



Investigating the Spatial Organization and Structure of Iranian Cities till Mid Qajar Era and Presenting Pattern of Traditional Structure of Cities in This Era

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ABSTRACT: Iranian traditional cities were created with a system based on experiments and gradual establishment of society through time. Qajar era is especially important in Iranian art history. Until mid Qajar era, Iranian cities's architecture mainly took benefit of its common traditional architecture that is already seen in most desert-surrounding cities. Till this era, there was not any connection between Qajar and western architecture and it rooted in principles of Iranian urban planning and architecture that were indicating traditional properties of the country formed as traditional cities structures. Later by entering of modernity thoughts during reign of Nasir al-Din Shah, several variations were seen at spatial organization of Iranian cities including Tehran and Tabriz. Identifying these variations requires profound recognition of traditional structure of Iranian cities during Qajar era to the mentioned time juncture to clarify the fact that how our cities have passed from the traditional to modern stage. Therefore, the main object of this study is investigation of the spatial organization and structure of Iranian cities during Qajar era and, finally, presenting pattern of traditional structure before entering modernity to Iran. The results show that there is not any main difference between spatial organization and structure of Iranian cities until mid Qajar and Safavid eras. Architectural figure of most spaces are in direct relationship with their functional content and social concept and urban and work spaces are intensively merged, and organization of urban spaces is still based on main bazaar axis of the city and governmental citadel area.

Keywords: Spatial Organization and Structure, City, Iran, Qajar era, Pattern.

INTRODUCTION

Urban planning and architectural evolutions were begun since mid Qajar era in reign of Nasir al-Din Shah. There was not observed any important works of foreign architecture until reign of Nasir al-Din Shah. Public and private areas in the spaces of Iranian traditional cities were realized at the context of traditional cities before being affected by outcomes of entering the modern era (Safamanesh, 2005, p. 75). Anyway, Iranians become acquainted with modern thoughts until second half of

Nasiri era and inevitably accepted some of its side effects without any conflict between proponents of ancient tradition and followers of new thoughts (Tabatabaei, 2006, p. 111).

During Qajar, Iranian architecture faced unexpected variations due to development of political relations between Iran and European countries. From spatial viewpoint, the first effect of modernity was manifested in architecture of buildings of foreign embassies (Rajabi, 1976, p. 26). Outward buildings are regarded as the most important sign of western style of urban planning in Iranian traditional architecture where the main part of the buildings was formed as an inward part surrounding a central yard. Only a small part of the buildings was

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designed as entrance and façade in order to communicate with the external space. Western urban planning style resulted in substantial variations in buildings and totally changes their communicational and spatial system. In this style, the central yard was eliminated and the building complex was put at the margin of streets or squares while facing them with a new communicational form (Pakdaman, 1993, p. 79).

In mid Qajar urban planning, streets, and squares -as urban communication network and creation of some new spaces find their way at evolutionary process of old city to a modern one through changing concepts of bazaar, city and quarter as biosocial hierarchy. It serves as a background for pre- modern and modern urban planning of Pahlavi era. However, it is spatially regarded as a continuous and coherent unit without any mark of monuments and disconnected buildings. Great mosques, bazaars, governmental and social centers, and residential spaces make an integrated unit while maintaining their own rank and position (Afsharasl & Khosrawi, 1998, pp. 122-137).

Entering of modernity thoughts to Iran since Qajar era affected significantly on spatial organization of cities especially Tehran as Dār al-khilafih (caliphate) and Qajar capital and resulted in its acquaintance with manifestations of modernism including modern architecture before other cities. Modern urban relation networks, modern functions, and modern configuration of physical spaces were seen in Tehran as results of modernity (Riazi, 2010, p. 129). After Tehran, urban evolutions were appeared in Tabriz as Dār al-saltānih and then, in other cities.

As stated, entering of modernity thoughts to Iran during reign of Nasiral-Din Shah was associated with several variations in spatial organization of Iranian cities including Tehran and Tabriz that their identifying requires profound recognition of traditional structure of Iranian cities during Qajar era until the mentioned time juncture to clarify the fact that how our cities have passed from the traditional to modern stage. This article considers spatial organization and structure of Iranian cities until mid Qajar era because studying urban planning variations of Qajar after entering of modernity to Iran is so extensive that is beyond the article. Terms of the article will be initially defined and then, the above-mentioned cases will be investigated.

Research Main Question

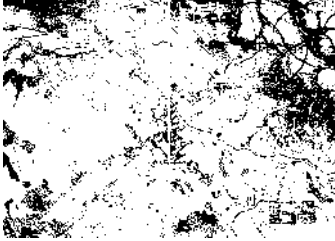








This article looks for achieving the most important characteristics of spatial organization and structure of Iranian cities until mid Qajar era in order to answer the questions about urban and architectural elements found in Iran during this era (structure), how the elements are adjacent to each other (spatial organization), special pattern of Iranian cities during Qajar.

Research Methods & Resources

The questions can be answered only through drawing and analyzing the maps of important cities until mid Qajar era and the available maps will be noted as the only documents, first-hand references, drawings, and written materials to answer the questions. (Table1)



Table1. Available Maps of Important Iranian Cities, Their Drawer and Drawing Date until Mid Qajar Era (Mahryar et al., 1999, pp. 64-99)

Available Maps of Important Iranian Cities, Their Drawer and Drawing Date until Mid Qajar Era		
 <p>Hamedan Map: The Group of Barascur Yacof and Jemadar Leto Agranovich Sazanof Under Consideration of Colonel Chericof (1267 AH/1851 AD)</p>	 <p>Tabriz Map: Terre zell - Fabouye (1207-1208 AH/1800-1807 AD)</p>	 <p>Tehran Map: Iliya Nikolayevitch Berezin (1269AH/1852 AD)</p>
 <p>Yazd Map: Unknown (1275AH/1859 AD)</p>	 <p>Mashhad Map: Unknown (1274AH/1858 AD)</p>	 <p>Shirz Map: Jemadar Yourgurf (1266AH/1850 AD)</p>
 <p>Sanandaj Map: Jemadar Leto Agranovich Under Consideration Colonel Chericof (1275 AH/1859 AD)</p>	 <p>Kerman Map: Topographer Zarynof, Brother of Fiudorof (1275 AH/1859 AD)</p>	 <p>Kermanshah Map: Barascur Yacof Brothers and Jemadar Leto Agranovich Sazanof Under Consideration of Colonel Chericof (1266 AH/1850 AD)</p>

In order to answer the research questions and achieve the main objective of the article, the data was collected with descriptive method and historical-documental approach and the related texts and references. To analyze the findings, analytical-comparative-deductive method will be used by considering formation pattern of traditional structure of Iranian cities during Qajar era. Structure of Islamic-traditional cities will be evaluated

from some important viewpoints in order to correspond spatial organization and structure of traditional urban development of Qajar era with that of before- Qajar one. Following evaluation of traditional structure of the city until mid Qajar era, the available maps will be redrawn to adjust their characteristics with Islamic-traditional structure. Terms of the article will be initially defined and then, the above-mentioned cases will be studied.



DEFINITION OF THE TERMS

Structure

According to some researchers, urban structure is defined as cities physical and skeleton design as well as Land uses pattern. They believe that urban development and growth policies, intercity transportation, housing and morphological pattern of cities should be considered in structure investigations. Additionally, different urban functions including religious, official, commercial, and transportation ones should also be considered when the cities structures are evaluated (Bazrgar, 2003, p. 52). Others consider urban structure theories as physical and functional form of settlements and create a framework for land use and spatial arrangement of elements and components constituting cities. Also, urban structure is determined by natural appearance, railway lines, networks, and streets and urban structure theories are based on the fact that settlements should be built according to a plan that specifying all networks, accesses and required spaces for main land uses and activities (Connell, 1981, p. 68).

Spatial Organization

This term is applied in different meanings. Although there are some similarities in its definitions, it has not found any single concept in urban literature of Iran. Spatial organization is used in this article as “a discipline found among the role of those elements introducing city as a system” (Mansouri, 1996) and “city discipline is a subjective and deductive issue that indicates the type of relationship between its elements and is not applied to city elements”. Accordingly, a city system or its spatial organization means how constituting elements of the city that are connected to each other.

Pattern

Moin Persian lexicon defined pattern as “sample and scheme” and it has been regarded as model, image, shape and sample, form, design, texture, and picture. The term has been used in different meanings. Pattern can be simply defined as theoretical and simplified manifestation of the real world (Sourin, Tankard, 2007, p. 65). Pattern is a model, design, and sample to be inspired, followed, and copied (Rousheh, 2000, p. 44). Pattern demonstrates the structure of a system characteristic and consists several elements. Any changes in each of the elements results in variation of other ones. For every supposed pattern, probability of some variations should be considered resulting in a group of patterns of the same type (Tavassoli, 1999, p. 412).

Tradition

It is a translation of “tradition” from European languages and has mainly a social content. The combination compiled during cultural revival era in Iran is called tradition. Iranian thought style was based on traditional system framework until beginning of ‘Abbas Mīrzā’s reformations and even until the second half of reign of Nasir-al-Din Shah. It should be noted that in spite of what happened in European countries, enlightenment flow did not emerge from inside of Iranian traditional thought and, therefore, was not able to consider the relationship between enlightenment and traditional though in its evolution (Tabatabaei, 2006, pp. 43-44). Discussion about traditional spatial structure of Iranian cities during Qajar era means evaluating structure of these cities until mid Qajar, i.e. before second half of Naşiri era.

Modernity

There are several controversies about meaning of modernity. Also, it should be noted that the concept is used in different fields. Irrespective of its special meaning, modernism is generally defined as culture and philosophy of modern civilization or, in other words, it is the ideology, attitude and tendency of modern human and era. In fact, modernity is the objective and embodied manifestation of modern world while modernism is regarded as emotional and doctrinal manifestation of the mentioned world. Modernism is defined as a process to coordinate traditional organizations with advancement of civilization and science (Ali Babaei, 2005, p. 537).

SPATIAL ORGANIZATION AND STRUCTURE OF ISLAMIC-TRADITIONAL URBAN PLANNING BEFORE QAJAR ERA

Talking about “traditional city” or “traditional architecture” is mainly focused on the past and past architecture. However, this article does not use this meaning of tradition. The meaning may be covered by the definition presented in this article. Tradition does not mean morphological and phenomenological form rather it is an unchangeable law upon which the nature has been created (Rahmati, 2008, p. 4). Traditional viewpoint is theoretically against modern thought and practically its superior version (Ahmadi Disfani, Ali Abadi, 2011, p. 18).

Orientalists propagated the term of “Islamic city” and generally applied it to Muslim cities (especially when historical cities of Islamic countries or Muslim cities are



called “Islamic cities”) since 19th century by assuming that these cities are physically manifestation of Islamic principles and values and, therefore, they are distinguished from cities of other cultures and civilizations. Thereafter, this term generally applied for cities developed by Muslims and their settlements was gradually stabilized through its introduction by orientalist in written materials and works of western literature which were related to civil researches evaluating Muslims’ settlements based on the fact that they indicated society and culture that were different from other civilizations relying on its special physical or mental limits (Danesh, 2010). Iranian traditional cities are called Islamic-traditional ones since they were built by Muslims and were their settlements.

Iranian urban planning and architecture faced several ups and downs during its long historical period and ecological conditions and cultural inheritances affected on its formation more than other factors (Moghtader, 1999, p. 469). Iranian traditional cities developed with a system based on experiences and gradual establishment of society through time are a function of climate type, magnanimity of the natural conditions, life style, culture, and production rate of the society and are distinguished from other cities based on characteristics of each of the above-mentioned factors. Like a living existence, it experienced transformation in accordance with local conditions and its internal or external historical events while facing growth or stagnation in some directions. Stability of the conditions resulted in its partial stability (Mehryar et al., 1995, p. 5).

Urban planning actions were initially implemented during reign of Ghāzān Khan in Iran. However, tax privileges and facilities were granted to those improving uncultivated and semi-abandoned lands. Then, Shah Abbas implemented actions to improve Isfahan by using codified and coherent urban development plans during Safavid era (Soltanzadeh, 2011, p. 221). Achievements of that era include streets, new recreational boulevards, bridges, recreational gardens and buildings, squares, etc., lately can be seen in urban planning of Qajar era.

However, it should be mentioned that urban spaces were formed based on old hierarchies of life and production before Qajar era. After selecting of Tehran as Qajar capital, style language and new spatial values are observed resulting from disorganization of life system and hierarchy of urban and private life (Afshar Asl & Khosrawi, 1998, p. 122).

There are different ideas about urban and architectural elements constituting Islamic cities that almost all of them refer to the same elements.

Mansuri divides significant elements of urban spatial organization into three main categories including core or centrality, urban structure, and small wholes (Mansouri, 2006, p. 51).

Prominent elements of Islamic city have been divided into six categories, by Falamakī, i.e. architectural and urban-architectural units as settlements, religious urban-architectural units, commercial urban-architectural units, productive urban-architectural units, public services urban-architectural units, and public service and communicational units to final directions (Falamaki, 1995, p. 128).

According to Tavassuli’s categorization, main elements of Islamic cities include:

1- governmental, judicial, and official centers of cities, citadel, 2- religious centers, 3- workshops, 4- commercial centers, 5- communities, 6- service elements, 7- main passage ways, 8- walls surrounding city with gates, and 9- rural communities of suburb (Tavassoli, 2002, p. 24).

Al-Şayyād believes that political motivations play the most important role in configuration of Islamic cities such that they are arranged with different residential areas based on racial, ethnical, and religious factors surrounding great mosque, bazaar, and some adjacent public bathrooms. In this structure, cobweb pattern of irregular streets is dominated on urban spatial relations and centrality of Islamic city structure results from political centrality (Houshmand & Alizadeh, 2011, p. 72) (Alsayyad, 1997, p. 95) (Fig. 1).

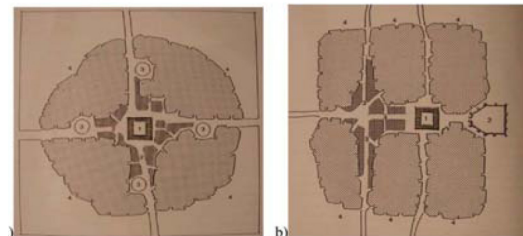


Fig. 1. Alsayyad’s Model of Islamic Cities (Alsayyad, 1997, p. 95).



- According to Detheman and Vireth, characteristics and functions of Islamic-Iranian traditional cities are as follows:
 1. Hierarchy of functions with Friday mosque and bazaar as central spatial core of every Islamic city
 2. Hierarchy of commerce and craft inside of bazaar, not only specific discipline and order of marketing and trade are seen all over the bazaar complex, but also Commercially, shops with high quality goods are located adjacent to bazaar core, passage ways, or reputable Rāstih while less valid goods were transacted far from the center
 3. Intercity residential communities with appropriate and coordinated isolation with considering social, ethnical, and religious differences of people
 4. Defensive-military establishments and fortifications including walls, towers, ramparts, gates, and narrow passage ways of communities
 5. Other special properties such as graveyards and periodical bazaars located out of city ramparts (Ahlers, 1994, pp. 30-31) (Fig. 2).

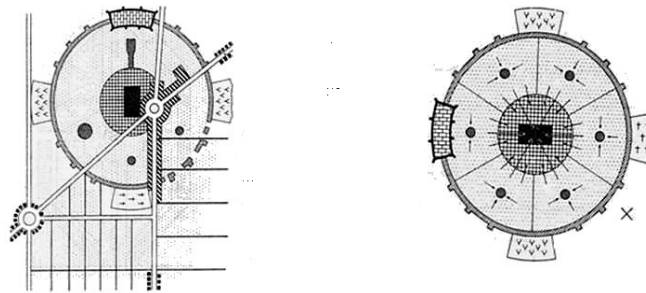


Fig. 2. Detheman's Model of Modern Islamic Cities & Detheman's Model of Traditional Islamic Cities (Ahlers, 2001, pp. 166-187)

Finally, it should be mentioned that five main elements, i.e. religious elements including mosques, religious theaters, and Husseiniyih; citadel (governmental elements), governmental center, judiciaries, and main seat of militaries; trading and commercial elements, bazaar, financial and economical centers such as abodes, caravanserais, Timchih, and Qiysariyih; urban communities (residential quarters); and main passage ways have been generally identified for Iranian traditional cities (Tavassoli, 2002, p. 24). Among them, great mosque, bazaar, and residential quarters constituted main elements of Iranian cities after Islam. Table 1 refers to complete summarization of those elements constituting Islamic cities and how they effect on spatial organization of Iranian cities after Islam.

Therefore, Islamic-Iranian city is a complex set of urban and architectural elements combined to make

this city. Not only the city grants its dominant feature to every single element but also it is being affected by their appearance, function, and establishment. There are several functional layers at every urban complex constituting city identity. The functions, i.e. religious, commercial, service, residential, and governmental ones, have their own special spaces and figures and, in fact, meet the mentioned requirements. How the elements are arranged considering other parts as well as the whole complex is one of the affecting factors on efficiency of every complex. According to their combination with kinds of main and local or urban and communities ways as well as their adjacency to other elements, all elements of Iranian traditional cities (religious, service, traditional and other ones) play a complement role for other elements in addition to their special role in the city (Balilan Asl, 2008, p. 145) (Table 2).



Table 2. Urban Planning and Architectural Elements and Their Effects on Spatial Organization and Structure of Iranian Islamic-Traditional Urban Planning (Balilan Asl, 2008, p. 145).

Urban Planning and Architectural Elements and Their Effect on Spatial Organization and Structure of Iranian Islamic-Traditional Urban Planning	
Residential units & Communities	1- Determining dominant orientation of city, 2- creating of adjacent units, 3- creating blind alleys to maintain privacy 1-Minor and blind passes to maintain privacy, 2- categorization in accordance with occupation or dominant property of residents
Community Center	1- Locating religious, service, commercial spaces there or its surrounding. 2- With public land usel dedicated to the community or a specific boundary of it.3- often at the margin of the main path of it
Mosque	1- Locating next to great mosque or other religious centers, 2- locating related service spaces such as paper, inkpot and bookbinding shops, 3- Connection with important passes and squares of city 1- Formation of community centers, 2- Efficient in definition and identification of main passes of community
Govern Mental Sector	1- Establishing of military and governmental squares, 2- locating next to great mosque or bazaar, 3- allocating of one gate to governmental sector
Passage Way	1- Locating important service elements next to it, 2- locating important governmental elements including barracks and guardhouses next to it, 3- locating important commercial elements like the main Bazaar next to it, 4- locating great mosque in its adjacency, 5-connection of main gates
Bazaar	1- The most important connectivity axis of the city, 2- joining together the important gates of the city, 3- effective on determining urban function, 4- effective on forming and general development of the city, 5- forming and locating of service spaces in its effective boundary
Square	1- Locating along main passes leading to one of the main gates, 2- locating important urban elements including Bazaar and great mosque in its adjacency. 1- functional area limited to a community is often located at the margin of the main path of the community, 2- it does not necessarily located at physical and geometrical center of the community, 3- designing and forming after formation of residential communities
Rampart & Gate	1- Being divided into two main and local categories, possibility of connecting with parts inside and outside of the city 2- locating along with main ways and roads (main gates), 3- Being capable of accepting the highest rate of traffic of people and caravans (main gate), 4- along with ways ending in gardens and workshops located out of city (local gate), 5- allocating one gate to citadel and governmental sector
River & Bridge	1- With communicative function, 2- developing some recreational spaces for spending free times around some bridges, 3- developing an urban space, 4- locating along with main ways and gates, 5- sometimes, a place to gather beasts and travelers



TRADITIONAL SPATIAL ORGANIZATION AND STRUCTURE OF IRANIAN CITIES

Until mid Qajar era, traditional architecture was mainly regarded as the prevalent architecture of the country that is still seen in most desert-surrounding cities. They are not still connected to western architecture and have maintained their traditional and local roots. This architecture was formed in relation with principles of traditional architecture, ecological properties, geographical conditions, and at the framework of a traditional urban structure. Inwardness was the main property of this architecture, i.e. the buildings orientation was mainly inward, they were usually built in one storey, and the buildings back side was against passes, narrow and winding alley, even their required light was provided by the buildings internal yards. This architecture which obtained the most favorable and beautiful forms considering conditions of a traditional city underwent significant evolutions as a result of this traditional structure transformation. Transformation of the traditional urban structure was due to evolutions occurred in Iran since Qajar era (Pakdaman, 1997, pp. 619-620). Now available maps of the cities will be redrawn to investigate the spatial organization and structure and effects of urban and architectural elements on physical structure of Iranian traditional cities during Qajar era. Then, the structure pattern will be compared with that of pre-Qajar structure. Tehran, as capital and Dār al-Khilafih of Qajar, Tabriz, as Dār al-Saltānih and domicile of Qajar kings' princes and the second governmental center following Tehran Dār al-Khilafih (Ghobadian, 2005, p. 22) and then some other cities will be discussed.

Determining the Traditional Spatial Organization and Structure of Tehran Dār al-Khilafih During Qajar

In 1200 AH, Agha Muhammad Khan begins his monarchy in Tehran and officially introduced it as Iran capital (Ghobadian, 2004, p. 60). At the beginning, Tehran had a traditional structure in physical and cultural aspects, i.e. there were totally traditional ceremonies, occupations, social relations, form of clothing, type of transportation vehicles, city context, urban structures, and etc., and there was not any significant difference between the mentioned era and its previous periods (Ramazan Jamaat & Neiestani, 2010, p. 65). Development of Tehran refers to its selection as capital and architectural buildings of Tehran was also evolved parallel to its growth and development. Until mid Qajar era, architecture of Tehran

was regarded as main common traditional architecture of the country formed as a traditional city (Pakdaman, 1997, p. 619). Inwardness was the main property of this architecture, i.e. the buildings orientation was mainly inward, they were usually built in one storey, and the buildings back was against passes, narrow and winding alleys (Ibid, p. 620). Prior to entering of modernism to Tehran (mid also era), there were, in fact, inherent and intangible progresses and variations in architecture and urban planning of Iran. During every era, constructional findings and skills are transferred from one generation to the next one gradually and made slow progress (Ghobadian, 2004, p. 6) (Table 3).

There are limited drawing references from Tehran in Qajar era drawn by different people since 1819. Following table explains the maps:

Comparing all maps, it was clear that Kirshish map has been more exactly prepared and indicates more details from alleys and different parts of the city. All buildings of citadels are drawn in the map and, similar to Barzīn map, the city has been consisted of four communities and one citadel. Bazaar is still the most important Rāstih of the city. Arg square and Sabzih Miydan are regarded as two main squares of the city located at the distance between southern side of citadel and northern end of Rāstih Bazaar. The map was completed by ʿAbd al-Ghaffar Khan and, then, more details were added. Small area of city-surrounding gardens is the most significant difference between Kirshish and Barzīn maps. They changed to residential areas due to population growth. Therefore, we will investigate Tehran map drawn since Barzīn (1852), i.e. mid Qajar era. Kirshish map will be used to investigate more details. (Table 4)

At the beginning of Qajar era, Tehran map is an expression of a traditional city of Islamic Iran located at a hot and dry region. There is a big fence surrounding the city to protect residents of Dār al-Khilafih against invaders. There is a higher fence around governmental citadel protecting rulers and nobles against domestic and foreign invaders. The city was consisted of four definite communities including ʿūdājān, Sangilaj, Chālih Miydan, and Bazaar. They were connected through long and irregular Rāstih while they had their own social properties and differed from each other considering cultural, ethnical, and economical viewpoints. The Rāstih beginning from Shah ʿAbd al-ʿazim gate and ending in citadel was regarded as the most important Rastih of the city. Main bazaar of the city and the most important religious, educational, service, and commercial buildings were located adjacent to the Rāstih. Generally, long, irregular, and narrow Rāstih of the city indicates the



properties of Iranian traditional cities located at a hot and dry climate. (Ibid, p. 102)

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Table 3. Tehran Maps During Qajar Era (Mehryar, M. et al., 1999, p. 147; Motamedi, 2002, p. 24; Zoka, 1970, p. 6; Ghobadian, 2004, p. 104; Tehrani, Beka, 2009, p. 47; Golestan Palace Album, Collect and Analyze).





Tehran Maps During Qajar Era	
<p>Iliya Nikolayevitch Berezin, Russian Planography and Orientalist (1269AH/1852 AD)</p> 	<p>Capt. Nascof (1241AH/1826 AD) Coincided with the Late Reign of Fath ʿAli Shah(1211-1250 AH)</p> 
<p>This map is expression of traditional Iranian Islamic city located at a hot and dry climate. The map is in Russian and there is a colored version ornamented using Persian transcripts The city was consisted of four specified communities and bazaar connected through long and irregular Rāstih. The Rāstih begins from Shah ʿAbd al-ʿAzim gate and terminates to citadel is the most important Rāstih of the city.</p> <p>Main bazaar and the most important religious, educational, service, and commercial buildings are adjacent to the Rāstih. Generally, there are long, irregular, and narrow Rāstih which are regarded as main property of Iran traditional cities located at hot and dry climate.</p>	<p>Nascov map: It is the first map from Tehran prepared with military intentions.</p> <p>In addition to a general scheme from Tehran, it explains its palisade as well.</p> <p>Introduction of city defensive redoubts was regarded as main surveying objectives.</p> <p>In addition to Tahmasibi fence, it has referred to wide out-of-fence areas in the north, parts of east, west, and south, location of royal citadel and political centers, bazaar and main social and economical centers, caravanserais, stores, baths, infrastructure establishments, defensive redoubts, and gardens.</p>
<p>ʿAbd al-Ghaffar khan Najm al-mulk (Teacher of Mathematical at Dār al-Funūn School) and his students Start: (1285 AH/1868 AD) End: (1309 AH /1890 AD) (One year after the commencement of Tehran)</p> 	<p>Monsieur the August kirshish (Army Brig. and artillery teacher at the Dār al-Funūn school) with cooperation of the Zu al-Faqar biyg and his student; Muhammad Taqi khan (1275 AH /1858 AD)</p> 
<p>This is the most exact map of Naşiri era that indicates more details from old and modern context of the city.</p> <p>The modern context is no longer located at property framework of Iranian traditional cities. It resembles Housman urban plans in Paris. Housman fundamentally changed Paris during Napoleon III era (1853-1870) including wide and straight streets that connected city key points. He was contemporary to Naşir al-Din Shah.</p>	<p>The map has been prepared exactly and indicates more details of alleys and different parts of city.</p> <p>All buildings of citadels are drawn. Similar to the previous map, the city has been consisted of four communities and one citadel. Bazaar is still the most important Rāstih of the city. Arg square and Sabzih Miydan are regarded as two main squares of the city located at the distance between southern side of citadel and northern end of Rāstih Bazaar</p>



Table 4. Urban and Architectural Elements in Tehran Dār Al-Khilafih Traditional Spatial Organization and Structure During Qajar Era, (Siyfi Qumi Tafreshi, 1990, pp. 62-107), Drawing and Analysis.

Role and Position of Urban and Architectural Elements in Tehran Dār Al-Khilafih Traditional Spatial Organization and Structure During Qajar Era			
House and Mansion	Square	Residential unit	Passage way
			
Bazaar	Gate	Governmental Arg	Quarter center
			
Bagh (Garden)	School and Mosque-School	Mosque and Tekiyeh	Caravanserai
			
<p>The Communities are Connected through Long, Irregular, and Narrow Rasteh Fences and Ramparts Surround the City</p> <p>Main Square was Located Near the Governmental Citadel.</p> <p>Community Centers and Tekieh (The Religious Theater) are Regarded as Important Urban Centers</p>			





Determining the Traditional Spatial Organization and Structure of Tabriz Dār al-salṭānih during Qajar era

Second son of Fath ‘Ali Shah, known as ‘Abbās Mirzā, was entitled as regent by Agha Muhammad Khan Qajar. He was candidate as crown prince of Iran. ‘Abbās Mirzā moved to Tabriz in Zī al-ḥajjih, 1218 and Tabriz was officially known as domicile of Qajar crown prince (Lachini, 1947, p. 4). According to the handwriting found on the map, it was found along with map of Pir

Muhammad Shah castle at general headquarter of Tabriz when the city was occupied by Russian army in 1827 AD (Fakhar et al., 2006, p. 16). Tabriz was regarded as the second Iranian city of Qajar. It was superior to Tehran from some perspectives (Ghazi Tabatabaei, 1974, p. 141). Although it is not capital, it is domicile of crown prince and important military and political decisions are made there. It was changed to one of the most important economical hubs and serves as a center for important national events in a near future (Vahabzadeh, 1996, p. 71) (Table 5).



Table 5. Tabriz Maps During Qajar Era

Tabriz Maps During Qajar Era			
	Tabriz Suburb Map: Petrof Pasiotzeid Bishuf (1227 AH /1827 AD)		Tabriz Map: Terre zell – Fabouye (1207 AH /1807 AD)
<p>It is the first map which topography of city-surrounding heights has been considered and mountains and rivers have been emphasized there.</p> <p>In this map, the city is seen among several villages.</p> <p>Caravan-passing paths indicate a special topography framework with Tabriz as its gravity center surrounded by big villages and gardens.</p> <p>Whole city was surrounded by palisades.</p>		<p>Tabriz map was lately named as Terre zell – Fabouye map. It is one of the valuable maps of Tabriz.</p> <p>City structure continues its Safavid form without any changes in this era. Some current urban elements have been destroyed in earthquake and no new land use has been created. There are private caravanserais, gates, baths, and mosques dedicated to their owners using cursive Persian Nasta'liq writing on entrance of their residential places.</p>	
	Maraghini's Dār al-Saltanat map: Assad Allah Khan Maraghini's (1327 AH /1910 AD)		Qarajih Daghi's Dār al-Saltanat map: Colonel Muhammad Reza Qarajih Daghi's (1297 AH /1880 AD)
<p>The map is a very accurate and complete reference and commercial space and their urban location is the most important volume emphasized in the map.</p> <p>For different reasons, there is a primary networking and informative system without any pattern. However, there is not any difference in this regard.</p> <p>Dark areas indicate commercial spaces.</p> <p>Tabriz bazaar is also seen as the biggest and compressed commercial complex as a dark point in the map. Other information of the map focuses on communities, alleys, and public spaces such as graveyards and governmental citadel.</p>		<p>For the first time, the map uses modern concept of topography.</p> <p>For the first time, map of communities was prepared to emphasize on their border. It is the first map drawn after destruction of Najaf Quli Khan rampart. The map was colored later.</p> <p>It is one of the most authentic and modern maps drawn from Tabriz. It is the beginning point of modern surveying in Iran.</p>	

Considering the printed documents, there is a map of Tabriz belonging to 1827 AD. This is one of valid maps of Tabriz. Maps of Tabriz lately named as Terre zell – Fabouye





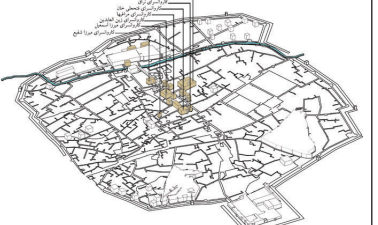




map was drawn before 1827 AD. Since there is not any map from urban planning and architectural elements of Tabriz from 1807 to 1880 among the printed documents



(except the suburb map mainly focused on topography of city-surrounding heights) and Maraghihi's map of Dār al-Salṭanat was prepared after modernity, Qarajih Daghi's map of Dār al-Salṭanat was used as a basis for drawing. Other maps were used when more accuracy was needed or when the map lacked any complete information. Tabriz preserved its traditional structure during Qajar era and only some modern elements or functions were developed that caused some variations in urban spaces or architectural elements. Although reformations were necessary and immediate in Tabriz Dār al-Salṭanih until

second half of Naşiri era, proponents of ancient tradition paid no attention to theoretical fundamentals of modern thought (Tabatabaei, 2006, p. 96). Tabriz in Qajar era had a radial intertwined system that were formed based on different political, religious and security conditions. Try to observe religious recommendations including necessity of observing privacies and city security resulted that different urban and architectural organs are located in a complex system to each other and then to whole city. (Table 6)

Table 6. Urban and Architectural Elements in Tabriz Dār al-Salṭanat Traditional Spatial Organization and Structure During Qajar Era, Drawing and Analysis.

Role and Position of Urban and Architectural Elements in Tabriz Dār Al-Salṭanat Traditional Spatial Organization and Structure During Qajar Era		
Gate	Bazaar	Governmental Arg
		
Alley	Caravanserai	Bathhouse
		
Square	Mosque	School
		



Important governmental centers such as barracks and guardhouses, important commercial elements like main bazaar, Jame mosque were located adjacent to passages

Bazaar is the most important communication axis of the city connecting important gates of the city. It is effective on determining the urban function, general formation and development of the city, locating and formation of service spaces in its effective limit.

Square was located along with main pass ways ending to one of the main gates. Important urban elements such as bazaar and Jame mosque were located in its adjacency and religious, service, and commercial spaces were located in or adjacent to community centers.

Graveyards were located both inside and outside of the city

Passageways and access network of Tabriz at the end of Qajar era, in general, are regarded as one of the most interesting urban elements. Locating of bazaar in the city geometrical center led to radial formation and development of ways through branching and moving toward it. Nature of these passageways is one of the effective and important terms in locating various elements through them. Access to network and system are highly affected by central core of the city, i.e. a complex of bazaar, great mosque, and citadel and immediately manifested its radial system difference with access system of other cities. Ways accept multipurpose roles through absorbing functional elements in accordance with their kind and degree in addition to continuing their role in facilitating city spatial sequence and communication (Balilan Asl, 2009, pp. 44-46).

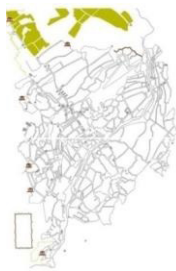
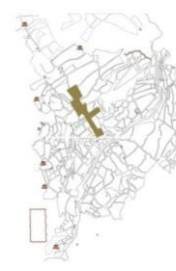



- Tabriz had a radial interwoven system formed based on different political, security, and religious conditions. Try to observe religious recommendations including necessity of observing privacies and city security, was resulted that different urban and architectural organs are located in a complex system to each

other and then to whole city.

- Complexity of bazaar, great mosque, and citadel consisted of city main core regarded as one of the most important factors forming city radial system.
- Maintaining its coherence, Tabriz defined and directed rate and type of movements, activities, security control and supervision, and etc., relying on a codified system. Distribution of different land uses all over the city follows the same system and helped its consolidation.
- One citadel, four bazaars, three religious theater, three bathrooms, 72 houses, 6 gates, two graveyards, 19 caravanserais, one alley, 3 quarters, 2 schools, two mosques, and two squares may be regarded as urban elements of Tabriz. Main elements can be found as follow.

Now, traditional spatial organization and structure of some Iranian cities during Qajar will be dealt with as follows.

Table 7. Determining the Traditional Spatial Organization and Structure of Hamedan During Qajar, (Zendedel et al., 1998, p. 90), Drawing and Analysis.

Role and Position of Urban and Architectural Elements in Hamedan Traditional Spatial Organization and Structure During Qajar Era				
Bagh(Garden)	Caravanseraï	Bazaar	Gate	Passage way
				




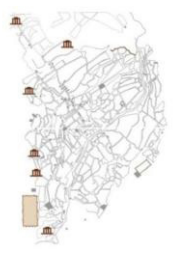
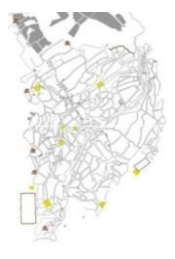

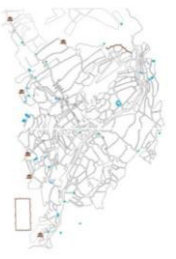
Bathhouse	Governmental Arg	Mosque	School and Mosque-School	Mosque and Tekiyeh
				
<p>Jame mosque was located near the central square of the city and western part of Ekbatan St., at the limit of city Rasteh Bazaars. The bazaar is specially important since Hamedan and its old city was located at the pathway of commercial and even pilgrimage caravans</p>				

Table 8. Determining the Traditional Spatial Organization and Structure of Shiraz During Qajar, (Ibn Balkhi, 1995, p. 171; Afsar, 1974, pp. 276-285; Falamaki, 2005), Drawing and Analysis.




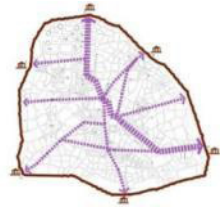


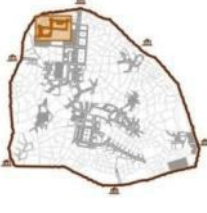

Role and Position of Urban and Architectural Elements in Shiraz Traditional Spatial Organization and Structure During Qajar Era			
Bazaar	Mosque and Tekiyeh	Gate and Battlement	Passage way
			
Square	Caravanserai	Governmental Arg	Quarter center
			
<p>A fence was built around the city during Şamşām al-Dulih era. Tūpkhānih was the most important and largest square of the city. Public passing ways and main ways consisted of long, winding alleys and covered bazaars. The city was primarily in circle form. There was not any fence around the city and it had old forts and Rabaz.</p>			



Table 9. Determining the Traditional Spatial Organization and Structure of Mashhad During Qajar, (Brar, 1977, p. 102; Etemad al-Saltaneh, 1983, p. 14; Mahryar, et al., p. 144; Labbafkhaneki, 1999), Drawing and Analysis.

Role and Position of Urban and Architectural Elements in Mashhad Traditional Spatial Organization and Structure During Qajar Era			
Mosque and Tekiyeh	Bazaar	Caravanserai	Passage Way
Bagh (Garden)	Gate and Battlement	School and Mosque-School	Governmental Arg
<p>The city had an irregular map. There was a big clay wall and moat surrounding the city. The city was in rectangular form. Main path of the city connected two gates together. Great bazaar extended from east to west as a straight line.</p>			

Table 10. Determining the Traditional Spatial Organization and Structure of Yazd During Qajar, (Department of Education, 2003)(Tavassoli, pp. 28-38), Drawing and Analysis.

Role and Position of Urban and Architectural Elements in Yazd Traditional Spatial Organization and Structure During Qajar Era				
Bagh(Garden)	Caravanserai	Mosque and Tekiyeh	Governmental Arg	Passage way
<p>There was a fence surrounding the city. Bazaar complex was located at downtown. Main passages passed from community centers. Community centers were regarded as center of main activities of people and gather point of all urban and architectural elements along each other. Jame mosque was located in downtown.</p>				



Table 11. Determining the Traditional Spatial Organization and Structure of Kerman During Qajar, (Daz Consultig Engineering, 1974; Mahryar, et al., p. 191; Golabzadeh, 1999), Drawing and Analysis.



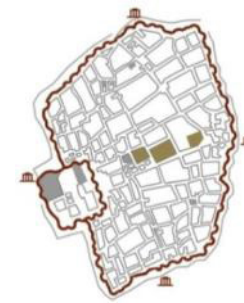
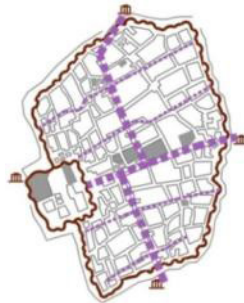
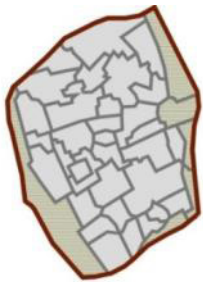

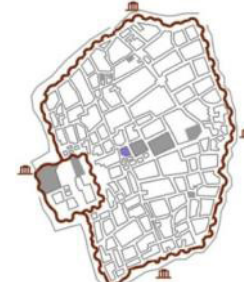

Role and Position of Urban and Architectural Elements in Kerman Traditional Spatial Organization and Structure During Qajar Era			
Mosque and Tekiyeh	Bazaar	Caravanserai	Passage Way
			
Residential Quarters	Gate and Battlement	School and Mosque-School	Governmental Arg
			
<p>The city had a concentric structure with three important elements, i.e. Rabaž, downtown, and citadel. Downtown was surrounded by city fence as a square with fences and moats.</p> <p>Bazaar was regarded as the main axis and downtown, connected two gates of the city from east to west as a straight line. It divides the city into two northern and southern parts.</p> <p>Jami^e mosque was located near bazaar.</p> <p>There were winding narrow alleys. Main alleys were almost straight and ended to one of the city gates.</p> <p>Community centers were regarded as center of main activities of people and gather point of all urban and architectural elements along each other</p>			



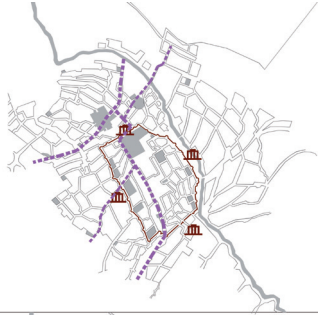
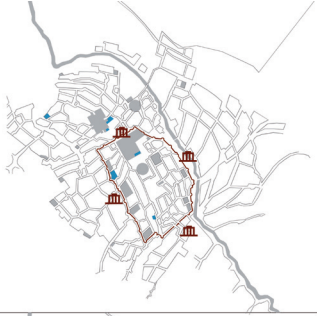
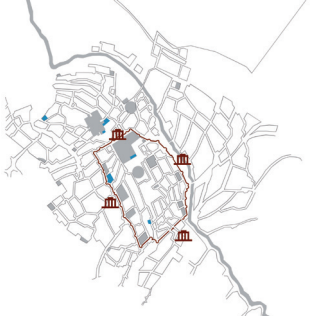
Table 12. Determining the Traditional Spatial Organization and Structure of Kermanshah During Qajar, (Biglari, 1995, pp. 17, 21-27), Drawing and Analysis.

Role and Position of Urban and Architectural Elements in Kermanshah Traditional Spatial Organization and Structure During Qajar Era			
Square	Bazaar	Caravanserai	Passage way
Bagh (Garden)	Gate	School and Mosque-School	Governmental Arg
<p>There were barbican (The city extension was considerable) There were uncoordinated, irregular, and clay houses. There were winding narrow streets and alleys. Main alleys were wider</p>			

Table 13. Determining the Traditional Spatial Organization and Structure of Sanandaj During Qajar, (Zareie, 2009), Drawing and Analysis.

Role and Position of Urban and Architectural Elements in Sanandaj Traditional Spatial Organization and Structure During Qajar Era			
Square	Bazaar	Caravanserai	Passage Way



Gate	Mosque and Tekiyeh	Governmental Arg
		
<p>Sanandaj was significantly developed during Qajar era and surrounding heights were used as rampart. Safavid era communities were rebuilt. Three communities of Chahārbāgh, Qal'eh Chāhārlan, and Kirmanj were created at northeast, west, and east, respectively. Architectural and social structures of communities were mainly changed in front of houses, bazaar, and a square to meet primary needs of quarter residents. Jami^e mosque was built in the west side of governmental citadel. Arg square or Dar al-Īyalih square and Khosro^eabād Chahārbāgh were developed in a 100m distance from the city between 1793 and 1819. City structure was changed significantly.</p>		

CONCLUSION & RESULTS

Following table refers to analyzed samples of traditional spatial organization and structure of Iranian cities during Qajar era. For traditional structure of each analyzed Qajar city, a pattern was drawn which finally led to a special pattern of traditional structure of Qajar city. (Table 14)

Studying traditional spatial organization and structure of Qajar cities, it was concluded that:

1. The most important and main elements of traditional structure of Qajar cities have been located in its historical and central district. Elements which are regarded as public area of the city play a significant role in the main structure. Symbolic elements of the city serve as an identifying factor for their surrounding environment and the communities are identified by these elements in historical and central parts of the city.
2. A multilateral order governed Qajar traditional city and people were regarded as the most important element of traditional cities. Traditional morphology and context of city are created by following traditional population. There is a connected apparent and inherent pattern for traditional structure of Qajar city and balance and interaction are seen in urban and

architectural elements. While maintaining their unity, diversity is regarded as traditional spatial organization and structure components of Qajar city.









3. In this era, spatial organization of public and private areas of traditional structure of cities was arranged based on main bazaar and governmental citadel axis. All elements surrounding bazaar axis and its immediate communities including stores, caravanserais, mosques, bathes, gymnasiums, coffeeshouses, schools and, the most important, houses organized kinds of people's relations in their public and private areas.
4. Comparing traditional structural system of Qajar cities with that of traditional Islamic and Safavid era cities, it can be concluded that there is not any significant difference between Qajar cities and traditional-Islamic and Safavid cities considering city context and its spatial organization. Bazaar is still main axis of the city and is the manifestation place of all social-cultural morphologies and configurations in addition to its commercial-economical role. Architecture of different buildings of Qajar era such as bridges, baths, mosques, schools, etc. is a continuation of architecture of previous era especially Safavid and bears only variations and elements specific to Qajar era. Accesses separated




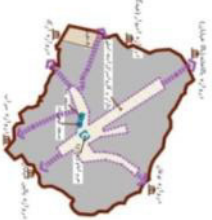



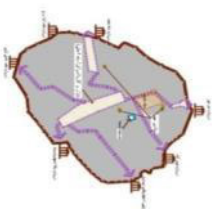
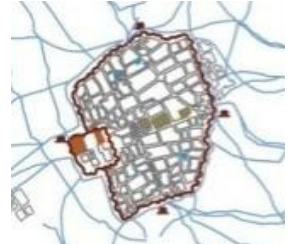

from bazaar cross each other at community centers and communities continue their life in city as a semi-independent place. Although the communities have lost their old dependency to their villages from their religious, beliefs,

and racial perspective, they are left as societies in themselves. In the other words, although economical organization has been trapped by global economy, its spatial organization has not undergone main variations.

Table14. The Traditional Spatial Organization and Structure of Iranian Cities of Qajar Era.

Study of the Traditional Spatial Organization and Structure Map and Pattern of Iranian Qajar Cities			
City/ Year	Map	City Pattern	Characteristics of urban Structure
Tehran Dār al-Khilafih (1269 AH /1852 AD)			The communities are connected through long, irregular, and narrow Rāstih. Fences and ramparts surround the city. Main square was located near the governmental citadel. Community centers and Tekiyeh (the religious theater) are regarded as important urban centers.
Tabriz Dār al-Salṭanat (1207-1208 AH /1800-1807 AD)			Important governmental centers such as barracks and guardhouses, important commercial elements like main bazaar, Jami ^e mosque were located adjacent to passages Bazaar is the most important communication axis of the city connecting important gates of the city. Square was located along with main pass ways ending to one of the main gates. Important urban elements such as bazaar and Jami ^e mosque were located in its adjacency and religious, service, and commercial spaces were located in or adjacent to community centers.
Hamedan (1267 AH /1851 AD)			Jami ^e mosque was located near the central square of the city and western part of Ikbatan St., at the limit of city Rāstih Bazaars. The bazaar is specially important since Hamedan and its old city was located at the pathway of commercial and even pilgrimage caravans
Shiraz (1266 AH /1850 AD)			A fence was built around the city during Şamşam al-Dulih era. Tūpkhānih was the most important and largest square of the city. Public passing ways and main ways consisted of long, winding alleys and covered bazaars. The city was primarily in circle form. There was not any fence around the city and it had old forts and Rabaz



<p>Mashhad (1274 AH /1858 AD)</p>			<p>The city had an irregular map. There was a big clay wall and moat surrounding the city. The city was in rectangular form. Main path of the city connected two gates together -Great bazaar extended from east to west as a straight line.</p>
<p>Yazd (1275 AH /1859 AD)</p>			<p>There was a fence surrounding the city. Bazaar complex was located at downtown. Main passages passed from community centers. Community centers were regarded as center of main activities of people and gather point of all urban and architectural elements along each other. Jami^e mosque was located in downtown.</p>
<p>Kermanshah (1266 AH /1850 AD)</p>			<p>There were barbican (The city extension was considerable) There were uncoordinated, irregular, and clay houses there were winding narrow streets and alleys .Main alleys were wider.</p>
<p>Kerman (1275 AH /1859 AD)</p>			<p>The city had a concentric structure with three important elements, i.e. Rabaž, downtown, and citadel. Downtown was surrounded by city fence as a square with fences and moats. Bazaar was regarded as the main axis and downtown connected two gates of the city from east to west as a straight line. It divides the city into two northern and southern parts. Jami^e mosque was located near bazaar. There were winding narrow alleys. Main alleys were almost straight and ended to one of the city gates. Community centers were regarded as center of main activities of people and gather point of all urban and architectural elements along each other.</p>




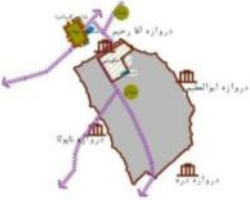

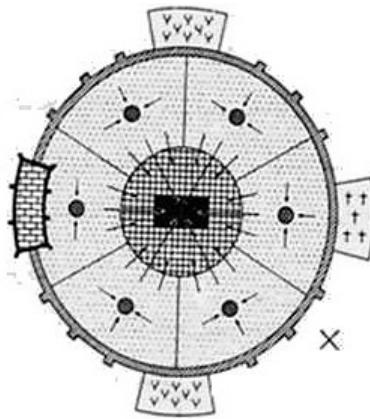
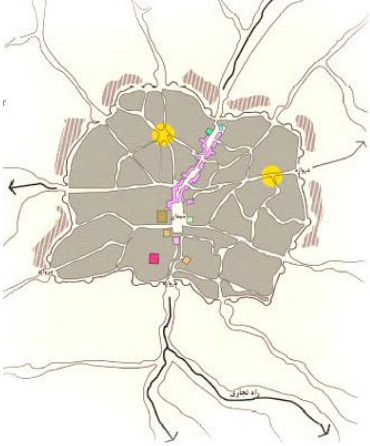

<p>Sanandaj (1267 AH /1851 AD)</p>			<p>Sanandaj was significantly developed during Qajar era and surrounding heights were used as rampart Safavid era communities were rebuilt. Three communities of Chahārbāgh, Qal'ih Chāhārlan, and Kermanj were created at northeast, west, and east, respectively. Architectural and social structure of communities were mainly changed in front of houses, bazaar, and a square to meet primary needs of quarter residents Jami' mosque was built in the west side of governmental citadel. Arg square or Dar al-Īyalih square and Khusrō'abad Chahārbāgh were developed in a 100 m distance from the city between 1793 and 1819. City structure was changed significantly.</p>
<p>Traditional spatial organization and structure of Iranian Qajar city</p>		<p>Particulars of Qajar cities The city had a concentric structure and general order people were regarded as the most important members of physical city in traditional cities There was a connected apparent and inherent structural pattern in Qajar city The urban and architectural elements were balanced and interacted. While maintaining their unity, there was a diversity in elements There were barbican There were wider main passages and narrower secondary passages Community centers located in cross point of secondary passages Community served as semi-independent places in downtown Military zone was located beside one of the city gates Bazaar was located in downtown Urban elements included passage, gate, community, community center, citadel, bazaar, caravanserai (main Rāstih), graveyard, school, mosque, and square Accesses were separated from bazaar in cross point of community centers Lack of any main variations on city face and its spatial organization</p>	

Table 15 compares the traditional spatial organization and structure of Qajar cities with that of traditional Islamic cities as well as cities of Safavid era (before Qajar era) (Table15).



Table 15. Compares the Traditional Spatial Organization and Structure of Qajar Cities with That of Traditional Islamic Cities as Well as Cities of Safavid Era.

Detheman's Pattern of Spatial Organization and Structure of Traditional Islamic Cities	Pattern of Spatial Organization and Structure of City in Safavid Era	Our Presented Pattern of Spatial Organization and Structure of Traditional Qajar City
		



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