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Acknowledgement

In the Name of God

Dear Readers,

I, on behalf of the editorial board, am proud to present this issue of the *International Journal of Applied Arts Studies (IJAPAS)* under the sponsorship of the Islamic Azad University, Yazd Branch. We were driven to found the *IJAPAS* by a noticeable lack of journals, in the Islamic Republic of Iran in particular, devoted to architecture, urban design, urban planning, architectural conservation and restoration, painting, art history, graphic, digital arts, fashion design, performing art, industrial design, aesthetics and semantics. Although the academic world is increasingly driven by cross-disciplinary visions and models, we seek multi-disciplinary views, an attempt to inform researchers, graduate students, and professionals about the trends, ideas and innovations being put forward in applied arts. To this end, in addition to standard articles, in every volume of the *IJAPAS* we hope to provide a special issue related to a respective field with innovation.

We are also sending out a call for papers related to *Applied Arts* to appear in the next issue of *IJAPAS* in Aug – Sept 2018. The deadline for submissions for this issue is July 31, 2018.

Finally, I should mention that we are committed to a speedy refereeing process for every article submitted to us. We effort to reply to all papers submitted within five weeks' time with a response about acceptance or rejection. We also do not require formatting for submissions in our style until *after* the paper has been accepted by us for publication.

I would like to thank our Editorial Board for their work so far in helping to establish the *IJAPAS*. And, finally, I would like to extend my deepest gratitude to Dr. Ali Boloor, the assistant editor of the *IJAPAS*, for all of his hard work to ensure the timely completion of the issue.

I am delighted to invite you to visit us at www.ijapas.org.

Sincerely,

Dr. Abolfazl Davodi Roknabadi
Editor-in-Chief
International Journal of Applied Arts Studies (IJAPAS)
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Evaluation of the Effects of High-Rise Building Components in Residential Complexes of Shiraz by Radar Chart

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Abstract

Urgent population growth as well as the avoidance of horizontal expansion of cites have made the high–rise building phenomenon necessary as a solution to the problem of land scarcity. On the other hand, paying attention to the human and environmental factors influencing planning and design can improve the quality of life in these high-rise building. In this regard, the purpose of this study is to identify effective factors of high-rise building on the living culture of Shiraz and to examine the status of each of these components on the residential culture. This is an applied research study, enjoying a descriptive-survey method. The data collection tool in the research is a questionnaire given to the residents of the Derak residential complex and the residential complex of oil company staffs. Data were analyzed by using SPSS software and the results of the surveys were presented in the form of diagrams. The results indicate that there is a significant relationship between the factors affecting the creation of high-rise and residential culture. By providing solutions, it is also possible to promote a culture of dwelling in such settings.

Keywords: Urbanization; High Places; Residential Culture; Derak Residential Complex; Oil Company Staffs Complex; SPSS

1. Introduction

The lack of land and particularly the unreasonable growth of its prices across the country, on the one hand, and increased demand for housing in metropolises like Shiraz, on the other, led politicians to adopt the rules for increasing congestion and high-rise in the 24/10/1990 and emphasize the general policy of encouraging the high-rise buildings, implementation of a pattern of

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separation with high-rise building requirements and encouraging the aggregation of parts in modernization areas (Rahnema & Razaghian, 2013) (quoted by the Supreme Council for Urban Development and Architecture of Iran, 18: 2009). Thus, living in high places without regard to some of their social abuse consequences was imposed on communities, since land removal does not only reduce the price of land per unit, but also affect the type of ownership to each residential unit as well as the type of household lifestyle. In addition, it creates a kind of social life that depends on its adaptation to social cultural teachings (Pourdiehimi, 45: 2012). Consideration of cultural and residential issues will ultimately lead to a life based on peace and social sustainability, which will enable us to see the establishment of favorable housing complexes for residents in the future (Monjezi & Keshavarz, 2017).

Accordingly, this paper tries to analyze the effective components of high-rise building on the residential culture, using data obtained from two selected residential complexes.

1.1. The main purpose of the research

1. Efforts to promote a residential culture with respect to the factors affecting the creation of high-rise buildings in Shiraz.
2. Analysis of effective components of high-rise building in residential culture in Shiraz.

1.2. The necessity and importance of the research

Necessity: along with the basic needs of humans like food and clothing, one of the most important needs of the human community is housing (Malekabadi et al., 2016). The people of each period will speak in their particular language and understand the architecture in the same language. Ancient language is a living language that feeds on life, day to day issues of society, technology and science of the day. If the presence of architecture in life and issues of an era diminishes, this poverty of presence will also be transferred into language and culture.

On the contrary, this is true so that if the language and culture of a nation dwindles or even attacked by foreign language and culture, the architecture of that nation will also be transformed. Therefore, culture and architecture are two inseparable parts that affect each other unintentionally. Recognizing the effects of architecture and culture on each other is of particular importance because a culture survives which has a sufficient basis against the alien culture and architecture is the true means of measuring the culture of a nation (Momeni & Masoudi, 2015).

Importance: a culture is a relationship between man and the environment. With the help of culture, human beings are closely intertwined and the nation comes into existence with the intellectual commonality that originates from this culture (Momeni & Masoudi, 2015). Architecture is a real measure of the culture of a nation. The culture of each society responds to the formation of space. If the culture is defined as the set of traditions and behavior of the consciousness of a society that moves toward a goal, everything is almost part of culture. Architecture is also the actions and reactions of human beings (Fatehi & Karimi, 2016).

2. Meaning and Concepts of Keywords in the Research

2.1. Residence

In a situation where human life is more and more abandoned in cadizism, residence is also diverted from its qualitative concept. This definition, "residence is nothing but a ceiling overhead and a few meters below the ground", represents getting away from the quality and desirability of

residential space and paying attention only to the material dimension of residence (Varesi & Karimi, 2017).

The first concept that takes place after hearing the word *'residence'* in the human mind is to reside in one place (Rashneu & Saeedi, 2012).

Housing is an institution created to meet a complex set of goals. Housing is, on the other hand, a social phenomenon, the order and type of space as well as its form is influenced by cultural, social and economic factors. The main purpose of housing is to create an environment that is consistent with the human lifestyle. In addition to meeting individual needs, housing must also be able to meet the social needs of the individual (Pourdiehimi, 2012).

Table 1 Summary of the ideas of theorists on the concept of residence

Theorist	Theoretical view of the concept of residence
Nurburg Schultz	Residence represents a meaningful link between humans and the perceived environment. This link originated from an attempt for identity, that is to say, a sense of belonging.
Yarahmadi	Residence is a process in which a person transforms the "place" into "home", and deals with the four main sources of thinking, namely, God, himself, heaven and earth.
Fazeli	Residence is a collection of values and meanings that define what the concept of a home is in a group or nation and how to make a home, what kinds of rituals are inside the house and what else are out and… It is responded by being in each community which is in fact a subset of the whole culture of society.
Yashlar	Residence is considered the home to be a dream and quietness is necessary to dream comes true.
Robert Gifford	Hut is a collection of richly evolving cultural, demographic and psychological meanings that we attach to a physical structure and has six characteristics: shelter, ordering, identity, solidarity, symbiotic warmth and suitable with psychological needs.

(Source: Authors, 2017)

2.2. High-Rise Building

When it comes to high-rise building, everyone seems to have the same idea, while this is not the case, and not only among the general public, but also among experts, there are different views about the high-rise building definition.

While this is relative, important factors such as time, place, person's perceptions of the environment and the height of adjacent buildings, etc., are involved. For example, at the point where all houses are villas, a 5-floor building looks tall and in a city like Chicago, if a building does not look small or does not overlap with nearby buildings, it should have dozens of floors (Rasaghian et al., 2011).

In general, there are two defining frameworks for high-rise buildings that are:

1. Definition based on the determination of the height of buildings

2. Definition according to the characteristics of the building or the possibility of its establishment in the city and region.

In this regard, various definitions have been made; in the first definition, for example, the fire equipment (which is 23 meters in Iran according to the 122 issue) and the necessity of using elevators in building for residents (in Iran, buildings of more than 4 floors need elevators and are considered to be high-rise building) are considered.

Within the second definition, it is possible to say that the main characteristic of these buildings is that the design or operation of the building is influenced by the symbol of its height (Azizi & Motavaseli, 2012).

2.3. Culture

The term *'culture'* has taken different meanings and concepts in its historical course.

Ralph Linton considers culture as a combination of acquired behavior that is transferred by members of a certain community from generation to generation and shared among individuals (Khakpour & Sheikh Mehdi, 2011).

Edward Tyler has defined it as follows: "culture is a complex set involving knowledge, beliefs, arts, laws, habits and any other abilities that man has acquired as a member of the community" (Emami, 2009). The definition of Edward Barnett Taylor, the great English anthropologist, in 1871, in the first sentence of the book "elementary culture" is that: culture is a combination of knowledge, religion, art, law, morality, ability and habit that a person has acquired from the community (Salehi Milani & Mohammadi, 2011).

Table 2 Definition of culture

Definition of culture	Year	Theorist
The culture of the set is an integral part of the modes of thinking and action that is more or less distinct and is shared by many people and shared between them (Gay Rocher,1989)	1989	Gay Rocher
Culture is a model of the basic assumptions and beliefs that a social group has created in order to discover or create the way to solve two fundamental problems of adapting the external environment (the way to survive) and creating inner coherence (the way to stay together). This template has been validated on the course of this group's journey and proved to be useful. As a result, it is transmitted to the next generation as a proper way of perception, thinking, feeling and behavior (Schein,2010)	2010	Schein
Culture is the lifestyle of group which is formed based on the material and spiritual achievements of the community. The achievements that have been made in history are still valid and are current in the lives of the individual and group (Fallahi,2013)	2013	Fallahi
Includes man-made objects, techniques, social orientations, perspectives, and goals that are determinants of behavior that are underlying it (Rooh Alamini,2014)	2014	Herscovitz
A collection of handcrafts, goods, technical processes, thoughts, habits and heritage values, and a unique reality (Ashuri,2014)	2015	Mallnouski

(Source: Authors, 2017)

2.4. Residential Culture

One of the most important aspects of living is the ability to get identity through life into the center of the residential culture. In the sense of identity, which divides into individual and social identities; individual identity is shaped in a person' residence and as stated "residence can also be regarded as determining position and authentication" (Schultz, 2015).

Residential culture means the attention to the rules and requirements of life in the collective environment, i.e. the biological complex has meaning and concept and avoiding it causes social problems. In this situation, people have to give up a part of their freedom to enjoy a quiet and peaceful life, and accept duties in exchange of the rights they find (Shokouhi, 2012).

2.5. Relationship between culture and architecture

What we have mentioned as culture (laws, values, etc.) is only part of the culture of every society. Culture has another dimension, called the material dimension and the meaning of it is buildings, factories and so on. In fact, these are also part of a community. Because they are rooted in values, beliefs, and so on, in which the circle of communication between culture and architecture appears (Momeni & Masoudi, 2015).

The orientation of the cultures is always based on the human nature and thought and this path is effective in shaping the residential space and the emergence of architecture, since this space is an issue as a human need and these needs are always responded in the path of divine intellect and nature (Fallahi, 2013).

3. Research Methodology

This research is applied in nature and the research method is a documentary-analytical survey. The data gathering procedure is divided into two categories: library and field. Library methods were used in order to collect information about the literature and the history of the research and for gathering data, a field survey questionnaire was used to collect information.

Therefore, a set of questions was arranged and distributed to study the effect of high-rise building components on the primary residential culture. Data were analyzed by SPSS software. The statistical population of this study was randomly selected within the sample site. The questionnaire reliance factor (i.e. Cronbach's alpha) was calculated to measure the reliability. The closer the coefficient to 1, the more reliable the questionnaire would be. The validity of the questionnaire was also ascertained before the data analysis.

4. Society and Statistical Sample

The statistical population in this research is residents of Derak residential complex located in the 6th district of Shiraz, and residents of residential complex of the oil company staffs located in Shiraz municipality district 1. To determine the sample size, Cochran sampling method was used. The Cochran formula is calculated in equation 1 (Habibi, 2012).

$$n = \frac{\dfrac{t^2 PQ}{d^2}}{1 + \dfrac{1}{N}\left(\dfrac{t^2 PQ}{d^2} - 1\right)} \tag{1}$$

n = sample size
N = population volume (population, city, province, etc.)
Z or *t* = error percentage of acceptable coefficient of confidence
P = relative proportion of population without definite attribute
q = (1-p) = proportion of population without definite attribute
d = the degree of assurance or optimal probability of accuracy.

In this research, N (proportion volume) is considered as all inhabitants of Derak residential complex and the oil company complex. The sample size was calculated by taking into account the maximum P and Q values (.5) and with an error rate of .88 of 257 people, of which 181 belonged to the Derak complex and 76 related to the staff of the oil company complex.

5. Content of the Questionnaire and Determination of its Reliability

The content of the questionnaire, in addition to questions about gender and the level of education and age, includes 15 questions about assessing the impact of high-rise building compounds on the inhabitant's residential culture. Residents' preferences are set as 5-point arbitration on a Likert scale. Cronbach's alpha method was used to assess the reliability of the questionnaire. According to Table 3, the obtained result is 0.711 showing internal consistency and appropriate reliability.

Table 3 Determine the reliance of questionnaire

No. of questions	Cronbach
15	0.711

(Source: Authors, 2017)

Since the Cronbach's alpha coefficient is .71, the questionnaire has a satisfactory reliability and we can be sure of the internal solidarity of the questions. In order to ensure the validity of questionnaire, it was scrutinized by several expert professors and then was distributed to the sample after confirmation. After analyzing the internal consistency of the questions, the questionnaire was analyzed. Based on the findings of the factor analysis, the value is equal to .658, which indicates that the sample size is suitable for factor analysis and Bartlet's value is 12345.438 and a significant level of .99% indicates that the correlation of the variables is appropriate for factor analysis (Table 4).

Table 4 Characteristics of a cloth

Amount		Statistical index
0.658		Index KMO
1275.438	Statistics	Bartlet test
105	Degree of freedom	
0.000	Significant level	

(Source: Authors, 2017)

6. Analysis of Information

In this research, for analyzing the obtained data, firstly, the variables of the research were analyzed using descriptive statistics, frequency indexes and percentages (according to Table 5). Then in the inferential part, by using the t-test and weighing and drawing the spider diagram (Radar), the research questions were studied. To test the hypotheses, SPSS software was used.

Table 5 Distribution of the statistical sample in Derak residential complex

Frequency percentage	Frequency	Category	Index
52.5	95	Male	Gender
47.5	86	Female	
5.5	10	16-20 years	Age
20.4	37	21-30 years	
39.2	71	31-40 years	
10.5	19	41-50 years	
19.3	35	51-60 years	
5	9	61 years and above	
5.5	10	Education under Diploma	Education
13.3	24	Diploma	

11	20	Higher-Diploma	
36.5	66	Bachelor	
29.3	53	Master and PhD	
4.4	8	Un-answered	

(Source: Authors, 2017)

Table 6 Distribution of the statistical sample in Oil Refinement Company Staffs

Frequency percentage	Frequency	Category	Index
43.4	33	Male	Gender
56.6	43	Female	
0	0	16-20 years	Age
13.2	10	21-30 years	
51.3	39	31-40 years	
21.1	16	41-50 years	
14.5	11	51-60 years	
0	0	61 years and above	
2.6	2	Education under Diploma	Education
15.8	12	Diploma	
7.9	6	Higher-Diploma	
10.5	8	Bachelor	
11.8	9	Master and PhD	
51.3	39	Un-answered	

(Source: Authors, 2017)

In order to investigate the relationship between the factors affecting the creation of high-rise building and residential culture, Pearson correlation coefficient was used, the results of which are presented in the following Table 7.

Table 7 Correlation coefficient between factors affecting the creation of high-rise spaces and residential culture

			Residential culture	
Residential complex	Factor	Number	Correlation coefficient	Significance level
Derak	Physical needs	181	0.386**	0.000
	Safety and quietness	181	0.586**	0.000
	Social balance	181	0.709**	0.000
	Social identity	181	0.565**	0.000
	Discipline and self-development	181	0.585**	0.000
Oil refining company's staff	Physical needs	76	0.772**	0.000
	Safety and quietness	76	0.809**	0.000
	Social balance	76	0.610**	0.000
	Social identity	76	0.447**	0.000
	Discipline and self-development	76	0.772**	0.000

(Source: Authors, 2017)

The correlation coefficient between physical needs, the need for safety and quietness, social balance, social identity, discipline and self-development and the duration of residence at Derak complex were .386, .586, .709, .565, .585, and in the oil complex they were .772, .809, .610, .447, .772, respectively. This indicates a good correlation between factors affecting the creation of high-rise building and residential culture.

This correlation is significant because its *p* level in all dimensions in both complexes is less than .05. Therefore, it can be said that there is a significant relationship between factors affecting the creation of high places and residential culture.

6.1. Calculating the high-rise building effective components on Shiraz residential culture in Derak and oil company complexes

To compare the general factors and components with each other, the weight of the factors is first calculated, and then the spider diagram is plotted. The weighted average method is used to calculate the operating weight. First, the value of each of the Likert scale options is multiplied by its relative frequency. Then the sum of these products gives the calculated value of the components. The resulting number is redistributed to the total score of the components and the weight of that component is obtained. This is done for all components. Finally, to draw the status chart of components in the two complexes, it is necessary to first calculate the final score; this score is obtained through the obtained average multiplication in weight of that component. To come then, in order to obtain the final score, final scores of all components of that factor are added together. The general factors and their components are grouped as follows.

Table 8 General factors and their components

Physical needs
Density
Proportion
Human scale
Permeability
The need for safety and quietness
Security
Social monitoring
Comfort
Access network
Social interaction
Social participation
Presence
Public place
Social identity
Urban management
Discipline and self-development
Sense of belonging
Liveliness and pleasant
Unity and social order

(Source: Authors, 2017)

6.2. Investigating the Status of affective high-rise building components on Shiraz residential culture in Two Residential Complexes, Derak and oil Refinement company staffs

After collecting data, we can compare residents' opinions in order to examine the current status of the factors and the influential factors affecting the residential culture. In order to examine the conditions for the general influential factors on the residential culture, the weight values of each component must be multiplied by the mean of the scores to earn the final weighted average, which

will be the final score, and the resulting values will be converted into a five-dimensional scale to allow us to provide a guide to the status of components that affect residential culture. It can be compared based on the final score obtained from each of the components by a radar chart. The chart of the components is illustrated by the general factors as the following Equation (Asgharpoor, 2008).

$$w_i = \frac{a_{ij}}{\sum_{k-1}^{n} a_{kj}}]$$

(2)

Table 9 Final scores of physical needs component

Name of component	Components of physical needs	Average value of component	Weight of each component	Final score	Final score in 5-scale	Status
Derak	Density	3.15	0.217	0.684	2.995	Requires more attention
	Proportion	3.56	0.245	0.874	3.825	Acceptable readiness
	Human scale	3.27	0.256	0.954	4.177	Acceptable readiness
	Permeability	4.07	0.280	1.142	5	Acceptable readiness
Oil refining company staffs	Density	2.75	0.214	0.590	2.869	Requires more attention
	Proportion	3.12	0.243	0.760	3.693	Acceptable readiness
	Human scale	3.30	0.257	0.850	4.132	Acceptable readiness
	Permeability	3.63	0.283	1.029	5	Acceptable readiness

The results of Table 9 indicate that, from the viewpoint of the respondents, for the components of physical needs in both complexes, the highest weights belong to the components of permeability and human scale.
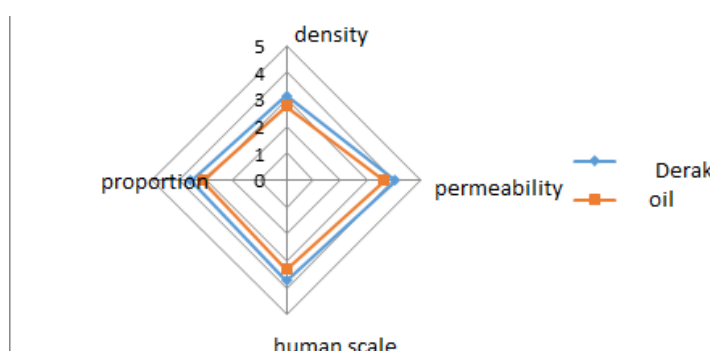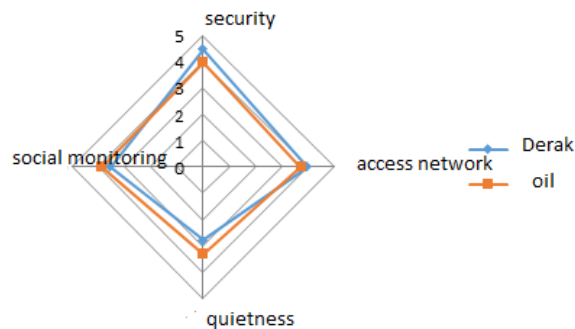

Fig 1 Comparison of the components of physical needs in two Derak complex and oil company complex staffs

Table 10 Final scores of safety and quietness needs components

Name of complex	Safety quietness components	Average value of component	Weight of each component	Final score	Final score in 5-scale	Status
Derak	Security	4.48	0.303	1.359	5	Acceptable readiness
	Social monitoring	3.54	0.239	0.849	3.121	Requires more attention
	Quietness	2.78	0.188	0.523	1.952	Requires immediate attention
	Access network	3.96	0.268	1.062	3.906	Acceptable readiness
Oil refining company staffs	Security	3.99	0.268	1.070	5	Acceptable readiness
	Social monitoring	3.87	0.260	1.007	4.703	Acceptable readiness
	Quietness	3.30	0.221	0.732	3.420	Requires more attention
	Access network	3.71	0.249	0.925	4.322	Acceptable readiness

Therefore, the results of Table 10 indicate that, from the viewpoint of the respondents, the highest weights is for the security and access component in Derak complex for safety and quietness components. Besides, the complex of staff of the oil refining company has earned the highest weight of security and social monitoring components.

Fig 2 Comparison of the components of safety and quietness needs in two Derak complexes and oil company staff complex

Table 11 Final scores of social interaction component

Name of complex	Social interaction components	Average value of component	Weight of each component	Final score	Final score in 5-scale	Status
Derak	Social participation	2.72	0.294	0.800	2.233	Requires immediate attention
	Presence	2.45	0.265	0.649	1.811	Requires immediate attention
	Public place	4.07	0.440	1.792	5	Acceptable readiness
Oil refining company staffs	Social participation	3.07	0.339	1.043	5	Acceptable readiness
	Presence	2.93	0.324	0.950	4.554	Acceptable readiness
	Public place	3.03	0.335	1.016	4.870	Acceptable readiness

The results of Table 11 indicate that from the viewpoint of respondents, Derak complex has the highest weight in public places index for the components of social interaction and in the oil company' staff, the most weights are the components of social participation and public places.
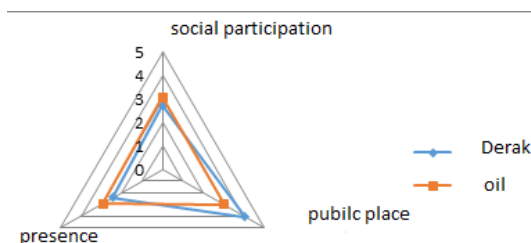
Fig 3 Comparison of components of social interactions in Derak complex and oil refining company staff complex

Table 12 Final scores of Discipline and self-development component

Name of complex	Discipline and self-development components	Average value of component	Weight of each component	Final score	Final score in 5-scale	Status
Derak	Sense of belonging	2.53	0.354	0.897	5	Acceptable readiness
	Liveliness and pleasant	2.33	0.326	0.761	4.240	Acceptable readiness
	Unity and social order	2.27	0.318	0.722	4.025	Acceptable readiness
Oil refining company staffs	Sense of belonging	3.37	0.332	1.118	4.455	Acceptable readiness
	Liveliness and pleasant	3.57	0.351	1.255	5	Acceptable readiness
	Unity and social order	3.21	0.316	1.015	4.042	Acceptable readiness

The results of Table 12 indicate that, from the viewpoint of the respondents, for the components of discipline and self-development, both complexes have obtained the most weights in components of a sense of belonging and liveliness and pleasure.
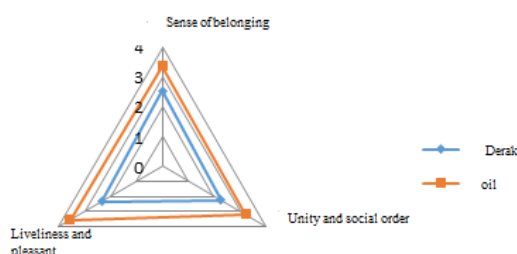

Fig 4 Comparison of components of discipline and self-development in Derak complex and oil refining company staffs complex

Table 13 Comparison of high-rise building effective factors on residential culture in Derak and Oil refining company staffs complex

Name of complex	Factors	Final score	Status
Derak	Physical needs	3.94	Acceptable readiness
	Safety and quietness	3.69	Acceptable readiness
	Social interaction	3.08	Requires more attention
	Social identity	2.44	Requires immediate attention
	Discipline and self-development	2.38	Requires immediate attention
Oil refining company staffs	Physical needs	3.17	Requires more attention
	Safety and quietness	3.72	Acceptable readiness
	Social interaction	3.01	Requires more attention
	Social identity	3.97	Acceptable readiness
	Discipline and self-development	3.38	Requires more attention

The results of Table 13 indicate that from the viewpoint of respondents, for effective factors in the residential culture in the Derak complex the most weights are indicators of physical needs and the need for the safety and quietness, and in the staff of the oil company complex, the most weights are the indicators of social identity and safety requirements and quietness. The results also show that, in view of the respondents, the mean of physical needs and social interaction in the Derak complex is greater than that of the oil company's staff, and also the average need for safety and quietness, social identity and order and self-development in the oil company staff complex is greater as compared with the Derak complex.
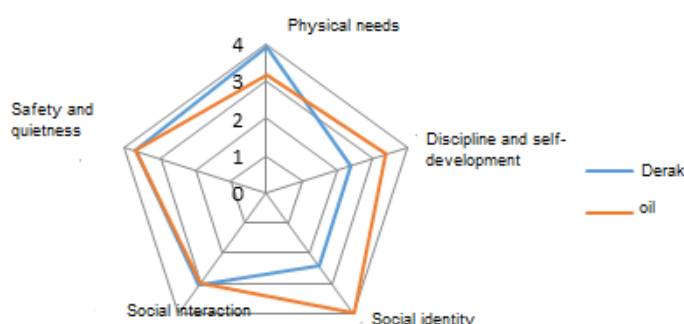
Fig 5 Comparison of High-rise building Effective Factors in Residential Culture in Derak and oil refining company staff complex

The effective components guide for Shiraz residential culture is described in Table 14:

Table 14 Statues guide for the factors and effective components in residential culture

Average range	Status
<2.5 average 0<	Requires immediate attention
≤ 3.5 average 2.5 ≤	Requires more attention
< 5 average 3.5 <	Acceptable readiness

7. Conclusion

Today, housing is one of the key issues in the construction and development of cities. In Iran, along with the growth of urbanization and population growth and the lack of suitable land for

construction, the construction of high-rise buildings has been necessary to meet this growing need for housing.

Considering that housing has a decisive role in shaping the culture of society, it is possible to take valuable steps by observing a residential culture in increasing the quality of life and society.

According to the analysis, the assumptions of the research are as follows:

There is a significant relationship between the components that affect the creation of high-rise spaces and residential culture.

In this regard, it is possible to come up with solutions to improve the residential culture in the residential space, including:

-providing collective space in order to expand social relationships and fostering thoughts

-creating space for recreation and liveliness.

-embedding the building blocks in such a way that there is less visibility on each other

-embedding index elements such as columns, flooring and color

-using of sound insulation in the interior and exterior walls of the building to control the sound

- designing pathways by changing the nature of materials through considering safety issues

-establishing laws and supervising the implementation of laws with the participation of residents in the selection of management and the board members of the complex

In total, in the comparative study between the studied complexes, the following results were obtained:

Regarding the physical needs and the need for safety and quietness in the residential Derak complex and the factors of social identity and the need for safety and comfort in the staff of the oil refining company complex, there is the highest level of acceptable readiness. The physical needs and social interactions in Derak complex are higher than those of the staff of the oil refining company complex; the safety and security, social identity and self-development among the staff of the oil refining company complex is higher as compared with Derak complex. In Derak complex social interaction as well as the physical needs, interaction, discipline and self-development need more attention, and more important are discipline, social identity and self-development that require immediate attention in the residential Derak complex.

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A Comparative Analysis of Spatial Configuration in Designing Residential Houses Using Space Syntax Method (Case Studies: Houses of Isfahan and Modern Architecture Styles)

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Abstract

In the traditional Persian architecture, the design of different spaces of houses was based on the needs of their inhabitants, and these needs affected even the arrangement and the mode of spatial relationships. In contemporary architecture, housing patterns do not usually meet the needs of their inhabitants. This research investigates spatial configuration in a sample of houses of the first modern and Isfahan style architecture; in order to find the functional space and the most important factor affecting the space syntax. Selected samples were analyzed using "E-Graph" software, and by calculating the average and the Pearson coefficients of three variables of depth, integration and connectivity, and the correlation of these variables on space syntax was studied. The results show that in traditional houses, the yard and the porch, had the role of connection in the system; and Majlesi (chamber) was located at the lowest depth. In modern houses, the living room and the hall are functionally used and perform as space divider while other spaces connect to this space with direct access. Finally, the variables of integration and connectivity had the greatest impact on the space syntax, both in traditional and modern houses.

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1. Introduction

Home is meant to be a place to live and is considered as the safe privacy of a person. The dimensions of tranquility and comfort are among the most important qualities of a desirable house, and their lack may distort the serenity of the man. In Iranian and Islamic culture, the concept of home as a place to meet the various needs of residents has been considered. In terms of characteristics of an Iranian house, it is possible to refer to features such as the definition and distinction between territories, secrecy, privacy, security and safety, tranquility, introversion, and human scale (Pirnia, 2013).

Some of these features have been transformed by new constructions and inspired by the western style of homebuilding, and have been transformed into mere imitation, and has been overlooked during the time. More important than the physical changes seen in modern buildings, there are spiritual and psychological changes, and today's housing is completely different from traditional homes. Family focusing in an environment with a delightful and delicate structure would bring family members comfort and relaxation, and the distance from the house's entrance to the house's seating place gave the person a chance to fit into the interior environment of the house. A person who enters the home without any preconceptions, the dichotomy of the environment inside and outside, makes him confused in the proper communication (Saremi & Shahbazi, 2016).

In the space and structure of traditional houses, before entering the main building, the courtyard and the entrance hall create a different space for the man, and the special space of the house makes him ready to face the household and spiritual and mental connection with them. Consequently, using the comparative study of spatial configurations in traditional houses and analyzing the greatest changes in the connectivity of the public and the private spaces, this traditional pattern can be used in modern houses.

This research attempts to study the adaptive space syntax in a sample of primer, modern architecture houses and Isfahan style architecture in order to find the functional space and the most important factor affecting the connections and the composition of the space in houses. How to make this comparison is using space syntax method and using "E-graph" software, which will analyze the priority of the arrangements of the spaces in the studied houses. Therefore, the hypothesis of the research is that it seems that the type of functional spaces has undergone changes, in the course of time, and it also seems that the index of integration affects the syntax of the space in different domains of the houses more than other variables. Thus, the questions of this research are:

- Which of the various home spaces has had a more functional role over time?
- Which of the variables has the most impact on the syntax and configuration of the space in traditional and modern house samples?

2. Theoretical Basis

2.1. Space Syntax

Space syntax is a theory and a technique for analysis in architecture and urbanization, which began in the late 70's and the early 80's by Steadman in London. The syntax or configuration of space here means the examination of the relation of each space unit among spaces in a complex. Just like examining a word inside a text and its relation to the other words. If a building is considered as a tool, consisting of a spatial connection system, the presentation of the connection system will be in the form of a graph (Hillier et al., 1987).

Understanding these graphs and patterns means recognizing social relations in spaces. Understanding social relations means knowing the activities of consumers inside the spaces. These activities and relations in the space are premier to the shape or general form of the space. Ultimately, the space syntax providers argue that it can be used to analyze spatial relations (Dawson, 2002). Although the constructor or the architect creates a unique form, in order to achieve this form, he/she arranges the spaces together (Haq & Zimring, 2003). The building is the creation of spaces by elements and components. These spaces are created for specific functions and for people or consumers using them. Each space creates a specific connection between the consumer and the space. Here, the arrangement of spaces together means the internal relations of the spaces that are used by the consumer (Montello, 2007).

Thus, it is possible to recognize the social relations of the users, by recognizing spatial relations. In this field of concept, building is seen as a social object and architecture is seen as a social art. The shape or final form of the building introduces a system of spatial relations.

2.2. Configuration Theory in Architecture

This theory was founded by Hillier and Hanson in London in 1984, and is based on researches on the relations between social and spatial forms. The spatial configuration is based on the theory of graphs and is used for space syntax analysis (Jeong & Ban, 2014). This theory believes that space is the core of how social and cultural incidents occur. Since space in turn develops throughout social, cultural and economic processes, it is usually regarded as a platform for social and cultural activities, to the point where the form is almost not considered and it is assumed as invisible (Makri & Folkesson, 2000).

The theory emphasizes that, in deep understanding of urban spaces, the role of urban spaces as individuals and the characteristics of that space in small scale is less important in comparison to its role in combination with other elements of the city and its macro-scale and the whole urban system characteristics (Hillier et al., 1993).

In this regard, the main idea behind the configuration theory is the concept of spatial configuration, in which the connection of each element to other elements of the entire system is essential (Hillier, 2007). From the view of this theory, the relations between activity and space are understood and defined in relations between spaces or spatial structure and also connections between responders and social interactions, rather than being individually defined in the characteristics of space (Rismanchian & Bell, 2010; Hillier, 2007).The features of space syntax approach are examined by using indicators that are as follows:

1. Connectivity: It is defined as the number of points in the space that are directly connected to the other spaces. For instance, the connectivity of a room with two entrance doors to an adjacent space equals to two according to the Equation 1:

$$C_i = K \tag{1}$$

Where K is the number of points that are directly connected to the intended point and C_i refers to the connection at i-th point (Khalesian et al., 2009).

For studying the connectivity, based on the type of movement in each space, the nodes in each graph are divided into four categories:
- Space with one connection
- Space with two connections or more
- Space with two connections or more that is part of a ring.

▪   Space with three connections or more that connects two rings at least.

Therefore, the type of space is determined in terms of movement (communicational, syndetic, and static space) influenced by the socio-cultural aspects of everyday activities.

2. Integration: According to some people, this is the most significant output of this method. Degree of integration is the depth average that is passed to reach from a node to all other nodes in the system. On a linear map, the integration value of a line or space is the average number of lines that by using them, reaching to all other lines in the whole system from that one line is possible. Obviously, lesser the average, the closer the connection of the node with the other existing nodes, or in other words, the node is more accessible. The more depth average means the more separated space. Spaces that have higher levels of integration in the system usually have more permeability.

Given that the integration value usually computes the relationships of a line with other lines, the value obtained or the concepts taken by it, such as the concept of permeability, have a communicational and conceptual value, and not the metric one (Lam, 2008). Of course, in new methods, by converting a linear map into a segmental map, it is possible to include metric factors in the calculation, which extends beyond the scope of this paper.

This value is checked to determine the degree of continuity or differentiation of each space in the system. Integration can be measured by relative asymmetry or real relative asymmetry as follows:

$$RA_i = \frac{2(MD_i - 1)}{n-2} \quad \text{and} \quad RRA_i = \frac{RA}{D_n}$$
(2)

Where $D = 2\left\{n\left(\log_2^{((n+2)(3)-1)} + 1\right)\right\}\left[(n-1)(n-2)\right]$, n is the number of points, and MDi is the average depth from the i-th point (Khalesian et al., 2009).

3. Control: Control is a parameter that determines the degree of privilege of a point over its immediate neighbor points. In other words, a lower degree of choice of one point with regard to a specific point means that the former has a lower amount of control over the latter (Kamalipour et al., 2012). See the Equation 3:

$$Ctrli : \sum_{j=1}^{k} = 1/Cj$$
(3)

Where K is the number of points immediately connected to the point I, and Cj refers to the connection at the j-th point. Ctrli denotes the amount of control at i-th point (Khalesian et al., 2009).

4. Choice: Choice is a general measure of the flow rate in a space. In fact, a space offers a high probability of choices from a large number of shortest connectivity paths intersecting that space (Jiang & Claramunt, 2002; Lima, 2001).

5. Depth: Depth is not a main parameter in space syntax, but it is central for calculating integration at a given point. In general, it should be illustrated as one of the steps one must take to pass from a point to the other points (Jiang & Claramunt, 2000; Lima, 2001). See the equation 4:

$$MDi = \frac{\sum_{j=1}^{n} = d_{i,j}}{n-1}$$
(4)

Where MD_i is the average depth from the i-th point, n is the total number of points and $d_{i,j}$ is the shortest path between points i and j (Khalesian et al., 2009).

2.3. Spatial Arrangement

The spatial arrangement means the composition of spaces together and their interconnections. As it is seen in the Figure 1 below, there are three different types of layout arrangements. The two cubes on the left are not connected; in the middle, the relation is symmetric and equal; and on the right, the relation is asymmetric (Hillier et al., 1993).

Now this relationship can be checked with a third object. In Figure 1; on the left, each of the cubes is individually linked to the lower cube; in the middle, each of the three cubes is connected; and on the right, to reach each of the last cubes, it must be passed through the middle cube. The illustrated justified graphs describe the issue better.

To get from each cube to another, it must be passed through one or more objects. The number of objects to pass through is the same as the depth of the cube related to the original cube. By changing the layout of the cubes, all the spatial arrangements will alter. In the city, this phenomenon can be seen that changing the shape of buildings and streets or creating new streets will change the entire spatial relations of the city, and these changes will affect the citizens' imagination of the city and, subsequently, the behavior of the citizens in the space (Raeisi & Habibi, 2008).
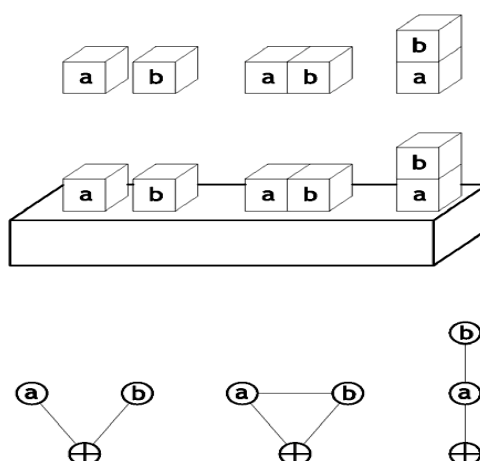

Fig 1 Justified graph of space syntax (Hillier et al., 1993)

There are also three main concepts in the analysis of space syntax, which are (Klarqvist, 1991):

Convex Space: Space where no line between the two points goes outside the perimeter of the space. Therefore, a concave space should be divided into the minimum number of convex spaces.

Axial Space: Axial space or axial line is a straightforward sight-line view that is understandable as a walker.

Isovist Field: This field includes all areas that are visible from any single point.

Accordingly, there are three types of analytical systems in space syntax:

a) Axial line analysis:

Axial lines (axial map) are a graphical diagram that derives from the catalysis of streets and open spaces. This diagram is developed on special software and it is the basis of the space syntax. On the axial map, the highest sight-lines and access lines, which are visible, are displayed. This map will contribute to divide the urban spaces into convex spaces, in all of which there are two basic principles of access and visibility (Hoeven & Nes, 2014).

b) Convex space analysis:

In this system, the convex space is analyzed from two aspects: (a) Spaces exhibiting non-linear behavior, and (b) Buildings and common spaces between them, as well as the interior arrangement of houses (Jiang & Claramunt, 2002; Klarqvist, 1991).

c) Visibility graph analysis:

The initial idea of this analysis comes from the fields of view that were visible from a certain point. Hence, the basis for this pattern is the reflection of light, which determines the patterns of people's motional behavior in the environment (Bendikt & Burnham, 1985; Jiang & Claramunt, 2002; Montello, 2007).

2.4. House and Layout Concept

Among the surrounding environment, house is the most immediate human-related space, and in everyday life, it is both influenced by human and influences human. The house is the first atmosphere in which humans experience the sense of spatial belonging. The five senses always pass through it all over, and shortly afterwards, they get accustomed (Norberg-Schulz, 1980).

House is the only place where the first immediate experiences with space are formed, both in isolation and group. For Moore, "The home is the center of the world for its inhabitants, and is the most significant building for consolidation of the place for its vicinity"(Moore et al., 1974).

To be an effective and active building, it is necessary to identify and categorize all its spaces, and then, by predicting the appropriate relationship between them, the building can be operated as a particular unit (Rossler & Glasgow, 2005). Housing design is also no exception, and before designing, it is necessary to determine the classification or, in other words, the layout of spaces. Before doing the job, the appropriate criteria for this task must be specified, so that the placement of harmonious and consistent spaces in one category is done correctly and the inconsistent areas are separated. Typically, these indicators are derived from an examination of cultural, continental and belief patterns (Hansson, 2008).

3. Research Methodology

This research is practical based on its purpose and is methodologically comparative with the use of analysis and description. The space syntax method has been used for this research. The research process consists of eight different houses (four modern styles and four classic Isfahan style) with a number of almost identical spaces that are selected in the city of Isfahan. The ground floor plan of the houses has been studied, and the courtyards and the alley or street space are also considered as a space. In addition, the spatial relations of different parts of the houses with the spaces have also been studied to compare the degree of privacy in different constructions. For this purpose, using "E-graph" software, the justified graphs are drawn according to the building plans the sets.

E-graph software draws a justification graphs based on the plan entered as a background and it calculates the main parameters of the spatial syntax based on the plotted diagram (Manum et al., 2005). Finally, by calculating the average of the three variables of depth, integration, and connectivity, first, their normal distribution or abnormalities will be evaluated using the Kolmogorov Smirnov test, and then the Pearson coefficient and the correlation of these three variables on the space syntax will be investigated.
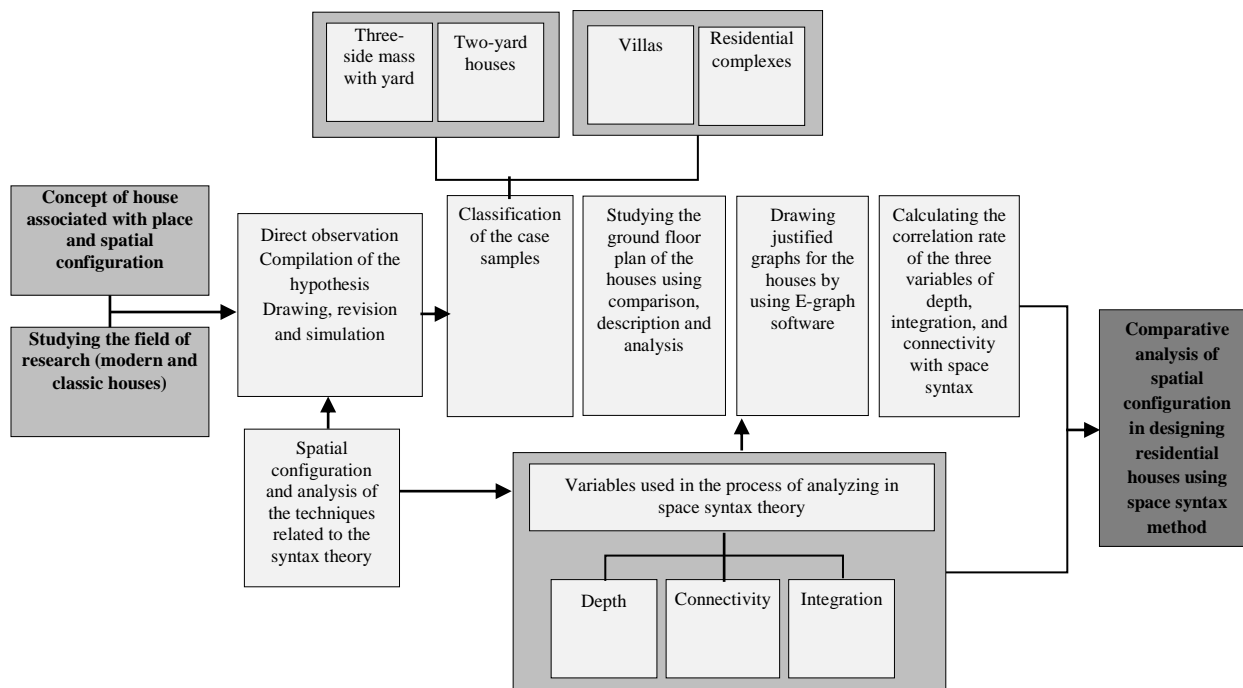
Fig 2 Conceptual model

4. Case Study

As previously mentioned, this research seeks to make a comparative study of spatial connectivity in the design of residential houses using space syntax method. One of the most important issues in the selection of traditional and modern houses was that the houses would be equal in terms of the number of spaces (different sections). For this purpose, eight housing patterns were selected consisting of four types of housing with traditional architecture and four types of residential complexes and contemporary villas in Isfahan. In the following, case examples of traditional and modern houses will be introduced.

4.1. Traditional Houses

1. Traditional house of Sayed Kazem Arabi

The house belongs to the Safavi period and on 1996, it was registered as one of the national monuments of Iran. On the east side of the house, the palaneh and the roof are being destroyed, and there are inadequate bracings on this side.

Fig 3 Traditional house of Sayed Kazem Arabi

2. House of Martha Peters

The house was built in the Safavi period and was registered in the list of historical monuments of Iran in 1974. The House of Martha Peters has a different pattern compared to its current ordinary houses, and it seems that the overall layout of the house was originally located in the middle of a garden, which has undergone some changes over time. The main part of the building is a cubic shape belonging to the Safavi period, and has four Sofehs in its middle. This space has a height of two floors and has porches on both sides of the east and west. The four-sofeh ceiling is decorated with Mogharnas and its walls are covered with decorations of plaster modeling, mirroring, gilding, and engraving of angels, which caused special features.

This space and the porch on either side were faced to the garden and the lighting was provided on its four sides. In the four corners of the main section of the house, there are rooms that are connected to the porches and the middle space. On the southern side of the building, there is a porch in the middle and two triple-door rooms on the sides, which are likely to be added later to the building.
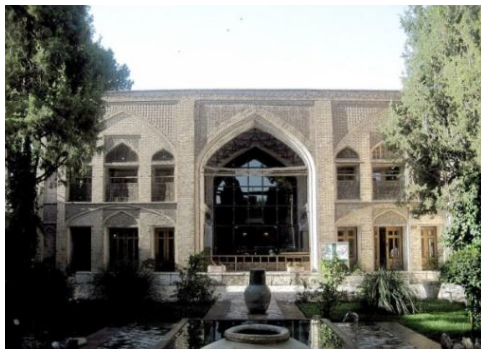

Fig 4 Martha Peters House

3. Sokisian House

This house is one of the remains of the Safavi era, and is composed of a vast, long yard and spaces on both sides of the northern and southern sides. On the southern front, the more important spaces are located, and it overlooks another courtyard on the other side. The southern yard consists of two-column ivy facing a beautiful pool. Two three-door rooms with different depths, both overlooking the main courtyard of the house, are located on the sides of the porch, and behind each of them there is another room that is connected to the second courtyard.

Fig 5 Sokisian House

4. Haqiqi Brothers House

The house dates back to the Safavi period, and there is also a little footprint of the Qajar architecture. It was reconstructed a few years before the Islamic revolution, and part of it has been repaired in recent years. The house is made up of a fairly large space consisting of a pool, a courtyard with brick floor and garden, and also in the north part of the building, the magnificent main room with a very beautiful sash window was built and its walls decorated with decorations of paintings and statues. The reason why this beautiful and interesting house is located among the famous attractions of Isfahan is the similarity of its gilding and flower ornaments with the architecture of Karimkhani castle in Shiraz. This work was added to the list of national works of Iran in 1974.
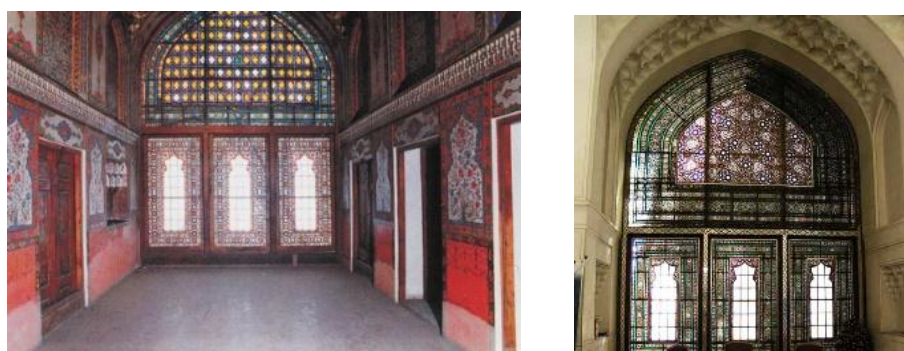

Fig 6 Haqiqi Brothers House

4.2. Modern Houses

1. Duplex Villa House – Phase Two

The house is a modern style and duplex house, located at the Imam Khomeini Street- Resalat 1. One of the challenges that made this project difficult to design was that the space was exposed to sunlight just from one side (south side). For this reason, suitable actions are taken to design the body and the land area. This project is a perfect example for defining architecture as an art for organizing the space. Accommodating private and public arenas was an architectural work of art. To a better use of light, the designer puts the main spaces in the southern part such as kitchen and bedrooms. The main space of the villa is designed to provide a sense of harmony for interior space by collecting different uses in different layers under one roof.

2. Duplex Villa House – Phase One

This villa is located on Jey Street. Most of the lighting of the villa is from the east and west, and the size of the windows is small, so it is in poor condition in terms of lighting. Access to the villa is directly from a main and broad street. The interior space, the exterior façade and the entrance of the complex have a simple design with no decorations.
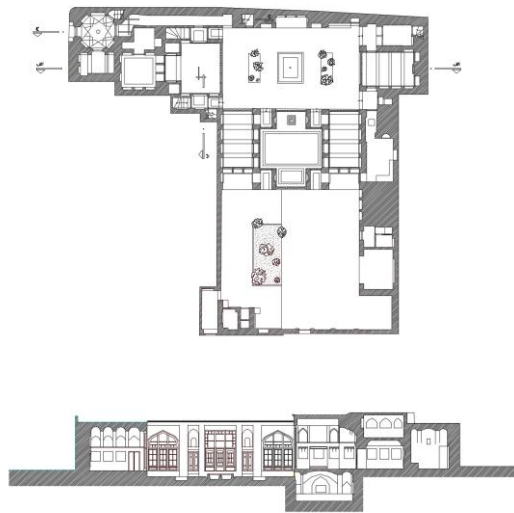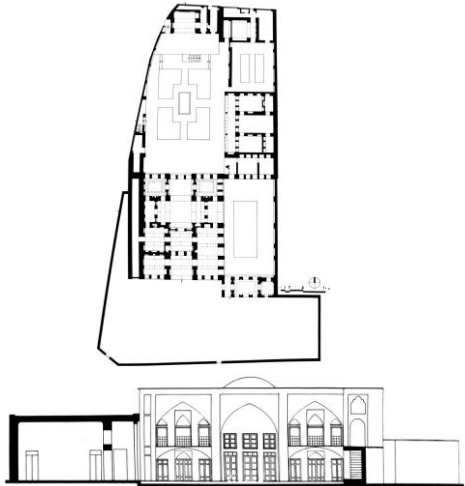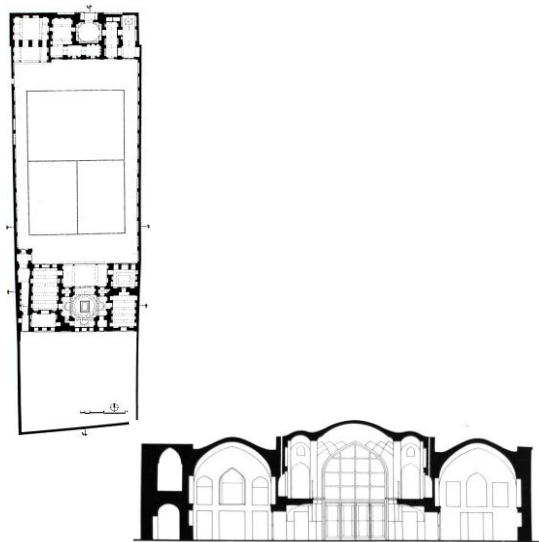
3. Sepehr Moshtaq Residential Complex

The complex is located on Moshtaq Street, along the Zayandehrud bank, and it overlooks the greenery and the river, so it has a very beautiful landscape. The project area is between 156 and 450 square meters in five floors on stilt. There are five duplex units designed to respond to the wide range of requests. This project contains luxury facilities, such as fan coil and chiller, swimming pool, sauna, Jacuzzi, smart systems, fire alarm system, etc.

4. Erison Residential Complex

Erison Residential Complex, located on Jey Street, is a four-story house. Access to the complex is direct from the main street, and access to the home spaces and their connection with each other is through the living space or the hall. The green space of the complex is located between the blocks and the architectural form of the building and its facade provides the use of ribbon windows to utilize maximum sunlight and to use larger terraces. The interior space, the courtyard and the exterior façade of the complex are very simple and have no special decoration. In general, the lack of proper yard in today's complexes has caused poor lighting and its impact on the shape and dimensions of doors and windows and the absence of the porch.

Table 1 Ground floor plan of the traditional and modern houses

Isfahan style houses
Arabi house
Martha Peters house
Haqiqi Brothers house
Sokisian house

Modern style houses	
 Duplex Villa House – Phase One	 Duplex Villa House – Phase Two
 Sepehr Moshtaq Residential Complex	 Erison Residential Complex
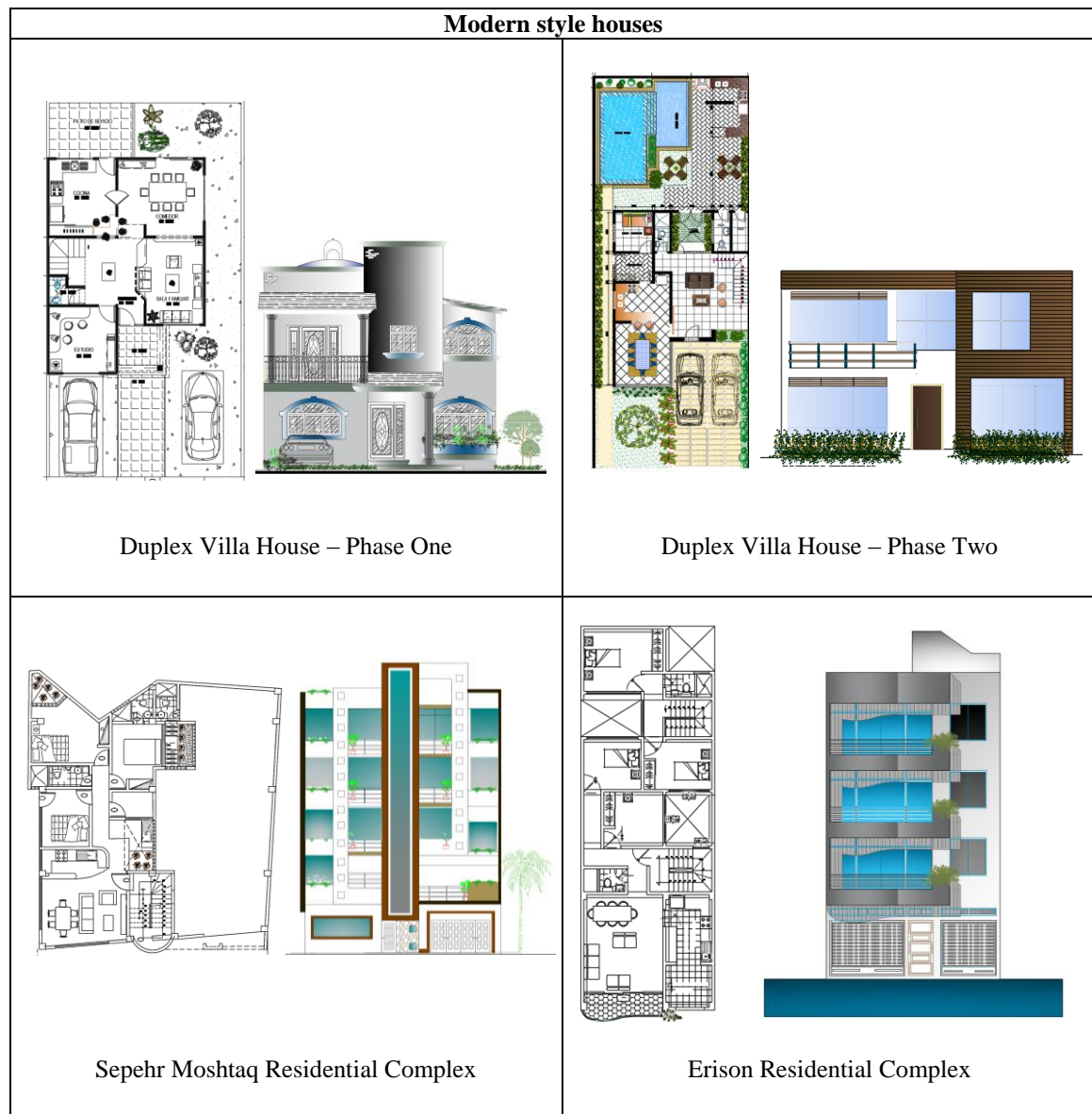
5. Discussion and Analysis

5.1. Depth

1. Depth in Traditional Houses

As noted above, depth has a semantic social meaning. As the depth increases, the space becomes more private and the permeability of the space decreases. The courtyard and the porch, and then the entrance space, are considered to be the public domains with the least depth. The reason to depth of the entrance is that there are sub-entries for each home, which opened to spaces such as the storeroom. After entering the house and passing the courtyard and porch, the kitchen and Majlesi are the two spaces for which easy access have been provided. At the next level of the depth, there are the room and the windbreaker that is indicating an increase in the degree of privacy in these spaces. The bathroom and the warehouse are also among the most private spaces in the complex (Fig 7).
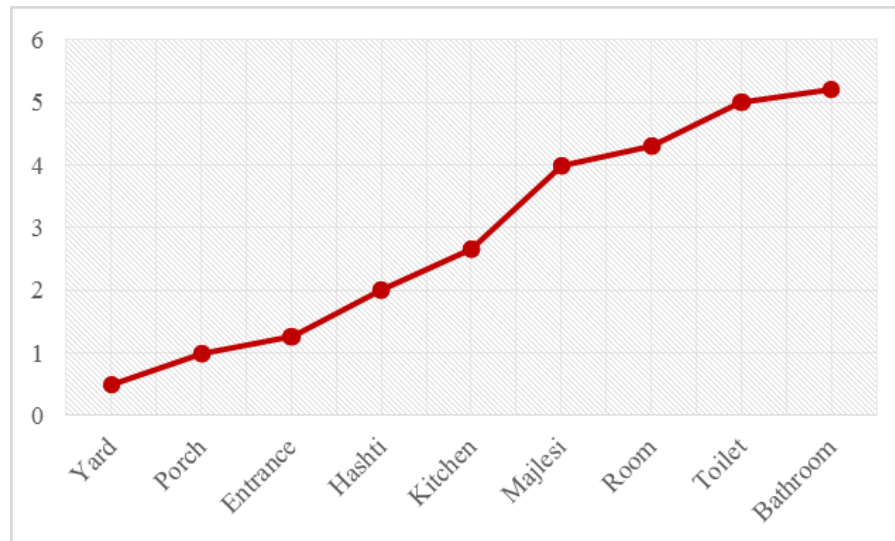
Fig 7 Depth average in traditional houses

2. Depth in Modern Houses

In modern houses, bedrooms have a low depth, while in traditional style houses they have the highest degree of depth or the lowest degree of integration. As the bedrooms integration degree has risen over the time, the privacy, intimacy and comfort of these spaces have also diminished. Nowadays, due to space constraints and lack of courtyard, in some cases, the rooms have the same role as the courtyard of modern houses. Modern private spaces are often protected only by the doors, and if the doors are open, they would show the space. In fact, privacy is not being protected in the same way all over the space, and there is no intermediary space (often a corridor) that prevents them from encountering other spaces (Fig 8).
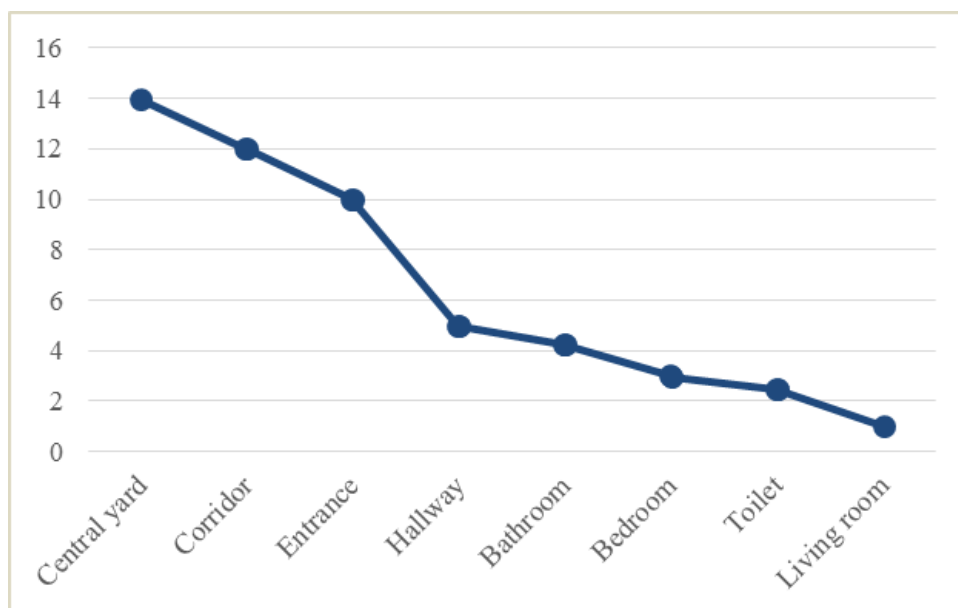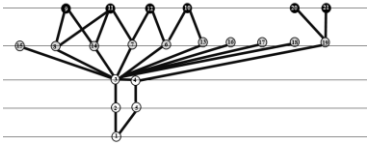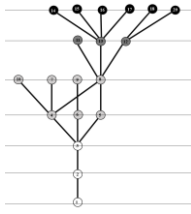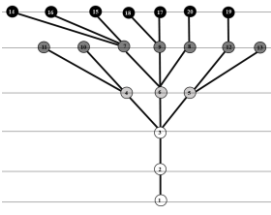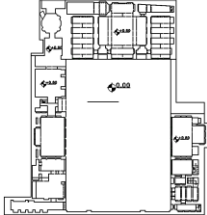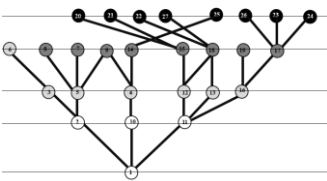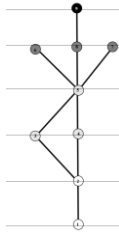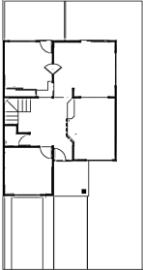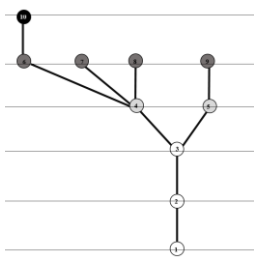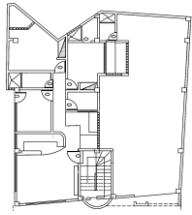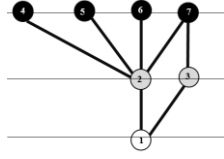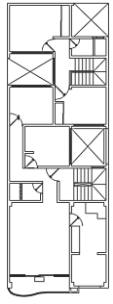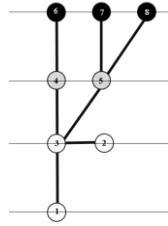
Fig 8 Average depth in modern houses

Table 2 Selected samples and graphic justification diagrams by E-graph

House	Plan	Justified Graph
Arabi House		
Martha Peters House		
Sokisian House		
Haqiqi House		
Duplex Villa House – Phase Two		
Duplex Villa House – Phase One		

Sepehr Moshtaq Residential Complex		
Erison Residential Complex		
Legend:	Spaces with zero depth ⭘	Spaces with highest depth ●
	Depth lines of spaces		Connectivity between spaces —
Increasing the darkness of the color of each layer represent an increase in the depth of space, so that no-colored circles are symbols of spaces with zero depth and black circles are symbols of the most depth.		

5.2. Integration of the Spaces

1. Integration in Traditional Houses

According to the calculations, the porch and the yard in traditional houses have the highest degree of integration. Therefore, the two spaces have lots of connections with other spaces, and access to the deeper spaces takes place through these two points. In fact, they perform as the distribution space. In addition, the low depth and small integration of the kitchen reflect deployment in a shallow depth and easy access, but there is a lack of a strong connection of this space with other spaces. The most remote areas of the complex are rooms and bathrooms that tend to differentiate themselves from the system.
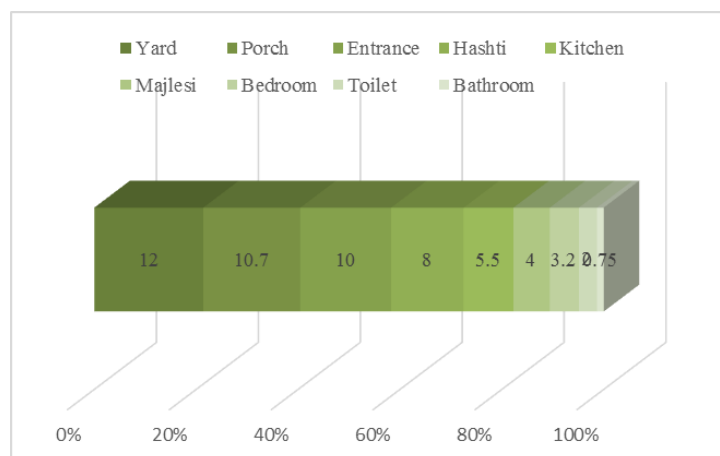
Fig 9 Integration spectrum in traditional houses

After these three spaces, the room and the kitchen have the lowest integration. Due to the low depth of the kitchen, the low level of integration in this space indicates its distance from other spaces and its indirect relation to other spaces through distribution or connecting spaces (Fig 9).

2. Integration in Modern Houses

In studying the modern house, the most integration was the connection between the living room and the courtyard. The entrance from the street i.e. the connection between inside and outside of the space was in a way that includes a relatively high integration with the interior spaces of the house, and this is more related to the living room and hallway space. This may indicate that the hierarchy of access to the public, private and semi-private spaces in modern houses is less noticeable, and also there are more tendencies to the connectivity with outer spaces. Bedrooms are also considered as the spaces with a higher degree of integration than the average; meaning that in modern homes, bedrooms are not included in isolated spaces and have a proper connection with the rest of the spaces. This may affect the privacy level of the spaces such as the bedroom, and it may not provide the tranquility and comfort needed for such spaces (Fig 10).
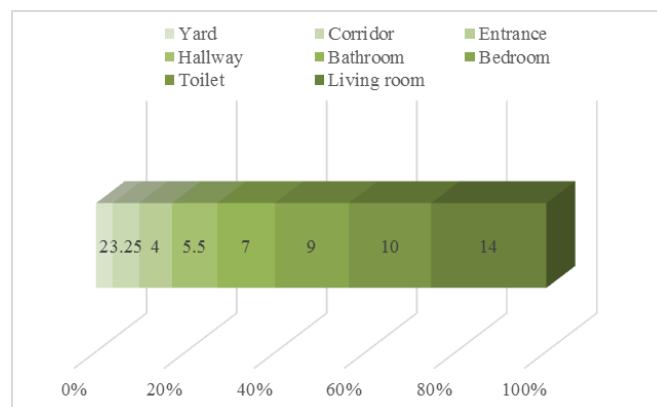
Fig 10 Integration spectrum in modern houses

5.3. Spatial Connectivity

1. Connectivity of Traditional Houses

The yard and the porch, are often of the type and the space "b" or "c", with two connections or more, and are considered to be connectivity spaces. As space is closer to the "d" type (connector of connectivity rings), it plays a more important role in the house performance, because space "d" acts as a dividing space and the background for spatial change and entry into different activity spaces. The results of the study of the courtyard and the porch spaces in traditional dwellings suggest that there is such a property for these two spaces.
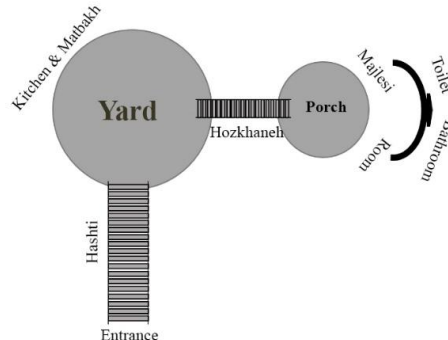
Fig 11 Schematic diagram of spatial relationships in traditional houses

2. Connectivity of Modern Houses

In modern houses, the most connections are between the bedrooms, the entrance and the living room, and they provide the most connections to the toilet, kitchen and the yard, and serve as functional spaces, which illustrate how to divide the house into the service-provider and service-receiver areas.
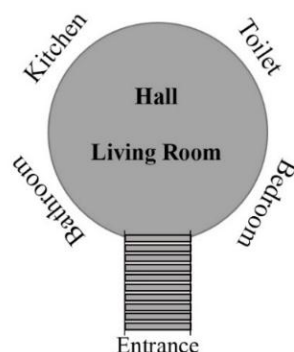
Fig 12 Schematic diagram of spatial relationships in modern houses

5.4. Calculating the Correlation of Depth, Integration and Connectivity variables on Spatial Configuration

At this level, depth, connectivity, and integration for the spaces in each house are calculated, and then the average depth, integration and connectivity for the two categories of traditional and modern houses are calculated. After that, Pearson coefficient was used to investigate the correlation between depth, integration, and connectivity and the syntax of the space.

Table 3 Average of depth, integration, and connectivity variables in traditional and modern houses

		Depth	**Integration**	**Connectivity**
Average	Traditional Houses	1.724	0.1547	3.7941
	Modern Houses	2.248	0.843	3.9311

5.5. Sample Distribution Normality Test

In this section, it is necessary to identify the distribution of the obtained data in order to select the appropriate tests according to them, and to evaluate the hypotheses. For this purpose, the Kolmogorov-Smirnov test is used. The hypotheses of this test are as follows:

(H0): distribution of the sample is normal

(H1): distribution of the sample is not normal

The hypothesis test results are presented in Table 4.

Table 4 Checking normality of the variables

Variables	**Significance level**	**Distribution status**
Space syntax	0.002	Not normal
Depth	0.000	Not normal
Integration	0.000	Not normal
Connectivity	0.000	Not normal

In this study, the connection between the characteristics of the relationships and the spatial arrangement of the house, including "depth", "integration" and "connectivity" in traditional homes, villas and residential complexes, were examined (Table 5). The results of the survey explain that there is a meaningful relationship between the two parameters of "integration" and "connectivity" with the relation and spatial arrangement.

This confirms that people living in traditional homes are more concerned with these two features as the spatial layout of the house, but the depth character is not significantly related to the spatial relationships and layout, so this feature has not been effective to change the pattern of space syntax over the time.

Table 5 Correlation level of depth, integration and connectivity variables with spatial arrangement in traditional and modern houses

			Depth	**Integration**	**Connectivity**
Space Syntax	Traditional Houses	Pearson Coefficient	0.524	0.75	0.79
		Significance Coefficient	0.415	0.00	0.00
	Modern Houses	Pearson Coefficient	0.548	0.84	0.93
		Significance Coefficient	0.461	0.00	0.00

The research findings indicate that:

1) The entrance of a traditional house represents less connectivity and integration compared to the entrance of modern houses to the outside and public space. This feature indicates that the entrance of a modern house has the same value of corridors. This balance means that the privacy space of families is gradually declining.

2) As shown in the analyses, the bedrooms in the modern houses have a high integration and a low depth, while in the traditional style houses they have the highest degree of depth or the lowest degree of integration. As the bedrooms integration rises over time, the privacy and tranquility of these spaces are diminished.

3) In the past, the courtyards played an important role in establishing a connection between different spaces. Today, due to space constraints and in some cases lack of the courtyard, the living rooms have the same role as the yards in the past and show a high degree of integration. The highest number of entries and movements is seen in the hallways and corridors.

6. Conclusion

Space syntax is a method for analyzing the architectural space with the purpose to discover social relationships in space, such as the creation of privacy and the degree of privacy and generality of the space. Examining the space syntax in eight samples of housing from traditional houses in Isfahan style and residential houses in modern style resulted in the following information:

a. Depth

In the traditional houses, the courtyard and the porch with the least depth are considered as a public space, Majlesi as a semi-public space and the rooms, the bathroom and the toilet as a private space. In the modern houses, the hierarchy of space has changed and there is the least depth level in the hall and the living room, and these spaces are considered as public spaces, and the rooms and the kitchen are considered as semi-public spaces.

b. Integration

In the traditional houses, the porch and the yard have the most connection with other spaces. The degree of integration with other spaces is low, in the sense that the most of the planes are dense and the spaces are considered as separate rooms around the courtyard, which are connected with each other by the yard or the porch.

In the modern house, the living room plays a functional role for other spaces and the highest level of integration exists in these spaces. In this style, rooms, kitchen, bathroom and toilet are located at different angles alongside the living room and the hall.

c. Connectivity

In the traditional houses, the porch is considered as a control room for entry into the private spaces of the complex. In fact, the yard and the porch are defined as the division space. Most areas of the houses are assigned to functional or activity spaces, and only 15% of the occupancy level is devoted to connectivity space.

Spaces are divided into two domains of service-provider and service-receiver, and each with a separate core.

The rooms and Majlesi are service-provider areas with the centrality of the porch and the bathroom and kitchen are service-receiver areas with the centrality of the yard. In fact, the courtyard provides access to the service-provider spaces and the porch provides access to the service-receiver spaces. Therefore, the kitchen and the toilet have a strong connection to the yard, as well as Majlesi and the rooms have a strong connection with the porch.

In modern houses, the living room is considered as a space to enter other spaces. In fact, in modern buildings, these spaces perform as division spaces. There is also direct access from rooms, bathrooms, toilets and kitchens to these spaces, and finally, the hierarchy of the spaces is lost and direct connections have been replaced.

By calculating the correlation level and the results of the survey, there is a significant relationship between the two parameters of "integration" and "connectivity with the relations and spatial arrangement. This means that people living in traditional homes often demanded to have indirect access to private spaces in the design of homes, but people living in new residential complexes and villas tend to have direct access to the interior spaces of the house.

In general, the analysis and discussion above confirm that privacy in new houses is not emphasized. Although this change may be due to new lifestyles and new technologies, an overview of the physical and mental needs of humans in the past centuries shows that many of these needs have existed throughout human history. One of these needs is the need for privacy space. Without denying the fact that the needs vary at different times, one cannot completely ignore a particular need; therefore, the revival of the architectural quality of the privacy space in traditional Iranian homes is a necessity.

A comprehensive study of this type of architecture in order to extract and redefine concepts that are not present in contemporary life will certainly help to meet the basic needs of society, in addition to increasing the degree of intimacy and privacy in the spatial organization of contemporary architecture. We suggest that each building project be simulated in its early stages to make it possible to analyze the internal behavior of its inhabitants and thus to solve the problems and to improve the quality of construction.

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Physical Comparison and Review of the Caravansaries of Isfahan Golpayegan with a Focus on Jelogir Caravanserai

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Abstract

Since ancient times, attention has been given to Human's need for shelter. Building caravansaries has a long history in Iran. Nowadays, you can see valuable buildings, which have been forgotten because of living and commercial changes around the roads of Iran. Conserving the social-cultural heritage of caravansaries (between cities and inns) can provide us with modern equipment and facilities built on the basis of traditional structures. Moreover, it is considered valuable heritage in attracting Iranian and foreign tourists. Jelogir caravansary is among the precious buildings of the Safavid period. It is located 14 kilometers to Khundab (village belonging to Dehq-Najafabad). Jelogir caravansary has been built in Shah Sultan Hussein's period. While it is of great importance and has special features, no conservation initiative has been taken. Because of the increasing damages and lack of care, it is predicted that only the ruins of the structure exist.

This research aims to introduce Jelogir caravansary architectural and embellishment features. An attempt is made to answer questions about the role of this caravansary in planning and building other caravansaries in the west of Isfahan, located in the route of Golpayegan. To achieve the goals, historical-descriptive and analytic research methods were used. Moreover, by conducting field and desk research, we provided an appropriate course for recognizing and answering the above mentioned questions.

Keywords: West of Isfahan; Country Caravansaries; Safavid Dynasty; Jelogir Caravansaries

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1. Introduction

In Iran attention has been given for building caravansaries. Factors such as development of commercial and pilgrimage roads and geographical and political positions have been among the most prominent causes for expansion of such structures.

Iranian caravansaries have different styles of architecture and building according to the climatic conditions. The 4-porch, 2-porch, octagonal round, mountain and Persian Gulf Coast maps were used for building country caravansaries. In Safavid period, the following items caused the flourish of this region: the importance of roads, Raahdari (an organization in Iran which is responsible for road maintenance), the related facilities and assigning Isfahan as the capital of Iran. Because of the mentioned reasons, many caravansaries were built in this region at that time. In addition to depicting the economical, commercial and connective importance of this region, the caravansaries hold remarkable architectural features (Hasani, 2012).

The old Arabestan, region in Isfahan, has always been the focus of attentions in different periods. In the description of courses of Isfahan, Siro said even in the pre-Achaemenid period, the merchants traveled in these courses. Jelogir caravansary is one of the valuable buildings in this region. It has been built in Shah Sultan Hussein's period.

The four-porch method has been used in building Jelogir caravansary. It is about 3700 square meters in area. It is registered as one of the national monuments of Iran in 2003, with the national monument number 9047. This building is considered as a unique roadside caravansary in Isfahan. Although it is far away from the main road, the location is based on the historical period of its time for general safety. Due to the changes in planning such as transportation and commercial system, the Jelogir caravansary has become dull and forgotten.

Moreover, this building is exposed to the following serious damages:
• Damages caused by humans such as digging deep holes, shooting walls and actions done by people looking for treasure.
• Natural damages
• Erosion (humidity, wind, old material, etc.)

The amount of the damage is increasing and if the necessary conservation and protection are not done, by the passage of time, this building will be ruined.

In this paper, initially a brief explanation about caravansaries, in general, and about Jelogir caravansary has been provided through examining its vicinity context. Afterwards, the historical, structural and architectural aspects of this building will be discussed by relying on the gained knowledge. Finally, some steps that can be taken toward conserving and restoring this building and preventing it from destruction will be introduced. In some studies, Jelogir caravansary is compared with other contemporary-neighboring buildings which will also be dealt with in this paper.

2. Literature Review

Many studies have been done on caravansaries of Iran. This study has pointed out some of them; Pirnia (1991 & 1993) in a chapter briefly talks about buildings dependent on roads and adds other researchers' opinions. Siro (1949) introduces the ancient roads of Iran, buildings dependent on such roads, and somehow presents typologies of Iranian caravansaries. Moreover, Siro offers instances for each type of the caravansaries. Kiyani (1994) introduces the names and briefly explains the architectural detail and history of the Iranian caravansaries. Hadizadeh Kakhaki (2010) reviews the types of caravansaries, their histories and their physical architectural structure.

Shanavaz and Khaghani (2015) offer the history of caravansaries, their reviews in different historical periods of Iran- especially in the Safavid period; and finally review the physical architecture and functions of Iranian caravansaries in Safavid's period. After reviewing the above mentioned sources, it was clear that only Siro and Bita mentioned the Jelogir caravansary. This rectangular-shaped caravansary of the Safavid period has private rooms for people to relax; an important factor which has been forgotten since the Seljuq period. From the inside of the caravansary, the proportion of the entrance has been well structured. This building was especially for the high-level official travels. The construction date of this building has been engraved on a stone. Very little research has been done on this Jelogir caravansary till date.

3. Methodology

The study has a historical and descriptive analysis method. This methodology is based on field survey and library documentation. The field survey included taking photos, measuring the structure and interviewing the rural residents. The library research includes comprehensive information, written sources and historical pictures.

4. History and Location of Jelogir Caravansary

The foundation of caravansaries was established during the Achaemenid dynasty in Iran. The Shahi road was among the most important roads built in the Achaemenid period. There are 20 caravansaries from Lidi to Ferbji (Girshman, 1965: 158). In the Parthian period and in coincidence with the presence of Iran in world commercial center, much attention was given to build caravansaries and other building facilities, some of which have remained since that period. Most of the discoveries include carvings and inscriptions. Consequently, these remains of the structure need preservation and improving the road situations (Pirnia & Karamatallah, 1991: 91).

In the Sassanian period, growth in economy and construction of many caravansaries took place along the commercial roads. In this period, it is most likely that the buildings were simple and not much difference between the structures (Siro, 1949: 88-92). With the advent of Islam, drastic changes took place in building caravansaries in a way that a huge portion of Iranian architecture was devoted to the foundation of caravansaries (Monzavi, 1982: 163).

Undoubtedly, the golden age of building caravansaries in Iran belongs to the Safavid period. The prosperity of domestic and foreign commerce and also paying due attention to the pilgrimage cities and roads were among the major reasons for new changes in architecture of caravansaries and their embellishments. Tourism travelling to Iran in the Safavid period had recorded interesting descriptions and drawings of the caravansaries and described those buildings as modern hotels (Kiani & Delfaram, 1983: 3).

Jelogir caravansary was built in the Safavid period. It is a roadside structure with four Ivans (porches) located 14 kilometers to Khundab (a part of Dehaq, a district of Najafabad) and 13 kilometers to Dor (Dor is a village of Golpayegan, a district of Isfahan).

This building is called "*Madarshah*" by Maxim Siro. According to Siro, from ancient times to the Safavid period, people crossed the Tor village and travelled from Isfahan to Borujerd and Golpayegan. However, in the past century, one has seen fewer travelers. This road is on highway number 24 of Tehran which starts from a village called Gaz and a place called Anushiravan. It is still the shortest route between Isfahan and Golpayegan. The next stop is the caravansary of Hosnijeh; which belongs to the Safavid period, famous for its tall entrance structure; there is also another road which connects the Tor village. The nearest village to Dehaq is located in high and

sharp altitudes; from where one climbs the Tor pass. There is a flat area which is surrounded by mountain walls. This is an ideal place for settlement which is also close to the station.

Fig 1 Caravanserai location in the village and surrounding villages (source: www.google.com/maps)

Fig 2 Caravanserai (source: www.google.com/maps)

There exists the great Madarshah caravansary and a Mongolian castle. Also, an old Mongolian dam exists near the pass; the water of this dam was used for this flat area. From this place one can reach "Shureh Chah" and "Tikal". There is a highway after Tikan which leads to Borujerd (Siro & Bita, 1947: 16-18).

Fig 3 and 4 Caravanserai view from roadside (source: Authors)

5. Geographical importance of Jelogir Caravanserai during the Past Years

From the Achaemenid period to the invasion of Arabs to Iran, Isfahan plain was playing an important role in policy, economy and business of Iran. After the invasion of Arabs, this city became an arena for gathering the conquerors. 'There is a valley, always called Arabestan, which directly leads to Golpayegan" (Siro, 1949: 7). The presence of Arabs was one of the reasons for which this place was called Arabestan. When the Safavid dynasty took power, they declared Shia as the formal religion of Iran, started commercial relationships with the world, eliminated the Iranian relationship with the Osmani Emperor and made a society in which many caravansaries were built. During that period, Isfahan was the capital city of Iran. Shah Abbas built a well-equipped road to connect Isfahan to the west of Iran (i.e., Khosravi). This road was a branch of the Silk Road. The remains of such caravansaries can be seen in Hosnijeh, Damaab, Dor, Tikan and Chaleh Siah, used by caravans to pass these cities (Momeni, 2009: 52; Kalantari, 2001: 33).

According to what was mentioned so far and in view of the remaining buildings, which belong to different historical periods including Atabaki castle, Dor, Hosnijeh caravanserai and Chaparkhaneh of Chaleh Siah, it is obvious that this region was one of the important areas in Iran and many merchants and caravans passed through this region. Therefore, many buildings such as Jelogir caravanserai were built there.
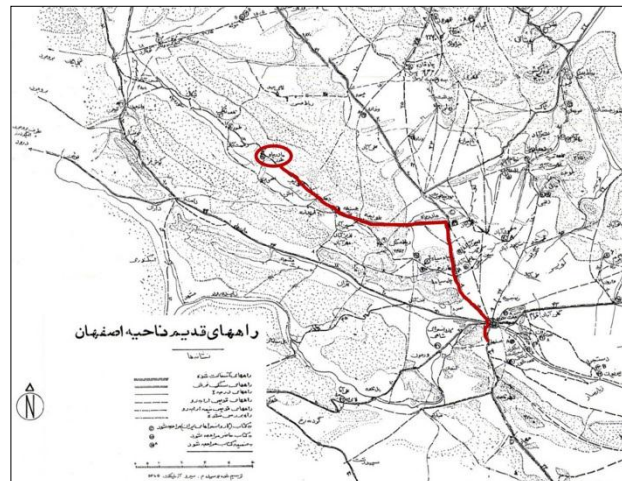
Fig 5 Old route of Isfahan area; caravan route from Isfahan to Golpayegan and the location of the caravanserai (source: Siro & Bita, 1947)

5.1. The History of Jelogir Caravanserai

In the past, the Isfahan-Golpayegan route from Tor village was used by caravans. Therefore, a lot of caravansaries can be seen on this route. After the Khundab village toward Golpayegan, it is the Jelogir strait. This strait is one kilometer to the north-west of the Jelogir caravansary. After the Safavid period, some bandits and rebels took these caravansaries as a base and pillaged the caravans passing by. That is why this caravansary is called Jelogir. According to the local people, this building has been called Jelogir for about three centuries.

According to Maxim Siro's observations, the boulder mounted on the covered walls of the building dates back from 1694 to 1722 (Siro & Bita, 1947: 291), of which nothing of the boulders remained.

5.2. The Architectural Structure of Jelogir Caravansary

The entrance building has two floors. It extends 3.8 meters from the general outline with stone trusses on both sides. The wooden entrance door of caravansary is missing and the only remaining one is the stone door frame. This frame has been embellished with delicate stone pots on the plinth. The portal of Jelogir caravansary is a roof which leans against two big piers with light weight shelves. The extra load is avoided by using chamfered parts (Siro & Bita, 1947: 294). It is important to mention that like many other caravansaries, there are some openings (or cavities) above the portal of the building called Sorbafkan. This acts as a defensive part which has been used for pouring boiling water, oil, lead or any hot fluids on the enemies when the caravansary was in a state of siege (Hadizadeh Kakhaki, 2010: 107). The general outline of the caravansary is higher than the surrounding floor. It is decorated with a portal, five bulkheads and a plinth made of Tishehi stone which is 90 centimeters in height. There are brick meshes on the outside walls of the

caravansary; most of the parts have been ruined. Due to the lack of an eight-sided shape and its construction with the roof, it is impossible to see the dormant part with the main building of the house.
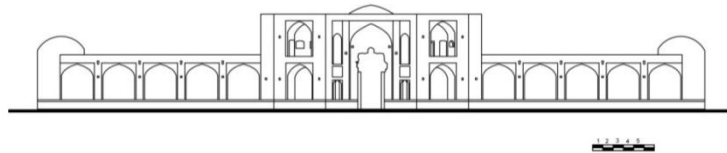
Fig 6 and 7 Elevation and the Entrance doorway (source: Authors)

There are two circular plan towers at the corners of the entrance facade. After the entrance, we get to the vestibule with a circular roof and beautiful brickwork. Indeed, the vestibule connects the entrance to the courtyard, which is in front of the southern Ivan (porch). There are two rooms on the west and east of the vestibule. The roof is accessed through the two staircases built in the vestibule area. This also holds two small rooms connected to each other at the top of the entrance. These rooms were used by the soldiers and had a view of outside areas of the caravansary as well the space of the vestibule (Siro, 1949: 286).
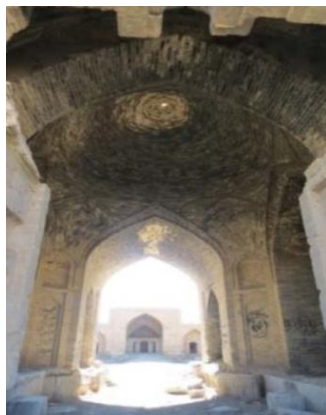
Fig 8 and 9 Destructive way between the two sides above the vestibule (source: Authors).

Image 9: Vestibule space (source: Authors)

The central courtyard of Jelogir caravansary has a near square or rectangle shape measuring about 38.5 m 31 meters. The chamfered stable entrances on four corners of this caravansary are made for convenient entry of animals. The courtyard walls have cavities built of stone bars called Akhieh used for fastening stocks.

This caravansary has four important Ivans built at the center of each corner. The porches are built higher than the other parts to make them distinguishable. Unlike the western and eastern Ivans (porches) having Grehchini bricks, the other two Ivans are simple with walls decorated with shelves. The western and eastern Ivans are symmetrical; each has two shelves and one fireplace on

the sides. Moreover, each of these Ivans has three shelves on the opposite side. Their roofs are in a rhythmic type. All the Ivans are decorated with four bulkheads which are symmetric and each two of them are placed opposite each other.

The southern Ivan is a two-story one located in front of the entrance Ivan. The first floor has two pentagonal parts, one fireplace and two shelves. This main private space, also called Shahneshin in Persian, was used by high ranking officials for resting and holding discussions.

The southern doorway connects the western and eastern spaces via a bridge which is on the three hatches of the downstairs. The eastern side space has an opening through which the outside can be observed. It is likely that the front hall was used for ceremonies. Men watched the ceremonies from upstairs and women from downstairs.

There are chambers on the four sides of the courtyard, which is accessed through a small Ivan measuring 2.8m x40cm. The Ivan is higher than the floor of the courtyard. The chambers measuring 3 x 2.8m were used for accommodating guests. These chambers are built all around the northern and southern Ivans, which include two groups each with three rooms. Also, the western and eastern sides, which are symmetric, hold one Ivan and two groups of rooms (each with two rooms). They are on both sides of the Ivan. The floor and small Ivan are 40 cm higher than the level of the present yard.

There exist two chambers, which are larger than other chambers, on both sides of the western and eastern Ivan. Each of these chambers has four shelves and one fireplace. Their roofs are of Ahang. The rest of the chambers hold two shelves and one fireplace; moreover, their roofs are of Chehar Tork.

The stables of Jelogir caravansary completely surround the chambers and Sahn (i.e. the inside space of a covered building). The stables of this building are divided into seven sections; to have an easy access, entrances have been built in the chamfered corners of the central courtyard. It seems that the southern stables were private and were used by high ranking officials and prominent figures. Basically, the stables were designed in a way that they served as a buffer between the outer space and the guest room which overlooked the central courtyard. In the stable bulkhead, platforms were built form stones, which were used by porters and cameleers to take a rest and unload their freight. There were stone Akhiehs which were used for fastening the stocks and now they are ruined.

There are some Hourns in the roof. They provide ventilation and light for the stable. In four sections of the stables, four toilets were built for passengers.

One important point which makes Jelogir caravansary distinguishable from other roadside caravansaries is the construction of two private courts in two corners of the courtyard. The Jelogir caravansary has a small octagonal courtyard with two Ivans, three chambers and a guard station on the south eastern corner. This part acts as the private area of the caravansary. In this small courtyard and around its narrow area, kitchen and toilet have been built.

There is another yard in the south western corner, which is smaller and of less importance compared to the later one. These two yards are symmetric. The second yard corridor is more covered. This keeps the strangers away from having a good sight within the yard. This section holds two rooms and a hall which is illuminated through a small rectangular yard. At the end of this yard, there is a pentagonal Ivan; one end of this yard connects to the kitchen and the other to the toilet (Siro & Bita, 1947: 286). The private yard can be accessed from within the right and left stables. The entrances to these spaces have been built in the form of a maze passage, preventing the strangers from peeping inside when they were at the doorway. Sometimes, for security reasons these route were built more complex (Sultanzadeh, 2011: 184).
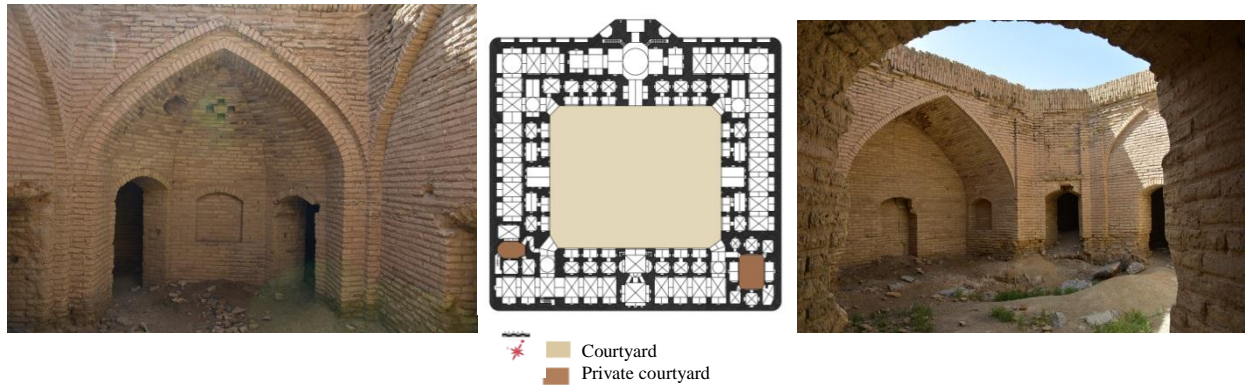
Courtyard
Private courtyard

Fig 10 and 11 Private courtyard of the Jolgir caravanserai (source: Authors)

Perhaps, these two small yards were used by women. This idea seems to be logical because of the following reasons: first, the caravansary was built along the pilgrimage route; second, according to Siro, it was considered as a royal caravansary and the queen (who according to history was so powerful) had settled there at least once. Chaleh Siah caravansary or Sheikh Alikhan caravansary is another instance of the caravansaries, the courts of which are in the corner of the yard, and will be referred to for comparison.

6. Comparing Jelogir Caravansary with the Neighboring Contemporary Caravansaries

The study compares the plans and architectural structures of other caravansaries whose geographical positions are the same as those of Jelogir caravansary. The study compares Jelogir caravansary with other three caravansaries built in the Safavid period which are Chaleh Siah or Sheikh Alikhan, Madarshah of Murcheh Khort and Tor respectively.

Chaleh Siah caravansary bears many similarities with Jelogir caravansary, which dates back to Shah Suleiman's period. The Madarshah, which was a royal caravansary, was built in the Safavid period, which dates back to Qajar period. Tor caravansary is located 13 kilometers away from Jelogir caravansary; it was built in the Shah Tahmasp I period and was restored in the Shah Suleiman's period.

6.1. Chahel Siah or Sheikh Alikhan Caravansary

Cheleh Siah caravansary is located 45 kilometers northwest of Esfahan in the village Jihad-abad. Caravanserai of Sheikh Ali Khan has an area of 6700 square meters, with a square dimension of 82 by 82 meters. The entrance is on the left side with 12 bulkheads on both sides. There are platforms, rooms with two smaller upper floors, used by the guards, with some space allocated for passengers with services such as groceries and food. The hall has two octagonal small yards near the corners of the building. The large internal yard has four chamfered corners measuring 38 by 50m with Ivan's style (Ganjineh Asar, 1971: 646).

There are two halls behind the northern Ivan at the building entrance. The front hall has a double-story rectangular shape which is connected to the behind hall through three doorways. The entrance of the stables is located behind the chambers, within the four chamfered corners of the

yard. The drinking water of the caravansary is supplied by a subterranean canal. The structure embellishment is in brickwork which is comparable with some old houses of Julfa in Isfahan; the characteristic belongs to the late of the Safavid period (Ahmadi, 2006).

Two stone tiles are on top of the door of this caravanserai. One engraved with Nastaliq inscription depicting the completion date and time of the building. The other tile is placed on top left side with poems written in Nastaliq inscription. According to the inscription, the document engraved is by Taher, son of Reza Esfahani (Honarfor, 1971: 648).
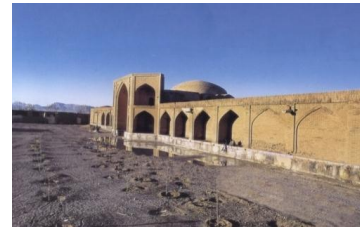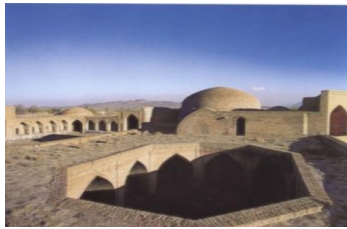
Fig 12 and 13 Entrance of the Caravanserai and corner view from the Sheikh Ali Khan courtyard (source: Hajighasemi, 2005: 20)

This caravanserai has striking similarities to Jelogir caravansary. Both caravanserai entrances project out of the wall. Moreover, in each entrance doorway, a beautiful stone frame surrounds the wooden doors. The main façade of the Madarshah caravansary, in which there is a central building, is almost like the one of Chalehsiah. The structures used at the entrance of the buildings are the same (Siro & Bita, 1947: 286). There exist chambers, where services such as bakery and grocery were offered, on both entrance sides of these caravansaries. The Chalehsiah caravanserai has a central hall, with chamfered corners at the entrances of stables, private courtyards and a porch hall opposite the entrance. Such features have also been observed in Jelogir caravanserai. The materials used in both of the caravansaries are brick, adobe and stone. As mentioned earlier, the inscription of Sheikh Ali Khan caravanserai dates back to the Safavid period. It is likely that Jelogir caravanserai is contemporary with Sheikh Ali Khan caravanserai since they are quite similar and date back to the same period. In addition, Siro believes that the architecture of both caravansaries was carried out by same person (Siro & Bita, 1947: 286).

Fig 14 Entrance of the Sheikh Ali Khan caravanserai (source: Safari, 2013).

Fig 15 Entrance of the Jelogir caravanserai (source: Entekhabi, 2016)

Fig 16 At the entrance of Sheikh Ali Khan caravanserai (source: Safari, 2013).

Fig 17 At the entrance of Jelogir caravanserai (source: Authors, 2013)

Fig 18 Backside stone at the entrance of the caravanserai (source: Safari, 2013)
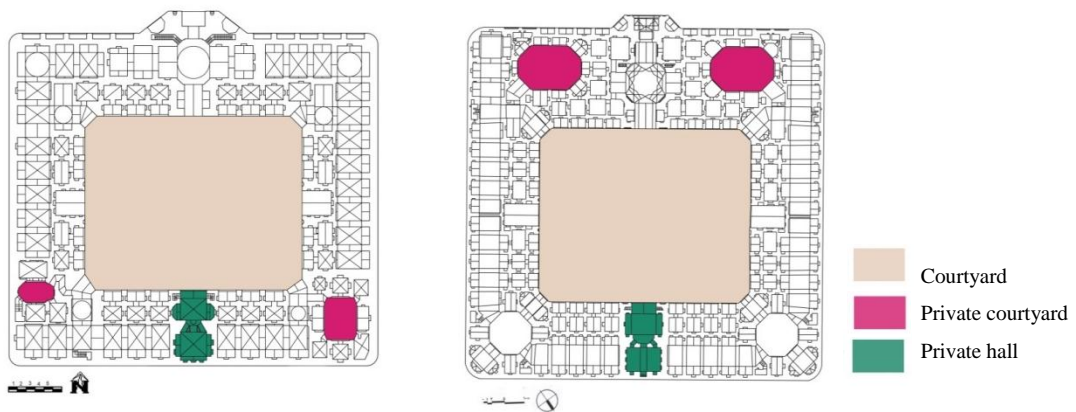
Fig 19 Sheikh Ali Khan and Jelogir caravanserai plan with courtyard, private courtyards and private hall
(source: Authors/ Hajighasemi, 2005, 17)

6.2. Madarshah Caravanserai of Moorchehkhort

Madarshah caravanserai of Moorchehkhort is located in Borkhar o Meimeh town in Isfahan. It is located on the right side of Esfahan and Tehran highway (Hasani Baferani, 2012).

An inscription is placed at the portal of this caravanserai which dates back to the Mohammad Shah Qajar period-1251A.H (Honarfar, 1971: 863). According to Maxim Siro, the caravanserai welcomed the king and foreign ambassadors visiting Esfahan (Siro & Bita, 1947: 276). In view of the skills implemented to build this caravanserai, Siro believes it was built by the best architects during the Shah Abbas II period or King Solomon ordered by Shah Abbas mother (1052-1077 A.H) (Siro, 1949: 149).

Fig 20 Madarshah caravanserai (source: Authors, 2016)

The caravanserai has an area of 6678.45 square meters. There is a large rectangular courtyard in the middle of this caravanserai. Further, it holds four Ivans in the middle of its sides and some small Ivans between these four Ivans. Chambers are built behind these small Ivans. The arches of the small Ivans, which are around the courtyard, are the same. The main Ivan is on the northern side of the dome roof. There are two staircases around it to access the roof. This caravansary has two types of stables: 1) some has pillars with square bases; built in the corners of courtyard. The entry to this area is through the chamfered corners of the courtyard. This space is covered by roof, it is decorated and it has been used by private stables. 2) The other stables are long like corridors covered with roof, located behind the south eastern and north western chamber of the courtyard (Siro & Bita, 1947: 276).

The entrance of the caravanserai to the south and south west includes portal and hashti (vestibule). The portal, hashti and back Ivan are connected directly. Hashti is a space with Hasht o Nim Hasht base. The height is two meters covered with a dome. The sides of the vestibule consist of two spaces covered with a dome. The space was used by soldiers or the security guards of the caravanserai. There exist four circular towers at the four corners of the caravanserai used for security purposes. The materials used include stone and brick. The interior and exterior façade of the building has been built in brickwork. Bathrooms and water reservoirs were built outside the caravanserai on the west side, which are also accessed from the inside of the caravanserai (Siro, 1949: 148).

There are some similarities between this caravanserai and Jelogir caravanserai. For instance, their entrances are projected outward of the buildings; there are also chamfered and similar bulkheads. Moreover, the paths to access to the courtyard are similar in each caravanserai; at first, one needs to cross the hashti and then reach the Ivan. Both caravansaries have an equal number of chambers. The access to the roof is through the staircase in the vestibule (i.e. Hashti).

However, the major differences between these two caravanserais are the stables and the way to access them. The linear form of the stables of Madarshah caravanserai surrounds the caravanserai.

Moreover, the stables of this building have square forms in the corners. The structure is symmetrical in all directions. Another difference is the number of their towers.

Fig 21 Entrance to the Jelogir caravanserai (Source: Authors, 2017)

Fig 22 Entrance to the Moorchehkhurt caravanserai (Source: Authors, 2016)

Vestibule
Ivan
Arcade
Private courtyard
Courtyard
Chambers
Camel Stable
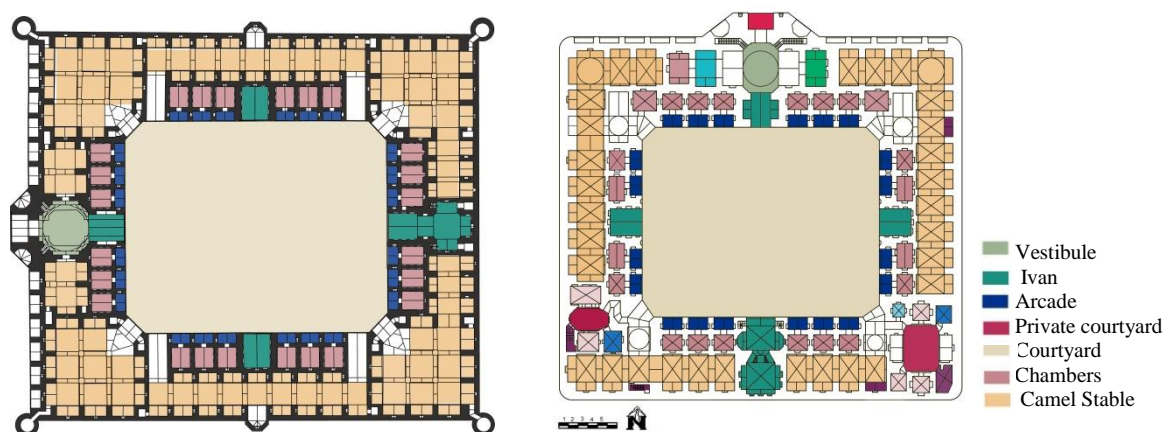
Fig 23 Comparison of spaces on plan of the Jelogir and Madarshah of Moochehkhurt caravanserais (source: Authors / Hajighasemi, 2005: 30)

6.3. Tor Caravanserai

Tor caravanserai is located 50 kilometers to the east of Golpayegan. It is in the old road of Isfahan-Golpayegan and in a village called Tor. This building was built in the Safavid period. It has a central courtyard, twelve chambers and stables. It was built in the Shah Tahmasp I period (930-948 A.H) and later its façade and portal were restored in the Shah Suleiman period (1077-1105 A.H).

The portal form of this caravanserai is different from the portals of other caravansaries built in this region. This difference is mostly because of the restoration. The building measures 55.55 by 47.5 m and was built by brick, stone and cement. This caravanserai has a big courtyard and the northern Ivan includes the building depth. The Ivan measures 4.66 by 12.22 meters with five fireplaces. In front of the two halls, there exist two other Ivans. The Ivan measures 4.55 by 5.6 meters.

Tor caravanserai has four L-form stables, and each of these stables has one entrance. The corridor, after the entrance, has two vestibules; the first one is covered with a convex small dome. This vestibule is connected to two corridors from both sides. Each of these corridors has two hatches longitudinally.

Fig 25 Entrance of the Jelogir caravanserai (source: Authors, 2017).

Fig 24 Entrance doorway (source: Authors, 2016)

There were two toilets near the northern solid towers. According to the portal, this building dates back to the time of Shah Suleiman (Siro & Bita, 1947: 195).
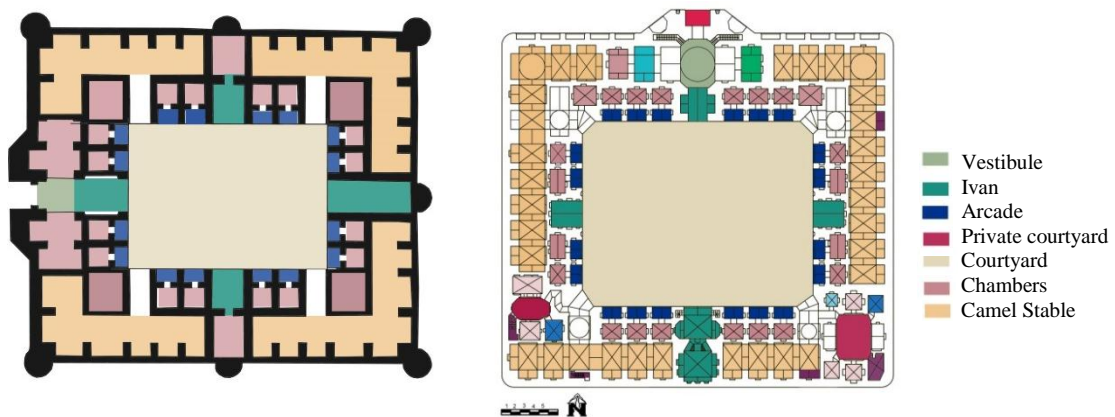
Fig 26 Tor caravanserai plan (source: Authors)

This building was registered as a national monument in 2005, with the national monument number 12236. This building is located 13 km to Jelogir caravanserai. The Tor caravanserai's height differs from the height of Jelogir caravanserai. The way to access the stables is another difference between these two caravansaries.

In addition, Tor caravanserai has four decorated solid towers and three half towers amide its sides. However, Jelogir caravanserai has just two towers. Generally, Tor caravanserai differs from Jelogir caravanserai; the differences lie in the towers, the height of the entrance, the Ivan, the number of the chambers, the access to the stables and the exterior façade. The plan and pattern of Tor caravanserai is simple. A common aspect that exists in the two caravansaries is the general features of four-Ivan caravansaries.

7. Conclusion

According to what has been mentioned, attention was paid to the roads and facilities in the Safavid period. This was because of the communication development, commercial prosperity and economic growth. In that era, many buildings and caravansaries were built in the middle of some roads. Among these buildings, Jelogir caravanserai, which Siro et al call '*Royal Caravanserai*', has an special importance because of its geographic location. Because of the changes in the present living patterns, this building has been isolated. However, it can be revived by assigning new facilities based on today needs.

In the route of the Jelogir caravansary to the western exit of Isfahan, there exist many other caravansaries, which show the importance of this caravanserai. Since this route was used by pilgrims and other caravans, it was necessary to build such caravansaries and other buildings. However, based on the comparisons, it can be concluded that Jelogir caravanserai is more complete than any other caravansaries; the presence of private courtyards, the toilets and a main hall proves this claim.

Generally, the form and the usages of Jelogir caravanserai are designed according to a roadside caravanserai. This means that the building holds a systematic square plan and is composed of sections such as vestibule, entrance, central courtyard, four main Ivans, some chambers which surround the building, a main hall and finally some stables which have been placed behind the chambers. The features that draw our attention is that Jelogir caravanserai has two private courtyards with different sections. This feature does not exist in any other caravansaries except Chaleh Siah caravanserai.

Of course, it must be pointed out that the Chaleh Siah building has two private similar courtyards. There exist a kitchen and a toilet in these two sections. Based on the available evidence, Jelogir building dates back to the Shah Sultan of the Safavid dynasty. The evidence includes a striking similarity between this building and Chehel Siah building which dates back to Shah Suleiman of the Safavid period. It is probable that Jelogir and Chaleh Siah caravansaries had the same architect since there is a remarkable similarity and they are built in the same period.

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Investigating the Role of Tapestry in Creative Design of Clothes

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Abstract

Tapestry is a form of textile art that exists from ancient to modern art. Different capabilities of tapestry let artists use extensive creativity of this art. In this article, after recognizing the features of tapestry, the use of this art in clothes designing has been studied. The essence of the clothes designing is innovative. Using tapestry in clothes designing makes creative collections. Analyzing tapestry use in clothes modeling can guide readers of this article to understand the vast territory of this art.

Keywords: Clothes Designing; Tapestry; Creativity

1. Introduction

Tapestry is a branch of weaving art with changes throughout history. The study of these changes includes the usage of this art, the subject of weaving and the materials. In general, the study is about the variety of structures and evolutions of the place of the construction of tapestry. In the beginning, tapestry was used for covering walls and frames with limited types of weaving, but recently it has been utilized more with an increase in the number of artists in two areas of practical and aesthetic tapestry works. With a new view of tapestry, it helps to create a new area of usage of this art such as the wide world of fashion. A mixture of tapestry and cloth designing will create a new area of aesthetics. In this study, all works are practical, showing the cloth designers the understanding and using of this art that could enable them to be scored the capability of tapestry in cloth designing.

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2. History of Tapestry

In order to deliberate on the history of tapestry, there is a need to look at the first human weaving samples that were used to protect them from cold and heat with woven fabrics with foliage, wicker wicks that were used as bedsores or accessories of living. Tapestry has come to us from many years ago; the oldest example that it survived from the past is the Pazirik region in Iran. This piece of art is related to the first century AD with a pattern of cross and arrow in Peru. The other example is the works from Copts from 2nd and 9th centuries in Egypt and the Lycasso silk tops in China which are related to the Sangs era (1280-960). The European works date back to the 11th century and the French knitting work in France and San Sereion in Colony (Aflatoonian, 2010:3).

Tapisserie is a French word that is called tapestry in English which means a handmade cloth with a simple woven such as rug that weft covers warp completely; however, sometimes warp threads are used in tapestry to create a diverse pattern. A new inspiration has created a new dimension in context of the texture (Mohammadnejad Sigaroodi, 2009:31).

Tapestry was more practical in the beginning. In the middle ages, the rich wall covering of the palaces used hand-woven tapestries as curtains and wall panels. In the definition of today's topography, it can be said that the art of texture is varied with different materials. These materials can be used or not used as fabric. Tapestry, hand-woven fabric of plain weave, is made without shuttle or drawboy, the design of weft threads being threaded into the warp with fingers or bobbin (www.encyclopedia.com). By following the pastoral traces of the past and reaching the contemporary tapestries, we notice the differences in the type of weaves, the subjects and materials used in the texture of the tapestries, which have transformed this field into a growing and modern art. The first sparks of the development of this art come to the beginning of the 20th century. In the late 19th and early 20th centuries, a new definition for tapestry was considered, which, based on this definition of the artist in design, the use of technique and materials in the toasters was unrestricted and could freely create an artwork (Karimi, 2008:1).

Fig 1 Traditional Tapestry, Rasoulzadeh Namin, 2013
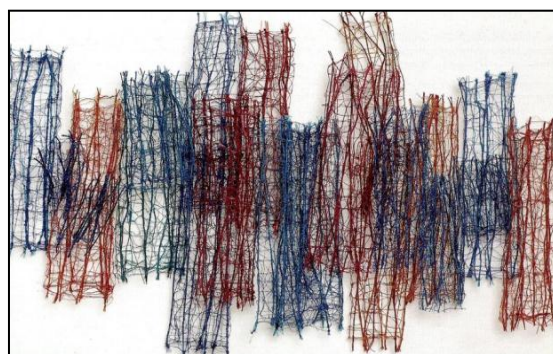
Fig 2 Modern Tapestry, Dawn throne, 2009

Fig 1 shows the image of the tapestry in the early historical periods of this art, while Fig 2 is an example of Post-Modernism. In the images, the differences in the type of textile and the subjects to whose texture artists are referring is quite evident. Following the historical evolution of this art, now the use of various materials and other arts in tapestry is completely free, and the artist chooses materials for weaving by selecting the theme to show the purpose of designing. The history and transformation of this art can be seen by seeing the pictures. The new free vision has given a new

definition to the art of tapestry, making it possible to wrap different shapes in addition to the surface that appear in the form of cloth or carpet.

3. Woven and Tapestry

Introduction to texture and textiles makes it possible to find out the capabilities of art of tapestry. In fact, tapestry was created along the art of weave. The use of texture differs from one another in different arts, and this difference arises from the origin of weaves. In the encyclopedia of art, texture is the appearance of a surface in terms of its tangible quality. In other words, texture is the only visual element that sees through sensation the feeling of touching the viewer. In artwork, four types of texture are recognizable: factual, artificial, abstract and inventive (Pakbaaz, 2005:71).

The existence of texture in the art makes it uneven and familiar to the viewer. It removes the artwork from the extinct. Similar to designing clothes, the designer uses various factors to create a sense of being different. The designer expresses the balanced composition of the model by replacing the surface, form, texture and line. The use of appropriate decorations such as embroidery -with threads or stones – demonstrates a visual and realistic sense of texture. Even fabrics with outstanding texture or woolen fabrics express warmth and factual texture in model. Also, printed fabrics can be used to illustrate artificial texture. Using decorations, weaves and essentials of clothing that have texture will consciously diversify while attracting attention and varying patterns. However, if this utilization is not conscious and correct, the composition and the balance of the model will be disrupted. The designer shows the contrasts in the dress by using texture. Contrast or contradiction is a kind of relationship between visual elements that emphasizes distinct differences based on the location, size, extent, proportions and direction of the adjacent elements in the composition. Formats and methods of construction can also be a way of contradicting. As the less contrast between elements, the composition becomes more aligned, the greater the contrast, the more complex the structure, and principles of diversity in the composition of the effect will be more prominent (Pahlavan, 2009:28).

In tapestry, all types of weaves which were described earlier are used; the first tapestries were weaved like a rug (with a similar weave) and later detailed gobelen (cross stitch charts) was added as a fine knitting piece of this art. The growth of weaves in tapestry has been so popular nowadays that it has encompassed a wide range of arts. Tapestry is a combination of texture, needlework, graphics, art and painting which has a place as a subset of visual art.

4. Position of Making Tapestry

Tapestry was made up of fabric or rug which was completely woven by hand. In the design of the pattern of the tapestry, the position of passing weft through warps has a significant role. The position of making tapestry has been varied in different historical eras. People in areas that were skilled in weaving weaved decorated textiles. As time passed by, artists used any type of textile and art in tapestry. As a result, making different tapestry started from the historical eras. This transformation was not only reflected in tapestry, but also in all visual arts. In modern times, artists employed new structures for expressing their thoughts, and the traditional frontiers of art were removed. The birth of the modern tapestry and the growth of the value of the weave of creative tapestry have changed the position of the usage of the tapestries rather than the coverage of the wall or display, and galleries are new places to showcase. Tapestry is a subset of the yarn art nowadays, and artists present their woven collections in terms of modern collections. The audience does not look at paintings and historical events by looking at the tapestries, but seeks to discover neither the

concept of that piece of art itself nor the volume of the tapestry. This art has acquired a separate identity for itself. The audience faces the artwork with a variety of designs and combinations. However, the modern tapestry can also take the idea from the traditional subjects, but the concept and type of weave express contemporary art. Changes in the type of weave and subjects have led to a change in the position of the tapestry, and it is viewed as an independent art and continues to evolve in terms of texture and usage resulting in different positions, from the use of modern types of texture in interior decoration of clothes, design of bags and shoes to other necessities of clothing. The designers contemplate a creative application for topography every day. Although the status of this art has been accompanied by stagnation and lack of progress, with the onset of re-engagement artists have earned a valuable place in the art of yarn, and in almost all artistic fields it has been used now.

5. Structure of Tapestry

In the beginning, the art of tapestry did not have a special structure and it included a texture of facing weft with the great value of historical and artistic aspect. They are a solid documentation for displaying the weave techniques of the historical periods and the mapping of that time. Knowing the types of tapestries is possible with the familiarity of the artist's weave style which shows what kind of weave, appearance and composition the artist uses in terms of showing his/her purpose. In textile industry, there are several ways to build the levels, one of which is the combination of two longitudinal and horizontal stands of threads that define the longitudinal stand as the warp and the horizontal strand as the woof. The result of this method of weaving is weaving that is called textile (Khojasteh, 2005:15).

In the early tapestries, it was important to create a perfect and smooth surface with a complete illustration of the image. The artist has been trying to showcase the image with all the details and skills of knitting. After tapestry became a subset of fibre art with a diversity of the uses of texture, using other arts led to a better formation of the artists' ideas and creativity in this field and produced a variety of performances. Early tapestries and many modern tapestries were woven in the flat shapes with the usage of frames, but in modern tapestries the designer has a freedom to use different weaves and outstanding textures. Creating different plans at the level of the frame will result in a diversity in the form and the link between the artwork and the audience as shown in Fig 3.
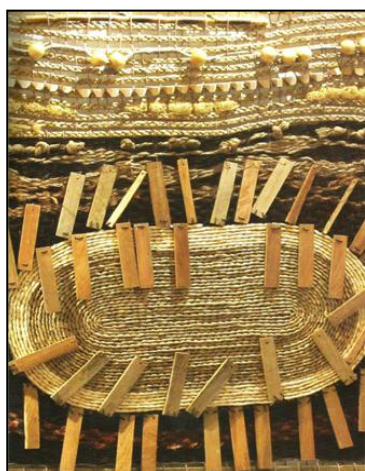

Fig 3 Modern Tapestry, Rasoulzadeh Namin, 2013   **Fig 4** Volume Tapestry, Barbara chase, 2007

Another type of tapestry is presenting it as a bulk, which can be in the shape of a statue where the artist uses an armature for the base because of the necessity of the texture types and materials. The process has been done by metal frames for the shape of the work and after that by covering it with weaving different textures. In this type of tapestry, texture is the most important element and there is no need to cover up all the parts, and so the armature is a part of the artwork (Rasoulzadeh Namin, 2014:71). In Fig 4, bulk tapestry is used to make a tapestry in volume. If the selected materials allow the artist to fill without the reinforcement, the tapestry is formed by the formability of the materials. Because of the wide range of the capabilities of tapestry, it is a practical art. In Fig 5, designers use tapestry in the interior designs, for example for furniture decoration.

Fig 5 Tapestry in furniture, Claire-Ann Obrien, 2011

6. Influence of Materials in Tapestry

The traditional tapestry structure did not leave much choice for the preparation of the weavers' materials. Of course, the texture and stages of the preparation of traditional tapestries' materials during its period can be considered as the leading arts of that time. The fibres used for textiles, cloths and figurative carpets are usually cotton and wool, and they are carefully dyed. Dying fibres was done in accordance with certain principles. The precision of these principles was a guarantee of the color quality. Texture design can provide a beautiful weave by recognizing different types of textures and using yarns of different grades and types. This technique is prevalent in modern tapestry.

In modern tapestries, in addition to commonly used yarn and wool, various types of materials, such as metal, stone, wood and glass are used by the designer without any constraint on texture and materials. Designers, in addition to usual weaves, use fancy and innovative types. As a result, many kinds of weaves are created via experiencing new materials.
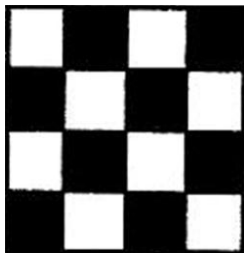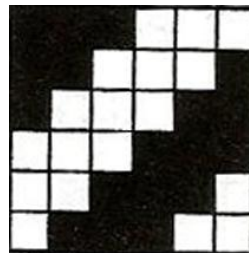

Fig 6 Taffeta   **Fig 7** Twill   **Fig 8** Satinee
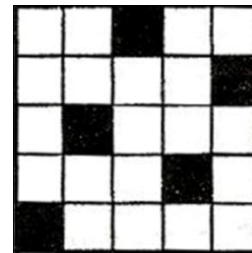
Fig 6, 7 and 8 show three main weaves and the remaining weaves are derivatives of these three fundamental weaves.

These weaves are used in the design of warp and weft fabric. The designers use these basic weaves and add their own creativities in the selection of materials by using one type of weave in different patterns and displaying a different presentation of a fixed weave.

The appearance of the taffeta texture is different when it is woven with wool from the one woven by metal strips. In fact, the artist can use a simple texture in a variety ways by selecting different applied materials. The possibilities are that each material in artists' discretion, if combined with various texturs, will yield a good result; however, even where the artist uses a type of texture, only through the transformation of applied materials into creativity it will be reached. In this case, the importance of the selected materials is detemined in the construction of modern tapestries. In Fig 9, there are alternating square nodes. There are some more nodes such as sailing and carpentry that can be used in tapestry.
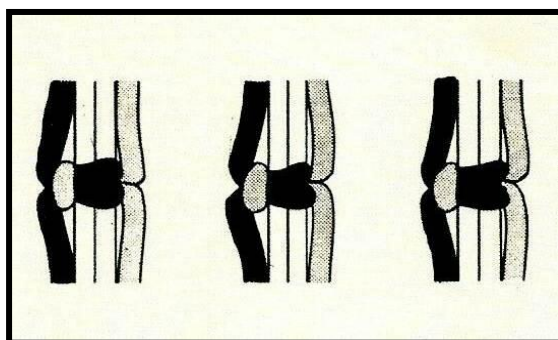
Fig 9 Alternating square node, Rasoulzadeh Namin, 2013

Many artists use natural materials around them in tapestry, such as plants, wood, leaves. In Fig 10, tapestry is created by branches and plant fibres with the combination of leather strips. In such cases, the background and the free space of tapestry is also a part of the artwork and it is also considered how to present the effect and background. Lightening is another element that needs to be considered by the designer.

One of the difficulties that can arise when you work with transparent materials is deciding how you will display the final work. The work itself might have been made to fit a particular site within space (Thorne, 2009:116).

Fig 10 Natural fibre tapestry, Aflatooni, 2011

In choosing different materials, the composition and balance of the design should also be considered, that is the targeted materials should be selected and used in appropriate textures; each texture, if created with the right materials, will display a better performance. Artists always seek to experience new materials but paying attention to traditions also has a great value and represents the culture of every nation. Ethnic art reflects the thoughts of a community and takes on a collective need (Fisher, 2007:191). Of course, it should also be noted that the lack of change in the design of a product and the preservation of its originality is considered to be of value in some cases; however, against the waves of modernity, the production of handicrafts is a drawback and will become a factor in the decline, stagnation and desolation of these products (Pakzaad, 2017:37). For these reasons, the matching and growth of handicrafts over time will be a positive factor and indeed its survival factor; it has been able to select the type of this passage through contemporary art. Traditional and indigenous arts are rich in opportunities, and these arts can also be used in tapestry.

7. Creative Use of Tapestry in Dresses

The art of tapestry provides an extensive field of activity for various artists; meanwhile, designers of clothing have used various techniques in their collections. The designers choose the method of using tapestry according to their own views and the collections. The innovations in this field have made creative collections. Tapestry is a very rich field and full of ideas in as much as the designer can use it in a creative design of her/his collection for a long time, and each chapter presents a new way of displaying this art. It is very true to say that a part of the culture and art of any country can be searched in its dress. In today's world, dress is a (visual) tool for recognizing human beings from a continental, historical, cultural, artistic and economic aspect and at the level of civilization and society progress (Majlesi & Khoshnevisan, 2010:58).

Tapestry, by preserving the principles of this recognition in each climate and historical context, has the ability to express the artist's purpose. Fig 11 shows the design of Dolce & Gabbana brand in 2013. The brand has come up with a Gobelen tapestry pattern in the design of that period. As it was mentioned earlier, Gobelen is one of the traditional tapestries. It has an interesting point that Dolce & Gabbana have used the idea of tapestry as a traditional texture. However, the traditional Gobelen texture with a modern design is a perfect match of classic and modern art. In this way, many traditional arts can beautify the modern world.

Fig11 Tapestry in cloth, Dolce and Gabbana, A/W 2013

Fig12 Tapestry in cloth, Alberta Ferreti, S/S 2016

Tapestry can be used in designing dresses in different ways. In the above collection, tapestry is knitted on the top of the textile. In Fig 12, tapestry is weaved with the main textile as a complementary textile for the dress. The designer has used the property of tapestry texture as a straight texture which means the type of texture is directly affected in the model of the dress. Creating the surface by texture and displaying the texture are essential characteristics of tapestry in this dress, and the designer has initiatively added fabric strips and the fitting of the fabric and texture in different parts of the model, considering the negative space suitable to add more effects on the design.

Also, the way to use the texture form can provide a new design in the tapestry. Tapestry is one of the rare types of art that gives a designer a wide range of practical varieties to design the dress. Fig 13 shows the interesting design of the glasses with the usage of tapestry in the frames. The texture is very detailed and colorful. Different colors in the texture create the design in the frame. The production of these glasses was done by 3D print. The glasses are the result of the interface of new technology and traditional art.
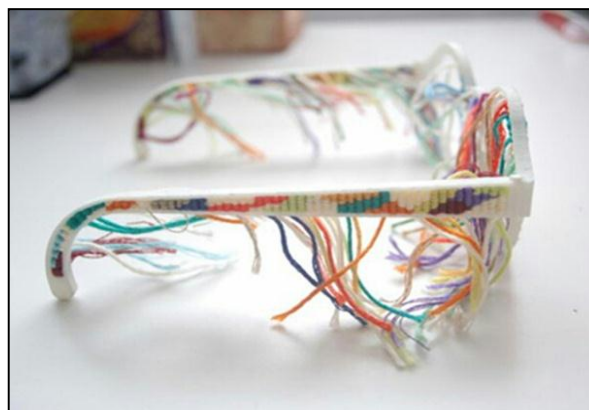

Fig 13 Tapestry 3d print, Chloe McCormick and Nicholas O'Donnell, 2012

The usage of tapestry has caused creativity and new designs by recognition of different materials in the presenting of texture and modeling. The designers have used this feature to demonstrate a variety of collections. One of these materials is rope which has created many possibilities. The designer can design a detailed texture or use this feature in the background of modern tapestry in dress.

Fig 14 Volume design Louis sabagi, 2015   **Fig 15** Model design Doin Lee, 2015   **Fig** 16 Textile design Chanel, 2016

Fig 14 shows a modern look to the tapestry, with an irregular texture, in other words, stitching of a string of thick threads to present the volume in clothing. In Fig 15, the fabric is used as strips for the design idea. These strips create a knot, determining the style of the dress. The design has been made by weaving up-and-down strips.

In Fig 16, the skirt is weaved in a tapestry style. One of the areas of using tapestry in designing cloth is fabrication. In this design, the designer has also used other different textures and free threads in the end. Tapestry and the accessories are used in clothing in various ways, but due to the capabilities of this art, there is always a new way for designers to make use of this art.

8. Conclusion

By comparing the original tapestries and contemporary ones, we will face a variety of perspectives for the artists, expressing a new point of view to this art. Artists in different fields have used tapestry in their works to achieve their creative goals; this, in addition to the innovation in the collection, has contributed to the growth of the art of tapestry. Although the presentation of tapestry was limited to Gobelen frameworks and rugs in the past, changes in subjects and weaves have promoted the position of tapestry to an independent art. With growth in texture and usage, tapestry has found a potential ability to be used in different positions such as interior design, clothes design, shoes and bag designs and all clothing accessories. Designers are considered to be increasingly innovative in using tapestry. In general, the position of tapestry has developed with the reactivation

of artists so that it has gained a valuable place in the art of fibre, and it has been used in almost all aesthetic fields.

The usage of tapestry in clothes designing and creative dress modeling is described in the following ways:

1. Use of tapestry in applique.
2. Application of tapestry textile in clothing surface for modeling.
3. Fabrication with the effect of model designing by tapestry.
4. Use of volume tapestry ability with innovative textures.

The variety of textures and capabilities to perform different types of tapestries has made a wide range of usages in clothing design. Designers use tapestry according to their styles and points of view. It is obvious that tapestry has many capacities in modeling that has not been used yet, and that clothes designers with increasing knowledge and a creative power of application can create great collections.

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Representation of Symbols and Signage of Ancient Iranian Festivals in Contemporary Posters

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Abstract

Many ancient ceremonies and rituals of Iran, in addition to their ritualistic and humanitarian characteristics, have a role in social and economic affairs and have remained stable within the economic, social and cultural structure of the society. Since graphics is an art related to the community, the artists' awareness of various cultural backgrounds and familiarity with the identity of the society and its proper use is inevitable. The present research studies the presence of some of the most important symbols of Iranian festivals in posters. Using a descriptive-analytic method, the following two questions are answered; what are the visual expression techniques implemented in designing posters related to Iranian festivals? and how have Iranian festivals become figurative in contemporary posters? In response to the questions, it has been tried to identify the way to reflect Iranian festivals in posters, and therefore the appearance of these symbols has been assessed. The aim of this study is to peruse the techniques that have been used by the designer to portray them. The present study has analyzed 15 contemporary posters and has examined five important posters related to ancient Iranian festivals and found that the designer has directly used symbols related to each festival in most of the artworks studied. In the analysis of the artworks related to the celebrations, most of the general structures of the artwork were of an original and combined form in detail. In these posters, artists have tried to communicate with the audience using techniques such as typography and printing, and visual elements such as rhythm, texture, color, form, and symbols. This function has strong and weak points in expressing concepts. This research has been able to determine these points through the structure analysis of the posters.

Keywords: Iranian Festival; Symbolism; Iranian Graphic Design; Poster Design; Visual Expression

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1. Introduction

Festival is a cultural feature of any community. Celebration and enjoyment have existed since ancient times. How to conduct these festivals has been an ancient tradition in the ancient Iranian culture, and literature and illustrations are suitable sources to study these festivals. In ancient Iran, celebration and happiness formed the basis of people's life, and structured their religious beliefs and emphasis on ritual teachings. Identity in any culture has to be addressed, and hence the most important approach to success is using cultural treasures through the art tools.

Considering the title of the article in the practical section of this research, an attempt is made to first introduce the most important celebrations and their elements and then to study how to implement these symbols in the selected posters of the recent years. With knowledge of the techniques that have been used to create the work of art, graphic designers analyzed the type of composition and use of various visual elements such as color, rhythm, surface, etc. Understanding how Iranian festivals are reflected in the contemporary posters of Iran, studying the symbols reflected in the posters and scrutinizing the techniques that designers have used for illustration are the main goals of this research. This can be used as a guide to recognize and analyze the artwork, help perceiving the cultural signs in Iranian history, and influence its representation in contemporary, and especially, graphic art.

What is important in this research is the way designers interact with the elements, the composition of different visual elements, and the use of various graphical techniques to present themes such as movement, vitality and expression of different emotions to identify the most important aspects involved in the formation of an effect to convey the concept.

1.1. Literature Review

The research tries to focus on descriptive analyses of festivals and rituals, distinguish the symbols associated with each ritual, examine them as signs in graphic arts and in specific forms in contemporary posters, and comparatively analyze the semantic roots in artwork. In several studies, such as student dissertations, the analysis and description of symbols, their role in graphic art and how they are applied in posters are discussed. However, this study has tried to give an overview of the functional and practical designs of posters, the application of each symbol, the influence of the rituals in this art, and the return of the Iranian cultural identity.

Sharifian (2006), in his master's thesis entitled, "*Ideology, symbolism and meaning in graphic art*", has focused on the structural features in image composition with the content of Iranian celebrations and rituals and has examined the visual structures and visual elements in the presentation of the ceremonies and rituals. He focuses on visual elements such as color, rhythm and movement in his artwork and analyzes the role of rituals and celebrations in the final formation of the work based on the principles of art. Leila Badrazimi (2014), in her thesis, "*Analysis of the visual structure of Iranian artwork with the theme of ceremonies*", has analyzed the visual structure and visual elements in the presentation of celebrations and rituals in the work of illustrators of the last two decades. The main aim was to find the subject that interested Iranian illustrators and their reaction to Iranian traditional rituals.

1.2. Research Method

The research has a descriptive-analytical method along with data (i.e. images) interpretation and their adaptation. The information is collected through library study, and the data collection tools

include documentary resources, selected images from books and internet resources. Therefore, based on the study of the images and posters collected and designed by the authors, the image samples are compared with the concepts and symbols obtained from ancient Iranian festivals.

2. Ancient Festival

Festivals in Iran are referred to as '*Eid'*. They are common among the Zoroastrians, for whom before every ceremony there is a ritual and the prayer anthem from the Avesta, asking for forgiveness for the deceased. This was known as a celebration and gradually took place on the feast day. The number of Iranian festivals is estimated to be more than 73 annually. This shows that people of Iran celebrated either the day before or the day after the festival. For ancient human beings, enjoyment has its own special place. In the inscriptions, documents and ancient texts, one can find the oldest references of the inhabitants of the Iranian plateau of the special customs of festivals. In the Achaemenid inscriptions, Ahuramazda is the Great God who has created joy for mankind. It is said that even at the time of death, people and relatives must not grieve. Therefore, the philosophy of happiness in ancient Iran is rich in content (Akhte, 2009: 15).

To achieve the purpose of conquering the devilish forces, Iranian needed two things, one is strong body and arms while the other is strong intention, firm soul and faith to defeat the filthy fortune. In order to reach the second part, that is a healthy soul, they required several devices, one of which was to organize multiple seasonal festivals throughout the year on different occasions. People participated in these celebrations, and healthy recreation, squeaky pleasures, fireworks and tap-dance gave them mental happiness, released them from mental fatigue and physical tiredness of the body and prepared them for the next day's hard work after the celebration. The Nowruz festival is among the many ancient Iranian festivals celebrated in detail. There are special days in the history of the ancient and civilized Iran which reminds us of the important stories and events.

In ancient times, any type of personal, social, intellectual and physical activities was considered as a religious activity. In fact, what we call culture today was known as religion in the olden days. This religion, both primary and advanced, included a series of beliefs and holy narratives that had multiple individual and social rituals, and the life cycle was based on these beliefs and traditions. The most common rituals used were birth, puberty, marriage, death, planting and harvesting (Bahareh, 2014: 163).

In ancient Iran, every day and month has been called as a Goddess. Thus, when each day of the month matched with the name of that month, the Iranians celebrated that day and since there were twelve months in a year, it resulted in twelve celebrations (see Table 6).

2.1. Iranian Festivals and Symbols

Among the festivals that have been performed in ancient times, a handful of them are known today among the people, with their traditions being implemented. The important festivals are Nowruz, Mehregan (first month of autumn), Yalda (celebrated as the longest and darkest night of the year), Sadeh (celebrates 50 days before Nowruz, that is 29th January) and Chaharshanbe Soori (celebrated on the eve of the last Wednesday before Nowruz); there are special symbols for the recognition of each festival (Table 6).

2.2. Iranian Festivals and Symbols in Contemporary Posters

Since 1960s, serious transformations have taken place in poster art by talented graphic designers. Participation in social activities and advertisement of cultural and artistic works of art are for

communication and information exchange. The poster artist utilizes the achievements of contemporary graphic art, different modern trends and traditional roles in various types of common methods. In 1979, due to the significant political events, posters were considered by various groups and hence found it true place. The first exhibition of political posters was held at the faculty of fine arts in 1979, which was welcomed and appreciated by people. The political trend was the revolutionary initiators in the field of graphics particularly in the design of posters. In recent years, people and artists have given attention to the Iranian civilization and culture. Therefore, a lot of work has been done by artists using cultural symbols in the field of cultural affairs.

The study intends to explain the posters designed with the themes of Iranian festivals and also the elements and techniques that have been used to illustrate the meaning and concept of the festival. Before examining this, one needs to look at the visual elements and features that can be effective in influencing the design.

The designer creates the image using color, form, line, texture and other visual elements. The important point is the manner in which the designer uses these elements and obtaining visual features in the poster space; each can produce important psychological effects on the audience. The designer, in order to convey the work of art, should motivate the feelings of the audience and attract their attention. To achieve this goal, the designer's artwork must have qualities related to the subject under discussion in order to interact with the artwork. The correct alignment of the visual elements leads to balance, harmony, movement, contrast, etc.; spaces that each provides a special effect on the viewers.

2.3. Visual Elements

Frame: It is the line that separates the interior space from the exterior (Hosseini Rad, 2006: 77).

Proportion: It is the mathematical concept that in visual art refers to the quality of suitable relationship between the components of artwork with each other and with the whole of the artwork (Ibid).

Balance: Creating a balance in visual art depends on how to create coordination between the elements and its components.

Harmony: Whenever in visual art, the energy interaction of the components with each other and with the whole artwork is in balance then that artwork is in harmony (Ibid).

Contrast: Contrast means inconsistency and mutual conflict between elements and visual qualities (Ibid).

Rhythm: In visual art, rhythm has a visual meaning consisting of repetition, change and movement of visual element in visual space. In other words, the systematic and continuous repetition of a pictorial element creates a visual beat (Ibid).

Equal repetition: In this type of beat, an image is repeated evenly and consistently. This rhythm creates a self-referential movement and attracts the audience. But it has a negative effect too because it lacks diversity and after a while becomes boring (Ibid).

Alternative repetition: In this beat, a visual element is repeated, but its repetition varies with the changing variations so that each audience is always waiting for a type of repetition (Ibid).

Evolutionary repetition: In this type of beats, an image or visual element starts from a special state and gradually changes into a new state as it follows the route along its growth and changes like the moon (Ibid).

Wave repetition: This type of beat is based on the alternative movement of curved surfaces and lines and is a perfect example of visual beats like the desert sand (Ibid).

3. Analysis of the Nowruz Posters

Nowruz has been the largest and most celebrated Persian festivals, which is still common today. There are many symbols from this ancient ceremony, and all people are familiar with this festival. Therefore, it is one of the most popular styles among the designers. Most of the remaining elements of Nowruz are used for other cultural events. Color is one of the important elements for the designer to achieve the goal. The designers with a proper use of color technique convey their messages to the audience, in addition to beautifying their artworks. In the posters, the designer uses live and pure colors to create a joyful and lively atmosphere. However, in posters related to Nowruz, we see green more than any other color. The green color reminds one of the start of spring and growth of plants as well as the seven elements of Haft Sin table (seven essential symbols of Nowruz on the table). The color appearance on the poster is in a way that the audience gets excited when they see it, and before reading the text on the poster the message of joy is conveyed somehow to the audience. The reason why the designer uses the green color is that green indicates greenery and spring, but it is not easy to portray elements such as vinegar, Samanu (a sweet pudding made of wheat), and Sepand (Syrian rue), and thus conveying messages via green color does not work quickly at times.

Another commonly used color is red, usually for the illustration of apples and goldfish. The goldfish is not a part of the Haft Sin element, but it is one of the important elements on the table, and by seeing it, the concept of Nowruz or New Year is associated in the mind. This is due to the fact that this goldfish is only seen on the streets during the Nowruz eve. Designers use this element in their artwork as it has a cheerful color and its shape is recognizable. The presence of goldfish with its beautiful color makes it vibrant in the frame and attracts the audience. Of course, the use of red color is limited to the subtle spring season.

Other commonly used techniques in the poster of Nowruz are the use of rhythm and typography. Designers use rhythm to create diversity in the frame which is one of the important features of the festival. Typography which is usually written in the Nastaliq style of calligraphy gives identity to the artwork and stimulates the audience's emotion. An overview of several posters of Nowruz in terms of graphic design is illustrated in Fig 1 and 2.

3.1. Analyzing Poster Contents

The poster is designed with the theme of Nowruz, and the content and concept of the artwork are presented by implementing various methods. Initially, the designer uses a neutral color in the background and lively colors in the foreground that remind us of the passing away of winter and revival of nature. The green color, in addition to enhancing vitality, is one of the main colors of Nowruz which is meaningful in the work of art. The designer, by using ancient Iranian motifs and old spaces in the artwork, refers to the ancient nature of the festival and depicts the image in the form of a carpet. The Haft Sin table is a depiction of Nowruz and states the theme of artwork. Using the Haft Sin in the background with faded colors is an intelligent way to show the ancient and traditional nature.
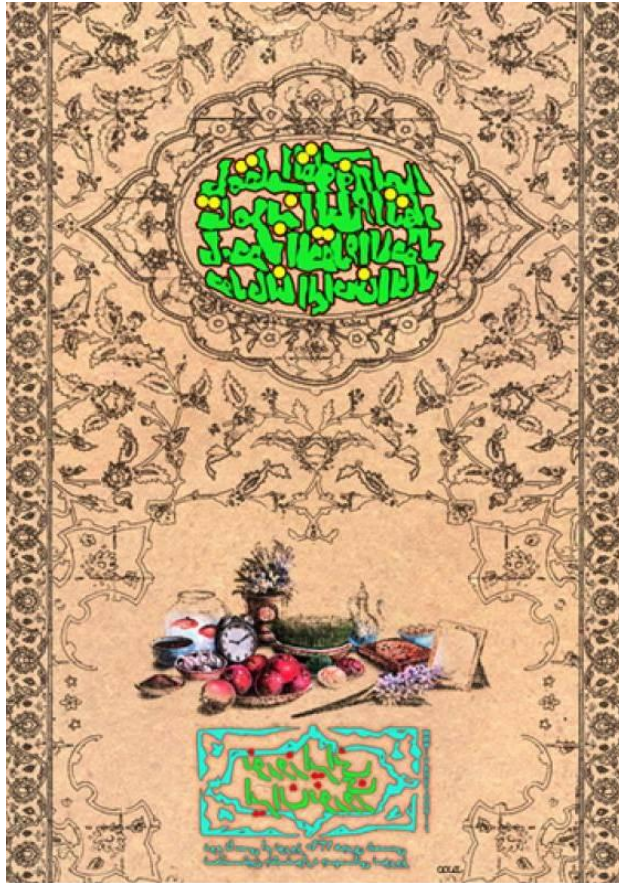
Fig 1 Nowruz festival composition poster
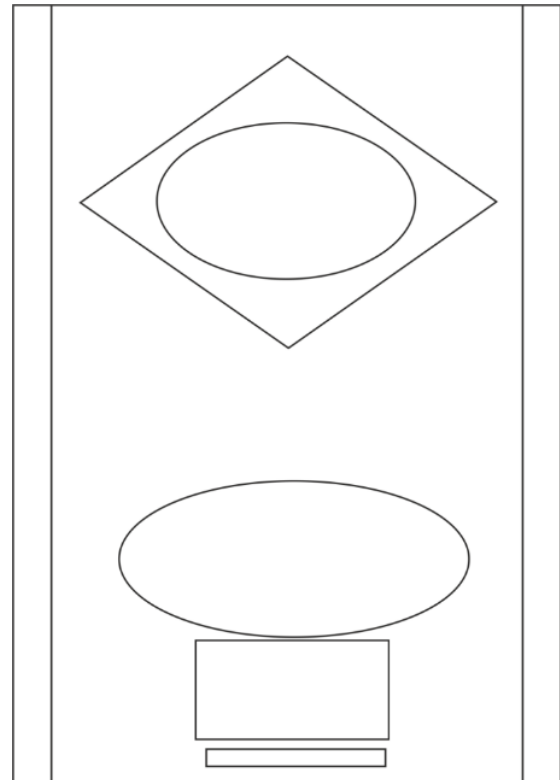
Fig 2 Nowruz festival composition poster

3.2. Symbol

As previously mentioned, the artwork has been designed with the theme of Nowruz. This is the most celebrated festival of ancient Iran with many symbols. The designer in the artwork exhibits the Haft Sin table that includes all the symbols of this festival. In this manner, the designer directly refers to the theme and leaves no doubt in the mind of the audience. In addition, using the green color for the text above the image has the highest visual energy, indirectly illustrating Nowruz. In addition to the direct use of Nowruz symbols, the designer uses symbolic colors for the design.

Table 1 Describing the Nowruz festival poster components

Color	Texture	Graphical technique	Rhythm	Form	Structure	Symbol
Neutral and lively color contrast	Graphite paper	Creating old space	Uniform and alternate	Horizontal	Symmetrical	Haft Sin

4. Analysis of the Mehregan Festival Poster

Mehregan is a festival related to Fereydoun and the revolution against Zahak's cruelty. This festival is one of the greatest Iranian rituals which is unfortunately being forgotten, and it is only known by a few communities. That is why poster and artwork is limited in this area. Since the festival has been forgotten, its customs are not familiar to people and there are no special symbols. The most important theme which is left is freedom, and the symbol of this festival is the cypress tree (Fig 3 and 4).
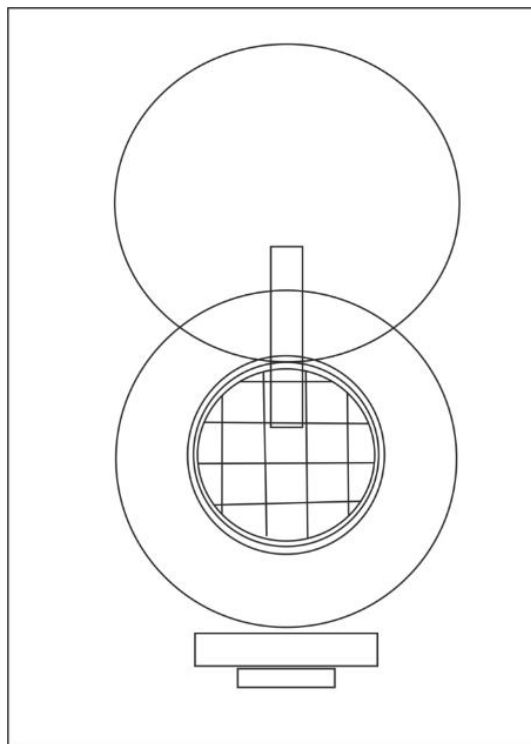
Fig 3 Visual elements composition   **Fig 4** Mehregan festival poster

4.1. Analyzing Poster Contents

This work of art was designed with the theme of Mehregan festival and the celebration is for resistance and freedom. The designer has used a cypress tree which is the symbol of freedom as its most important visual element. This tree begins from the center of the frame and continues upward. It envelops within itself the word of *Mehregan* and the youth's head who are the survivors of this day. The cypress tree, as the most powerful element, covers all the elements of the poster and the circular shape refers to the earth. The designer uses the cypress tree which has been the symbol of freedom in his portray and communicates with the audience using symbols of this festival.

Table 2 Describing the Mehregan festival poster components

Color	Texture	Graphical technique	Rhythm	Form	Structure	Symbol
Color with less brightness	Drawing texture	Manual	Alternate and revolutionary	Circular	Symmetrical	Cypress tree

5. Analysis of the Yalda Poster

One of the famous festivals of the ancient Iranians is the Yalda which is held on the first night of winter. Fortunately, this festival is still taking place and it is celebrated in Iran like Nowruz. The tradition of this celebration is to get together and eat fruits and nuts. This tradition has become popular among people, and fruits such as pomegranate and watermelon have become the symbol of this night.
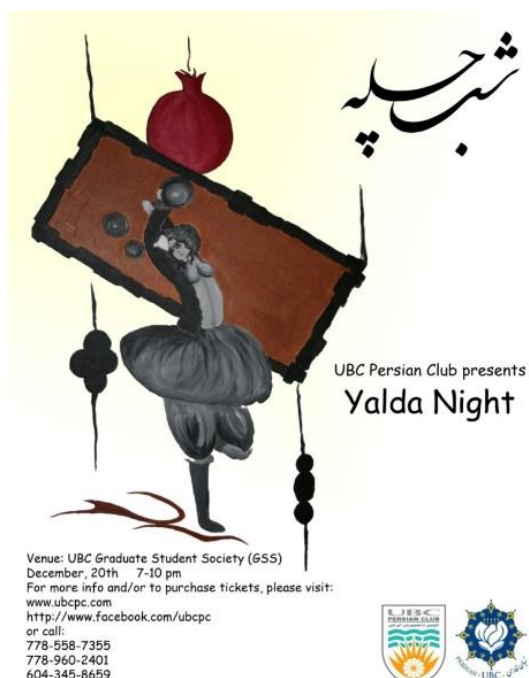
Fig 5 Poster illustration of the Yalda Festival
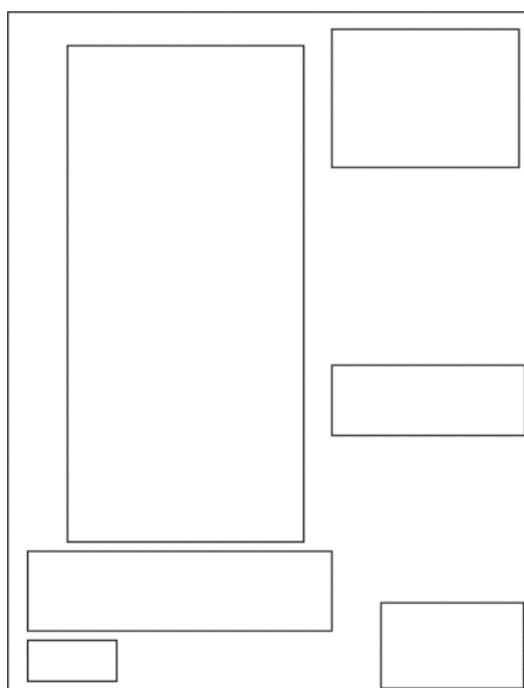
Fig 6 Graphical presentation

5.1. Analyzing Poster Contents

This work of art was designed with the theme of Yalda night. In Iranian mythology, this night is known as the rebirth of sun, which is reborn after the longest night of the year. The yellow color in the background reflects this belief. In the foreground of the picture, one sees a woman in local dress with a traditional pendant. Although the designer has used good elements and portrayed them beautifully, there is no specific relationship between the elements and each has to be defined separately. The pomegranate image above the woman's image is a symbol of this night, which the designer has used to connect the audience with the subject. The designer has directly used the

symbol related to the celebration to design the poster. Pomegranate is a fruit that is eaten at Yalda night as a tradition, and the designer by drawing the pomegranate in the poster has expressed such a theme.

Table 3 Describing the Yalda festival poster components

Color	Texture	Graphical technique	Rhythm	Form	Structure	Symbol
Grey and neutral color	Drawing texture	Manual	-	Rectangle and Circular	Asymmetrical	Pomegranate

6. Analysis of the Sadeh Festival

The Sadeh festival is an Iranian celebration that has been eliminated and forgotten to a great extent from the rituals and celebrations. The most important symbol of this festival is fire. Since the Sadeh festival has been almost forgotten and many people have not even heard its name, limited poster designs exist thereof. Nevertheless, with the help of the available studies done on the poster, it can be understood that the elements and methods used are similar to other ancient festivals. The designer has used happy colors to design the artwork, and a lot of yellow and red colors are used to depict the fire festival. In this work of art, the designer has used a rhythm to create motion and dynamism in the image frame. A few of the posters are studied so far.
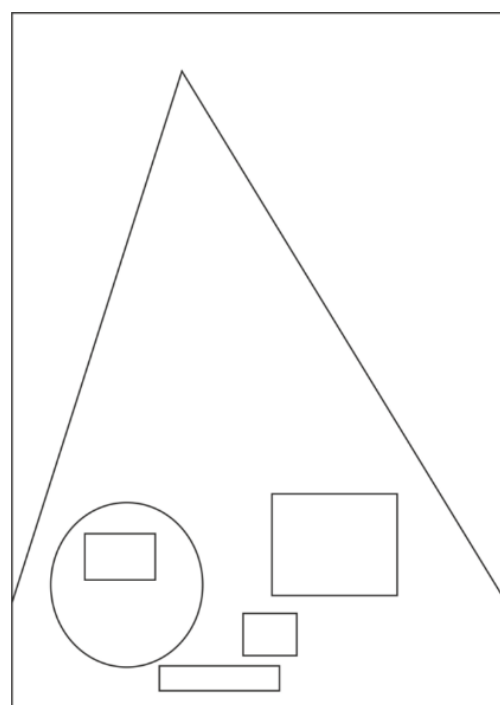

Fig 7 Sadeh festival poster

Fig 8 Analysis of the visual elements composition

6.1. Analyzing Poster Contents

There is not much information about the Sedah festival and the philosophy of the celebration, but what is clear is the ceremony of burning fire in this festival. The designer portrays much of the space with fire and emphasizes the importance of this element in this festival. The use of Nastaliq script gives beauty and identity to the work of art.

Table 4 Describing the Sadeh festival poster components

Color	Texture	Graphical technique	Rhythm	Form	Structure	Symbol
Warm and cool	Drawing texture	Manual printing	Evolutionary	Triangle	Symmetrical	Fire

7. Analysis of the Chaharshanbe Soori

Chaharshanbe Soori is one of the well-known festivals in Iran, which has been popular among people till date. There are many traditions and fictions in relation to it, but the story, which is most acceptable by the scholars, is related to Siavash and his walk through the fire to prove his innocence. This ceremony which is still popular in Iran is associated with open fire and people's jumping over the fire. Therefore, the fire in this festival is considered as the main element and symbol that the artist portrays.
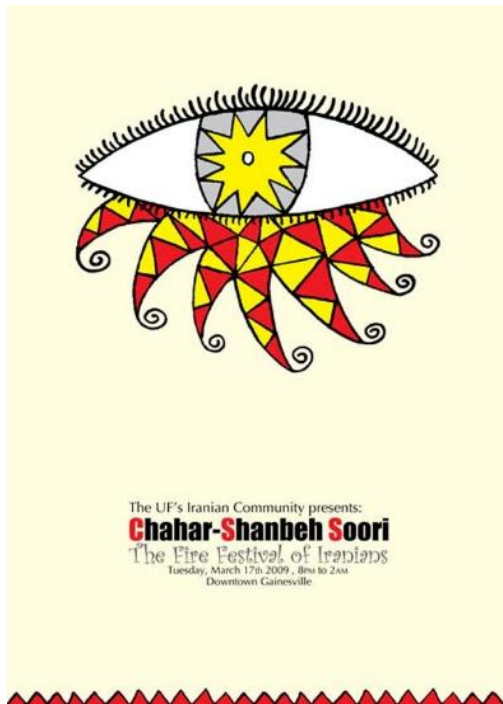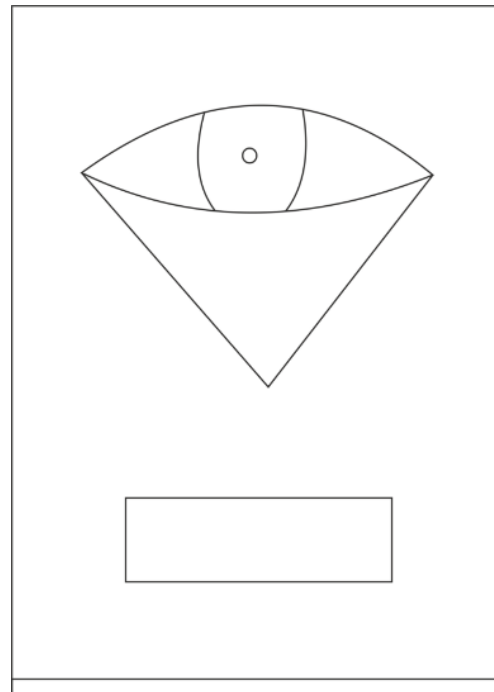

Fig 9 Chaharshanbe Soori Poster

Fig 10 Analysis of the visual elements composition

7.1. Analyzing Poster Contents

The poster that has been designed on the occasion of Chaharshanbe Soori does not contain any element or symbol that emphasizes this festival. The role of the eye which can be described as the only element of the poster is not any depiction of the Chaharshanbe Soori celebration, and more resembles a circus clown. Perhaps, this image is more appropriate for a poster with the theme of a circus or magic festival. The colors yellow and red are inspired by fire. The designer has used these colors to convey his concept, but the small space occupied by these colors does not give a warm and energetic feeling. The inside pupil of the eye is like a star that is yellow in color; it can be said that it represents a person who looks at the fire, and the designer portrays the reflection of the fire brightness in the eye of the audience. This form can be mentioned as the designer's most accomplishing depiction of the Chaharshanbe Soori. This artwork however cannot be regarded as a successful work of art in communicating with the audience. Although this artwork was structurally and aesthetically satisfactory, it does not convey the message and the audience cannot understand the message without reading the text.

Table 5 Describing the Chaharshanbe Soori festival poster components

Color	Texture	Graphical technique	Rhythm	Form	Structure	Symbol
Warm	-	-	Uniform and alternate	Triangle	Symmetrical	Warm color

8. Conclusion

By reviewing the posters related to the five important ancient Iranian festivals, we found that the artists have used more of colors and rhythms to convey and express their concepts. In posters related to festivals (i.e. Eids) and celebrations, the artists have used various visual techniques to illustrate the concept of motion in the frame. Each designer takes into consideration this principle according to his style of work.

The most important and influential element in the artworks related to ancient festivals is color. Since most Iranian festivals are associated with fire, warm colors are the most applicable colors in these works. The designers convey the concept of fire to the audience by putting together yellow, red and orange and create a warm atmosphere. In the works where the designers have used different aspects of colors such as symbols, the artwork is more successful and has conveyed a better communication with the audience. Creating a happy and lively atmosphere by using pure colors and organizing the correct color are very effective for the success of the artwork.

Rhythm is an important factor for inducing motion and dynamism, and the main indicator of many festivals. Iranian designers have used rhythm in their works for various purposes in various ways. In works where the designer did not induce the concept of motion with different rhythms, the design had more diversity. In most of the works studied, the designer has created an element of original design via a rhythmic repetition, resulting in the dynamic effect within the artwork. One of the usual methods for using rhythm in these years is the repetition of the text known as typography. Designers have benefited from typography, especially by using the Nastaliq script for identification of their works, and have increased the aesthetics of their artwork. In addition to its beauty, the Nastaliq script shows the sense of motion due to its stretched shape. Most of the works studied have a symmetrical composition and the designer uses this method to keep balance in the artwork. In the

artworks, however, the designers have implemented equilibrium in the frame with the use of visual energy, and hence the artwork is more successful and has more image variations.

Designers have increased the diversity and dynamism in the space of the frame by using different textures in their work. One of the most commonly used textures is the hand-printing technique which has a special effect on the artwork. Textures are used in different ways to convey different concepts and have significant impacts on the artwork. By organizing different elements together, different textures are created which have a high visual energy. Designers have used textures as a method to diversify the work space and convey certain concepts and meanings.

In the analysis of the artworks related to the festivals, most of them have an original form in the main structure and a detailed composition form. Using the main form in the frame, the designers have given coherence to design, and using composition to form has given dynamism to the work of art. For success in the composition, the designers have used correct forms so that the space of the frame can be verified from the aesthetic point of view. The artworks in which the designers have used dynamic and energetic forms in their composition to convey the festival message were more successful.

Different graphic techniques allow designers to differentiate their design and artwork from those of the others and create their own style. Therefore, the work of art is more effective and better in inducing the poster concept. However, unfortunately in most of the artworks studied, the designers have made limited use of graphic software and have not used a unique technique in their work. The successful technique used in these artworks is the integration of a hand printing method with a computer method.

In many artworks, the designers have directly used symbols related to festivals, and in few cases they have used the symbolic aspect of color to describe the subject of the artwork. The use of symbols makes a quick contact of the audience with the subject, resulting in more impacts. In most artworks under analysis, the designers have used symbols in a correct way, have not wasted them in organizing the work space and have not decorated the symbols.

1. Posters with colors for conveying the meaning and concept of the festival were more successful and had a better communication with the audience.
2. Use of warm colors activates the space and creates a better perception of the subject and message of the poster for the audience.
3. An important element in poster related to ancient festivals is the use of rhythm.
4. Use of the symbolic aspect of color in posters related to Nowruz and Chaharshanbe Soori has been effective.
5. Designers have used typography as a successful method for artwork and for quicker communication with the audience.
6. For creating variety in the image, the designers have used hand-printing techniques.
7. Most of the ancient festival posters have a vibrant and dynamic atmosphere.
8. Posters with a high visual energy form can convey the message quicker to the audience.
9. Color is an important factor in communicating with the audience.

Based on the results of this research, it has been proved that what exists in ancient Iranian culture has the potentialities in terms of semiotics and can be used in various cultural fields. It is suggested that such an application be considered in cases such as children's book illustrations and dynamism.

Table 6 Symbols illustrating the Iranian festivals

	Plant symbol	Animal symbol	Natural symbol	Thing
Nowruz festival Symbol: Sabze, goldfish, apple, Samanu, Somagh, Senjed, Vinegar, water and mirror				
Yalda festival Symbol: Pomegranate and watermelon				
Mehregan Festival Cypress tree (concept of freedom)				
Sadeh Festival Symbol: Fire				
Chaharshanbe Soori Symbol: Fire				

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Enhancing the Quality of Life in Historical Contexts with an Emphasis on Urban Regeneration Approach (Case Study: Imam Ali Square in Isfahan and its Surrounding Texture)

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Abstract

In recent decades, inconsistent growth in urban environment has had an impact on the quality of urban life, and historical and valuable textures, resulting in urban problems and forcing urban officials to adopt new approaches. Accordingly, refinement and improvement approaches have evolved over time with urban renaissance as the new approach. The current research assesses the quality of urban life in the historical context of Imam Ali Square in Isfahan, based on social, economical and physical criteria with urban renaissance. The research has used SWOT technique and Analytic Network Process (ANP) for the analysis. The research results showed a significant relationship between criteria and sub-criteria with an improved quality of urban life and the alternative of renaissance. The economic criterion was the most important element for improving the quality of life. The satisfaction level of the neighborhood criteria was for social quality, and the housing and land market criteria were considered for economy. Flexible development plan was considered as one of the important factors for monitoring new constructions and in urban renewal alternatives. The impact on the quality of life was also recognized in the study area. Finally, strategies such as balancing the functions of the texture by injecting business, tourism, etc., formulating urban planning rules, taking into account land economics, and monitoring the human system in new constructions were studied in order to avoid the depreciation of valuable buildings.

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1. Introduction

In the twentieth century, urban growth increased the share of urban population and made urbanization a dominant way of life. Although urbanization is considered as one of the most important indicators in the field of welfare, social and economic development, its rapid growth can reduce the per capita of many social and economic facilities, and its consequences can be reflected in the form of reduction of the quality of life in various urban areas. Therefore, the quality of urban life was one of the first study areas that, along with urban development, gradually began to be considered by urban specialists in the 1930s (Akbari, 2010: 122). Quality of life is to determine the satisfaction and dissatisfaction of individuals and groups with different aspects of life. Nowadays, quality of life is the main goal for planning, which is studied by thinkers and planners (Ghalibaf et al., 2011: 33). The neighborhood represents the peak of the spatial manifestation of urban life and the presence of citizens, which due to lack of proper planning, faces massive urban problems today, reducing the quality of urban neighborhoods. According to the conditions of each period, various approaches have been proposed to fit the existing conditions. One of the most important changes is the physical and two-dimensional perspective into a new perspective based on the existing environmental capacities, and the use of environmental potentials in all aspects of the social and economic life. Using new approaches such as urban renaissance, we can rehabilitate these neighborhoods. In the planning process, therefore, we can use a renaissance approach at the urban neighborhood level to improve the quality of these neighborhoods by exploiting their potentials.

The area of Imam Ali Square of Isfahan is one of the old neighborhoods with a historical background. The area can be of potential use to promote quality and eliminate the inappropriate conditions and eventually achieve a sustainable neighborhood. Considering the main purpose of this research, that is to promote the quality of life in the historical context with an emphasis on the urban renewal approach, this study answers the following questions:

▪ How can one improve the quality of life based on renaissance approach and through economic, social and physical indicators which can be effective in urban planning, especially planning to live in the historical context of Imam Ali Square?

▪ What is the quality of life in Imam Ali Square of Isfahan in terms of physical-physical characteristics?

▪ What is the quality of life in Imam Ali Square in terms of social indicators?

▪ What is the quality of life in Imam Ali Square of Isfahan from the standpoint of economic index?

▪ To what extent can the use of Urban Renewal Approach be effective in restoring valuable and historical urban textures?

2. Theoretical Fundamentals of the Research

2.1. Concept of Quality of Life

In the literature on quality of life, Mulligan et al. (2004) have extensively defined it as the satisfaction that a person has of his physical and human environment, and the conditions related to the scale of the family, the neighborhood, etc., which can affect the personal behavior of the people. It has also been proven that different people may have different observations, and thus make different mental judgments about factors such as the specific characteristics of their urban environment that might affect their quality of life. In order to examine the aspects of quality of life, it is necessary to use modeling frameworks and aggregated data to utilize those frameworks in a

specific context (Marans, 2012: 2). Also, urban quality of life is an attempt to create a healthy city and provide suitable and accessible public services in the framework of sustainability (Hataminejad et al., 2012: 45).

Table1 Major Criterion for assessing quality of life

Main areas	Indicators
Social	Quality of neighborhood relationships, Quality of social security, Quality of social participation, Quality of satisfaction from the neighborhood, Literacy percentage (women and men)
Economic	Average land price, average income, ownership type
Physical	The quality of residential units in terms of citizens and researchers
Access to services, facilities and urban equipment	Access to green and open space, access to urban facilities and services, overall satisfaction with access to amenities
Public transportation	Access to public transport and residential units
Environmental health quality	Quality of streets, alleys and passages; quality of waste disposal and waste

(Source: Rahnemaie et al., 2011)

2.2. Concept of Urban Renaissance

Urban refurbishment has remained from the periods of evolution and progress, and today its presence is called urban regeneration in its recent approach. The coexistence and peaceful encounter of styles and cultures is the last stage of transformation in the concept of restoration with the beginning of the third millennium and the entry to the 21st century as a new definition of urban regeneration. In this definition, the cultural and artistic dimensions and originality of the part have become dominant in urban neighborhoods, and various theories have tried to justify the creation of vibrant urban dynamic environments (Hajipour, 2007: 25).

2.3. Approaches to Assess Quality of Life

Two subjective and one objective approaches assess the urban quality of life in urban studies (Lee, 2008). These approaches are often separately employed and rarely combined to measure the urban quality of life. The quality of life in the mental dimension reflects the perception and assessment of individuals from their own state of life and is measured using the mental indices. The mental quality of life can be measured in a variety of ways; one way can be the cumulative amount of satisfaction in different realms of life. Based on this method, life is divided into different realms and the combination of satisfaction from each territory represents the overall quality of life.

The simple model shows that quality of life in general, which is the sum of certain amount of satisfaction in different realms and aspects of life (Pacione, 2003: 64).

S = Quality of Life
D = Satisfaction in the desired territory
d = Satisfaction below the desired territory

S

D_1 D_2 $D_3.....D_n$

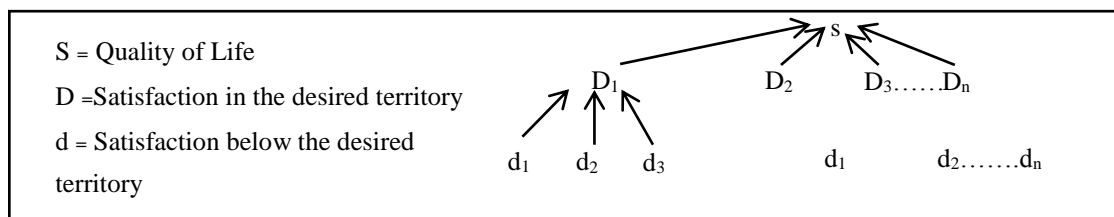d_1 d_2 d_3 d_1 $d_2.......d_n$

Fig 1 Simple structural model of quality of life (Source: Pacione, 2003: 65)

2.4. Urban Renaissance Approach

The aim of refurbishing old urban texture reflects the different levels of intervention, a change in the meaning and content of new aspects and areas of urban renewal.

- The nineteenth century and the consequences of the industrial revolution
- Protection and development in the first half of the twentieth century
- The 1950's urban rehabilitation approach
- The 1960's urban renewal with a revival approach (urban regeneration)
- The 1970's urban renovation with urban renewal
- The 1980's urban renovation with a view for redevelopment or economic regeneration
- The 1990's look of urban regeneration
- The third millennium's urban renovation with urban renaissance
- Reconstruction of the recent approach in restoration and improvement (Falamaki, 2007: 168)

2.5. Types of Urban Texture

It is possible to distinguish among different layers of urban texture due to the spatial growth and development processes of cities. For example, in the major cities of Iran, seven species of urban texture can be distinguished in the study of the typology of urban texture (Mashhadizadeh Dehaghani, 1994: 425). These textures are historical texture, old city texture, middle urban texture, urban new texture, surrounding texture of the city, satellites texture, or bulging expansion of the city, and the expansion of the metropolitan city with the creation of new cities.

Historical texture can be considered as the core of the city. The castle, the citadel or the Kohdjiz can be referred to as the historical texture of the city built in the past (in Iran before the Qajar period). The citadel, tower, castle and the main cores of cities like Hamedan, Shiraz, Isfahan, Yazd and Tabriz have such features (Shamaei & Pourahmad, 2005: 85).

3. Theoretical Framework

Considering the concepts and materials mentioned about the quality of life and urban regeneration, as well as the opinions expressed on the subject, we find that the three social, economic and physical indicators are among the most important factors in promoting the standard of living. Therefore, based on the information obtained and the researchers' studies and opinions, they are summarized in Fig 2. These factors affect the quality of life, which leads us to achieve the goal based on the approach of renaissance.

This research implements an Analytic Network Process (ANP) model, based on the concepts mentioned, as well as the strategies of the urban renaissance movement and the alternatives. In order to better understand their relationship with the social, economic and physical criteria and sub-criteria, the priority of each is measured.
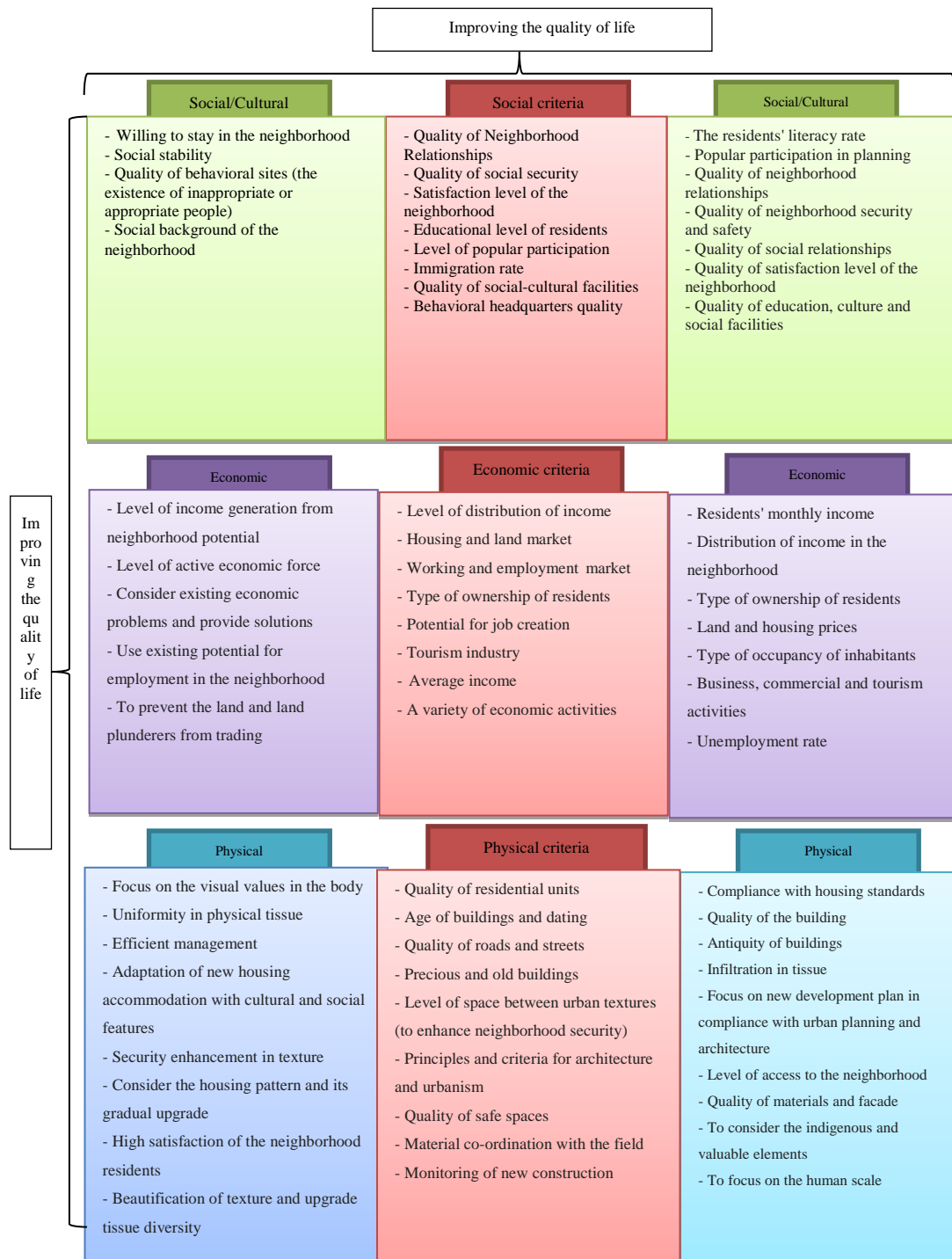
Improving the quality of life

Improving the quality of life

Social/Cultural
- Willing to stay in the neighborhood
- Social stability
- Quality of behavioral sites (the existence of inappropriate or appropriate people)
- Social background of the neighborhood

Social criteria
- Quality of Neighborhood Relationships
- Quality of social security
- Satisfaction level of the neighborhood
- Educational level of residents
- Level of popular participation
- Immigration rate
- Quality of social-cultural facilities
- Behavioral headquarters quality

Social/Cultural
- The residents' literacy rate
- Popular participation in planning
- Quality of neighborhood relationships
- Quality of neighborhood security and safety
- Quality of social relationships
- Quality of satisfaction level of the neighborhood
- Quality of education, culture and social facilities

Economic
- Level of income generation from neighborhood potential
- Level of active economic force
- Consider existing economic problems and provide solutions
- Use existing potential for employment in the neighborhood
- To prevent the land and land plunderers from trading

Economic criteria
- Level of distribution of income
- Housing and land market
- Working and employment market
- Type of ownership of residents
- Potential for job creation
- Tourism industry
- Average income
- A variety of economic activities

Economic
- Residents' monthly income
- Distribution of income in the neighborhood
- Type of ownership of residents
- Land and housing prices
- Type of occupancy of inhabitants
- Business, commercial and tourism activities
- Unemployment rate

Physical
- Focus on the visual values in the body
- Uniformity in physical tissue
- Efficient management
- Adaptation of new housing accommodation with cultural and social features
- Security enhancement in texture
- Consider the housing pattern and its gradual upgrade
- High satisfaction of the neighborhood residents
- Beautification of texture and upgrade tissue diversity

Physical criteria
- Quality of residential units
- Age of buildings and dating
- Quality of roads and streets
- Precious and old buildings
- Level of space between urban textures (to enhance neighborhood security)
- Principles and criteria for architecture and urbanism
- Quality of safe spaces
- Material co-ordination with the field
- Monitoring of new construction

Physical
- Compliance with housing standards
- Quality of the building
- Antiquity of buildings
- Infiltration in tissue
- Focus on new development plan in compliance with urban planning and architecture
- Level of access to the neighborhood
- Quality of materials and facade
- To consider the indigenous and valuable elements
- To focus on the human scale
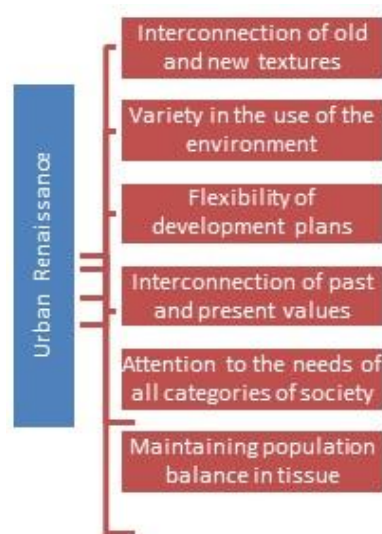
Fig 2 Theoretical framework of the research

Fig 3 Urban Renewal Options

4. Research

Mostafa, a resident of Egypt, in a study entitled '*Quality of life indicators in major urban areas case study: Kasr el Street in Cairo*' in 2012, concluded that the development of historical regions should be based on the economic, social and environmental dimensions, with the aim of addressing the quality of life in order to solve new urban issues. In historical regions, quality of life indicators based on quantitative and qualitative information as well as stakeholders should be determined and laws should be established for people's awareness. Further, in planning for valuable areas, an appropriate strategy and perspective for their future are to be developed.

Gavrilidis et al., in a paper entitled '*Index of urban quality perspective - planning tool for assessing urban landscapes and improving quality of Life*' in 2016, argued that the expansion of urban areas has increased the access of people to modern facilities and urban infrastructures, but the quality of life has declined due to lack of creation of social balance in large cities. Landscape can be considered both as a high and low quality of living. This study evaluates the urban landscape using the ULQI.

In a study by Cabrera et al. (2016) entitled '*Multivariate assessment through the exclusion index: planning concepts for quality of life and health care and access in the Quito quarter of Ecuador*', they concluded that there are certain differences in terms of quality of life and health care and access, which have affected the deprivation of individual's life and their quality of life, and that a proper program for eliminating these deprivations should be made and policies need to be adopted to promote the lives of citizens.

5. Methodology

The research type in terms of purpose is practical, having a descriptive-analytical method. The information gathered was through library and field survey. The data gathering tool used in library was fingerprinting and electronic resources. Interviews and questionnaires were used for field survey. In this research, quantitative and qualitative methods were used to assess the validity of the questionnaires, and SPSS Kaiser- Meyer-Olkin (KMO) and Cronbach's alpha were used to ascertain

the reliability of the questionnaires. SPSS software was also used for analyzing the demographic variables, and ANP method was used to prioritize the indicators. The statistical population was the citizens of the surrounding area of Imam Ali Square in Isfahan including residents, business people and also experts in urban affairs. In the process of distributing the questionnaire, the sample population was in two levels: 1) from 24248 people in the area of Imam Ali Square according to the census of 2011 Iranian Statistics Center, 15 people, and 2) among the experts of the city with a population of 40, 15 individuals were selectively chosen and were asked to respond to the questionnaires. Experts also assisted in providing SWOT matrices and strategies.

6. Analytic Network Process (ANP)

The analytic network process, in contrast to the Analytic Hierarchy Process, can handle the interrelationships between decision levels and indexes by obtaining compound weights through super matrixes. The purpose of the super matrix in the analytic network process is to partition the matrix so that each sub-matrix can be created to set the relationships between two elements or clusters in the network. The application of internal and external interrelations is, in fact, the best method that can be used to identify and introduce the impact of concepts or influences among clusters and factors with an attention to a particular factor.

The analytic network process can be summarized in four steps (Saaty, 1996).
▪ Making the model: a) Determining the dependency between clusters; b) Specific dependence between cluster elements
▪ Performing paired comparisons and extraction of relative weight vectors
▪ Formatting the super matrix to calculate the final weight in a system with dependency effects
▪ Calculating the vector of super matrices weighted in step 3
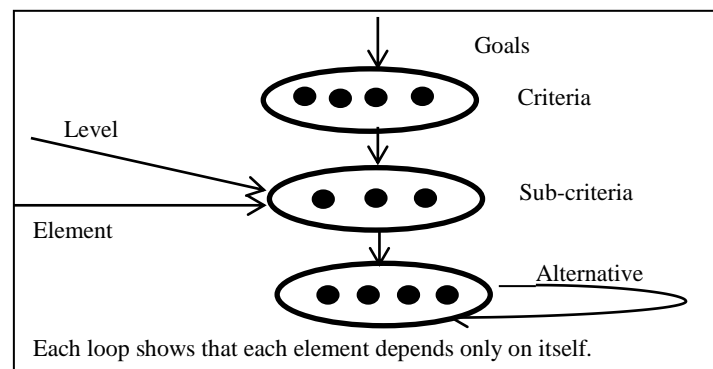
Fig 4 Hierarchical structure (Source: Saaty, 1998)

7. Study Area

Isfahan province with an area of 15,080.34 square kilometers is considered the sixth province of the country in terms of area and is located in the center of Iran's plateau. This province neighbors from the North to Semnan and Qom provinces, from the East to South Khorasan province; from the South to Yazd, Fars, Kohgiluyeh and Boyerahmad provinces and from the west to Chaharmahal and Bakhtiari, Lorestan and Markazi provinces. According to the census of 2016, its population

was 5,120,850, which was approximately 6.5% of the population of the whole country, with 4,168,219 people living in cities.

Fig 5 Location of Isfahan Province Source: Tourism Guide of the Provinces of Iran, 2013

The third district of Isfahan with the intersection of Chaharbagh historical axis totally forms the city's historical and central boundaries that flow from the south to the Zayandehrud River and the surrounding streets to Kamal Ismail and the first Moshtagh, from the north to the streets of Sorush and Adib, from the east to the Bozorgmehr Street and from the west to the Chaharbagh historical axis.

The area of this region is 1152 hectares, which is 17.4% of the central area and it surrounds 5.75% of the total area of the Isfahan master plan. The population of this area is 109968 people. The location of the city of Isfahan is marked as 3 in the Fig 6.
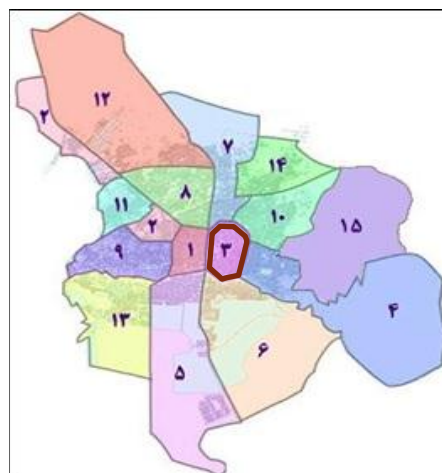
Fig 6 Range of regions. Source: Department of Urban Planning and Architecture of Isfahan

The total study area is 264.5606 hectares with a population of 24248 people. This street is limited to the north with Ebne Sina Avenue, and with the Kamal Street in the northeast, Sonbolestan Avenue in the northwest, Hakim Mosque on the west, Valiasr street in the southwest, and with Ahmadabad and Hafiz streets in the south east.
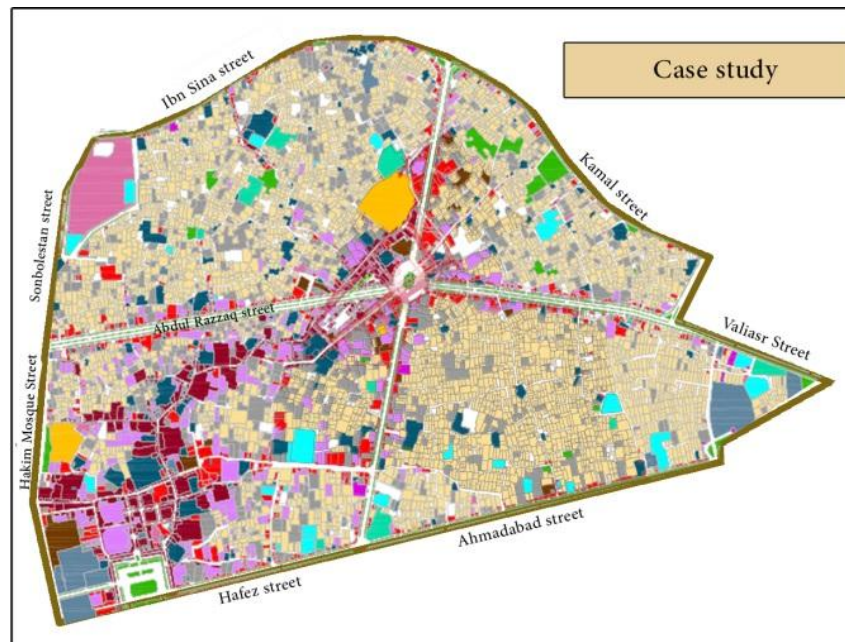
Fig 7 Study area. Source: authors

8. Research Findings

8.1. SWOT Analysis of the existing conditions based on three social, economic and physical systems

In order to achieve a better understanding of the existing condition with the field impression of the author, the current condition was surveyed based on the SWOT model so that with the help of the current position of the area, it could be compared with the ideal conditions through prioritizing with ANP analyses. This condition was studied in the Likert spectrum shown in Fig 8 and 9. The following tables illustrate this review.
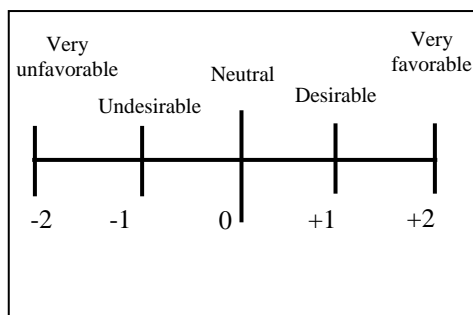
Fig 8 Likert Opportunities and Strengths
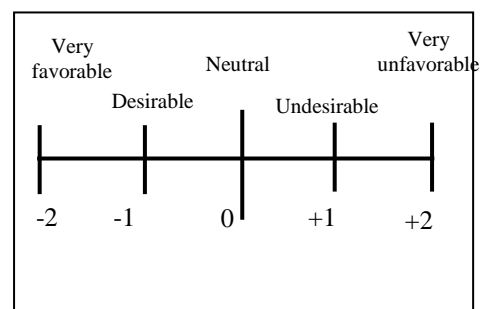
Fig 9 Likert spectrum for Weaknesses and Threats

Table 2 Analysis of the social system in the present condition

Weakness and Threats		Strength and Opportunities	
Threat	**Weakness**	**Opportunity**	**Strength**
General ethnic and social separation in the city (+1)	Reducing diversity in the social texture of the inhabitants (+1)	Attracting tourists through the potential of the study area (-1)	The historical and residential identity of the old neighborhoods of the city (+2)
Lack of attention and disregard for the renovation of worn out neighborhoods (+1)	Increased housing for low-income and immigrant people (+2)	Attracting housing investors to this region and as a result, attracting high-income social strata (-2)	Relative ownership of neighborhood residents (-1)
The continuation of the immigration trend of residents from the neighborhoods of this area (+2)	Unwillingness of young families to reside in neighborhoods of the study area (+2)	Considering policies to support upgrading and modernization of worn-out tissues (-1)	The existence of old neighborhoods and strengthening the sense of belonging to the inhabitants (-1)
	Increased motorcyclists and traffic jams (+2)	Create active hangouts based on existing historical potential for different people and promote social interactions (-2)	
	Weak neighborhood relationships among Range Residents (+1)	Increasing the sense of belonging of residents through their participation in activities such as beautifying the environment (-1)	
	Reduced social security due to the lives of delinquents within the scope of the study (+1)		
	Increasing residence for residents with low educational levels (+2)		
	Weak popular participation in promoting the quality of the neighborhood (+2)		
	Dissatisfaction of residents of the neighborhood of habitat in the tissue (+1)		
	Low quality in cultural facilities within the desired range (+1)		

(Source: Authors)

Table 3 Analysis of the economic system in the present condition

Weakness and Threats		Strength and Opportunities	
Threat	**Weakness**	**Opportunity**	**Strength**
Accommodation for different strata of income due to low land prices (+2)	Imbalance and balance between economy and space in households and land uses (+2)	High investment capability to establish service centers than to other range of areas of Isfahan due to low price of land (+1)	Join between neighborhood centers and employment centers in the studied area (+1)
The risk of dual polarization of the city due to economic reasons, due to the migration of people from this area to prosperous neighborhoods in the city (+2)	Low income rate for inhabitant in the range (+2)	Create diverse activities around historic textures to attract tourists (-1)	The ability to create new businesses due to the presence of tourism index elements (+2)
Probability of unwillingness of people to participate in modernization due to economic potential (+2)	The low capacity of renovation and improvement in the texture due to the low income level of people in this area from economics point of view (+1)	Use existing potential (historical, cultural, tourism, etc.) in texture to create new businesses (-1)	
The migration of indigenous inhabitants and the replacement of immigrant populations in the texture and as a result, increasing rental ownership (+2)			

(Source: Authors)

Table 4 Analysis of the physical system in the present condition

Weakness and Threats		Strength and Opportunities	
Threat	**Weakness**	**Opportunity**	**Strength**
Burnout of buildings within the fabric of the area due to non-refurbishment and renovation (+2)	Range with high density and low height (+2)	Use of ruined and deserted buildings to create urban space (-2)	The existence of horizontal and vertical rhythms in valuable historic monuments (Imam Ali Square, Jame Mosque, etc.,) (+2)
Possibility of destroying identity and	Lack of proper illumination of the index	Pay attention to the physical quality of space	The emphasis on the first floor line - fitted

characterize and repeating inappropriate actions with texture (+2)	element (+1)	with actions such as flooring, lighting, furniture, etc., (-1)	with pedestrian visions to fit the human scale (+1)
Inappropriate planning causes the loss of visual and physical integrity of the elements and components of the old texture in area and the city (+1	The lack of diversity and existence of field-empty-spaces on the street road line and make a contrast on the street path (+1)	The necessity of designing the walls, fuselages and views of new buildings in accordance to the field (-1)	Integrated body: unity, visual fit and sense of place (Imam Ali Square and Jame Mosque) (+2)
The loss of spatial identity of the texture due to the destruction of historical elements and lack of coherence of the old market (+1)	The breakdown of the old texture of the area through the new streets (+2)	Consider the optimal enclosure in order to see the main elements of the neighborhood (-1)	Being memorable of historical and religious for the presence of people (+2)
High damage caused by unexpected accidents due to lack of physical stability of building (+2)	Lack of integrity and coordination in the components and pillars of the views inside the fabric and the neighborhoods (+2)	Maintain the proportions in the walls (-1)	Cause to climatic comfort through shading due to the presence of snow in some areas. (+1)
Lack of attention to the field of new construction (+1)	Many buildings are old (+2)	Using of horizontal lines and coordinating of fuselages to prevent visual disturbances (-2)	Existence of spaces that are match with environmental features of the market, such as markets (+2)
	The existence of small and inadequate passages (+2)	The use of mosque materials in adjacent views and conjunction of fuselages to define identity closeness and emphasis on index elements (-2)	Desirable views on key elements such as Jame mosque and Ali alley Minaret, etc., (+1)
	Low quality residential units within the range (+2)		
	Non-observance of the principle rules of urban planning and architecture in new construction (+1)		

(Source: Authors)

After formulating the SWOT matrix, it is necessary to define the goal, criteria, sub-criteria and options and to prioritize according to the model in order to shape the ANP process.

8.2. Target identification

The goal of this assessment is to improve the quality of the living environment.

8.3. Identification of criteria

The criteria for this study are social, economic and physical that help us to achieve the goal.

8.4. Identification of the sub-criteria

After improving the quality of the living environment in the proposed model, the following criteria were summarized:

Table 5 Social, economic and physical criteria

Physical criterion		Economic criterion		Social criterion	
Sub-criteria	Abbreviation	Sub-criteria	Abbreviation	Sub-criteria	Abbreviation
Quality of buildings	c1	Distribution of income	b1	Quality of neighborhood relationships	a1
Age of buildings	c2	The housing and land market	b2	Quality of social security	a2
Quality of passages and streets	c3	Labor market and employment	b3	Quality of satisfaction level from the neighborhood	a3
Quality of valuable and historic buildings	c4	Type of ownership of residents	b4	Educational level of residents	a4
Level of mass and space between urban texture	c5	Potential of employment, including commercial and historical, etc.,	b5	Level of popular participation	a5
Observing principles and criteria of architecture and urban planning	c6	Tourism industry boom with regard to the strengths of the study area	b6	Immigration rate	a6
Quality of safe spaces for residents and tourists	c7	Average income	b7	Quality of cultural and historical facilities	a7
Quality of materials in harmony with the field	c8	Different economic activities	b8	Quality of behavioral headquarters and hangouts	a8
Supervising new	c9				

construction					

<div align="right">(Source: Authors)</div>

8.5. Identification of the alternatives

Based on the theoretical framework and the experts' and residents' opinions of the study area and given the high number of alternatives to be applied in the proposed model, the alternatives were summarized in Table 6.

<div align="center">

Table 6 Urban Renaissance alternatives

</div>

Urban Renaissance	
Abbreviation	
d1	Interconnectedness between old and new texture
d2	Diversity of using the environment
d3	Proper and flexible development plans
d4	Interconnectedness of past and present values
d5	Attention to the needs of all strata
d6	Maintain population balance

<div align="right">(Source: Authors)</div>

In this research, the network analysis model was used to improve the quality of life and to select alternatives for the urban regeneration approach. The three criteria of the model are social, economic and physical, and the sub-criteria were based on the theoretical framework of the project. After identifying the criteria, sub-criteria and alternatives for the network structure model, the Analytic Network Process was planned by experts and residents around Imam Ali Square. Due to the dependencies between criteria, sub-criteria and alternatives, the network structure of the problem was obtained. It should be noted that all criteria, sub-criteria and alternatives are interrelated and affect each other.

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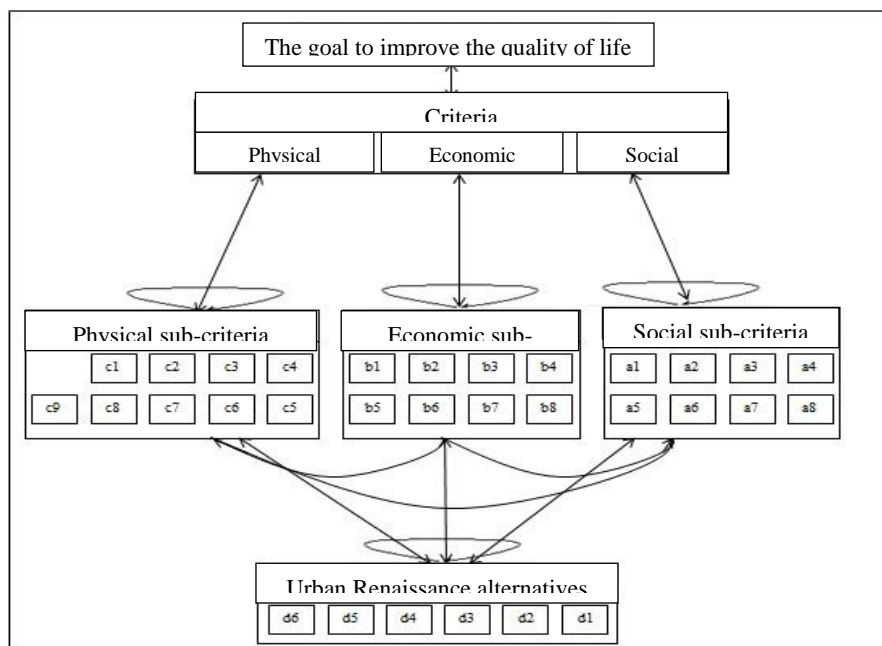
Fig 10 ANP Model

</div>

8.6. Obtaining the weight of sub-criteria and alternatives according to the Analytic Network process

A couple of comparisons need to be made in the Analytical Hierarchy Process. First, which criterion is more important in terms of the purpose? Secondly, which alternative is the most important among other criteria? In the Analytic Network Process, however, to prioritize the criteria instead of comparing them to the goal, the question arises as to which criterion should be considered more than other options?

In this model, the prioritization of alternatives is similar to the process of hierarchical analysis. The difference between this model and the Analytic Hierarchy Process is that it takes into account the dependency between alternatives, sub-criteria, and criteria. For example, if a criterion or alternative is dependent upon another criterion or alternative, a pairwise comparison is made to examine the severity of the dependency or the effect.

The Super Matrix Approach solves the problem of the analytic network process by forming a cloud matrix. The completion of each of the super-matrix sections depends on the type of problem and the dependencies that exist between the alternatives and the criteria.

The shape of the super matrix is shown in Fig 11.
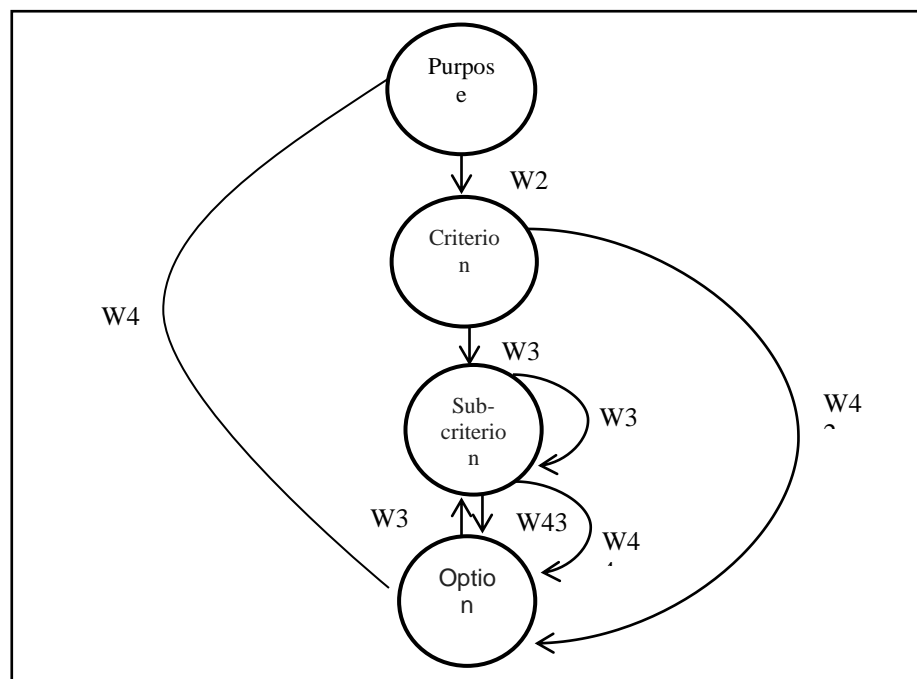
Fig 11 General matrix of this research

The main form of the super matrix is illustrated in Table 7.

Table 7 Super matrix

		Purpose	Criterion			Sub-criterion			Option
		Improving the quality of life	Physical	Economic	Social	(c1,c2,c3,...,c9) Physical sub-criteria	(b1,b2,b3,...,b8) Economic sub-criteria	(a1,a2,a3,...,a8) Social Sub-criterion	(d1,d2,d3,...,d6) Renaissance options
Purpose	Improving the quality of life								
Criterion	Physical	A							
	Economic								
	Social								
Sub-criterion	Physical sub-criteria (c1,c2,c3,...,c9)		B			C			D
	Economic sub-criteria (b1,b2,b3,...,b8)								
	Social Sub-criterion (a1,a2,a3,...,a8)								
Option	Renaissance options (d1,d2,d3,...,d6)	E	F			G			H

(Source: Authors)

9. Paired Comparisons and Prioritization

This study analyzes all the levels for example, doing a paired comparison and prioritization of the criteria against the goal, the criteria against criteria, the alternatives against the goal, and the sub-criteria against criteria as shown in Figures 12-18.
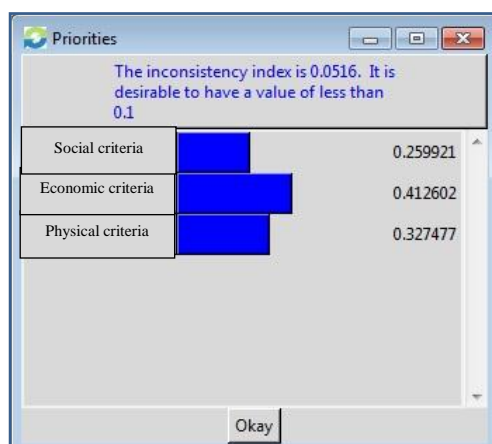
Fig 12 Comparing criteria against the goal
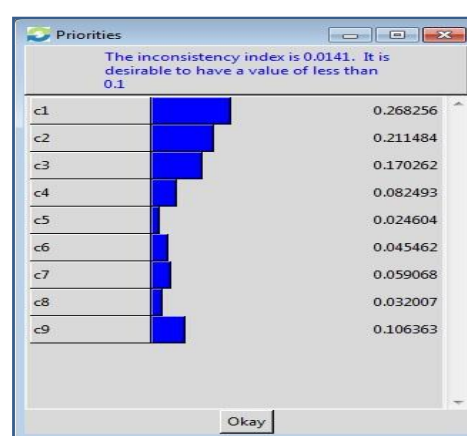
Fig 13 Prioritizing physical sub-criteria against physical criteria
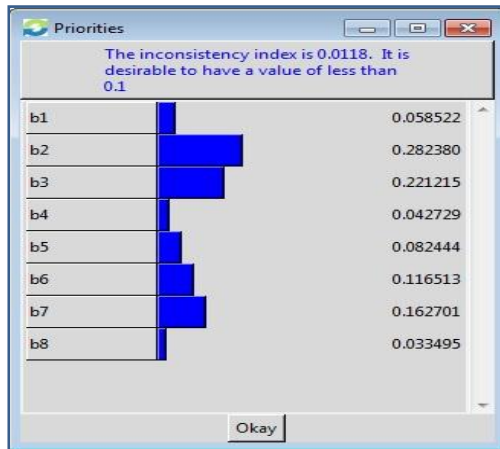
Fig14 Prioritizing the economic sub-criteria against economic criteria
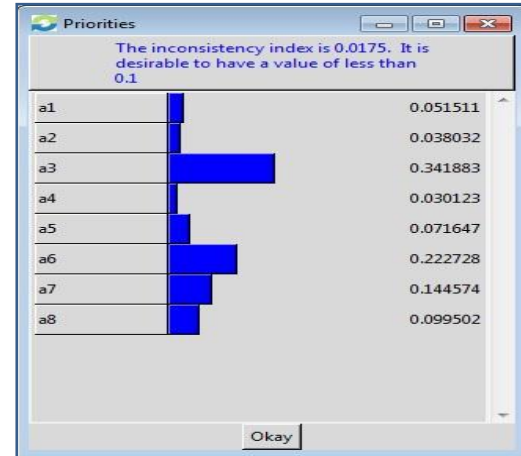
Fig 15 Prioritizing the social sub-criteria against the social criteria
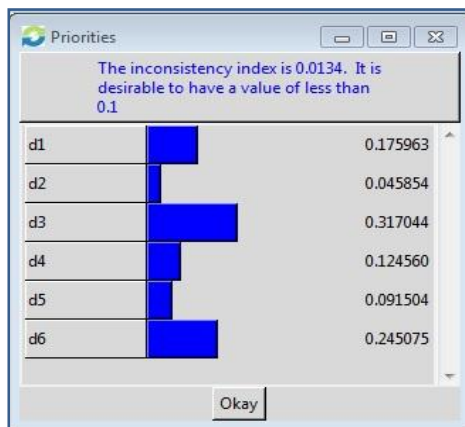
Fig16 Prioritizing urban renaissance alternatives against the goal
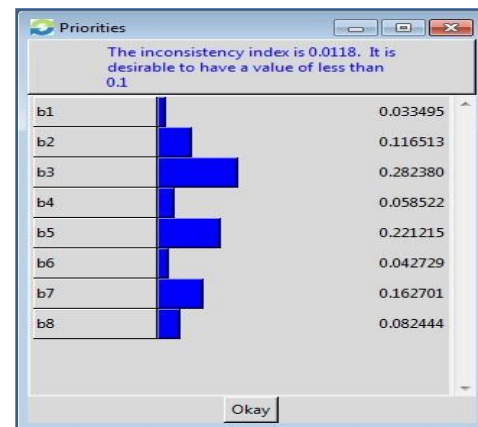
Fig 17 Prioritizing the economic sub-criteria to maintain population balance (d6)
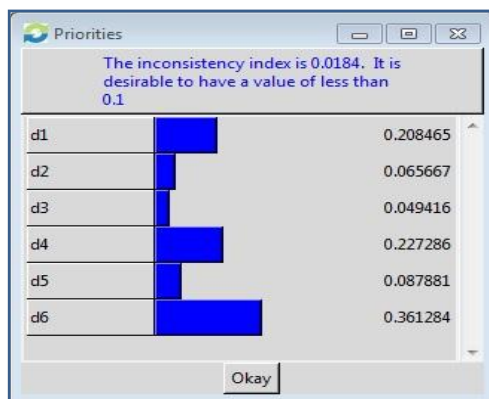
Fig 18 Prioritizing Urban Renaissance alternatives against Social Criteria

10. Ultimate weights

After checking and weighing based on the dependencies, the final weights obtained are as follows. The importance of criteria in relation to the purpose of all dependencies: the three social, economic and physical criteria were prioritized according to the goal. Regarding priority, the economic criterion has the highest rank.

Table 8 Final weights of the criteria according to purpose, with consideration of all dependencies

Row	Criterion	Weights	Rating	Inconsistency rate
1	Social criteria	0.25992	3	
2	Economic criteria	0.41260	1	0.0516
3	Physical criteria	0.32748	2	

(Source: Authors)

The importance of sub-criteria in terms of purpose with the considerations of all dependencies:

Based on the weights obtained, the rankings show which of the social, economic, and physical sub-criteria more significantly affects the improvement of quality of life. In social sub-criteria, the quality of satisfaction from the neighborhood is the most important one; in the economic sub-criteria, the impact of housing and land market is the most important aspect, and eventually for the physical sub-criteria, the structure of monitoring new constructions is regarded as the most important element.

Table 9 Final weights of the sub-criteria with consideration of all dependencies

Inconsistency rate	Row	Criterion	Weights	Rating	Inconsistency rate
1		Quality of neighbourhood (a1)	0.06727	8	
2		Social Security Quality (a2)	0.08880	6	
3		Quality of satisfaction level from the neighbourhood (a3)	0.22937	1	
4	Social sub-criteria	Educational level of residents (a4)	0.09872	5	
5		Level of popular participation (a5)	0.08488	7	0.0175
6		Immigration rate (a6)	0.15500	3	
7		Quality of cultural and historical facilities (a7)	0.15592	2	
8		Quality of behavioral headquarters and hangouts (a8)	0.12004	4	
9		Distribution of income (b1)	0.07311	8	
10		Housing and land market (b2)	0.23353	1	
11		Labor market and employment (b3)	0.13493	2	
12		Type of ownership of residents (b4)	0.13306	3	
13	Economic sub-criteria	Potential of employment, including commercial, historical, etc., (b5)	0.11449	4	0.0118
14		Tourism industry boom with regard to the strengths of the study area (b6)	0.11425	6	
15		Average income (b7)	0.11443	5	
16		Various economic activities (b8)	0.08219	6	
17		The quality of buildings (c1)	0.15837	2	
18	Physical sub-criteria	Lifetime of buildings (c2)	0.15195	4	0.0141
19		Quality of passages and streets (c3)	0.08733	6	
20		Quality of valuable and historic	0.15432	3	

		buildings (c4)			
21		Level of mass and space between urban texture (c5)	0.03557	9	
22		Observing the principles and criteria of architecture and urban planning (c6)	0.11149	5	
23		Quality of safe spaces for residents and tourists (c7)	0.03619	8	
24		Quality of materials in harmony with the field (c8)	0.07011	7	
25		Supervising new construction (c9)	0.19467	1	

(Source: Authors)

The importance of urban renaissance alternatives with regard to the goal with consideration of all dependencies:

In order to improve the quality of life, renaissance alternatives are also prioritized, and this is a two-way communication because if urban regeneration occurs, the quality of life will be improved and vice versa.

Table 10 Final weights of the renaissance alternatives according to the goal with consideration of all dependencies

Inconsistency rate	Row	Criterion	Weights	Rating	Inconsistency rate
1		Interconnectedness between old and new texture (d1)	0.19820	3	
2		Diversity of using environment (d2)	0.07679	6	
3	Urban Renaissance	Proper and flexible development plans (d3)	0.25325	1	0.0134
4		Interconnectedness of past and present values (d4)	0.15835	4	
5		Attention to the needs of all strata (d5)	0.10823	5	
6		Maintain population balance (d6)	0.20518	2	

(Source: Authors)

11. Conclusion

Each neighborhood, according to its culture and history, has created a context to meet the needs of its inhabitants. These needs are both physical and non-physical, which can be dealt with regarding the present needs through proper planning, in addition to preserving the identity and culture of the textures. Based on the studies and analyses which were carried out, it can be concluded that the quality of urban life has different physical, social, economic and environmental dimensions. The city is made up of neighborhoods that have unique social and cultural features. In this research, an attempt was made to restore and maintain their identity and culture in order to promote the quality of life in the neighborhoods; in spite of the existence of cultural, religious, and physical differences between them, social interactions are established in the direction of unity in the same plurality as in the school of Isfahan. Different cultures and neighborhoods are seen with their own specific characteristics as city ideals. The study area has a special status in terms of physical, cultural, tourism, and religious aspects. In the city, the historical background and textures of the third district of Isfahan are of particular importance.

Quality improvement based on the renaissance approach covers all dimensions like the physical, social, economic and environmental ones. In this study, three criteria were considered and the results are presented in Table 11.

Table 11 Final weights of the regenerative options according to the goal with consideration of all dependencies

Goal	Dimension	Prioritization	Current situation	Approach
Promoting quality of life with an emphasis on the approach of renaissance	Social	Satisfaction level of the neighborhood	Undesirable	- Balancing the functions of tissue by injecting business, tourism, etc., -Balancing social and physical needs of residents -Turning ruined buildings into urban spaces; to increase social interactions -The priority is to walk around the paths leading to the indicator elements
		Quality of cultural and historical facilities	Undesirable	-Define a range based on cultural and historical values -Restoration of all valuable buildings and representing identity, history and culture -Controlling traffic around index elements and sector identity -Priority to the deployment of historical and cultural elements along the tourist routes
		Immigration rate	Very Undesirable	-Restoring problematic tissues -Attention to maintain population balance in urban development programs -Creating diversity in the social fabric of the inhabitants -Creating employment through job creation potential to encourage residents to live in the context -To promote the historical and cultural identity in order to increase the sense of belonging inhabitants -Attention to the presence of all various social groups and the inclusiveness of space -Creating a willingness to residents for long-term presence in the tissues through the revitalization of the neighborhood center and creating employment for them to increase dynamism and social interactions
	Economic	Housing and land market	Very Undesirable	-Optimal use of land and spaces within the range -Formation of urban planning criteria taking into account land economics -Provide financial guidelines for the municipality of District 3 to reduce revenue through the sale of congestion and segregation -Balancing the placement tendencies of housing of low income groups through urban planning regulations -Balancing the economy and space between households and land uses
		Labor market and	Undesirable	-Creating new businesses by strengthening the tourism indexes

		employment		-Creating diverse activities in the context of the text -Creating artistic and handicraft activities and tourism in texture -Introducing resident products and creating pre-owned merchant shops around prominent elements such as traditional restaurants, etc.,
		Type of ownership of residents	Very Undesirable	-Adopting regulations on land regulation and increase of ownership power to residents -Considering financial facilities such as low-interest loans to residents of the area -Considering various residential units based on the purchasing power of residents in urban development projects
	Physical	Supervising new construction	Undesirable	-Supervising the human system in new construction to prevent the underestimation of valuable buildings -Design of building materials legislation -Supervise and formulate solutions for population adjustment -Formulating rules and regulations and penalty in case of violation of residents and officials
		The quality of buildings	Very Undesirable	-Identifying and prioritizing the reconstruction and restoration of historical monuments and renovation of buildings -Use of architectural style and local native materials adapted to texture -Creating integration and coordination in building components within the context -Renovating and improving buildings according to the past and sense of belonging to the environment
		Quality of valuable and old buildings	Undesirable	-Flooring and lighting suitable for valuable and historic monuments such as Jame Mosque, Monar Ali, etc., -Renovating and rehabilitating of valuable buildings according to their past identity -Maintaining visual continuity in the wall and emphasizing the index element -Observing the proportions of elements of the identity of the sector and its coordination with adjacent buildings -The use of native materials in adjacent views of historic and valuable monuments to emphasize the indicator element -Improving the quality of existing bazaars and mosques

(Source: Authors)

Because this research is based on the renaissance approach and all factors are affected, if the strategies are used in the economic, social and physical criteria, all urban renewal options will be strengthened and they will be in a favorable condition. After reviewing the strategies, a plan has been developed to improve the quality of life in the area of Imam Ali Square and the strengths and weaknesses of the plan have been investigated. In this plan, improving neighborhood quality, easy access to services, and the creation of tourism routes have been given priority.

11.1. The suggested range of study

The worn-out texture is considered as the range, apart from the historical indexes and the new buildings. Therefore, in addition to paying attention to the indexes and historical elements, the quality of life of the residents must also be improved for comfortable textures. The proposed scheme rises from the consideration of suitable areas and the residents' comfort. In this research, meeting the daily needs of the residents in the center of the neighborhood is also considered. This project will lead to the enhancement of the quality of life in this area through easy access to services, the creation of tourism routes and the promotion of neighborhood identity. Fig 19 shows the suggested options in detail.
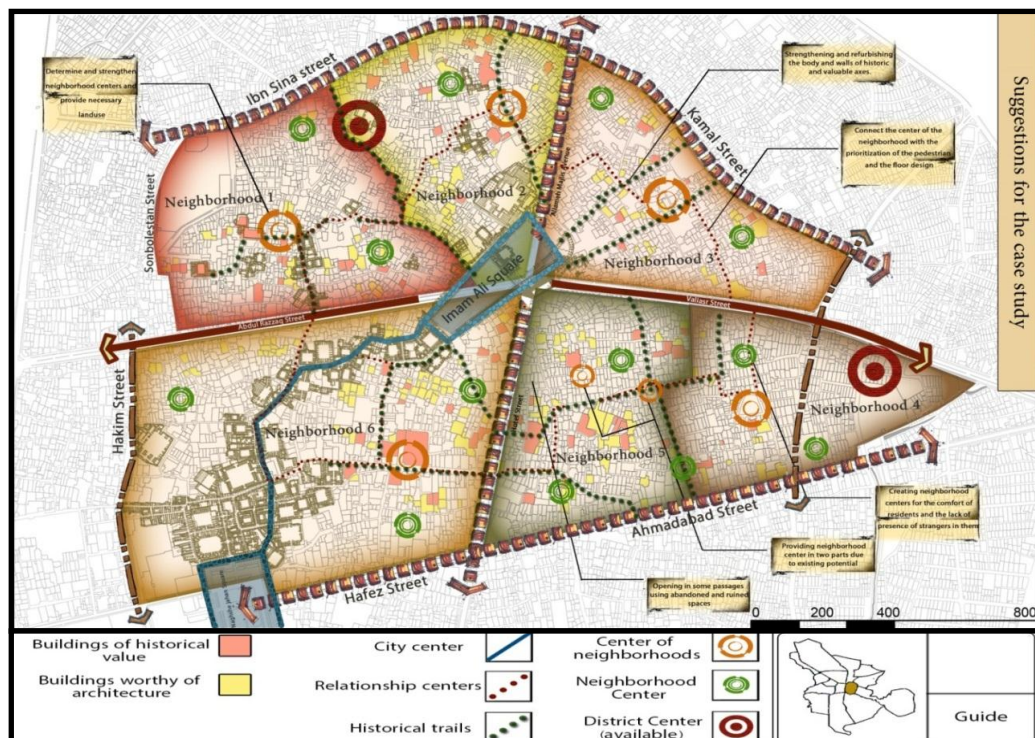
Fig 19 Suggested plan within the scope of the study

Table 12 Strengths and weaknesses of the suggestions within the study area

Weakness	Strength
▪ Generate noise pollution at the neighborhood level ▪ Establishing the center of the district at the center of one of the neighborhoods and as a result of social disparity in servicing another neighborhood.	▪ There is a strong communication network ▪ Residents' visit to the main communication axes ▪ The association of this neighborhood with the old Square as the urban space ▪ New structure of historical orders in order to strengthen the identity of neighborhoods ▪ Increased security through increased infiltration and thus more crowding ▪ Consider the location of neighborhood centers in space with the potential ▪ The role of service and culture interacting with the role of tourism around neighborhoods

	▪ Considering the vitality of the centers of the district center communication through the pedestrian walkway of neighboring to neighborhoods ▪ Pay attention to the whole range of pedestrians ▪ The presence of centers of neighboring and extravagant neighborhoods for the comfort of residents ▪ Contact neighborhoods

(Source: Authors)

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In the Name of God

Dear Readers,

I, on behalf of the editorial board, am proud to present this issue of the *International Journal of Applied Arts Studies (IJAPAS)* under the sponsorship of the Islamic Azad University, Yazd Branch. We were driven to found the *IJAPAS* by a noticeable lack of journals, in the Islamic Republic of Iran in particular, devoted to architecture, urban design, urban planning, architectural conservation and restoration, painting, art history, graphic, digital arts, fashion design, performing art, industrial design, aesthetics and semantics. Although the academic world is increasingly driven by cross-disciplinary visions and models, we seek multi-disciplinary views, an attempt to inform researchers, graduate students, and professionals about the trends, ideas and innovations being put forward in applied arts. To this end, in addition to standard articles, in every volume of the *IJAPAS* we hope to provide a special issue related to a respective field with innovation.

We are also sending out a call for papers related to *Applied Arts* to appear in the next issue of *IJAPAS* in Aug – Sept 2018. The deadline for submissions for this issue is July 31, 2018.

Finally, I should mention that we are committed to a speedy refereeing process for every article submitted to us. We effort to reply to all papers submitted within five weeks' time with a response about acceptance or rejection. We also do not require formatting for submissions in our style until *after* the paper has been accepted by us for publication.

I would like to thank our Editorial Board for their work so far in helping to establish the *IJAPAS*. And, finally, I would like to extend my deepest gratitude to Dr. Ali Boloor, the assistant editor of the *IJAPAS*, for all of his hard work to ensure the timely completion of the issue.

I am delighted to invite you to visit us at www.ijapas.org.

Sincerely,

Dr. Abolfazl Davodi Roknabadi
Editor-in-Chief
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