

## Representation of the physical structure of the Persian garden in painting and garden carpets in the Safavid period

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### ABSTRACT

In the Iranian mentality, the garden has an all-encompassing image; in such a way that the ideal garden has penetrated almost all the arts and has been proposed as a part of the cultural identity of Iran. The Persian garden is one of the manifestations of Iranians' belief in the promised paradise, and this factor has highlighted the presence of paradises in works of art. For this reason, different types of Iranian art have paid special attention to the representation of the Persian garden. Iranian carpets and painting are two areas that have dealt with this issue abundantly. This research is a qualitative research with a comparative approach. The method of the present study is descriptive-analytical, and information analysis has been done inductively. Research information has been collected through library studies and documentary methods. The statistical population of the study was selected from Iranian gardens, garden carpets and paintings of the Safavid period. The statistical population of this research consists of Persian gardens, garden carpets and paintings of the Safavid period. From each of them, five items were selected as the sample population. Four samples of gardens from Isfahan and one from Kashan; four samples of garden carpet from Kurdistan (northwestern Iran) and one from Kurdistan and all samples of paintings from the Safavid period are randomly considered for analysis. The findings show that the motifs and form structure in the garden carpets and paintings of the Safavid period have the same design, role and spatial geometry as the Persian garden. The pattern of four gardens, the square distance and the openness of the main landscape in a rectangular shape in the Persian garden have been observed in the design of garden carpets and paintings. Considering what is in the main structure of the Iranian garden design and comparing it to that of painting and garden carpets, we conclude that the composition of the structures and elements used in the two areas of painting and carpet weaving are similar and corresponds to three types of structure and geometric principles of the Persian garden (ie, uniaxial, two axes perpendicular to each other and three parallel elongations).

**KEYWORDS:** Persian garden, garden carpet, painting, Safavid period

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## **1- Introduction**

The history of garden and garden decoration dates back to the arrival of the Aryans and until the Sassanid era, it had a continuous presence in Iranian culture and art. With the arrival of Islam in Iran, a fundamental attitude was formed in the beliefs of Iranians. In the Holy Qur'an, God has promised paradise to the pious and has described it in several verses. Muslim architects, in view of these descriptions, set out to build paradise gardens on earth, which can be seen in the golden age of the Safavids, especially in the garden of Isfahan. Persian garden has had a significant presence and influence in other areas of Iranian art in formal and simultaneous semantic forms. the garden is a symbolic concept of paradise in Iran and has a special geometry in which streams, plants and pavilions are divided in various ways; The manifestation of paradise can be seen in other arts, including carpets and painting; Therefore, research on the impact of the concept of paradise on the art of gardening, carpets and painting is important (Hamzehnejad, 2014).

According to the research problem, it can be seen that the Chaharbagh pattern, as one of the most common patterns of Iranian garden formation in Iranian and Islamic culture, has been considered by gardeners and artists of the Safavid period. Studies have shown that no comprehensive research has been done on the composition of the Iranian garden in the two fields of painting and garden carpets. According to the common pattern in the formation of the Iranian garden, it is necessary to take a closer look at the main structure of the garden and the patterns used in these two visual areas. Therefore, this study is an attempt to comprehensively study these two visual fields in order to highlight the main structure of these two visual arts left over from Safavid artists. Garden in carpet and painting is one of the oldest cultural phenomena of Iranians in the course of history. There is evidence that these two fields of art are closely related in terms of the concept of the garden. In Iran, important relics of old gardens have been left, at least from the Achaemenid and Sassanid periods before Islam, as well as from the patriarchal, Timurid and especially Safavid periods, (Zarei 1390). In the design of garden carpets and paintings, in addition to the general form of the Persian garden, streams, plots and the central pond are regularly placed in the work, and usually the two main axes in the form of two streams of water divide the carpet into four parts(Mahmoudinejad, 2009).

The necessity of the present study is to study the main structure of the garden in the carpets and paintings of the Safavid period in order to deal with the differences and similarities in the field of gardening. Therefore, following the studies, including five samples of carpets, five samples of paintings and five samples of garden were randomly selected as the statistical population from the Safavid period. By analyzing these samples using a structuralist approach and the results obtained from reading garden drawings and carpets, the existence of similarities in these two visual areas and the relationship between their influences on each other is clearly determined. The composition of the Persian garden taken from the Chaharbagh pattern as the most common pattern in the formation of the Iranian garden and the emphasis on the centrality of the water supply network and the symmetry and coordination between the elements in the garden can be clearly seen in the garden paintings and carpets of the Safavid period.

This research is organized in three parts as follows: First, with reference to reliable sources about Iranian gardens, the elements and structure of the Persian garden in the Safavid period have been studied. Then, the emergence of elements and structure of Persian garden in Safavid painting and carpets has been studied. Finally, a general classification of common and differences features among these three types of art has been presented.

## **2. Research background**

So far, several books and articles have been written about the Persian garden and its connection with the art of carpet weaving and painting. Abolghasemi, in his book "Principles of Iranian garden design" has dealt with the role of the garden, its formation and the main structure in the Iranian garden (Abolghasemi, 1992). Wilber in his book "Persian Gardens and Garden Pavilions" has studied Persian gardens in the Timurid and Safavid periods (Wilber, 2004).

Chitsazian (2009) in an article entitled "Recognition of the pardis in the symbolic context of architecture and carpet", has dealt with the harmony of the Iranian garden design with Iranian ritual beliefs and the coordination of the overall design of garden carpets with the overall structure of the Iranian garden. This article examines any carpet that is based on engineering order and has a geometric order.

Shahcheraghi (2008), in a study entitled "Rereading the architectural system of the Persian garden in the Iranian carpet-garden with emphasis on the ecological theory of environmental perception" Studies the garden and the effect of the Iranian garden on peace of mind on the ecological theory of perception . He has also studied the formation of the archetype or reference pattern of the Persian garden "Chahar Bagh", which corresponds to the concept of surface in the composition of Islamic Iranian visual arts motifs.

Studies have also been done in relation to the concept and content of the Iranian garden, the following of which are the most important:

Abed Doust (2009), in an article entitled "Various forms of the tree of life on Iranian carpets" has dealt with the role of the tree and has pointed to its sanctity on garden carpets.

Mirza Amini (2011) in another article entitled "Study of the symbolic role of Medallion in Iranian carpets" deals with the role of Medallion, mythical and symbolic beliefs of Rosary and Pool (Houz), and believes that its evolution in its present form is a reflection of mentality, thought and aspirations of Iranian Muslim artist in the manifestation of the Garden of Eden and a spiritual space using abstract motifs.

Some sources have also examined both content and structure:

Ansari (2012) in an article entitled "Comparative study of the painting of the second school of Tabriz and the Persian garden in the Timurid and Safavid period" compares the characteristics of the Persian garden in the Timurid period with the painting of the Tabriz school, and states that most of the garden features In the painting are under the influence of the characteristics of the Persian garden in the Timurid period.

Teymouri Gardeh (2014) in an article entitled "Viewpoint of the main element depicted from the garden in the paintings showing the garden of Iran", has studied the main element in the Iranian garden with the most manifestation in garden paintings. He has studied the emergence of landscape as the most manifestation of the Persian garden in painting and how it occurs in the form of three forms.

Mahmoudinejad (2007) in the article "Garden carpet, from the role (carpet from the throne) to the design (throne on the carpet)" has dealt with the allegorical and symbolic concept of paradise and paradise gardens, as well as garden

carpets, in accordance with the architecture and design of the Iranian garden. The main form of Safavid garden carpets has been introduced as having elongation along the carpet, divisions and main axes of the Persian garden next to trees and flowers.

In this article, by exploring the carpet and painting of the Safavid period and examining the similarities and differences between them, the author has tried to investigate the effects of the elements and structure of the Iranian garden on the formation and organization of these two artistic fields.

### **3. Research method**

The present study is inductive and descriptive-analytical. Data analysis is detailed and qualitative. In the inductive method, the researcher draws a general conclusion based on the facts that he obtains through direct observation. On the other hand, the inductive method is reliable only when the research group is small (Blaki, 2013). In this research, it has been tried to collect and study data and variables by relying on documentary and library studies and by comparative comparison method and case study. In the reviews of the books "Iranian Carpet Art" and "A Look at Iranian Art" (Volume 12), 5 garden carpet designs from the Safavid period have been selected. In the meantime, 5 drawings from the book of Sultan Mohammad and his school and imaginary gardens have also been studied. Through this, the influence of the Iranian garden on the two fields of painting and carpet is explained.

### **4. Theoretical foundations**

#### **4.1. Garden design in carpets and paintings of Safavid period**

From the Sassanid period, painters began to illustrate the freshness and flowery landscape of spring on large screens. Fabrics woven in later periods have floral designs and paintings, but it was during the reign of Shah Abbas that it became common to make carpets with floral patterns. These carpets were called Chaharbagh(four garden) because they reflected the normal division of the garden into four parts. This division is related to the main and subsidiary axes (Wilber, 2004: 32). An allegorical concept of paradise and paradise gardens can be seen in Persian carpets, especially Safavid carpets, which are inspired by gardens and paradises of the Islamic era and show the great effort of the Iranian carpet designer in depicting and embodying high spiritual and heavenly concepts. Carpet with garden design was especially popular in the Safavid

period. Interestingly, this period is referred to as the glorious period of Iranian gardening art (Isfahan Chaharbagh), which also has an allegorical concept of paradise (Heshmati Razavi, 87 1387: 54). Therefore, the first effect of the garden in the carpets and paintings of the Safavid period was the design of Chaharbagh(four gardens), which is manifested in carpets and paintings in the form of four parts and main and secondary axes.

#### **4.2. The formal structure of the Persian garden**

Garden definition: By referring to Amid culture, the word "garden" has a specific and limited meaning that indicates a place or space covered and surrounded by trees. If we look more clearly and interpret the mythology of the word, the word Ferdows is manifested in the mind.

Scope and shape of the garden: When man began to garden, he not only fell in love with nature, but also revitalized it with irrigation and the generous distribution of scarce water. The emergence and life of these gardens depends on the flow of water. The water pressure, which is directed from the distant mountains to the gardens, is cleverly doubled by combining the two streams, and this increase in pressure causes the eruption of water from the central pond of the garden, which determines the area and shape of the garden. The Persian garden, more than anything else, tells the story of the journey of water and the emergence of life after fighting drought and death (Khansari, 2004: 10). The shape of the garden in Iran has long been in proportion to the nature and the weather and the amount of water. The phenomenon of gardening has existed in our country since ancient times. Patterns of ponds, water and trees on the pottery found in Susa and other artifacts show the importance of the garden in the lives of people accustomed to the dryness of the desert and the scorching sun in our ancient land (Naima, 2006: 3). Therefore, the art of gardening and landscaping in different places is inspired by indigenous culture and is influenced by climatic conditions and intended applications and lives in line with different goals.

Persian gardens were built either on flat land, called plain gardens, or on sloping land that allowed the garden to be made more beautiful with waterfalls and trees (Naima, 2006). In the case of land, which is one of the main elements of the garden, in addition to the general shape and position, other factors and characteristics such as soil type, slope and surface difference, irrigation and fertility are also important. One of the main reasons for constructing a garden on

sloping lands, of which there are many examples, is the possibility of water moving through the garden naturally. The Persian garden may be built on a surface with a gentle or steep slope. If placed on a steep slope, the shape of the garden is usually affected by the shape of the ground and is built on several levels. In this case, it will be possible to create a waterway and waterfall (Mahmoudinejad, 2009).

The main structure of the Persian garden: The garden is of three types in terms of structure and composition:

A) Geometric garden: The composition of divisions and their general shapes is within the framework of mathematical rules and regulations and is a function of geometric system, straight lines, regular shapes, exact angles, proportional dimensions, regular paths, guiding seals, calculated views and clear presence of regular water network.

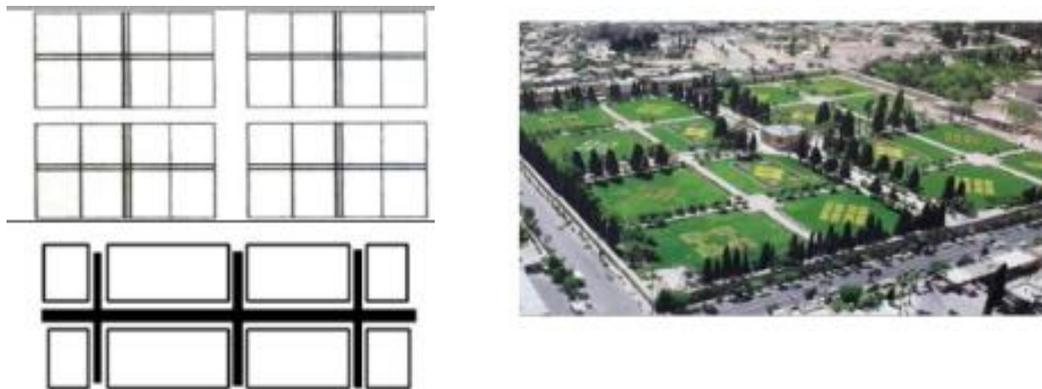


Figure 1 :A view of the geometric garden (author and [tps: //scontent.cdninstagram.com](https://scontent.cdninstagram.com))

B) Landscape garden : It is a free and eye-catching combination.

The smoothness of the lines, the variety of surfaces, the rotating shapes, the wavy paths, the cluttered views, the irregular or irregular axes, the change of many directions, the mixing of factors, the variety of adjacent details, are the characteristics of this type of gardening.



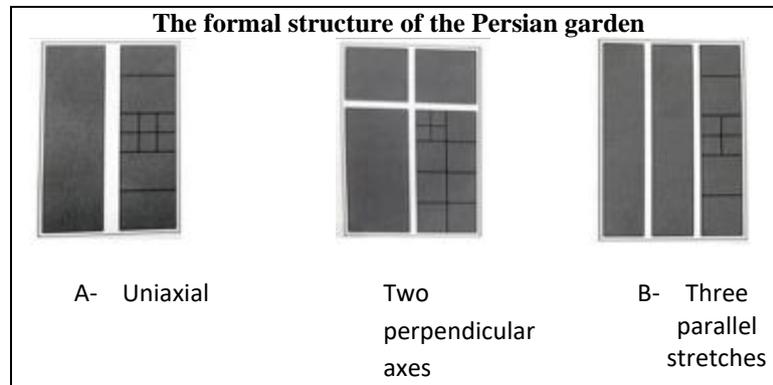
<http://www.leonardoda->) Figure 2: View of the Landscape Garden (Storehead Garden). March 2015)  
([vinci.org/Mona-Lisa-\(La-Gioconda\)-c.-1503-05.html](http://vinci.org/Mona-Lisa-(La-Gioconda)-c.-1503-05.html) (Accessed 10

**C) Combinatory: It is a combination of two types of geometric and landscape (Abolghasemi, 1371: 6-7).**

Geometry of Persian garden: In the geometry of Persian garden, regular and square divisions of plots can be seen, the history of these divisions dates back to thousands of years ago. Apart from elongated rectangular and square shapes, octagonal, kashkoli and quadrangular shapes have also existed in garden design (Naima, 2006: 34). Paying attention to geometric shapes and creating square shapes has been of special importance to simplify the garden components and determine the exact location of the trees so that the rows of trees can be seen from all sides. The design of the Iranian garden is based on the special attention and use of the square in its overall composition and components, and this is a distinctive feature of the Iranian garden that has long been considered by others (Naima, 2006: 21).

Undoubtedly, one of the best facial and meanings expressions derived from Iranian beliefs is the Persian garden. The Persian garden pays attention to the formal and geometric system and transcendent wisdom. All the basic concepts in the visual composition and spatial structure, such as movement, rhythm, symmetry, dynamism, inflection and balance are manifested in the spatial system of the Iranian garden in the most beautiful and powerful way. Iranian gardening is a window to the Iranian embodiment of the promised supernatural paradise and a testament to the joyful Iranian art in expressing eternal memories. In this regard, Pope paid more attention to the map of gardens and the Iranian image of Ferdows Garden, which is paradise rosary. Ferdows is a garden surrounded by several fences in a row, one of which is the tallest and widest, so that the devil cannot find his way in. The frequent margins on the Persian carpet are in fact the walls of Ferdows. It has an eternal- immortal spring, so that water is always flowing in it, and all kinds of domestic and wild animals and plants live a happy and eternal life in it, and rectangular or square networks with water streams are formed. The historical carpet of Baharestan depicts Ferdows with the

same feature (Jouleh, 1381: 26). The geometric structure in the Persian garden is formed in three main ways. Creating an axis along the garden, considering two intersecting axes perpendicular to each other or creating three parallel elongations in the garden area and then dividing the garden into squares that themselves have regular divisions (Shahcheraghi, 1394: 43).



**Figure 3: Types of structure of the Persian garden (author, Shahcheraghi, 1394: 43).**

#### 4.3 Components and elements of the Persian garden

According to the studies, the components and elements of the Iranian garden include four items: water system, building establishment system, planting system and axis.

A) (water system) water elements, including: pool, pond, water feature, waterfall and water stream (Maleki, 1385: 61). The main pond is considered to be the most basic element in the design of the garden and *pardis*, which is mostly built in front of the garden mansion, and its main dimension is in the direction of the length of the building. It is in rectangular, square, polygonal and circular shapes. Sometimes a fountain was built inside the mansions of the old gardens, which was called the “*Houzkhane*”. Water is one of the elements of the Iranian garden and is present in the garden at least from two conceptual and aesthetic aspects. These aspects and issues such as the presence of water in the garden and how it circulates and moves, water supply sources and garden irrigation can be easily followed (Mahmoudinejad, 1388: 74). The Iranians believed in a heavenly garden that resembled paradise. Our knowledge of this Garden of Eden is very scattered and only a part of their earthly allegories is available. *Ferdows*, as its meaning implies, is a garden surrounded by several fences in a row. *Ferdows* has a spring of water, eternal and immortal, so that water always flows in it and is never interrupted (Hosouri, 1376: 249).

Unity is transmitted through centrality, like the house of God. In the Persian garden, most of the ponds are built on one of the main axes, which is in the

center and heart of the garden, and affects the surrounding space. The pond is a symbol of unity and centrality and the importance of water in existence and a symbol of stability and resistance. The presence of a pond in the center and heart of the garden is a symbol of introversion, which manifests its importance to the interior in contrast to the attention to appearance. In essence, it is an emphasis on the unseen world and an interpretation of one of the inner divine attributes (Naeini, 2002: 46). Because of its octagonal or hexagonal shape, the pool is a symbolic embodiment of the sun. The presence of water in the pond and in the garden is a reflection of the sky, a sky full of sunlight and a sign of the continuity of life. In other words, water is the embodied light. The same transformation of a visual sign into a visual sign with the presence of static water in a closed space (Tusi, 1390: 69).

B) (Building system) Building elements including: pavilion, pergola, bed and mansion (Maleki, 1385: 61). The Persian garden, no matter how big or small it may be, has a wall around it that separates the inner part from the outer part. "The Persian garden is enclosed, surrounded by a wall or layer that has a crown of trees above it, a shield in hand, a smile of invitation on lips and the openness of hospitality on face. The fence goes around the entrance of the garden on both sides" (Abolghasemi, 1371: 4).

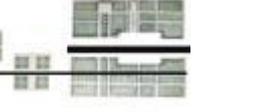
C) (Planting system) plant elements, including: plots, trees and flowers (Maleki, 2006: 61). Planting plants in the Iranian garden has a system that places plants and trees in three forms: linear, surface (plate) and volumetric in regular and square plots. This establishment, in proper connection and integration with the irrigation system and water order, creates special spatial qualities. The most important principle in the Iranian garden planting system is that the main axis (between the plots) of the garden should always have a completely wide view. Therefore, a tree is never planted in the main axis and usually a waterfall is placed or plants are planted that do not grow too high and do not block the view. To emphasize the main axes of the garden, and between the plots on both sides of it, a covered corridor of trees is built. These corridors are not just corridors but paths that organize the landscape (Shahcheraghi, 1394: 69). Usually due to the width of the main axis of the garden and the distance between the rows of trees on both sides of the axis, these vertical surfaces are easily seen visually. With the passage of time and the growth of trees (of course, proportional to the type of tree) a covered corridor of trees is formed (Pirnia, 1392: 7). Usually in this case, a multitude of trees create an atmosphere enclosed in the main axis that sunlight passes through the branches and by creating a light shadow gives a special quality to the main landscape in front of the pavilion (Shahcheraghi, 1394: 20).

There are these three elements (earth), (water) and (plant), which when the two systems of Iranian architecture and the framework of the concept and idea of the garden are put together form the "garden". In this way, other elements may be used in the formation of the garden, which are either sub-elements or are partial parts and manifestations of the presence of the main elements of the garden (Mahmoudinejad, 2009: 73).

D) Axis: including the movement axis, visual axis and water axis

Axis or line is considered as a pattern for controlling the design, which involves visual movement control and physical control of the design. The axis or line can direct the observer's view to a specific space or place or also determine the circulation of people's movements. The type of these lines and axes can also be effective on how to use the design space. The straight axis allows continuous, successive and dynamic movement, while the broken and spiral lines make the movement slow and floating. (Mahmoudinejad, 2009: 131). The axis can be the main creek that continues along the garden and branches in different directions. The appellation of all gardens is stony creek and ponds that play the first role of architectural composition in gardens (Zangari, 1391: 31).

**Table 1: Components and elements of the Persian garden and their appearance**

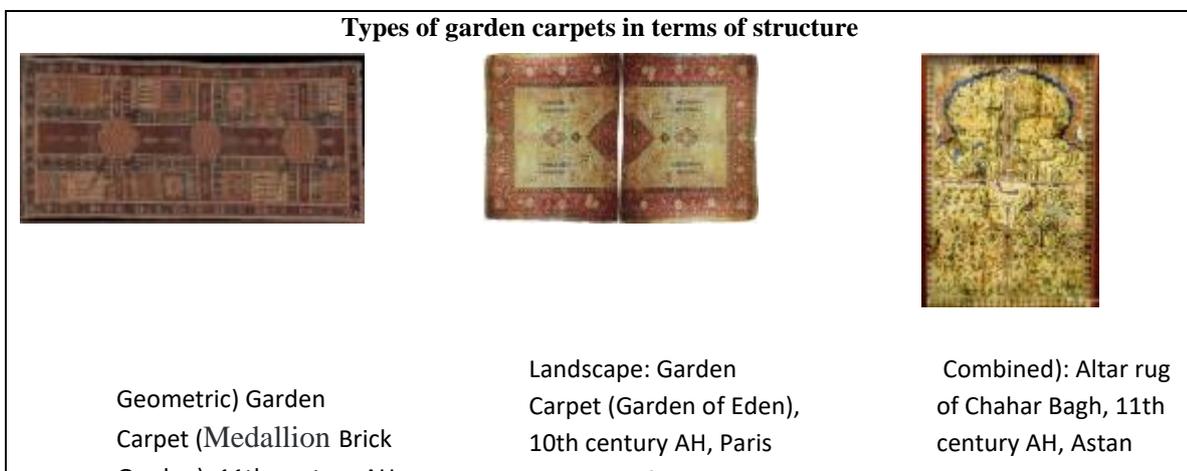
Its manifestation in the Persian garden	Pictures	Components and elements of Persian garden in the formal structure of the garden
Pool, pond, fountain, waterfall and water creek		A- Water system
Pavilions, pergolas, beds and mansions		B- Building installation system
Plots, trees and flowers		C- Planting system
Motion axis, visual axis and water axis		D- axis

#### .4 Shape structure of garden carpet

Persian carpet is the most physical embodiment of the garden after its architectural embodiment in the Iranian mind. Arthur Pope says about Iranian

carpets: "This garden is the favorite theme of Iranians, because almost all Iranian carpets express the meaning of the garden in a glorious, varied and often vivid way" (Pope, 1962: 3168). Basically, the Persian carpet is more a garden than a carpet, a pool of water in the center, and flowers and plants that are delicately planted around them and scattered along with animal decorations in various frames (Shahcheraghi, 1394: 176). A study of the designs and patterns of the carpet shows that, in proportion to the size of each carpet; in one category of Iranian carpets, the map of the garden and its elements (natural and artificial) are explicitly displayed, and in another category, this theme is implicitly mentioned. The carpets that show the physical plan of the garden are called Golestan maps, which in the Safavid period were also called Golzar (Hosouri, 1376: 247). In the structure of Iranian carpet design, several points are important and significant: A) Symbolism and cryptography are their main prominent features. B) It is usually based on geometric order and has a geometric order. C) Most of the carpets in Iran are based on rectangles, which correspond to the four main directions and four ancient climates and the square base of the Kaaba and the Muslim mosque. D) The principle of symmetry or balance has overshadowed its design. E) The design of each carpet has three main parts: background, border and Medallion. F) Avoiding spatial deepening (perspective) and using linear deepening (two-dimensional method) which is an example for designers (Chitsazian, 2009: 3).

According to studies, garden carpets are structurally divided into three groups: geometric, landscape and combinatory. In this research, the geometric structure has been studied. In geometric structure, garden designs are associated with geometric (cross) divisions in the background of carpet, as the carpet is divided into four separate parts by two creeks, which represents the concept of Iranian Chaharbagh. In this type of carpets, the pond in the middle of the garden design is reminiscent of the Kowsar pond, and the springs separated from it are considered as a tendency of four heavenly streams that divide the background space of the work into four gardens. This theme is exactly in line with the design of the Chaharbagh of the Safavid era, which shows the same symbolic concept of paradise in the art of carpet weaving and gardening in Iran. In these designs, the Iranian mystic artist tries to depict the heavenly concepts of paradise in a way that is comprehensible and in accordance with the perception and material construction of earthly man.



#### **4.5 components and elements of Carpet with Golestan design**

The components and elements of the garden carpet include four items: carpet border, carpet background, carpet Medallion and creek. A- Carpet border (garden wall or fence): The wall around the Iranian garden, with all its functional and semantic systems as well as its physical characteristics, is one of the characteristics of the Iranian garden, which is displayed as a carpet border in the Iranian carpet design.

Ferdows, as its meaning implies, is an enclosed garden, with several (usually seven) fences in a row, one of which is taller and wider (thicker) than the other, so that the devil cannot enter it. Repeated margins (usually seven or five) and especially a wide and distinct middle margin in Iranian carpets are the same frequent walls of Ferdows (Hassouri, 1997: 249). The narrow and wide margins of the carpet are the walls of the carpet that separate the central space from the outside space, which starts from plain weaving or loom. The narrow and wide margins of the carpet can be designed and decorated with various designs of Khatai and Islami. But they are in harmony with the patterns in the background of the carpet, in order to establish a close relationship between the background and the margin (Raisi, 1391: 43).

The margin of the Persian carpet, like the wall of the Persian garden, has become one of the visible and lasting features of the Iranian carpet design. The margins of the carpet garden (or the garden enclosed between the walls) are often decorated with various designs that sometimes match the original design of the carpet. Sometimes the designs are woven only in the tradition of the time with the help of wavy Arabesque, twisted vines, inscriptions with different lines and abstract motifs of animals (Dadgar, 2004: 44).

The use of margins is a kind of Iranian identity. Because it reminds of the ancient culture and tradition of Iranians in creating beautiful gardens. Margin in Iranian carpet design creates order, feeling of symmetry and balance. On the other hand, by repeating the elements of pattern and color, it creates weight and melody. Sometimes, even the disjointed patterns, which do not have a proper starting point, expansion and ending, are organized by the margins. On the other hand, the margin of the carpet is the only condition that causes some elements of the pattern or design, such as flowers, stems and animal figures, to be placed in an unfinished and incomplete state. In other words, the margin gives a narrative description to the pattern and increases the power of human imagination. The border is used as a complement to the pattern and design of the carpet (Daryae, 2007: 108).

B) Carpet background(garden plot)

Irrigation network and several ponds divide the carpet into several basic parts (four, six, eight and the like) and each part has six and sometimes four parts, so that the division is multiplied by six (or twelve or twenty Four); The movement of water in creeks is shown by wavy blue lines. There are fish and birds in the creeks (Hosouri, 1997: 252). In the garden carpets, the trees are located next to the water streams and next to the plots, inside the plots are flowers, animals and birds that are sitting on the branches of the trees (Safari, 1365: 21).

#### C) Carpet Medallion (pond in the garden)

There is a special place in the center of Iranian carpets and it is mainly a star with four corners, rhombus, oval and round and in the shape of the sun, a star with several feathered flowers which is called Medallion. The medallions are the same as the ponds (central ponds) of the paradis garden. Medallion or Houz is very important in Iranian carpets, and can be seen in different shapes and sizes. Most medallions are constructed in one of the main axes (Raisi, 1391: 43).

In Golestan design, there were springs or ponds or reservoirs, which some researchers argue that the medallion in the carpet is the same pond of Golestan design. Sirus Parham says: "from the beginning, in carpet weaving, medallion has been a symbol of ponds". In the oldest examples of carpets with medallion, the medallion was woven in a rectangular shape in the same way as the original pond" (Parham, 1999: 44).

#### D) Creek in the carpet (stream in the garden)

The creek is the link between the medallions and in Iran it is also called the gorge or strait (Boghaz) which is used for water (Dadgar 1383: 115). Usually, the two main axes in the form of two creeks of water have divided the carpet background into four parts (the plan of Iranian Chaharbagh), which represent the allegorical concept of paradise (Chitsazian, 2009: 112).

In Golestan design, the garden wall can be seen as a carpet border. The creeks, the plot of the garden, the location of the pavilion or the main fountain of the garden and all the natural components and elements, including flowers, plants, trees, animals, birds, are also displayed in an abstract way. Thus, from a configuration point of view, the Iranian carpet is a two-dimensional work of art that is a manifestation of a three-dimensional reality (Herdeg, 1990: 49).

representation in the components and elements of the Persian garden	Pictures	Components and elements of Golestan carpet in the form structure of garden carpet
The wall or fence around the garden		A- borders and borders of plots
Garden plotting		B- background
		C- medallion
Pond or fountain		
Streams or gorge or strait (Boghaz)		D- creek

Figure 5: Components and elements of Golestan carpet and how they appear in the elements of the Persian garden (author).

#### 4.6 Shape structure of garden painting

Throughout the cultural history of Iran, the physical and semantic systems of the Persian garden have been represented in numerous paintings. Burckhardt says: "The function of the original Iranian miniature is to show a glimpse of that pleasant garden in a world without which reflections will be nothing more than deception" (Burckhardt, 1997: 175). In Iranian paintings, the garden is a picture of an area surrounded by high walls, which separates it from other parts, such as plains, mountains and passages. A land like paradise with plants and flowers that have grown here and there in painting, in eye-catching colors. Sometimes a cypress tree rises so high that it comes out of the picture frame, breaks the frame and rises to the sky outside the painting. The creeks are flowing and the garden is a place for recreation, sitting, talking to each other and eating happily (Maleki, 2006: 60).

These miniatures depict the design of the Persian garden just like its architectural manifestation, with all the natural and man-made physical elements. The perimeter wall of the enclosed garden, the entrance building, the main pavilion, the streams, the pools and the water features of the garden, as well as the flowers and plants, the trees and the birds are depicted in an obvious order but with a special expression. (Javadi, 1383: 29).

Paintings generally illustrate the story told in the literary text of a poem or prose. After elements such as flowers, plants and trees that are the identity of the garden, it can be said that the pond or fountain and creeks are the most important element that are illustrated in this category of paintings to keep the garden space in mind. Pavilions or tents set up in the garden are also displayed in some works (Sahi 1384: 11). In the paintings, trees are seen around the pavilion (mansion) and next to the water creeks (Safari, 1365: 21).

**Painting components and elements**

Elements such as water creeks, flooring, trees and pavilions are permanent elements, which can be seen exactly in garden paintings. Although the outlines and geometry of the right corner of the Persian garden are not clear in these paintings, but the furnished plateau, its enclosed bump and the pond in front of the mansion are fixed elements along with the pavilion that occupy a large part of the image in the garden paintings which occupy a large part of the image in garden paintings. As when we are in the garden, in the garden drawings, instead of its general design and geometry, we can understand some of the elements and features, such as the hall, bed, porch, pond or pool, etc better than the other. The pavilion is one of the most important that creates a shady place to watch the garden (Teymouri, 1393: 18).

**Table 3: Components and elements of painting and their manifestation in the elements of the Persian garden (author).**

representation in the components and elements of the Persian garden	Pictures	Components and elements of garden painting in the shape structure of painting
The wall or fence around the garden		A-borders
Plots, trees and flowers		B-trees
Pool, pond, fountain, waterfall and streams		C- creeks, pond, waterfall
Pavilion, pergola, bed and mansion		D- Pavilion, tent, hall, bed, porch

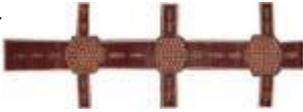
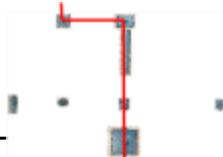
5. Evaluation case studies:

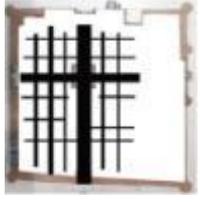
The Safavid period is the period of the rise of Iranian art. Painting and carpet weaving are among the most important and prominent arts of this period, which have benefited from the support of the court and have many similarities in terms of design. On the other hand, gardening and gardening has been of great importance in this period. According to the Iranian artist, the garden is a symbol of paradise. Attention to the elements of nature and the use of the motifs of animals and birds in the branches of trees and ponds of flowing water between them are associated with beautiful gardens that can be seen in both Iranian painting and carpets of the Safavid period. Therefore, all the selected samples in this research are related to the Safavid period. The study population includes the following: four gardens from Isfahan (Chehel Soton Garden, Hezar Jerib Garden, Hasht Behesht Garden and Farahabad Garden) and Fin Garden from Kashan; and among the Safavid period carpets, Medallion brick garden carpet, Golestan Chaharbagh carpet, Kurdistan Chaharbagh carpet and Kerman garden carpet; and among the paintings: "Father's advice about love" Haft Aurang by Jami, "Physicians contention", "Old lover with a weak voice and falling from the roof", "Khosrow and Shirin's conversation through music" and "Alexander Meets Socrates" from Khamseh by Nezami.

Table 4: Case studies (author).

					Iranian Garden
Farahabad Palace	Hasht Behesht palace	Chehelston Museum Garden and Palace	Hazarjerib Garden	Fin Garden	
					Garden carpets
Kerman Garden Carpet - 17th century - Glasgow Museum	Kurdistan Garden Carpet - 12th century AH - Museum of Lord Abar Conway Collection	Kurdistan Chaharbagh Carpet - Late 12th Century AH - New York Metropolitan Museum of Art	Chahar Bagh or Golestan - Northwest of Iran - 18 AD - New York Metropolitan Museum of Art	Garden carpet - (brick garden with Medallion) - northwest of Iran or Kurdistan - Metro Politen Art Museum	

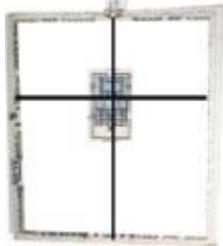
					painting
Alexander meets Socrates from Khamseh Nezami	Khosrow and Shirin conversation through music	Old lover with a weak voice and falling from the roof	Physicians contention	Father's advice about love	

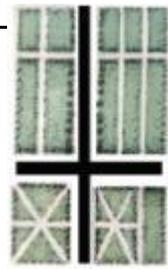
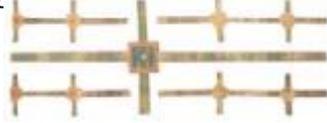
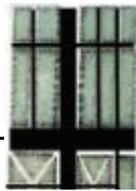
painting	Garden carpet	Persian garden
Father's advice about love, a house of Haft Orang Jami, Qazvin or Mashhad 973-974 AH	Painting elements Garden carpet (medallion brick garden) - northwest of Iran or Kurdistan - Metropolitan Museum of Art	Fin garden Garden Elements
Pond and waterfront Description: Circle pool in front of the pavilion	Medallion Description: An octagonal medallion on an axis	Water system Description: Ponds on two intersecting axes perpendicular to each other and the main pond facing the pavilion on the main axis
Margin pavilion, Tent, porch, bed, hall Description: Large margin, and pavilion	Margins and margins of plots Description: plot margin	Building system Description: Placement of the pavilion in the last third
Trees Description: 2 rectangular plots	background Description: 8 plots arranged around a main axis	Planting system Description: 1 main longitudinal axis and 5 longitudinal corridors - 2 main transverse axes and 4 transverse corridors
		

<p>Description: 1 main creek and two sub-branches perpendicular to the main stream</p>	<p>Description: 1 main creek and 6 sub-branches</p> 	<p>Movement Visual</p> <p>Description: 1 longitudinal main axis and 7 longitudinal sub-axes - 2 transverse main axes and 6 transverse sub-axes</p>
<p>Painting structure: two axes perpendicular to each other</p>	<p>Shape structure of garden carpet: uniaxial</p>	<p>Shape structure of the garden: two axes perpendicular to each other combined with a plan of three parallel elongations</p> <p><b>Conclusion</b></p>
<p>Controversy of physicians, Aghamirk, 9th century AH,</p>	<p>Chahar Bagh or Golestan - Northwestern Iran, 18 AD - New York Metropolitan Museum of Art</p>	<p>Carpet elements</p> <p>Hazarjerib garden</p> <p><b>Elements of the garden</b></p>
 <p>Description: 1 square pool and 1 rectangular pool</p>	<p>Medallion</p> <p>Description: 2 octagonal medallion and 1 half octagon on one axis</p>	 <p>Description: There is a pond at the intersection of every two axes, but there are two main ponds in the main axis</p> <p><b>Water system</b></p>
 <p>Description: 1 large border and garden wall displayed as a fence - 1 pavilion</p>	<p>border - pavilion, tent, porch, bed, hall</p> <p>Description: 6 plot borders</p>	<p>borders and plots borders</p>  <p>Description: The main pavilion is located in the center of the garden</p> <p><b>Building system</b></p>
	<p>background</p>	<p><b>Planting system</b></p>

Description: 1 rectangular plot	Description: 6 plots arranged around a main axis	Description: 3 main longitudinal axes and 8 longitudinal corridors - 1 transverse main axis and 10 transverse corridors	
Water creek	Water creek	Water	<b>Axis</b>
Description: 1 main creek and two sub-branches	Description: 1 main creek and 6 sub-branches	Description: The water axis extends in the direction of the main axis	
			Movement Visual
		Description: 3 main longitudinal axes and 10 longitudinal sub-axes - 1 transverse main axis and 12 transverse sub-axes	
shape structure of painting: uniaxial	Shape structure of garden carpet: uniaxial	Shape structure of the garden: uniaxial	<b>Conclusion</b>

<b>Old lover with a weak voice and falling from the roof</b>	<b>Painting elements</b>	<b>Chaharbagh Carpet Kurdistan - Late 12th century AH - New York Metropolitan Museum of Art</b>	<b>Carpet elements</b>	<b>Chehelsoton Garden and Palace</b>	<b>Museum</b>	<b>Garden Elements</b>
	Pond and waterfront		medallion			<b>Water system</b>
Description: 1 square pond		Description: 1 rectangular bergamot on the intersection of two axes		Description: Two large ponds on the main axis		

 <p>border - pavilion, tent, porch, bed, hall</p> <p>Description: 1 large border - 1 pavilion</p>	<p>Borders and plot borders</p>  <p>Description: 1 large border and 4 card borders</p>	 <p>Description: Placement of the pavilion in the last third</p> <p><b>Building system</b></p>
 <p>Description: 1 rectangular plot</p>	<p>Trees</p>  <p>Description: 4 plots arranged around two perpendicular axes</p>	<p>Background</p> <p>Description: 4 longitudinal corridors - 2 main transverse axes and 4 transverse corridors</p> <p><b>Planting system</b></p>
 <p>Description: 1 main creek</p>	 <p>Description: 1 main creek and 2 sub-branches</p>	<p>آبی</p> <p><b>Axis</b></p> <p>Description: The water axis extends in the direction of the main axis. - Rotation of water around the mansion</p> <p>Movement Visual</p> <p>Description: 6 longitudinal sub-axes - 2 main transverse axes and 5 transverse sub-axes</p>
<p>shape structure of painting: uniaxial</p>	<p>Shape structure of garden carpet: two axes perpendicular to each other</p>	<p>Shape structure of the garden: three parallel elongations</p> <p><b>Conclusion</b></p>
<p>Conversation between Khosrow</p>	<p>Painting elements</p>	<p>Kurdistan Garden Carpet - 12th elements</p> <p>Hasht behesht garden</p> <p><b>Garden elements</b></p>

<p>and Shirin through music, Khamseh Nezami, 10th century AH,</p>	<p>century AH - Lord Abar Conway Collection</p>		
<p>Pond and waterfront</p> <p><b>Description: 2 square pools</b></p>	<p>Medalliom</p> <p><b>Description: 1 rectangular medallion on the intersection of two axes - 6 circular medallion and 2 semicircular medallion</b></p>	<p><b>Description: Three ponds on the main axis</b></p>	<p><b>Water system</b></p>
<p>Margin - pavilion, tent, porch, bed, hall</p>  <p><b>Description: 1 large borders - 2 pavilions</b></p>	<p>Borders and plot borders</p> <p><b>Description: 1 large border and 20 card borders</b></p>	 <p>توضیحات: قرار گیری کوشک در یک سوم انتهایی</p>	<p><b>Building system</b></p>
 <p><b>Description: 1 rectangular plot</b></p>	<p>trees</p> <p>Background</p>  <p><b>Description: 20 plots arranged around two perpendicular axes</b></p>	 <p><b>Description: 1 longitudinal main axis and 1 longitudinal corridor - 1 transverse main axis and 3 transverse corridors</b></p>	<p><b>Planting system</b></p>
 <p><b>Description: 1 main stream</b></p>	 <p><b>Description: 1 main creek and 2 sub-branches and 26 smaller sub-branches within the plots</b></p>	<p><b>Description: The water axis extends in the direction of the main axis</b></p>  <p>حرکتی بصری</p>	<p><b>Axis</b></p>

			Description: 1 longitudinal main axis and 4 longitudinal sub-axes - 1 transverse main axis and 5 transverse sub-axes - Creating oblique axes between plots to increase landscape view	
shape structure of three parallel elongations (due to two pavilions)	Painting: Alexander meets Socrates, Khamseh Nezami, 15th century	Shape structure of garden carpet: two axes perpendicular to each other	Carpet elements Kerman Garden Carpet - 17th century - Glasgow Museum	Shape structure of the garden: two axes perpendicular to each other
				<b>Conclusion</b>
				<b>Garden elements</b>
				<b>Water system</b>
				<b>Building system</b>
				<b>Planting system</b>
				<b>Axis</b>

shape structure of three parallel elongations (due to two pavilions)

Painting: Alexander meets Socrates, Khamseh Nezami, 15th century

Shape structure of garden carpet: two axes perpendicular to each other

Carpet elements Kerman Garden Carpet - 17th century - Glasgow Museum

Description: 1 longitudinal main axis and 4 longitudinal sub-axes - 1 transverse main axis and 5 transverse sub-axes - Creating oblique axes between plots to increase landscape view

Shape structure of the garden: two axes perpendicular to each other

**Conclusion**

**Garden elements**

**Water system**

**Building system**

**Planting system**

**Axis**

Pond and waterfront



medallion



Description: 1 octagonal pool and 1 half octopus

Description: 1 medallion

Description: Two large ponds on the main axis

border - pavilion, tent, porch, bed, hall

Borders and plot borders

Description: 1 large border - 2 pavilions

Description: 1 large border

Description: Placement of the pavilion in the last third

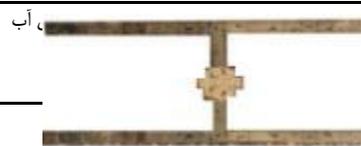
Trees

Background

Description: 1 rectangular plot

Description: 4 plots arranged around two parallel axes

Description: 4 main longitudinal axes and 10 longitudinal corridors - 2 main transverse axes and 8 transverse corridors



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<p>Description: 1 main stream</p>	<p>Description: 2 main creek and 2 sub-creeks</p>	<p>Description: The water axis extends in the direction of the main axis.</p> <hr/> <p style="text-align: right;">Movement Visual</p>
<p>Painting structure: three parallel elongations (due to two pavilions)</p>	<p>Shape structure of garden carpet: three parallel stretches</p>	<p>Shape structure of the garden: uniaxial</p>
		<p>Description: 2 main longitudinal axes and 14 longitudinal sub-axes - 2 main transverse axes and 10 transverse sub-axes</p>
<b>Conclusion</b>		

## 6. Comparative study of case studies

Case studies show that the morphological structure of carpets and paintings is similar to that of the Persian garden. In all three areas, three types of uniaxial shape structures, two perpendicular axes and three parallel elongations can be seen.

Table 6: Comparative study of case studies (author).

Shape structure	Persian garden	Garden carpet	painting
Uniaxial	Hazarherib garen Farahabad palace	- Garden carpet (medallion brick garden) - Northwest of Iran or Kurdistan - Metropolitan Museum of Art - Chahar Bagh or Golestan - Northwest of Iran, 18 AD - New York Metropolitan Museum of Art	Physicians contention", "Old lover with a weak voice and falling from the roof"
Two axes perpendicular to each other	Hasht behesht palace Fin garden	- Kurdistan Chaharbagh Carpet - late 12th century AH - New York Metropolitan Museum of Art - Kurdistan Garden Carpet - 12th century AH	- Father's advice about love, a house of Haft Orang Jami, Qazvin or Mashhad 973-974 AH,

		- Lord Abar Conway Collection	
three parallel elongations	- Chehelston Museum Garden and Palace - Kashan Fin Garden	- Kerman Garden Carpet - 17th century AD - Glasgow Museum	- Conversation between Khosrow and Shirin through music, Khamseh Nezami, 10th century AH, - Alexander meets Socrates, Khamseh Nezami, 15th century,

The following can be considered in examining the details used in the carpets and paintings under study

**Medallion (Pond):** From 5 selected images from the statistical population, the pond is located in the center of the garden and in front of the pavilion Ponds have different geometric shapes. Spatial view of the ponds can be seen from above, but birds and fountains can be seen from the front. The pools are geometrically designed and have an axis of symmetry and form the core of the drawings. In the 5 garden carpets examined, the pond is located in the center of the carpets. Some carpets have just one central pool. But some have several ponds that are connected by a creek, which is the same main axis in the garden. A variety of geometric shapes of square, rectangle, circle, oval, polygon and sun are used in the design of the ponds. The main view of the pools is from above and it induces a sense of centrality in the carpets.

**Background (plot):** among the 5 selected images, all the spaces of the plots are seen in a rectangular and square shape next to the pavilions. The elements are placed vertically on the plots. Inside the plots, tall, elongated trees are designed alongside flowers and smaller shrubs. Some of the trees inside the plots are conical and are located next to a rectangular pavilion. The trees are located at regular intervals along the water creek. The tendency to geometrically divide the earth into four parts is influenced by the presence of cross streams that systematize the overall spaces within the plots. In the studies of 5 selected samples from the statistical population, the plots are seen in a rectangular shape in the background of the carpets. Geometric garden carpets have a one-half structure and plots are created from the main axis of the creeks and its sub-branches. Each plot is divided into smaller parts and inside it, different types of trees (sycamore, cypress, willow, flowering trees and fruit trees) are designed.

**Border (fence):** In 5 selected images from the statistical population, the fence (border) around the garden can be seen. Rocks and plants (shrubs, flowers and trees) are the most important factors in enclosing a garden. The mansion and the pond are located in the center of the paintings. Trees and flowers surround the

pavilion. A little further on, small, dense cliffs and hills surround some shrubs, such as a garden wall. By enclosing the elements, both the elements and the spaces become more complete and the trees and shrubs create integrated patterns depending on the type of enclosed spaces. In the selected 5 cases of garden carpets, the border is like a fence that surrounds the inner circumference of the carpet. The borders have led to the integration and coherence of the main spaces and themes. The spatial viewing angle of the borders from above shows that the wide and narrow borders enclose the inner environment of the carpet like a thick fence that direct the viewer's eye into the garden.

Stream (creeks): water creeks are the main axis that can be seen in the garden space in the drawings. A stream of water emerges from the compacted rocks at the edges of the paintings and enters the interior space of the painting, enters the pool from behind the pavilion through the main branches and exits through another branch. Sometimes the water atmosphere enters a central pool and connects several pools that are in the same path. In the surveys of the 5 selected garden carpets, the creeks are located in a main path and enter the ponds and divide the carpet space into four parts through sub-branches. The resulting divisions emphasize four main directions, which are also called Chaharbagh. In some garden carpets, more divisions have been created. The main water-axis creeks divide the carpet into two halves and establish symmetry and balance in the carpets. The spatial viewing angle resulting from the divisions created from above is very precise. The main patterns created are squares and rectangles that establish rhythm and continuity in the carpets and create axial symmetry in the design.

## **7. Conclusion**

The glory, grandeur and culture of gardening in the Safavid period has led artists and carpet designers to use carpet designing and painting in parallel to reflect their mentality and creativity and consider carpets as a suitable platform for the image and embodiment of divine concepts that relates the self and nature. In the paintings, the artists depict the Persian garden and the daily life of the people next to nature. The garden carpets of this period have an allegorical and symbolic concept of paradise and paradise gardens, and at the same time, the motifs and designs in these carpets are appropriate to the architecture and design of Iranian gardens, which deal with the four gardens and paradise. This is a sign of creativity and ability of Safavid design artists. Promoting garden designs on carpets and depicting gardens in paintings has led to the use of nature and its motifs such as trees, flowers, birds and animals to be closer to the concept of the Garden of Eden. The pattern of four gardens, the square distance and the openness of the main landscape in a rectangular shape in the Persian garden

have been observed in the design of garden carpets and paintings. Considering what is in the main structure of the Iranian garden design and in matching it with the formal structure of the two areas of painting and garden carpets, we conclude that the composition of the structures and elements used in the two areas of painting and carpet weaving are conform to three types of geometric structures and principles (uniaxial, two axes perpendicular to each other and three parallel elongations), and the only difference is in the way artists display elements and motifs. The application of these principles expressed by artists in various arts in the contemporary period, will help us to present original and identical art according to the characteristics obtained, which will pave the way for the next generation and a strong connection and common point between different aspects. Create art.

#### 8. Resources:

- Abolghasemi, Latif (1371). Persian Garden, Tehran: Publication of Municipal Parks Organization.
- Ansari, Mojtaba et al. (1398). "A Comparative Study of the Painting of the Second School of Tabriz and the Persian Garden in the Timurid and Safavid Periods", Nagareh Quarterly, No. 22
- Bookhart Titus (1376). A Theory of the Principles and Philosophy of Islamic Art, Fundamentals of Spiritual Art, translated by Dr. Gholamreza Avani, Tehran: Office of Religious Studies
- Blake, Norman (2013). Social Research Strategies, translated by Hashem Agha Beigpour, Sociologists, Tehran.
- Pirnia, Karim (1392). Introduction to Iranian Islamic Architecture, 21st Edition, Tehran: Naghmeh No Andish Publishing
- Parham, Sirus (1378). Nomadic and rural handicrafts of Fars. Tehran: Amirkabir Publications
- Teymouri, Saeedeh (1393). "Perspectives of the main element depicted from the garden in the paintings depicting the Iranian garden", Bagh-e Nazar scientific research quarterly
- Chit Sazian, Amir Hossein (2009). "Recognition of the campus in the symbolic context of Iranian architecture and carpet", Goljam Scientific-Research Quarterly, No. 12: 122-99
- Khansari, Mahdi (1383). Persian Garden Reflection of Paradise, translated by Aran Consulting Engineers, Tehran: Cultural Heritage and Tourism Organization.
- Daryaee, Nazila (1386). Aesthetics in Iranian handmade carpets, first edition, Tehran: Ministry of Culture and Islamic Guidance.
- Javadi, Shohreh (1383). "Landscape Painting in Iranian Painting", Bagh-e Nazar Scientific Quarterly, Art, Architecture, Urban Planning Research Center, First Year, First Issue
- Heshmati Razavi, Fazlullah (2008). History of carpet evolution and evolution of Iranian carpet weaving, Tehran: Samat
- Hosuri, Ali (1376). "Ferdows Minavi Garden and Iranian Carpet Design", Kalk Cultural and Art Quarterly

- Hamzehnejad, Mehdi et al. (2014). "Comparative study of Iranian gardening in the Sassanid and Islamic eras based on the descriptions of paradise", Iranian Architectural Studies Quarterly, No. 5
- Dadgar, Leila (2004) Margin of garden or garden carpets enclosed between the walls, the book of Iranian garden carpets - woven paradise
- Raisi, Iman (2012). "Persian Carpet-Garden, More Text in Traditional Arts", Book of the Month of Art, No. 166: 47-38
- Zarei, Mohammad Ibrahim (2011). "Reflection of the role of Chaharbagh in garden carpets in western Iran with emphasis on examples from Kurdistan province", Iranian Carpet Scientific Association Quarterly (Goljam), No. 19, Summer 90, p. 43
- Zangeri, Luichi et al. (2012). Islamic Iranian Garden, *جمه* Translated by Majid Rasekhi and Farhad Tehrani, First Edition, Tehran: Cultural Research Office
- Joule, Toraj (1381). Research in Iranian Carpets, First Edition, Tehran: Yasavoli Publications
- Shahcheraghi, Azadeh (1394). Campus Paradigms, Fifth Edition, Tehran: Publication of University Jihad, Tehran Branch
- Shahcheraghi, Azadeh (1387). "Re-reading the Iranian garden architecture system in the Iranian carpet garden with emphasis on the ecological theory of environmental perception", Goljam Scientific Research Quarterly, No. 9: 20-1
- Nature of water, wind, soil and fire, collection of articles of the first symposium of art and elements of nature, published by the Academy of Arts.
- Safari, Amrullah (1365). "Garden and Garden Decoration Article", Art Quarterly, No. 11, 255-198.
- Abed Doust, Hossein et al. (2009). "Various forms of the tree of life on Iranian carpets", Goljam Quarterly, No. 12.
- Mahmoudinejad, Hadi (2009). Quranic view of the Persian paradise from the garden. First Edition, Tehran: Heleh Publications / Tahan.
- Maleki, Touka (2006). Persian Garden in Iranian Painting Book of the Month of Art, No. 101 and 102: 60-65
- Mirza Amini, Mohammad Mehdi et al. (2011). "Study of the symbolic role of bergamot in Iranian carpets", Goljam Quarterly, No. 18
- Naima, Gholamreza (1385). Gardens of Iran, First Edition, Tehran: Payam Publications
- Wilber, Ronald (2004). Gardens of Iran and its pavilions, translated by Mahin Dokht Saba. Tehran: Scientific and Cultural Publishing Company
- Herdeg, Klaus (1990). Shape structure in Islamic architecture of Iran and Turkmenistan, translated by the research and translation unit of Bonyan Consulting Engineers