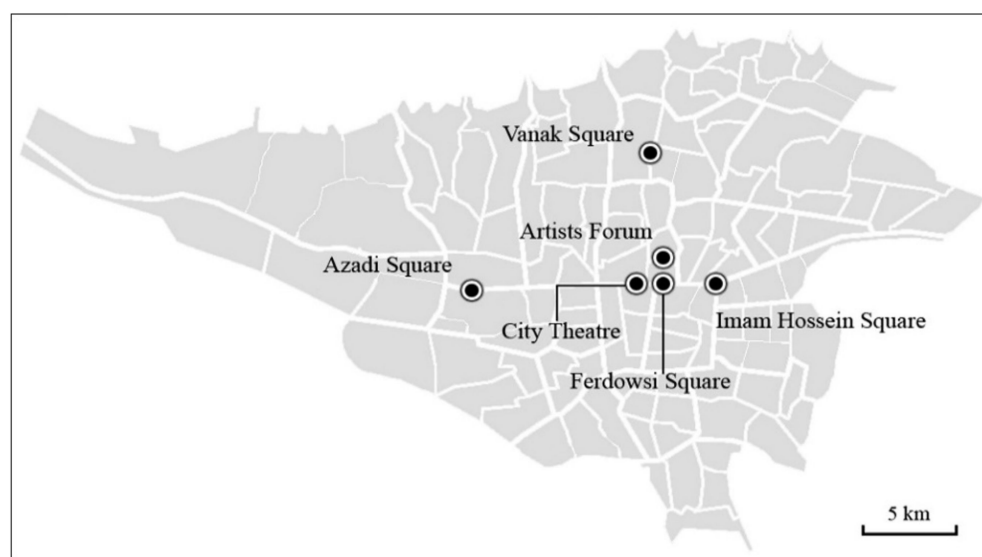


Figure 5. The locations of the selected urban spaces in Tehran.

### 2.1.1. First Stage (The Qualitative Section of the Study)

An unstructured in-depth interview technique, a goal-oriented sampling strategy and, particularly, the intensity sampling method [45], were used to select the samples [46]. The sampling was completed by repeating the data, due to the qualitative nature of the research. In phenomenological research, Creswell et al. [47] believes that the sample size can be 5–25. In this study, 9–13 phenomenological interviews were randomly conducted in each urban space (a total of 61 interviews) with people who had the necessary knowledge of the urban space in question and the desire to participate in the interview. The interview questions were formed in the interactions with the respondents, and their main focus was on the understanding of the lived experience of the respondents in the urban space in relation to the art. These interviews were conducted in May 2019. The interpretative phenomenological analysis (IPA) method was used to analyze the data, aiming to examine in detail how individuals perceive their individual and social worlds [48–52]. In order to improve the validity of the method, in addition to considering phenomenological reduction [53] and respondent validity [54], the results were controlled by five Urban Design PhD candidates working on related issues [55]. In accordance with the work of Smith and Osborn [50], the written interviews were read several times, and the most important and interesting cases were extracted from them. These were divided into semantic units, and in each section the main implicit concepts were noted. How respondents' language or emotions were expressed was recorded. Similarities, differences, repetitions, emphases, and contradictions were noticed in the individuals' speech. This process was carried out for the entire first interview. Returning to the beginning of the first interview, the margins were devoted to noting emerging themes and categories. The initial notes were changed to precise expressions aimed at expressing the meaning of the findings within the interviews, considering categories that represent higher levels of summary and use more specialized words. This method was repeated for all of the interviews, and the categories that appeared in previous interviews were used in those that followed.

The study results of this section were indicators through which art affects the meaning of urban spaces. The results of the analysis of the first stage are the main themes, categories, and subcategories that were the result of the combination of art and space in the creation of spatial meaning. These indicators were measured and surveyed in the second stage.

### 2.1.2. The Second Stage (The Quantitative Section of the Study)

The results obtained from the qualitative stage using the phenomenological method have neither weight nor a specific priority, and a quantitative measurement is needed in order to determine their degree of importance, weaknesses, and strengths. During the second stage of the study, the indicators extracted from the previous section were surveyed quantitatively. Each indicator became an item of the questionnaire, and the Likert scale was used to examine the degree to which people agreed with the indicators in relation to the art and the urban space (see Appendix A). The 100 samples were considered for each urban space based on Cochran's formula for the unlimited statistical community (with an error level of  $d = 0.1$ ). Accordingly, 100 questionnaires (a total of 600 questionnaires, with different groups of people at each site) were completed in each urban space in July 2019, with people who had the necessary knowledge of the urban space in question and the desire to complete the questionnaire. Out of 600 questionnaires, 306 (51%) respondents were female and 294 (49%) were male. In terms of education levels, 39.7% of respondents were bachelors, 6% undergraduate students, 30.3% diploma or associate degree holders, and 24% had a master's degree or higher. The random sampling method was used, and the questionnaires were analyzed by describing and analyzing the data obtained using SPSS software, while the reliability of the questionnaires was measured using Cronbach's alpha. The calculated Cronbach's alpha was more than 0.6 in all of the main themes, indicating the appropriate reliability of these indicators. In addition, the Cronbach's alpha calculated for all of the indexes was 0.932, indicating the appropriate reliability of the questionnaire. De Vaus [56], in his book, introduced the reliability of the indicators based on Cronbach's

alpha values of less than 0.3, between 0.3 and 0.6, and above 0.6 as low, medium, and high, respectively.

### 3. Results

#### 3.1. The Results of the Qualitative Section of the Study

After implementing and rereading the interviews accurately, the right-side margin of the text was used to write the analytical comments, and then, in the second stage, the left-side margin was used for the emerging categories. The comments included descriptions, details, summaries, relationships, or even initial interpretations. The categories represented higher levels of summarization, in which more specialized words were used. After carrying out this process for all interviews, the themes and categories were listed and categorized in a theoretical and analytical order. Table 1 represents a part of an interview in Ferdowsi Square.

**Table 1.** A sample of the outcomes used to analyze lived experiences in Ferdowsi Square and presenting the themes, categories, and subcategories of the semantic relationship between the art and the urban space.

	The Lived Experience of the Art in the Urban Space	The Orientation of the Experience	Implicit Concepts	The Main Theme	Impact Category	Subcategory
Interview No. 1	"Ferdowsi's name is very important for me, perhaps because of my attachment to the literature. But, when the name of this place is Ferdowsi Square, I am looking to make a relationship and I look at the statue and make a relationship with it when I get to the square . . . "	Positive	Establishing the conceptual and subjective relation between the appellation of the square with the name of Ferdowsi	The relationship with the context	Symbolism	Symbolic utilization of the appellation
	" . . . The square is very busy and high traffic and this matter influences everything . . . The square is full of cars and poor Ferdowsi is already lost among the crowd and traffic. Perhaps in the past, the statue was seen more in the square unlike now, due to these changes."	Negative	Traffic and crowd prevent establishment of a relationship with the statue.	The possibility of perception and experience	Experiencing	The impartial experience
	"Now, the statue becomes just a memory, and when I enter the square, I feel only a faint connection with the statue. For example, Azadi Square dominates the square due to the size of the building, but Ferdowsi's statue is lost in the square and its dimensions are not proportional to the space."	Negative	The disproportion of the size of the statue with the dimensions and characteristics of the square and the dominance of the space	The possibility of perception and experience	Subjective perception capability	Dominance and surrounding effect
	"Of course, the statue of Ferdowsi has been in the square for many years and has become a part of the memory of the square. It has a historical aspect and we feel it even if we do not look at it."	Positive	The durability of the artwork in the space has made it a part of the space identity.	The relationship with the context	The physical and structural interaction	Durability and being historical art and space

Finally, the main themes in the semantic interactions of the art and the urban spaces, along with the categories and subcategories related to each theme, became apparent after examining the lived experiences of individuals in the six urban spaces including a variety of urban art (Table 2). The possibility of experience and perception, social participation, and the relationship with the context were the main themes affecting the creation of space meanings through the relationship with the art. These themes are compatible with the themes of the conceptual model of the study, namely, "personal audience/person", "collective audience/community", and "artist and authorities/physical space". These themes were detailed using a series of categories and subcategories.



**Table 2.** The themes and categories of the meaning of the urban space in relation to the urban art.

The Main Themes of Meaning-Making	The Meaning-Making Categories	Subcategories
Experience and perception capability	Visual perception capability	Quality of performance
		Emphasis and distinction
		Visual appeal
		Visual communication
	Subjective perception capability	Human scale
		Art and space order and clarity
		Dominance and surrounding effect
	Experiencing	Repeatability
		The presence and the possibility of stopping
		Physical access
		The possibility of exploring and reflecting on the art
		The impartial experience
		Fit with the duration of the experience
		Change and diversity
Social participation	Active participation in the processes and events	Participating in ritual ceremonies
	Inactive participation	Participating in art events
		The sociability of the space
		Observing the art production process
	Subjective and functional sharing	Collective memories
		Emotional sharing
		The functionality of the art
	The interaction between the community and the art executive	Functional adaptation of the art and space
		Paying attention to existing activity and behavioral patterns
		Building trust and proximity to the community
		The dialogue between people and the art executives
		Avoiding unilateral and top-down art
	Considering all strata and groups	Providing context for spontaneous and folk art
		Catering to the tastes and interests of all groups
Relationship with context	Symbolism	Opening the space to all strata and groups
		Utilizing national and religious symbols
	Physical and structural interaction	The symbolic use of the appellation
		The coordinated physical design of the art and space
		The relationship with the historical structure and elements
		The durability and historicity of the arts and space
		The relationship with the cultural context
	Applying cultural signs	Flexible and appropriate physical context
		Using traditional art and architecture
		Applying cultural and religious signs

**(A) Experience and perception capability**

One of the emerging themes is the creation of the meaning through a person's relationship with artwork or art event due to their everyday experience of the urban space. This meaning formation is influenced by how a person is confronted with the art in the space, and what kind of visual and subjective qualities this confrontation has. The primary and secondary categories of this theme are as follows:

**Visual perception capability:** The capability and quality of the visual perception of art is a basic indicator in the lived experiences of the individuals. The “quality of performance” of artworks, the amount of “emphasis and distinction” of works in the space, the “visual appeal” of the works, and the possibility of establishing “visual communication” constitute the main subcategories of the visual perception capability. **Subjective perception capability:** In many experiences, the subjective relationship with the works and the space provides individuals with a deeper experience. This stage of perception is in a deeper layer than the visual perception, and the subcategories of the observance of the “human scale”, “the art and space order and clarity”, and the “dominance and surrounding” effect of the art in the space are extracted during the interpretation of the interviews.

**Experiencing:** The features of the art and the space, which result in the richness of the experience and its continuity, are mentioned in interpreting lived experiences. During the interviews about the richness of their experience, people refer to the “repeatability” of an artwork or art event in an urban space in different periods of time, “the presence and possibility of stopping” in the space, the possibility of establishing “physical access” to the urban art, “the possibility of exploring and reflecting on the art”, “the impartial experience of the art and space”, the “fit with the duration of the experience” of the art in urban space, and the creation of “the change and diversity” in artworks and events.

#### (B) Social participation

The main part of individuals’ lived experiences of urban art is formed socially and by participating in the artwork or art event in various forms. The main categories and subcategories are as follows:

**Active participation in processes and events:** The best form of participating in urban art is the active participation of audiences in producing and implementing the art, which is referred to as a meaningful experience in the interviews. In the urban spaces studied in Tehran, the only experience mentioned in this category is “the participation in ritual ceremonies”.

**Inactive participation:** The “participation in art events” is one of the manifestations of this kind of partnership in completing the urban art. The “sociability of the space” is another indicator related to the urban space and, finally, “observing the art production process” is one of the issues extracted from the interviews. **Subjective and functional sharing:** Another type of community participation in the construction of meaning is individuals’ subjective sharing about the art or the collective function of the art. The “collective memories” of the art in the urban space, “emotional sharing”, “the functionality of art” in the urban space, and “the functional adaptation of the art and space” were subcategories extracted during the interpretation of interviews. **The interaction between the community and the art executives:** One of the categories, discovered in relation to the creation of social meaning by the art in the urban space, is the interaction between urban art executives—such as institutions, organizations, and artists—and their collective audiences. “Paying attention to the existing activity and behavioral patterns” in the space by the authorities and institutions of the art executives, “building trust and proximity to the community”, creating the possibility of “dialogue between people and the art executives”, “avoiding unilateral and top-down art”, and “providing context for spontaneous and folk art” are some of the indicators extracted from the people’s experiences. **Considering all strata and groups:** This category was discovered in relation to the possibility of meaning-making by various groups with different tastes, norms, and beliefs. In relation to this category, subcategories including “hosting the tastes and interests of all groups” and “opening the space to all strata and groups” appeared during the analysis of the interviews.

#### (C) Relationship with context

The relationship with context indicates the relationship between urban art and the physical, historical, and cultural context of urban spaces in the city. The results of the interviews demonstrate that the adaptation of art to context leads to a deeper relationship of

the art with the audiences. The categories of symbolism, physical and structural interaction, and the application of cultural symbols are extracted from interviews.

**Symbolism:** The use of symbols with meanings and concepts familiar to the users of the spaces is one of the categories that link the art to the context. In the context of Tehran, the use of “national and religious symbols” was mentioned by the people. Furthermore, in some cases, the symbolic use of the spaces’ features, such as their “appellation” in urban art, has formed a deep link between the meaning of the space and the urban art.

**Physical and structural interaction:** The relationship between the art and the physical and structural contexts of the urban space is deduced as a category in relation to the theme of “contextualism”. The subcategories of this category include the “coordinated physical design of the art and space”, “the relationship with the historical structure and elements”, “the durability and historicity of the arts and space”, “the relationship between the art and the cultural context of the space”, and the availability of a “flexible and appropriate physical context” for implementing artworks.

**The use of readable cultural signs:** The application of readable cultural signs in urban art makes them meaningful for people in relation to the space. The use of the “traditional art and architecture” of Iran and of “cultural and religious symbols” in the art and the space are the categories inferred from the interviews in this regard. Table 2 represents the themes, categories, and subcategories of the interpretative review of the interviews.

### 3.2. The Results of the Quantitative Section of the Study

Among the 600 distributed questionnaires in the urban spaces, 306 (51%) respondents were female and 294 (49%) were male. Forty-three percent of the respondents resided around the urban space of the study area, and 57% in other areas of Tehran. Of the respondents, 29.7% daily, 29.3% weekly, 23.3% monthly, and 17.7% annually visiting the urban space questioned. In the following sections, the themes and categories in all of the urban spaces, and then in each space separately, were evaluated using the 1–5 point Likert scale.

#### 3.2.1. Reviewing the Meaning-Making Themes and Categories among the Urban Spaces

Table 3 indicates the average of the respondents’ agreement on the existence of the categories related to the semantic relationships between the art and the urban spaces among all of the urban spaces. Among all of the categories, the visual perception capability and the subjective perception capability have the highest values of 3.40 and 3.34, respectively. Therefore, the visual and subjective perception capabilities of the urban artworks (based on the subcategories presented previously) were evaluated relatively appropriate in these spaces. “The interaction between the community and the art executives”, and “considering all strata and groups”, have the lowest scores, with averages of 2.5 and 2.96, respectively. Thus, citizens believe that there is little interaction between the society and the art executives, and that different strata and groups are neglected in implementing urban art.

The mean score of the main themes influencing the meaning of urban spaces was obtained by combining the scores of these categories. The evaluation of these scores indicated that the mean values of experience and perception capability, social participation, and the relationship with context are 3.31, 3.0, and 3.13, respectively. In general, the mean of all three indicators is close to the average, indicating an average effect of art on the meaning of the urban space in a total of six spaces based on the criteria extracted from the qualitative section. Furthermore, experience and perception capability has the highest score, and social participation has the lowest score. Thus, from the citizens’ viewpoints, social participation in these spaces is in a weaker position, compared to the other two themes (Table 4).

**Table 3.** Measuring the main themes of meaning-making based on the categories in all of the urban spaces.

Main Themes	Categories	Frequency	Min	Max	Mean	SD
Experience and perception capability	Subjective perception capability	600	1	5	3.3422	0.92168
	Visual perception capability	600	1	5	3.4092	0.87100
	Experiencing	600	1	5	3.2057	0.74237
Social participation	Active participation in processes and events	600	1	5	3.1967	1.11657
	Inactive participation	600	1	5	3.1850	0.85138
	Subjective and functional sharing	600	1	5	3.1700	0.99427
	Interaction between the community and the art executives	600	1	5	2.5090	0.83792
	Considering all strata and groups	600	1	5	2.9633	0.94789
Relationship with context	Symbolism	600	1	5	3.2033	1.04506
	Physical and structural interaction	600	1	5	3.0507	0.92790
	Applying readable cultural signs	600	1	5	3.1650	0.96271

**Table 4.** The final results of evaluating the main themes of the meaning of urban space through the art, in all of the spaces.

Themes	Frequency	Min	Max	Mean	SD
Experience and perception capability	600	1	5	3.3190	3.3190
Social participation	600	1	5	3.0048	3.0048
Relationship with context	600	1	5	3.1397	3.1397

### 3.2.2. Evaluating the Themes and Meaning Categories in Each Urban Space

In this section, the themes and categories are examined separately in each urban space. Based on the results, a significant difference was observed in the capability of experiencing and perceiving the art in different urban spaces (Table 5). Imam Hossein Square, with a mean of 2.79, and Vanak Square, with a mean of 2.94, obtained the lowest scores for this theme, while Azadi Square, with a mean of 3.88, and the City Theater, with a mean of 3.49, provided the most possibility of experiencing urban art in the space. Furthermore, Azadi Square has the highest score in categories related to this theme (experiencing = 3.41, visual perception = 4.17, and the possibility of subjective perception = 4.06). Only in the category of experiencing, the House of Artists and the City Theater received higher scores, of 3.65 and 3.57, respectively.

**Table 5.** The mean scores of the themes of “experience and perception capability”, “social participation”, and “relationship with context” in each of the urban spaces studied (for more details see Appendix B).

Urban Space	Experience and Perception Capability	Social Participation	Relationship with Context
Vanak Square	2.9489	2.7800	2.6653
City Theater	3.4999	3.2926	3.3707
Azadi Square	3.8844	3.2752	3.6560
House of Artists	3.4210	3.2813	3.2933
Ferdowsi Square	3.3624	2.7455	3.5413
Imam Hossein Square	2.7976	2.6542	2.3113
Total	3.3190	3.0048	3.3197

In terms of social participation, the urban spaces of Imam Hossein Square, with a mean of 2.65, Ferdowsi Square, with a mean of 2.74, and Vanak Square, with a mean of 2.78, obtained the lowest scores, indicating the low impact of the urban art in attracting social participation in the meaning of these spaces. The review of the categories indicated that only Imam Hossein Square obtained a relatively good score (3.48) in the category of active participation, due to the ritual ceremonies. The City Theater, Azadi Square, and the House of Artists obtained close-to-average scores (Table 5).

Imam Hossein Square, with a mean of 2.31, and Vanak Square, with a mean of 2.66, received the lowest scores in the theme of relationship with context, while Azadi Square, with a mean of 3.65, and Ferdowsi Square, with a mean of 3.54, obtained the highest scores in this regard (Table 5).

The significance of the descriptive routine observed in the mean of the themes in the urban spaces was examined using one-way ANOVA. Based on the test results (see Appendix C) the significance level of the test is less than 0.05, which means that the observed routine is statistically significant, and the observed difference in the mean of the themes in the urban spaces is significant.

Regarding “experience and perception capability”, Imam Hossein Square and Vanak Square provide the least possibility of perceiving and experiencing works of art in urban spaces, while Azadi Square ranks first in most subcategories. Only in the category of “experience”, the House of Artists and the City Theater provide better opportunities, and this is due to their use of temporary urban art elements, along with better opportunities that provide for the direct presence and experience of art. “Experience” in Ferdowsi Square is also low; due to traffic jams and the nature of the square, together with the lack of physical access through walking, it is not possible to stand and understand the art or communicate directly with the artwork.

Regarding “social participation”, Vanak Square has the worst results in most categories. Ferdowsi Square and Imam Hossein Square have not been very successful in this regard either. In Imam Hossein Square, the active participation of the residents is prominent due to the holding of ritual ceremonies. Azadi Square, the City Theater, and the House of Artists have been among the most successful spaces in attracting citizens’ participation in art. The memorable space in the minds of the people and the holding of art programs are the main reasons for this relative success. It should be noted that the category of “the interaction between the community and the art executives” has a very low score in most spaces.

Regarding “relationship with context”, Azadi Square is at the forefront in all three categories, and art in this space establishes the best connection with the physical, cultural, and historical contexts. The City Theater and Ferdowsi Square also have a high rank in this regard. Perhaps one of the reasons for this success is the historical antiquity of these spaces and the urban arts associated with them. Imam Hossein Square and Vanak Square are the weakest urban spaces. An interesting point in this regard is the situation of Imam Hossein Square from people’s perspective. Although the art in this square has been designed for symbolic cultural and religious purposes, people have not understood the symbolism of the square, and have not even seen the familiar signs of culture and connection with the field in this space.

#### 4. Discussion

In the first stage of this study, the mechanisms of the effects of art on the meaning of urban spaces were determined by reviewing the opinions of experts. Then, the obtained indicators were explained and surveyed through the qualitative and quantitative study. In this regard, previous studies focused on just one of the dimensions of the art’s meaning, and failed to indicate the comprehensive mechanisms and applicable indicators for how art influences the meaning of urban spaces. The present study paved the way for measuring the impact of art on the meaning of the urban space by providing a comprehensive set of indicators. On the other hand, this research emphasized the semantic interactions of the art



and the urban spaces, and indicators were examined in both fields. However, most of the previous studies focused on the relationship between art and the public audience.

The study of indices in the urban spaces of Tehran indicated that the main themes of art cooperation in promoting meaning are very close to the average. In general, the “social participation” index has the lowest score among the semantic effects of art on urban spaces. Urban art has less relationship with urban spaces through social participation and collaboration in the selected urban spaces, which is influenced by the lack of a proper relationship between the authorities and executives and the people. On the other hand, specializing certain spaces to particular classes and groups, and neglecting the material and spiritual interests of all groups, influence the overall failure of urban art in the theme of social participation in the spaces. Comparing this section with the qualitative section indicated that some types of participation, especially active participation, are not available in the urban spaces of Tehran. For example, interactive art and the art completed by the presence of the audience are not available in these spaces. The “relationship with context” ranks second among the scores, and the “structural and physical relationship” has the lowest score among the categories related to this theme, due to the relationship between urban art and the physical, historical, and cultural structures of the urban context. The “possibility of experience and perception” indicator is in a better position than the other two dimensions; that is, the art in urban spaces provides a better possibility of experience and of subjective and perceptual relationships. However, experiencing the space index in this context, and providing the possibility of deeper engagement with the arts, obtained lower scores compared to the elementary relationship categories of visual and subjective perception. This means that artworks have relatively better perception capability; nevertheless, they provide less possibility of a deeper experience and perception. Given the diversity of spaces, the results were studied more precisely in different urban spaces, both separately and in comparison with one another. The results of this study indicate a significant difference in the scores of the themes and categories of the semantic effects of the art on the urban spaces. Indeed, through the comprehensive analysis of each of the spaces in Tehran, and through the study of the weaknesses and strengths of these spaces, it is possible to provide meaning-making artwork for these spaces.

The themes and categories presented in the study were not separated from one another; some were devoted to the urban space, and some were related to the urban art; some belonged to the quality of the art production and space, and some dealt with the production process. These categories can be explored in further studies separately. This study was conducted on urban squares and other urban spaces, and the impact of other indicators, such as movement and speed in the urban streets, can affect the results.

This study was conducted in Tehran, and for more comprehensive findings it would be necessary to repeat this research in other cities and compare the results with this study. We also suggest that a future project could explore the relationship between social interactions in urban spaces and experience. The type of urban art was not limited in the present study, and the focus was on the presence of a combination of artworks and art events in urban spaces. Other studies could be conducted on specific types of urban art—such as visual art, drama, and music—and how they affect space meaning. In the quantitative section of the present study, the error level  $d = 0.1$  in Cochran’s formula was used for an unlimited statistical population for calculating the sample number with respect to the research limitations. Furthermore, the number of questionnaires and, consequently, the research accuracy, increased to  $d = 0.05$ .

## 5. Conclusions

This study aimed to provide comprehensive and applicable indicators for how art affects the meaning of urban spaces. Based on the results, the main indicators of “the possibility of experience and perception”, “social participation”, and “the relationship with context” are effective in forming spatial meanings as a result of the presence of art in the urban spaces of Tehran. These themes are compatible with the main themes of

the personal/person, collective audience/community, and artist and authorities/physical space, which are derived from the conceptual framework presented for the interactions between the meanings of art and urban spaces. In addition, the possibility of experience and perception establishes the relationship between the personal audience of the art and the “person” dimension in the meaning of the space. Social participation refers to the interaction of the collective audience of the art with the “meaning” dimension of the society in the urban space, and determines the relationship with the context of the role of the artist and authorities in using contextual concepts in the space. Each of these themes is associated with a series of categories and subcategories in interpreting the interviews. The main categories can be measured using functional and normative indicators. One category of these indicators focuses on urban art, another is related to the urban space, and a third is related to the interaction of the urban art and the urban space. Thus, promoting the meaning of the environment via art is an interactive process between the art, the space, and the indicators and constructive components of each of them. Based on the results, the following suggestions may be useful in the field of semantic improvement of urban spaces in the case study city:

- Clarifying the role and mechanism of activities of urban art facilitators in relation to society.
- Enabling the active participation of people in the creation of art.
- Identifying different groups and strata in order to avoid specific topics.
- Paying attention to spatial and context qualities in connection with the establishment of urban art.
- Enabling closer and more direct communication between people and art.

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## Appendix A

**Table A1.** To what extent do you agree that the work of art in question has the following characteristics?

Subcategories	Strongly Agree	Agree	No Comment	Disagree	Strongly Disagree
Quality of performance					
Emphasis and distinction					
Visual appeal					
Visual communication					
Human scale					
Art and space order and clarity					
Dominance and surrounding effect					
Repeatability					
The presence and the possibility of stopping					
Physical access					
The possibility of exploring and reflecting on the art					
The impartial experience					
Fit with the duration of the experience					
Change and diversity					
Participating in ritual ceremonies					
Participating in art events					
The sociability of the space					
Observing the art production process					
Collective memories					
Emotional sharing					
The functionality of the art					
Functional adaptation of the art and space					
Paying attention to existing activity and behavioral patterns					
Building trust and proximity to the community					
Dialogue between people and the art executives					
Avoiding unilateral and top-down art					
Providing context for spontaneous and folk art					
Catering to the tastes and interests of all groups					
Opening the space to all strata and groups					
Utilizing national and religious symbols					
The symbolic use of the appellation					
The coordinated physical design of the art and space					
The relationship with the historical structure and elements					
The durability and historicity of the art and space					
The relationship with the cultural context					
Flexible and appropriate physical context					
Using traditional art and architecture					
Applying cultural and religious signs					

## Appendix B

**Table A2.** The mean scores of the themes of “experience and perception capability”, “social participation”, and “relationship with context”, in more detail, for each of the urban spaces studied.

	Urban Space	Frequency	Min	Max	Mean	SD
Experience and Perception Capability	Vanak Square	100	1.71	3.85	2.9489	0.55816
	City Theater	100	2.27	4.87	3.4999	0.60718
	Azadi Square	100	2.61	5.00	3.8844	0.56378
	House of Artists	100	2.09	4.86	3.4210	0.57476
	Ferdowsi Square	100	2.08	4.44	3.3624	0.57145
	Imam Hossein Square	100	1.00	4.19	2.7976	0.74188
	Total	600	1.00	5.00	3.3190	0.70258
Social Participation	Vanak Square	100	1.57	3.81	2.7800	0.52351
	City Theater	100	2.06	4.11	3.2926	0.44321
	Azadi Square	100	1.95	4.43	3.2752	0.59371
	House of Artists	100	1.88	5.00	3.2813	0.63406
	Ferdowsi Square	100	1.24	4.08	2.7455	0.56461
	Imam Hossein Square	100	1.30	4.32	2.6542	0.70339
	Total	600	1.00	5.00	3.0048	0.64490
Relationship with Context	Vanak Square	100	1.00	4.00	2.6653	0.68411
	City Theater	100	1.73	4.67	3.3707	0.52522
	Azadi Square	100	2.27	5.00	3.6560	0.63622
	House of Artists	100	1.83	5.00	3.2933	0.71457
	Ferdowsi Square	100	1.47	5.00	3.5413	0.62988
	Imam Hossein Square	100	1.00	4.10	2.3113	0.90534
	Total	600	1.00	5.00	3.3197	0.84361

## Appendix C

**Table A3.** The results of the one-way ANOVA test of the main themes of the study.

Main Themes		Sum of Squares	Df	Mean of Squares	Fisher Statistic Value	Significance Level
Between groups	The experience and perception capability	77.348	5	15.470	42.088	0.00
Inside group		218.330	594	0.368		
Total		295.679	599			
Between groups	Social participation	47.305	5	9.461	27.846	0.00
Inside group		201.818	594	0.340		
Total		249.123	599			
Between groups	The relationship with the context	141.604	5	28.321	59.091	0.000
Inside group		284.690	594	0.479		
Total		426.294	599			

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