Available online at www.ijapas.ir

International Journal of Applied Arts Studies

IJAPAS 9(2) (2024) 79–98

The Role of Enigmatic Architectural Components of Museums on Audience Perception (Case Study: Museum of Contemporary Arts in Tehran)

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Received 13 February 2024; revised 27 April 2024; accepted 06 June 2024

Research Article

Abstract

The process of transferring information in the Museum of Modern Art History is based on the representation of the evolution of culture over time. The more information there is, the more possibilities are available to the audiences, but this rule is usually not followed by contemporary art museums because in the architecture of these types of museums, attention is not paid to the process of attracting the audience. This research tries to investigate the role of the enigmatic architectural components of museums on the perception of the audience in the Contemporary Arts Museum in Tehran. The research method was a nest-by-nest combination to achieve this goal. The data collection method in the combined research (library and field). First, in the qualitative part, the components of enigmatic architecture from the theoretical research literature were extracted. Then the code table were compiled. Interviews were arranged, based on interviews, the variables of the role of the enigmatic architecture of museums on the perception of the audience in the museum of contemporary art were presented. In the quantitative part, questionnaires were used for verification. The sample size is 46 interviews in the qualitative phase and 384 people in the quantitative phase. The results show that discovery and surprise are the most important factors, the dynamic and

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This article is taken from the master's thesis titled "The interior path of the museum with a puzzle-like approach in the combination of past and present (case example of Sarem al-Dawlah House)" which was done by the first author with the guidance of the second author at the Islamic Azad University, Hamedan branch.

Publisher: Islamic Azad University, Yazd Branch.

horizontal arrangement of elements in space is the second factor, and the harmonious relationship between space and light is the third factor affecting the perception of the audience in the enigmatic design of the studied museum.
Keywords: Museum; Enigmatic Architecture; Audience Perception; Contemporary Art Museum.

1. Introduction

A museum is a historical-cultural space that can itself be an ambiguous, enigmatic space full of different questions regarding the past. Considering the importance of the destination and the preservation of culture and preservation of cultural artifacts, it is very important to comply with some standards in the museum (Pir Babaei and Anuri, 2012: 8). Therefore, in today's architecture, architects should not use visual stimuli in design. In this case, the ambiguity feature of the stimulus can be effective as this feature makes it impossible to have a superficial impression of the design or building in question, which causes a kind of persuasion in the interpretation of today's critics, a kind of participation of the viewer with the said architecture to create new meanings. This capability is considered an attraction for the work in architecture and an important part of the building depends on it (Pirzadi and Alaei, 2018).

It is always necessary to analyze and investigate the existing architecture to establish and establish a relationship between architecture and man, and from another point of view, to create a lasting architecture to achieve amazing architecture, and finally to reach favorable conditions so that people's needs are met. In this direction, identifying and determining the necessary parameters for museum design, understanding sensory design techniques, archetypes, and the use of enigmatic architecture in museum design should be used (Fen and Sal, 2010). Also, to clarify the issue of architecture in the future, there is a great and deep need to know the visual stimuli in architecture, so it is necessary and necessary to express these stimuli to create a desirable and worthy human atmosphere to improve the quality. This research seeks to investigate the role of enigmatic architectural components and creating a desirable and worthy human atmosphere on the audience's perception.

According to the extensive search in domestic and foreign sources, the description of which is described in detail in this research, research called the role of the enigmatic architectural components of museums on the perception of the audience is done for the first time, and the researcher is not in any of the scientific and academic bases and scientific institutions. , research and education both inside and outside the country could not find a similar example until the completion of this article; Therefore, to investigate and explain the effective components of enigmatic architecture on the audience's perception, it tries to answer the following question: How do the enigmatic architectural components of museums affect the audience's perception?

2. Theoretical Framework

2.1. Dictionary Definition of a Museum

The word museum is adapted from the Greek word "mozin", which means the abode of "mouse", the goddess of arts and crafts in ancient Greek mythology, which is pronounced museum in English and museum in French (Kaplan, 1976) around the decade of 1261 A.H. The French pronunciation of "Museum" also found its way into the Persian language (Golledge, 1999: 124). The International Council of Museums affiliated with the Organization, Cultural, Scientific and Educational Organization of the United Nations, in paragraphs 3 and 4 of its statutes, which is the most

comprehensive definition of a museum, says that a museum is a permanent institution without a material purpose whose doors It is open to everyone and works to serve society and its progress (Pirzadi and Alaei, 2018). The purpose of museums is to research the works and evidence left by man and the environment, to collect, preserve, and create connections between these works, especially to display them to examine spiritual productivity (Weisman, 1981: 189-204). The definition of a museum from the Omid dictionary is a collection of antiquities, a building where antiquities are kept or exhibited. In ancient Greece, it was the name of a place where they studied crafts and sciences, and it was also the name of a hill in Athens, where they built a place of worship and a special place for several of your gods that came into being and the muses were the daughters of Jupiter, who were considered the gods who inspired science, literature, art, music, and sculpture (Peponis et al., 1997: 341-358).

2.2. Duties of Museums

Every museum has three basic tasks - preservation and maintenance - 2 research and search; 3- communication (Dehghan, 2013). Preservation includes selecting and collecting cultural works and taking care of them. Research and search are the preparation of documents, which is considered a necessary platform for research and search. are taken, and among them, we can mention educational programs intended for different age groups, holding exhibitions, launching publications, creating websites, multimedia programs, etc. (Pir Babaei and Anuri, 2013: 8).

3. Characteristics of Museums

3.1. Complexity and Mystery

Complexity in an environment can affect arousal and performance in that environment. Excessive stimuli cause distraction and increase the fatigue of students, just as excessive simplicity is boring and destructive. Classrooms have more goals than just learning, so maintaining a balance of complexity will be the best approach (Klonk, 2009).

3.2. Signs

One of the most familiar problems in museum design is the pattern used for interior spaces. Some of the principles of sign design include the following: Using signs in prominent and important places throughout the building; Using specific colors to provide orientation information; Use some sort of tokenization system that gives visitors a sense of control over the environment, rather than relying on employees to answer their questions (Koseoglu and Onder, 2011: 1191-1195).

3.3. Navigation in the Museum

The complexity of museum environments is one of its inherent characteristics because they aim to display as many galleries as possible. One of the ways to overcome this complexity is inherent in creating signs for navigation in the museum because most people prefer to use signs rather than asking employees (Hart and Moore, 1973).

Fig 1 Examples of signs and routing maps (Klonk, 2009)

3.4. Exploration and Tourism

Another important topic is the way visitors explore and tour the museum. Visitors are biased towards the right side and as soon as they enter the gallery, they start looking and moving around from the right side (McQuail and Windall, 2009: 73).

At first, visitors see all the galleries, but as time passes, they become more selective and stop to visit fewer galleries (Weisman, 1981: 189-204).

People tend to use the first output they see, so people only see part of each gallery. Researchers call this pull of exits "exit stimulus" (Klatzky, 2003: 310-325).

Museum fatigue

Visitors miss many galleries without stopping to take a look. As a result, they will also miss many things that can be gained from visiting the museum (Porco, 2010).

Robinson used the term museum fatigue to express this phenomenon. Fatigue is caused by mental saturation as much as it is caused by physical activity (Weiss, 2013).

When visitors focus on a few galleries for a long time, they become so saturated with the museum environment that the galleries will become boring and boring (Levine et al., 1984: 139-157).

Fig 2 Museum fatigue in museum visitors (Weiss, 2013)

When excessive excitement is received from the museum environment, the effort is to ignore less important details and signs to pay attention to more important signs. This is a phenomenon that

happens in museum fatigue. Audiences become saturated with complex information and spend less and less time looking at museum details (Macleod, 2012).

Robinson believes that this fatigue can be reduced by creating a discontinuity in the gallery design. Discontinuity means a change in the rhythm of movement. For example, you can use a sculpture or furniture to make a space between the paintings in a gallery. Or who reduced the number of paintings exhibited (Hormuz, 2001: 42). Also, a label with large letters and an explanatory description would be helpful. In the case of interactive exhibitions, it will be effective to encourage visitors to participate in the show (Russell et al., 1989: 499-502).

Fig 3 (right) label with capital letters and descriptive description (Uebele, 2007)

Fig 4 (Left) Spacing between the works of a gallery with a space to pause and sit (Uebele, 2007)

The surrounding space is one of the best solutions in attracting the attention of visitors (Haq, 2001: 13). That is, the space that surrounds the displayed components of visitors can be increased when visitors spend time in a gallery by adding factors such as interactive components, stimuli involving several senses simultaneously, better lighting and texts that are more readable (Saegert, 1973: 254-260).

Fig 5 Examples of spaces containing the environment (Weiss, 2013)

3.5. Museum Audience

McQuail is one of the professors in the field of mass communication and media and one of the greatest theorists of mass communication and audience studies. He was born in London in 1935 and

his published scientific works are more than 15 book titles and dozens of scientific research articles. Among his works, his book Theories of Mass Communication was more popular and his world fame is from it (Mc Quail, 2006). So that in 2010, this work with the new title "McQuail's Theories of Mass Communication" reached the sixth edition and still has a special place in the publishing market. In an interview in 2009, McQuail expressed his interest in studying mass communication under the influence of the writings of Raymond Williams and Richard Hogarth mentions that four works of MacQuail have been translated into Persian (McQuail and Windall, 2009: 73).

Audience Studies written by Dr. Mehdi Montazer Ghaem in 2001, An Introduction to Theories of Mass Communication written by Dr. Parviz Ajjali, in 2003 and Models of Mass Communication translated by Goudarz Mirani in 2009 (Ajjali, 2009), and of course, An Introduction to the theories of mass communication by Dr. Hormoz Mehrdad in 2001, which is a free adaptation and translation from the second edition of McQuail's Theories of Mass Communication (Hormoz, 2001). Research in various fields can benefit from the audience's point of view. In this research, the target audience is the person addressed by the researcher. In general, in two or more communications, the person or persons to whom something is said is called the audience, the audience of the media is often not visible except in a scattered and indirect way, but in the present research, the audience of the researched media (the museum) is available and can be evaluated and it is a poll, according to what has been said, the audience can be defined as the audience is someone who voluntarily turns to the content of a certain media (Bakhshi and Davodiroknabadi, 2022). Audiences are classified into different types based on various indicators (A) Audience classification based on demographic characteristics This category consists of age, sex, occupation, number of family members, individual's position in the life cycle, family income, education, geographic location, religion, race and nationality. b) Categorizing the audience based on beliefs. On this basis, the audience perceives the world in different ways depending on their experiences, the effects of the environment, mental beliefs, etc. (Rasouli et al., 2023: 98). A phenomenon may have different meanings for different people and groups (Passini and Arthur, 2002).

4. Research Background

Ghobishavi, Kabuli in 2021 in the article on designing the interior architecture of the Abadan Museum with the approach of identity and inspiration from traditional architecture reached the following results: This study was carried out to design the interior architecture of the Abadan Museum with the approach of identity and inspiration from traditional architecture. In this research, it has been collected both by field method (questionnaire and library method). The measures of this research are questionnaire - field studies - documentary and library studies and experimental observations. To analyze the information, the methods (diagram-table-statistical, descriptive, and inferential) related to the topic of data have been used. The analysis shows that some of the original concepts of Iranian traditional culture and architecture have directly and indirectly influenced the design of the contemporary art museum in a way that these concepts overlap with the concepts of building formation.

Taheri, Rahimi Mehr in 2021 in the article "Museum design criteria with traditional architecture approach" said: Museums display some of the components of material culture and the objects in museums may not belong to that city only, so choosing a city to create A museum can have different reasons, but in general, the variety of works and objects in museums can indicate the growth of the civilization of that country. The main goal of the current research is to provide museum design criteria with a traditional architecture approach. The method of this descriptive-analytical research and the type of data collection is the library. In this way, to examine the concept,

characteristics, definitions, type, and style of museum design, as well as studies in the field of research approach, i.e. traditional architectural concepts, information was collected in the form of a documentary and field library, and this information was collected from various sources such as related books, research articles, Databases, etc. were extracted. According to the objectives of the research and investigations, based on the research findings for each of the principles of traditional Iranian architecture, including moderation in decorations, use of functional decorations, moderation in the size of the building, creation of multi-functional spaces, prohibition of aristocracy, etc.

In 2018, Pir Zadi and Alaei, in their article investigating the role of ambiguity in architecture, reached the following results: since the late 1980s, when postmodern and deconstruction topics were developed, postmodern architecture this time by accepting fundamental changes and new horizons from the perspective of visual stimuli such as; they found ambiguity and complexity. Thus, now in the 21st century, a new end has been opened. A new beauty is emerging in this world. Replacing the complex buildings instead of the silent and static buildings of the classical era, the architecture of the world, like this world itself, is becoming creative, self-changing, and unpredictable. Ambiguity in architecture in the modern and postmodern era was seen in the works of Peter Eisenman and Frank Gehry. In today's architecture, architects should not use visual stimuli in design. In this case, the ambiguity feature of the stimulus can be effective, which makes it impossible to get a superficial impression of the design or building in question; Which causes a kind of persuasion in the interpretation of today's critics, a kind of participation of the viewer with the said architecture to create new meanings. This ability in architecture is considered an attraction for the work and an important part of the building depends on it. On this basis, this research is investigated clearly and ambiguously. The method of conducting this research is library and internet research and analysis and interpretation of related materials.

Pir Babaei, Anuri in 2012 in their article "Mystery and Ambiguity in Islamic Architecture" stated: "The journey through the beauty created in Islamic architecture requires a spiritual journey to its mysterious valley." Where every pattern and color is a solid code of existential truth. A code that the audience reflects in the mirror of their existence, and the perceiver and the perceived seek unity. To understand the architectural concepts of this land, one must know and understand the cultural perspectives in which these concepts were created. In this regard, it is necessary to pay attention to the stability of essential concepts hidden in phenomena over time and to be inspired by them. The purpose of writing this article is to get familiar with the concept of mystery and ambiguity in literature, philosophy, and architecture, as well as to examine its relationship with human nature and its manifestations in Islamic architecture so that designers and perceivers can get closer to truth high values.

McLeod, Suzanne in 2012 in the book Making the Museum concluded that: In recent decades, many museums, galleries, and historical sites around the world have made an unprecedented large-scale investment in the infrastructure of their cultural sites, especially museums in terms of building renovation. And they have done the interior. The creation of numerous purpose-built new museums shows that there has been a fundamental re-evaluation of the processes of designing and shaping the museum space. The interior space of the museum and its interior architecture need to examine the formation of its architectural infrastructure to organize them in the museum through the examination of the elements of the interior space and direct its potential to connect to the deepest level of communication with human perception and imagination.

Klonk, Charlotte in 2009 in the book Spaces of Experience: Interesting Studies on Art Gallery Interiors explores the changing ideals and design practices of museum gallery interiors in Europe and North America from the 18th century to the end of the 21st century, provides detailed

information on the display methods in these spaces, which include: background wall color, light, furniture, height, and space creation to display artworks. The researcher shows that scientists such as Hermann von Helmholtz and Wilhelm Wundt, according to the theories of perception, consider the new ways of creating spaces for exhibitions and museums as important as the changing ways of exhibiting in art galleries and museums. As Michael Bazandal called one way of seeing elements in the space, due to the effect of this new method in interior decoration, information display showcase.

5. Research Methodology

Considering that the current research methodology is a mixed methodology, which means that first a qualitative method is used to calculate the dimensions and components of the research, and then a quantitative method is used to measure the enigmatic architectural components of museums in the perception of the audience, the research paradigm is also a paradigm Pragmatism governs the combined methods. The present research method is developmental-applied in terms of type and has a nested combination method in terms of method type. To answer the research questions, the nest-to-nest research method of qualitative and quantitative type is used.

In this research, in the qualitative part, open and semi-structured interviews were used in the form of direct questions and indirect questions. The semi-structured nature of the interview is due to the approach of this research.

The interview with the professors first started with general questions and gradually progressed based on data analysis with deep persistent and clarifying questions regarding the role of the enigmatic architectural components of museums on the audience's perception. The basis of the design of the questions was the criteria extracted from the subject literature, and the productivity of the questions was evaluated in a pilot study. The interviews were conducted individually. The interview time was from 10 to noon and from 18 to 21 in the evening in the summer of 2022. In qualitative research, interviews with people continue until information saturation is reached; Therefore, the coding steps of the interviews were done immediately after each interview; This means that the process of interviewing and analyzing the role of enigmatic architectural components in the design of museums was zigzag. In this research, the maximum number of participants was 46 people, and the ceiling of the sample size was not determined at the beginning of the work; The basis for completing the research was information saturation, which was not added to the number of research participants due to the saturation of information from the interview of the 46th person. All the conducted interviews were implemented and analyzed individually with qualitative content analysis methods, and the results were compiled by Atlas ti version 8 software. The characteristics of the interviewees are given in Table 1.

Table 1 Expertise of interviewees

Interviewees	Number	The cumulative frequency	Accumulation percentage
Professors of architecture	16	34.8	34.8
Professors of landscape architecture	9	19.5	54.3
Professors of interior architecture	12	26.2	80.5
Urban design professors	9	19.5	100
Total	46	100	-

A questionnaire with a 5-point Likert scale is compiled in a small part of the obtained variables and distributed among 384 space users (addressees and visitors). Sampling to determine cluster age groups and in each age group is random. A cluster includes age groups 20-40, 40-60, 60-80. The

features and characteristics of space users are listed in the table below. For the adequacy of the sample, the upper limit of the Morgan table, which is 384, has been used. At the beginning of the overall goals (the goal of realization and review) and the goals of the component (the goal of posing each question), the concepts, themes, specialized categories, and keywords of the research are specified and the explanation of each of them is attached to the space users (audiences and visitors) was placed. Then, if there was no ambiguity about these specialized words for the respondents, a closed-ended questionnaire was given to them, which included questions about the purpose and research question. The questions of the questionnaire were designed in a general way, far from being sophisticated and detailed.

Table 2 Characteristics of space users to whom the questionnaire was assigned (source: authors)

Number of sample people	384 people according to Cochran's formula	The number of people in the community
frequency (percentage)	Number	Those questioned
22.66	87	Female
77.34	297	Man
Male (person)	Female (person)	Gender of each group
71	57	20-40
66	62	40-60
81	47	60-80
education		
%	Number (all age groups)	section
3.12	12	High school
9.63	37	diploma
33.6	129	Bachelor's degree
40.1	154	Master's degree
13.55	52	PH. D.

The validity of the tool is used with the formula CVR=0.76 and Cronbach's alpha for reliability with a rate of 0.78.

6. Study Area

The location of the Museum of Contemporary Arts is on the street where most of the embassies in the capital are located. This museum is located on Africa Street, 22 embassies. The presence of an embassy in a place increases the traffic of foreign people in it, because ambassadors, businessmen, employees, and their family members live in the embassy during their mission and are constantly in the neighborhood for diplomatic affairs, official meetings, and daily affairs. are. On the other hand, foreign tourists and businessmen sometimes need to go to the embassy of their country during their stay in Iran to do various things, and this will increase the number of their visits. In the macro-politics of museums, tourists and people from other countries always have an important position among museum visitors, and this is intensified in the case of art museums because:

In most people, there is an inherent desire to visit the cultural and artistic works of other countries. The ability to turn each one of them into ambassadors to promote Iran's rich art in their own countries. People's increasing desire to watch and buy modern works of art. Ease of group visits that are usually arranged by schools' educational centers and tourism institutions. The possibility of transferring information and using the facilities and capacities of museums in the region, to increase productivity at educational levels, restoration of works, sampling, storage, simultaneous presentation, exchange of specialists, determining the originality of works, etc.

Fig 6 Museum of Contemporary Art

7. Research Findings

7.1. Qualitative Findings

Summarizing all the codes extracted from the interviews conducted in connection with the role of the enigmatic architectural components of museums on the audience's perception was done as follows.

a. Open Coding

At this stage, the researcher tries to recognize the hidden concepts by reviewing the collected data set. Finally, the information obtained from the interviews with professors and experts, and 27 concepts related to the role of the enigmatic architectural components of museums on the audience's perception were extracted through open coding. The main parts of the resulting space became the basis of the discussion regarding the dimensions of the role of the enigmatic architectural components of museums on the perception of the audience and the questions raised in this regard. Then, the classes formed in open coding were compared with each other, and the relationship with their subclasses was checked. Similar classes were merged and grouped into one central class.

b. Extraction of Descriptive-Interpretive Codes in Open Coding

At this stage, first, the text of the interview was studied in detail and word for word in search of themes related to the research questions, and at every point of the interview where a theme was found, that part of the interview was selected and a descriptive theme was attributed to it. And after the descriptive coding of the interview text, their meanings were interpreted. Below is the descriptive and interpretive coding of some interview texts.

Table 3 A selection of conceptual codes extracted from the text of the interviews (source: authors)

Propositions taken from the text of the interview and interpretation	Extracted conceptual code
The time visitors spend in a gallery can be increased by adding factors such as interactive components, stimuli involving multiple senses at the same time, better lighting and texts that are more readable.	readability of space
Discontinuity means a change in the rhythm of movement. For example, you can use a sculpture or furniture to create a space between paintings in a gallery. Or the one who reduced the number of exhibited paintings. In the gallery, the object that is displayed in the best place has a special priority and from the perspective of architecture, it may be relied on more, so it should be noted that architecture is a determining factor in the environment and it should not have a marginal role. It is believed that the existing relationships between multiple objects and between objects and space create a set of shapes and sizes, proportions and distances... which are basically subject to the same criteria of design psychology that art objects follow.	Distances of works and objects
Spatial flexibility and organization of man-made space and change in it to achieve new conditions, needs and applications should exist in museums.	Flexibility of space
Creativity is done in the connection and combination between two small components of the space or two large sets alike. In this architecture, spaces do not lose their independence when combined while being dependent. The plan and purpose of the composition are already known and it is clear that the building is a museum. In other words, since the pattern is known, the task of the components in the composition is known. Iranian architecture has pre-prepared physical elements and forms for various spaces. The conditions of the spaces may be as follows.	Creativity in how to connect spaces to each other
The museum can be considered an example of sociology, because in a society that has special rules and offerings, the museum is one of the few environments available for free presence. Since sociology deals with human relationships and these relationships are often so complex that it is very difficult to identify their nature, the best we can do is to consider a few main axes and classify these relationships within their framework in order to identify patterns and Get 3D practical elements.	Addition of three-dimensional elements
Basically, architectural design depends a lot on people and their spatial needs. Humans have different body dimensions due to differences in their age, sex, and body structure or due to disabilities, which usually average human dimensions are used for design. Appropriate design depends on having correct statistics of human body sizes and determining the range of their changes during various activities. Objects have different states at different heights, and because usually the viewer always looks at the object while standing, they place the objects at eye level.	Proportions and spatial scale
Not only the appearance in the architectural design of the museum, but also its interior decorations should be completely consistent with the common architectural methods in the society, and at the same time, the museum building should also include aspects of the art and history of the society according to the rules of the museum architecture design.	The way of communication between decorations and the mentality of people
In the architectural design of the museum gallery, rooms with equal dimensions become too	Graphic

uniform. By creating diversity and proportionality in dimensions, as well as by using different colors on the walls and floors, unconscious motives can be created to attract the visitor's attention. The color and material of the wall and flooring in the exhibition halls are very important in the architectural design criteria of the museum. In the past, they chose white color for the walls, because they believed that objects show their nature better against white color. But today, experts believe that the works look darker against the white color. Therefore, colors are chosen for the walls that show their nature better against the white color. To deal with the uniformity of the halls, you can use lighter colors in the places where the light is less or make the wall where the light shines on it a little brighter. The material of the walls of the architectural design criteria of the museum should also be in accordance with local and climatic building conditions. Choosing the right flooring is also one of the important points in the architectural design criteria of the museum, because the visitor is on the move all the time. In general, in the design of movement paths, it is necessary to observe two things: 1) avoiding restrictions with interruptions; 2) Avoiding high level differences.	capabilities of the floor spaces
Designing spaces in a straight-line causes uniformity, so it is suggested not to place a window in front of the door; Because the visitor will be dazzled as soon as he enters. Regarding the shape and size of the rooms, in order to attract everyone's attention, their size should be different and proportional to the dimensions of the exhibition. The dimensions of the rooms should be proportional to the lighting system. Ceiling lighting has more variety, because the lighting can always be adjusted according to the size of the room.	Harmonious relations of space and light

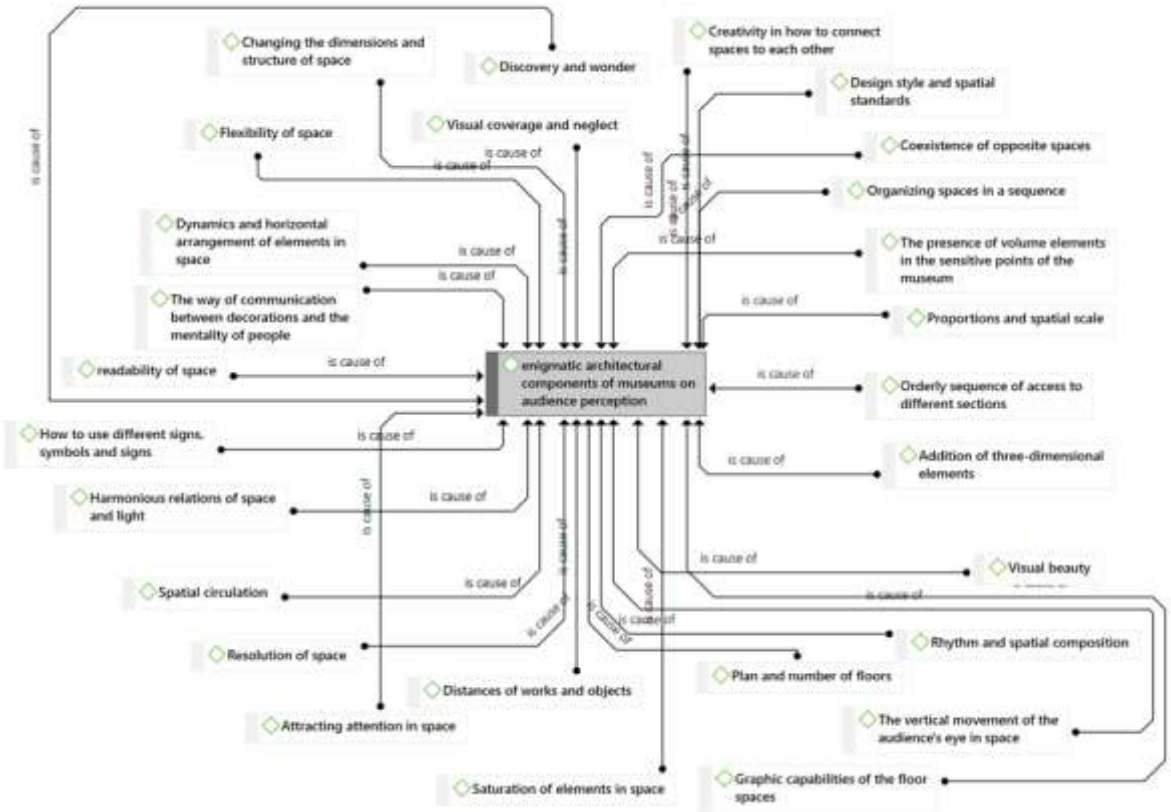

Fig 7 Components extracted from the interview text

7.2. Quantitative Findings

a. Multivariate Regression Analysis

A correlation matrix is used to determine which type of regression is required for this type of variable data. The results show that there is no linear relationship between variable data. In Figure 8, each house of the correlation matrix of the factors shows how the data is distributed in different situations. If these components have a linear interface, the points in all houses follow the same shape. As it is known, this matrix follows several distinct multilinear, linear, and parabolic states.

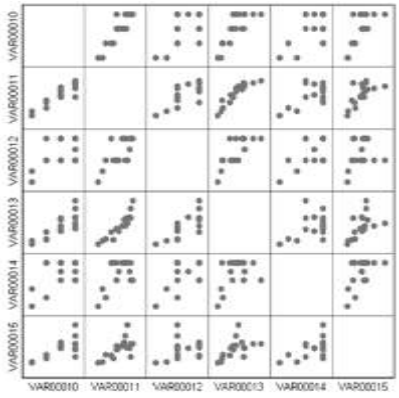

Fig 8 Correlation matrix of factors

In the multivariable regression, the step-by-step method has been used to enter all the independent variables to explain the role of the enigmatic architectural components of the museums on the perception of the audience. Durbin-Watson's statistic value is equal to 1.99, which shows that the residuals are not correlated and are independent.

Table 4 Step-by-step regression model of independent variables to explain the role of enigmatic architectural components of museums on audience perception

Model	Correlation coefficient (R)	R Square	F test value	T test value	Significance level	Constant
Step by step	0.372	0.138	37.224	2.884	0.000	1.955

According to Table 4, the correlation coefficient of the step-by-step regression model of the studied variables to explain the role of the enigmatic architectural components of museums on the audience's perception is equal to 0.372. The value of F indicates that the regression model of the research is a suitable model for explaining the dependent variable (audience perception). Also, the amount of constant value shows that if the influence of independent variables is controlled, the base value of audience perception is equal to 1.955. It should be noted that surprise and discovery were the first variables that entered the model and are most closely related to the museum's enigmatic architecture. The organization of spaces in a sequence was the last variable that entered the model and has the least relationship with the enigmatic architecture and the effect of this design on the audience's perception. The t value and the significance level indicate the relative importance of the presence of each variable in the model. Thus, if the absolute value of t value is greater than 2.884, its error level will be smaller than 0.01. As a result, the desired variable has a statistically significant effect in explaining changes in the dependent variable. Based on this, the variables

included in the model have a significant effect on the role of the enigmatic architecture of museums on the audience's perception, and the effects of other variables are almost constant. In the following, we will seek to what extent each of the enigmatic architectural variables and also the simultaneity of the two will affect the audience's perception. In Table 5, it is shown for each variable that the coefficient of determination indicates the contribution of each variable in the desired dimension, and this number varies between 0 and 1.

Table 5 Step-by-step regression of the enigmatic architectural components of museums on audience perception

	Variable	R Square	F	B	β	T	meaningful	Degrees of freedom
The components of the role of the enigmatic architectural components of museums on the audience's perception	Harmonious relations of space and light	0.467	527.222	1.000	0.781	46.522	0.000	453
	The vertical movement of the audience's eye in space	0.615	405.122	1.000	0.732	42.152	0.000	453
	Coexistence of opposite spaces	0.383	217.343	1.000	0.662	40.223	0.000	453
	Dynamics and horizontal arrangement of elements in space	0.746	199.943	1.000	0.648	38.239	0.000	453
	Changing the dimensions and structure of space	0.762	201.612	1.000	0.664	8.958	0.000	453
	Visual coverage and neglect	0.946	643.623	1.000	0.662	11.134	0.000	453
	Attracting attention in space	0.952	849.683	1.000	0.652	18.441	0.000	453
	Saturation of elements in space	0.846	349.603	1.000	0.665	19.144	0.000	453
	Distances of works and objects	0.657	184.945	1.000	0.483	49.173	0.000	453
	Design style and spatial standards	0.546	276.748	1.000	0.464	47.963	0.000	453
	Flexibility of space	0.795	199.943	1.000	0.452	46.226	0.000	453
	readability of space	0.893	499.034	1.000	0.463	47.228	0.000	453
	Visual beauty	0.658	523.034	1.000	0.472	25.288	0.000	453
	Discovery and wonder	1/000	147.258	1.000	0.661	45.256	0.000	453
	The presence of volume elements in the sensitive points of the museum	0.462	321.564	1.000	0.452	41.552	0.000	453
	Orderly sequence of access to different sections	0.896	492.371	1.000	0.401	21.356	0.000	453
	How to use different signs, symbols and signs	0.745	471.658	1.000	0.411	58.321	0.000	453
	Resolution of space	0.245	650.987	1.000	0.421	19.694	0.000	453
	Rhythm and spatial composition	0.455	542.960	1.000	0.589	24.879	0.000	453

	Spatial circulation	0.654	214.362	1.000	0.521	44.587	0.000	453
	Proportions and spatial scale	0.756	752.382	1.000	0.542	48.566	0.000	453
	Graphic capabilities of the floor spaces	0.645	699.301	1.000	0.545	23.658	0.000	453
	Addition of three-dimensional elements	0.425	421.115	1.000	0.411	12.231	0.000	453
	Plan and number of floors	0.415	411.325	1.000	0.309	16.897	0.000	453
	Creativity in how to connect spaces to each other	0.311	161.415	1.000	0.517	36.458	0.000	453
	The way of communication between decorations and the mentality of people	0.145	568.211	1.000	0.607	24.564	0.000	453
	Organizing spaces in a sequence	0.265	475.214	1.000	0.619	29.325	0.000	453

b. Correlation

Two-Sample Kolmogorov-Smirnov Test is used to check the parametric and non-parametric type of data.

Table 6 Kolmogorov-Smirnov test to check the normality of the variables of the role of enigmatic architecture of museums on the audience's perception.

Variable	Average	The standard deviation	Z Kolmogorov Smirnov	p
The role of enigmatic architecture of museums on audience perception	27.77	3.23	0.793	0.485

In Table 6, it can be seen that Kolmogorov-Smirnov's test for audience perception score is significant (p=0.555) and therefore the enigmatic architectural variables do not have a normal distribution and non-parametric analysis can be used for them. In Table 7, in the correlation section between the components of the enigmatic architecture, discovery and surprise with a value of (0.883) and the dynamics and horizontal arrangement of elements in space with a value of (0.873) and the harmonious relationships between space and light (0.871) An increase of one unit of these components can increase the other components by the amount of the mentioned numbers (correlation coefficient).

Table 7 Spearman's correlation of the enigmatic architectural components of museums on audience perception

	Variable	The correlation coefficient	meaningful
role of the enigmatic architectural components	Harmonious relations of space and light	0.871	0.000
	The vertical movement of the audience's eye in space	0.481	0.000
	Coexistence of opposite spaces	0.745	0.000
	Dynamics and horizontal arrangement of elements in space	0.873	0.000
	Changing the dimensions and structure of space	0.846	0.000
	Visual coverage and neglect	0.871	0.000

	Attracting attention in space	0.831	0.000
	Saturation of elements in space	0.853	0.000
	Distances of works and objects	0.873	0.000
	Design style and spatial standards	0.623	0.000
	Flexibility of space	0.536	0.000
	readability of space	0.620	0.000
	Visual beauty	0.465	0.000
	Discovery and wonder	0.883	0.000
	The presence of volume elements in the sensitive points of the museum	0.715	0.000
	Orderly sequence of access to different sections	0.711	0.000
	How to use different signs, symbols and signs	0.843	0.000
	Resolution of space	0.711	0.000
	Rhythm and spatial composition	0.662	0.000
	Spatial circulation	0.711	0.000
	Proportions and spatial scale	0.451	0.000
	Graphic capabilities of the floor spaces	0.465	0.000
	Addition of three-dimensional elements	0.546	0.000
	Plan and number of floors	0.245	0.000
	Creativity in how to connect spaces to each other	0.788	0.000
	The way of communication between decorations and the mentality of people	0.421	0.000
	Organizing spaces in a sequence	0.365	0.000

8. Discussion

According to the findings of the research, discovery, and surprise are the most important factors, dynamics and horizontal arrangement of elements in space is the second factor, and the harmonious relationship between space and light is the third factor affecting the perception of the audience in the enigmatic design of museums. The basic principle of spatial composition, unplanned perception of space, and people's analysis of the morphology of presence and encounter in the study museum, significantly allows people to seek a sense of wonder and discovery higher than the planned space that the museum is for adapting to meet them and it leads to searching for the mysterious effects of museum collection space related to galleries and in the sequence of galleries. Also, what creates the mysterious feeling of the space is the distinction based on the geometric features of the interior spaces of the museum. In the studied contemporary art museum, a network should be created so that a regular order of viewing cannot be created. These findings are similar to Klatzky's study in 2003 (Klatzky, 2003). Also, there should not be the same conceptual arrangement of objects. As a result, it maximizes random events in the movement pattern and surprise; Because the arrangement of space and objects in one direction support each other, and by doing this, they strengthen the addition of the message and reduce the unexpected to effectively convey the desired concept; Therefore, it can be argued that in these cases, the space shows rather than presents, the way the objects are placed together represents something other than the objects themselves. This follows that in museums with a long path model, through the arrangement of spaces and objects, the designer controls the information and reduces the exploratory aspects of the meeting both in terms of 3D perception and intellectually.

Arousing the audience's sense of exploration of the works of museums, increasing their interest in improving their level of knowledge about the works, discovering and recognizing various values, and the desire for emotional values in the definition of this category of historical works, all show the audience's reaction to discovering hidden meanings and messages about each It is the effect of

museums that the ultimate goal of establishing museum spaces and the mission of carrying out any conservation intervention.

What defines a museum as a type of space is two spatial elements that are repeated enough to be recognized as representative themes: the first is the spatial organization in the visual sequence and the collection space, and the second is the return space in the sequences. These important spatial aspects create two types of interfaces that characterize this museum as a type of building: on the one hand, between visitors and curators, and on the other hand, among visitors. Organizing spaces in a sequence is one of the principles of museum design and a tool to create the movement of visitors as well as the arrangement of objects.

In museum architecture, light has a function beyond illuminating the space and is considered by designers as one of the main components. Light is one of the most important qualitative and symbolic factors and has a special place in museum architecture in terms of practical function. However, light is used symbolically by using architectural genius and paying attention to the three factors of aesthetics, concept, and meaning, which we call lighting.

9. Conclusion

Museums are not just galleries for viewing objects and historical works, and today in the famous museums of the world, various techniques are used to introduce objects, museums are the most obvious display and exhibition of human cultural heritage. Considering the importance of the destination and the preservation of culture and preservation of cultural artifacts, it is also very important to comply with some standards in the museum. In the proposed topic, new solutions were presented for how to organize the interior space of museums so that more audiences can be attracted to these cultural and artistic places, and it has been mentioned as a suggestion for its application in the interior architecture of museums, which has received enough attention so far. has not been the basis of the above theory and the inspiration of the researcher is the capabilities and aspects of the interior spaces of museums, which have been considered differently from the previous learnings and existing sources, and prompted the researcher to propose a new way in the art of interior architecture and design while examining these aspects. The interior of museums should be effective through organizing the interior space. In the studied museum, it has been concluded that creating a sense of discovery and wonder by the audience in the work of art stimulates feelings and emotions in the perceiver, and these various effects together with the objective elements of the work of art form a unified and uniform experience.

The arrangement, order, and arrangement of elements and forms in the interior of museums is an effective factor in attracting and quantity audiences. In this way, the order of the display objects depends on the visitors and the characteristics of the display objects. In the relationship between visitor and display object, the lower the ratio of visitors to display objects. The possibility of concentration and that every visitor can communicate freely with the display object increases. Also, in a group visit, it is not possible to come in close contact with the shown object without causing trouble for the other members of the group. Visitors should be placed around the display object in such a way that all their distance to it is equal and can attract their audience.

A major part of the impact of a museum's work is due to the correct use of its lighting. In museums, lighting is more than shining light on objects, just to show them off. Lighter and darker parts within the frame help to build the composition of each shot, thus directing the audience's attention to specific objects and actions. A part of the work that receives more light can draw the viewer's eye to an important point, while the shadow hides the details. Lighting helps to bring out the texture of the work of art: the lines on a work, the decorations used, the subtleties, the textures,

the brightness of a piece, etc. Also, lighting shapes the overall composition of the work. Lighting can affect the audience's sense of the shape and texture of displayed objects.

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