

Analyzing zendevari (lifelikeness) approach in Persian gardens using SWOT technique Case Study of Fin Garden in Kashan

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Abstract

Ersian Garden, based on lifelikeness elements and layers, provides complexity and attractions to the visitor. Relying on their knowledge and experience, Persian garden designers and creators create an atmosphere that causes survival and dynamism of natural context. As a Persian garden, Fin garden in Kashan has features worth it to be recorded in the world. Then, understanding its lifelikeness approach is very important. The main objective of this article is to analyze lifelikeness approach in Fin garden in Kashan as one of the prominent Persian gardens, using SWOT technique. The results of this study indicate that among ten lifelikeness layers in Fin garden, a total of 14 strengths, 8 weaknesses, 9 opportunities, and 10 threats are found. It is worth noting that ten lifelikeness layers in this study, with total average score of 51 in the strengths, total average score of 31.6 in the weaknesses, total average score of 34 in the opportunities, finally, total average score of 38 in the threats, show that although Fin garden in Kashan has acceptable conditions in terms of lifelikeness approach, the threats are at a higher level than opportunities, that requires severe attention to avoid negative effects. SWOT analysis results show that the sum of weaknesses and threats with a score of 69.6, as restrictions, is at a lower level than the sum of strengths and opportunities, as advantages, with a score of 85.

Key words: Persian garden, Fin garden in Kashan, lifelikeness, SWOT technique.

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Introduction

Since ancient times, building gardens and crofts in the yard and around the buildings was of interest to Iranians. In the writings of Greek historians, about 3,000 years ago, gardens surrounded houses of most Iranians, and beds built around the building we called "Pe ere Deese", which means surrounding of fortress or Dees. Dees meant building, and a person who built dees was called Deesa, meaning construction worker. An example of these gardens is the campus of Persepolis mentioned by Xerxes when counting what he had built. Pardid of Behesht is a word meaning paradise, in Arabic is called Ferdows (meaning the enclosed courtyard and circle garden). Heaven means the best life, and is described as a green, lush and beautiful garden. On the other hand, in the Iranian literature, Persian Garden were called "garden house" or Pardis and paradise. The Persian Garden is a new word translated from foreign languages. Persian Garden has three unique structures and designs. first, it is located in the path of the stream. Second, it is surrounded by high walls. And finally, there is a summer house and pool inside the garden. These three features characterize the Persian Gardens (Isfahan cultural heritage organization, 2011). Actually, Iranian garden houses were called Persian garden by tourists. Persian garden or "garden house" refers to its unique structure and design. Persian garden is linked with the history of subterranean aqueducts. First Persian gardens were located in the path of aqueducts. Examples of such gardens can be found in Tabas, Yazd, Gonabad, Birjand, and most desert parts of Iran. The gardens as, a complete structure, indicate a close relationship between cultural and natural contexts, and are indications of compatibility and consistency of human needs and nature (Triveh, 2010). This refers to the lifelikeness approach that was used in Persian gardens designs in the first place. Indeed, based on lifelikeness elements and layers, Persian Garden has the power to analyze the environment and understanding the complexity around it. Relying on their knowledge and experience, Persian garden designers and creators have created an atmosphere that has caused survival and dynamism of natural context. Fin garden in Kashan, as a Persian garden, has features that their analysis requires matching the principles of architecture with different aspects of the idea, design, and construction of this building.

So, The main objective of this article is to analyze lifelikeness approach in Fin garden in Kashan as one of the prominent Persian gardens, using SWOT technique, and total strengths, weaknesses, opportunities and threats of ten layers of lifelikeness are analyzed in this Persian garden.

Research importance and necessity


One of the themes of sustainable and nature-oriented development of architecture is lifelikeness concept and approach. In fact, lifelikeness approach, with technical and feasible look, provides the context for development of criteria for the design in architecture to realize correspondence, balance, consistency, appearance, multiplicity, and other principles and branches in modern architecture (Pirnia, 2003). On the other hand, the correct understanding of how to consciously apply lifelikeness approach to Persian gardens in necessary, which are particularly tied with natural elements. Fin Garden in Kashan and set buildings in 5 December 1935, it was listed as a national property of [Iran](#) with code 238. On 2007, 8 September, Bagh-e Fin was submitted to the [Unesco's Tentative List](#). Unesco declared the garden a [World Heritage Site](#) on July 18, 2012 (Cultural Heritage Organization website, 2014). Hence, understanding the implicit and explicit aspects of the philosophy and principles of design and construction is quite clear. On the other hand, due to current climate and geographical conditions and their

future changes, enjoying the delicacies design and implementation used in the Persian Garden for application in the design of today's gardens will be very important (Greuther, 2007). One of the major issues of this garden is discussing lifelikeness spectrs used in the garden.

Research background and literature

It should be noted at the outset that lifelikeness approach in architecture is a new discussion, and should be addressed with the application of new scientific methods to analyze and to implement it in all architectural themes. On the other hand, it should be noted that many studies have been performed on the market, each have studied it from a specific perspective. Economic, political, social, cultural, and physical analyses, and even concepts of specialized markets such as the oil market, or black market are also in this context. However, what is intended by the researchers in this study, is to address aspects of lifelikeness approach based on multiple layers of lifelikeness for the market, its position, and its functions. According to the novelty of this topic, two studies are referred to in this regard. In an article entitled Lifelikeness approach in rural homes of mountainous regions of Iran (Javam and Iravanian: 2014), the authors analyzed lifelikeness layers in qualitative and survey methods. The results of this study show that considering the natural factors such as soil and water in climate-based design, including orientation, building form, how building is established, relationship between empty spaces, and other architectural features are particularly important in terms of lifelikeness approach. The results also show that towns and villages have been completely built based on context and attention to the environment, and it is believe that the balance between architecture and the environment can be contributing and amplifying factor for both the work and its context. Therefore, buildings in rural areas are interacted with their environment, and have reached balance due to this interaction with environment and the building. In another study entitled Lifelikeness: A New Framework Derived from Sustainability for Development in the Built Environment, the author compares the architecture of two cities with almost similar climatic conditions, and different social, historical, and cultural conditions, zavareh in Iran, and Santafeh in the United States. The relative similarity of architecture climatic layers in the cities justified the relative similarity of sub-climate layers of the architectures, and similarities are mostly effective in the physical shell of the buildings. However, the interior spaces distribution and communication is influenced by social layers, that is significantly different in two cities. The results of this research also consider promotion of Islamic-Iranian model in the architecture quite effective, and regard the lifelikeness approach as a result of that. In this study, the Fin Garden in Kashan is investigated.

Table 1:Introduction of Fin Bath in Kashan

image	registration year	era	title	location	row
	1935	Safavids	Fin garden	Kashan	1

Research methodology

In order to study the theoretical aspects, this article tries to use scientific and reasonable methods. this paper uses qualitative methods and analysis, as well as field surveys and documentary studies. After collecting data using interviews based on the Delphi technique, the SWOT method was used to analyze the data. In addition, for field data, the survey method is used. Using the results of other studies and face to face interview with experts, a list of weaknesses, strengths, opportunities and threats was prepared based on ten lifelikeness layers, including emotional, environmental, biological, economic, social, spatial geometry, legal, aesthetic, communicative, and natural layers. It is worth mention that based on the expert opinions on lifelikeness layers, it was shown that ten of twenty-five lifelikeness layers are more individuuated in h the Fin Garden in Kashan. Basedo on lifelikeness theories, balancing and activating these ten layers, other layers will be spontaneously affected, and lifelikeness conditions will be fulfilled. To determine the weight of each of the four elements of SWOT, Likert scale as very high: score of 5, high: score of 4, average: score of 3, low: score of 2, and very low: score of 2 is used.

Table 2:Introduction of lifelikeness layers of Persian gardens in the study

Title	Row	Title	Row
Spatial geometry	6	Emotional	1
Legal	7	Environmental	2
Aesthetic	8	Biological	3
Communicative	9	Economic	4
Natural	10	Social	5

Analysis of results

After collection, summarization, and extraction of data from field studies, documents, interviews and questionnaires, the SWOT analysis was used to assess limitations (weaknesses and threats) and advantages (strengths and weaknesses). SWOT analysis was performed for the definition and implementation of lifelikeness approach in Fin garden in Kashan in conformity with its applications.

Explaining the most important strengths of lifelikeness layers in Fin garden in Kashan;

Explaining the most important opportunities of lifelikeness layers in Fin garden in Kashan;

Explaining the most important weaknesses of lifelikeness layers in Fin garden in Kashan;

Explaining the most important threats of lifelikeness layers in Fin garden in Kashan.

Internal factors affecting lifelikeness approach in Fin garden in Kashan

To identify strengths and weaknesses, the internal environment of Fin garden in Kashan was examined in terms of ten layers of lifelikeness. The results are presented in Table 3.

Table 3: Internal factors affecting the lifelikeness approach in Fin garden in Kashan

Weaknesses	Strength	Lifelike layer
<ul style="list-style-type: none"> Seasonality of emotions due to the change of season- 	<ul style="list-style-type: none"> Creating a sense of relaxation and comfort for visitors Creating a sense of vitality for visitors 	Emotional
<ul style="list-style-type: none"> Overcoming climate on air mitigation power, especially in warm seasons in Kashan 	<ul style="list-style-type: none"> Mitigating climate around the complex 	Environmental
-	<ul style="list-style-type: none"> Creating life motivation for residents Location of trees and birds 	Biological
<ul style="list-style-type: none"> Competition in economic opportunities Speculation in the fields around the Fin Garden 	<ul style="list-style-type: none"> Creating economic opportunity and income 	Economic
<ul style="list-style-type: none"> Social unrest in the Fin garden 	<ul style="list-style-type: none"> Creating a sense of solidarity and vanity for Kashanian people Creating social neighborhood 	Social
<ul style="list-style-type: none"> Building strength of Fin Garden 	<ul style="list-style-type: none"> Defining spatial- geometric axis to development Fin Garden in the surrounding 	Spatial geometry
-	<ul style="list-style-type: none"> Creating national and international rights due to registering Fin garden at national level 	Legal
<ul style="list-style-type: none"> Changed face of Fin Garden for pest damage to trees 	<ul style="list-style-type: none"> Creating visual beauty in the design, arrangement, and use of natural elements (water, trees, etc.) Using decorative elements 	Aesthetic
-	<ul style="list-style-type: none"> The relationship between urban elements with gardens and its complexes 	Communicative
<ul style="list-style-type: none"> Defining the nature-based finite elements in Persian gardens 	<ul style="list-style-type: none"> Using nature-oriented elements in design 	Natural

External factors affecting lifelikeness approach in Fin garden in Kashan

To identify opportunities and threats, the external environment of Fin garden was examined in terms of seven layers of lifelikeness. The results are presented in Table 4.

Table 4: External factors affecting the lifelikeness approach in Fin garden in Kashan

Threats	Opportunities	Lifelike layer
<ul style="list-style-type: none"> • Possibility to create negative emotions at the time of undesirability of Fin Garden as an attraction 	<ul style="list-style-type: none"> • Creating travel incentive for national and international tourists to visit this international monument 	Emotional
<ul style="list-style-type: none"> • Creating high buildings around the Fin garden • Irregular urban density and loading around the Fin garden 	<ul style="list-style-type: none"> • Development of the surrounding tissue using the Fin Garden model 	Environmental
-	-	Biological
<ul style="list-style-type: none"> • Inadequate development of economic activities in the surrounding streets 	<ul style="list-style-type: none"> • Development of business opportunities due to Fin Garden in city of Kashan, particularly in the tourism industry 	Economic
-	<ul style="list-style-type: none"> • Creating the opportunity for community of international scholars in festivals and rituals 	Social
<ul style="list-style-type: none"> • Poor imitation of design and architecture of the Fin Garden 	<ul style="list-style-type: none"> • Enjoying the lifelikeness issues of the garden in the design of the new Persian gardens 	Spatial geometry
<ul style="list-style-type: none"> • Non-compliance with international registration standards 	<ul style="list-style-type: none"> • Attracting international architecture for the promotion of Fin Garden model • Considering the right of ownership for Kashanian people in obtaining entrance fees 	Legal
<ul style="list-style-type: none"> • Damage and destruction of decorative items • Droughts 	<ul style="list-style-type: none"> • Studying and identifying similar decoration in Persian gardens 	Aesthetic
-	-	Communicative
<ul style="list-style-type: none"> • Injuries and diseases of plants and trees • The use of inappropriate methods to maintain Fin Garden 	<ul style="list-style-type: none"> • Choosing a variety of other natural elements in design 	Natural

Analysis of strengths, weaknesses, opportunities and threats

According to studies, 14 internal strengths versus 8 internal weaknesses, and 9 external opportunities versus 10 external threats have been determined. In sum, 23 strengths and opportunities as advantages, and 18 weaknesses and threats as limitations of seven layers of lifelikeness in Fin garden were identified, and assessed by a questionnaire using Likert scale. Table 5 shows the total weights, and the average weights for each of the components of the strengths, weaknesses, opportunities and threats.

Table 5: Analysis of strengths, weaknesses, opportunities and threats

Average weights	Total weights	Strengths analysis
4.6	23	S1 Creating a sense of relaxation and comfort for visitors
4.2	21	S2 Creating a sense of vitality for visitors
3.4	17	S3 . Mitigating the climate around the complex
3.2	16	S4 . Creating life motivation for resident
3	15	S5 . Location of trees and birds
4.4	22	S6 . Creating economic opportunity and income
4.2	21	S7 . Creating a sense of solidarity and vanity for Kashanian people
3.4	17	S8 . Creating social neighborhood
3.2	16	S9 . Defining spatial- geometric axis to development Fin Garden in the surrounding
4	20	S10 Creating national and international rights due to registering Fin garden at national level
3.2	16	S11 Creating visual beauty in the design, arrangement, and use of natural elements (water, trees, etc.)
3.4	17	S12 . Using decorative elements
3	15	S13 . The relationship between urban elements with gardens and its complexes
3.8	19	S14 . Using nature-oriented elements in design
Average weights	Total weights	Weakness analysis
3.4	17	W1 . Seasonality of emotions due to the change of season
4.4	22	W2 . Overcoming climate on air mitigation power, especially in warm seasons in Kashan
4.8	24	W3 . Competition in economic opportunities
4.6	23	W4 . Speculation in the fields around the Fin Garden
4.2	21	W5 . Social unrest in the Fin garden
3.2	16	W6 . Building strength of Fin Garden
3.4	17	W7 . Changed face of Fin Garden for pest damage to trees
3.6	18	W8 . Defining the nature-based finite elements in Persian gardens
Average weights	Total weights	Opportunity analysis
4.8	24	O1 . Creating travel incentive for national and international tourists to visit this international monument
4	20	O2 . Development of the surrounding tissue using the Fin Garden model
4.6	23	O3 . Development of business opportunities due to Fin Garden in city of Kashan, particularly in the tourism industry
4	20	O4 . Creating the opportunity for community of international scholars in festivals and rituals
4	20	O5 . Enjoying the lifelikeness issues of the garden in the design of the new Persian gardens
3.6	18	O6 . Enjoying the lifelikeness issues of the garden in the design of the new Persian gardens
3.4	17	O7 . Attracting international architecture for the promotion of Fin Garden model
3	15	O8 . Considering the right of ownership for Kashanian people in obtaining entrance fees
2.6	13	O9 . Choosing a variety of other natural elements in design
Average weights	Total weights	Threat analysis
4.4	22	T1 . Possibility to create negative emotions at the time of undesirability of Fin Garden as an attraction
4	20	T2 . Creating high buildings around the Fin garden
4.2	21	T3 . Irregular urban density and loading around the Fin garden
4.4	22	T4 . Inadequate development of economic activities in the surrounding streets
3.6	18	T5 . Poor imitation of design and architecture of the Fin Garden
3.8	19	T6 . Non-compliance with international registration standards
3.2	16	T7 . Damage and destruction of decorative items
4	20	T8 . Droughts
2.8	14	T9 . Injuries and diseases of plants and trees
3.6	18	T10 . The use of inappropriate methods to maintain Fin garden

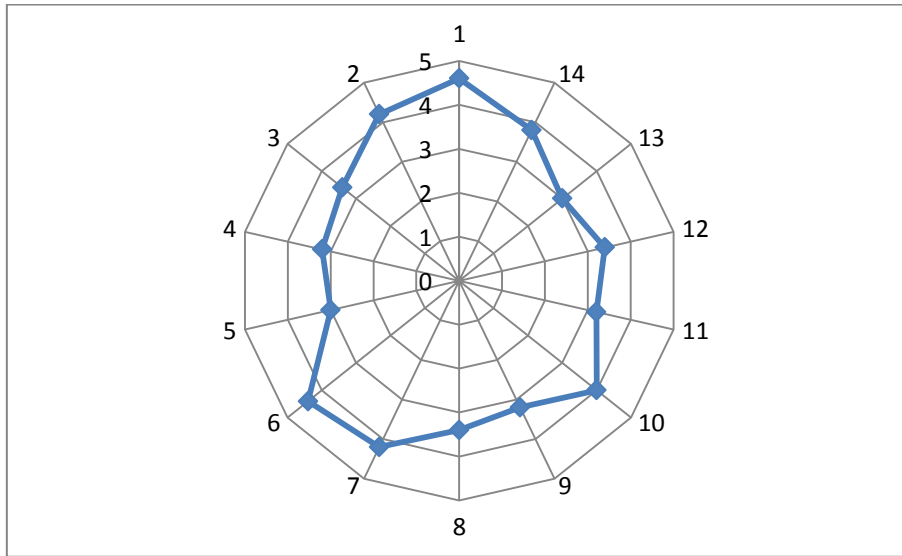


Figure 1. Spider graph of the strengths of ten lifelikeness layers

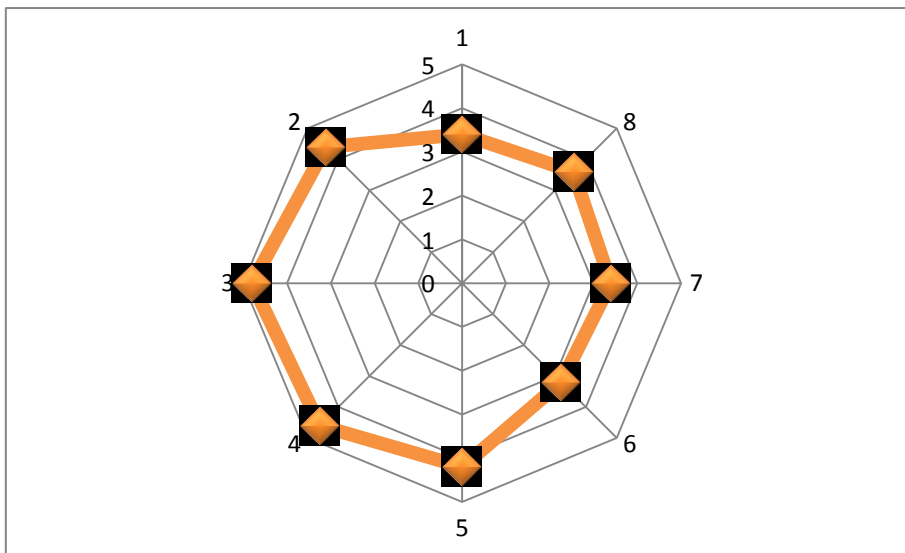


Figure 2. Spider graph of the weaknesses of ten lifelikeness layers

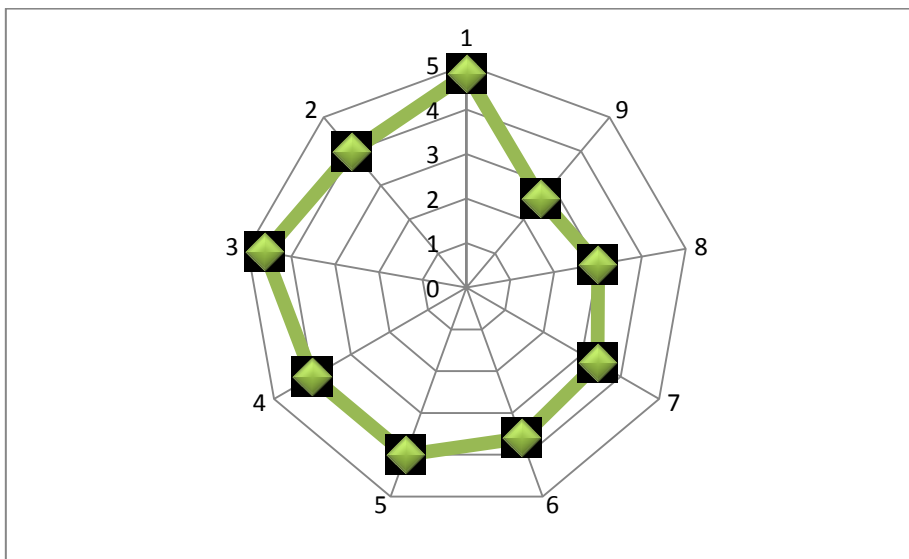


Figure 3. Spider graph of the opportunities of ten lifelikeness layers

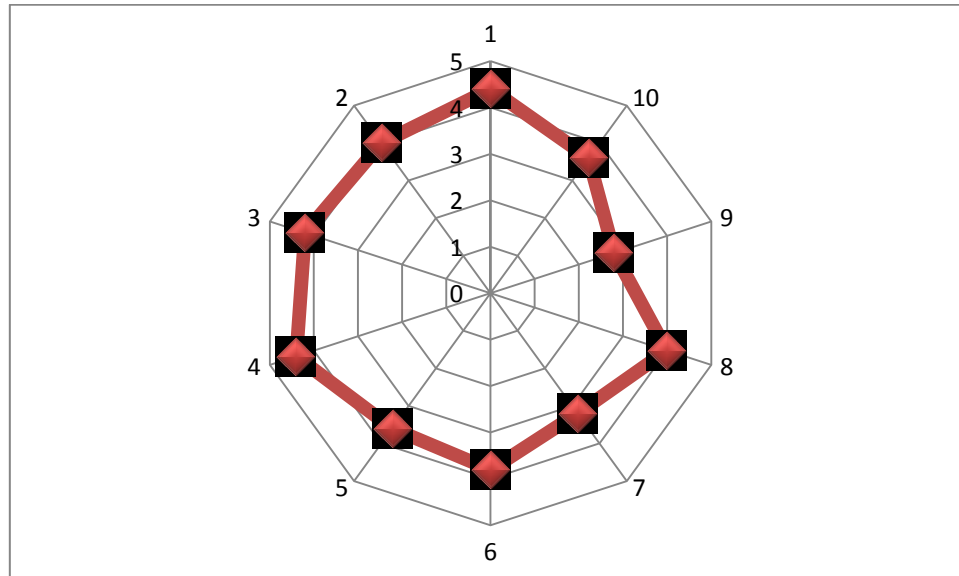


Figure 4. Spider graph of the threats of ten lifelikeness layers

Summary and Conclusion

Lifelikeness is mutual interaction of its layers, that would guarantee the survival lifelike development. In fact, lifelike development is inevitable in relationships of creatures. Thus, applying the explicit and implicit principles of lifelikeness in a building provides the context for its life (Iravani, 2015). By explaining lifelikeness in Persian Gardens models, the relevance, vitality, perfectionism, social morale, and balance, as well as the spatial and environmental compliance can be observed. In Fin garden in Kashan, due to studying its ten lifelikeness layers with concept overlap and inevitable interaction, worth mentioning results were achieved. The results show that of total of 14 strengths based on the ten lifelikeness layers, no component is lower than the average score of Likert scale. This shows the deep and defined relationship between components of the strengths in lifelikeness layers of Fin garden in Kashan. Moreover, of total of 14 weaknesses based on the ten lifelikeness layers, no component is lower than the average score of Likert scale, and therefore, to eliminate weaknesses in the building, it is necessary to act as soon as possible by employing a defensive strategy based on the above mentioned factors. However, in analysis of opportunities in the lifelikeness layers of Fin garden in Kashan, a component called "choosing other types of natural elements in the design", indicates precision in the selection of a natural elements of design of Fin garden. For example, the type of trees that are consistent with their host ecosystem confirms this point. Moreover, in the field of threats, a component called "damage and diseases of plants and trees" have lower score than average, which indicates the focus on maintenance of the garden based on the natural layer garden of lifelikeness.

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