







1. Assistant Professor, Department of Architecture, Faculty of Art and Architecture, IsG.C., Islamic Azad University, Islamabade Gharb, Iran.

Email: Fa.Taheri@iau.ac.ir

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A Comparative Study of the Spatial-Physical Structure of Prominent Qajar Urban Caravanserais in the Historical Bazaar of Kermanshah (Case Study: Vakil al-Dowleh, Nou, Kashani, and Hamedani Caravanserais)

## Faezeh Taheri Sarmad¹®

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## **Abstract**

The urban caravanserais of Kermanshah Bazaar, as semi-open spaces and breathing nodes, were located in the core of the covered market fabric and were considered places for economic interactions, commodity exchanges, and the settlement of caravans. During the Qajar period, the boom in production and commerce in Kermanshah led to the expansion of the historic bazaar along the city's main caravan route and the coherent formation of urban caravanserais as integral physical elements of the bazaar structure. The importance of the present study lies in the fact that, despite the prominent position of the bazaar and urban caravanserais of Kermanshah during the Qajar period, no independent research has so far been conducted on them. Therefore, the aim of this research is to understand the spatial organization and examine the elements and patterns of the physical structure of these urban caravanserais during the Qajar period. The present study was conducted using a descriptive-analytical approach. Four urban caravanserais were selected as case studies and their history of emergence was investigated through library research. Then, using the fieldwork, and based on the research objective, their physicalspatial characteristics were analyzed and examined. The results show that the most important factors in the formation of these urban caravanserais were the provision of security infrastructure for caravans, the city's location on the Baghdad-Kermanshah trade route, the establishment of British, Russian, and Ottoman consulates in the city, and the migration of merchants from surrounding towns. This is reflected in the physical structure of the caravanserais, which simultaneously employed local architectural traditions, Qajar-period architecture, and elements derived from Western styles. In examining the physical-spatial structure of the four urban caravanserais it was also observed that the design of the various parts of the buildings was influenced by their caravan-commercial function.

**Keywords:** Urban Caravanserai, Historical Bazaar, Physical-Spatial Structure, Kermanshah, Qajar period.



## Introduction

One of the most important architectural monuments in Iran is the caravanserai, including the urban caravanserais, which developed from ancient times and, over many centuries, evolved into multifunctional complexes serving commercial, religious, and social purposes. The term "caravanserai" itself is derived from two Persian words: "caravan," meaning a group of travelers, and "sara," meaning a house or place (Hadizadehkakhki, 2014: 60). The tradition of caravanserai construction in Iran dates back to the Achaemenid period and continued through the Parthian and Sasanian eras. From the Sasanian period, a limited number of examples have survived, among them the Darvazeh-ye Gach Caravanserai (Gach Gate Caravanserai) and the Robat-e Anushirvani (Anushirvani Caravanserai) (Farshchi and Haji Zamani, 2018: 62). During the Seljuk era, with the expansion of political and commercial networks, numerous caravanserais were built, drawing inspiration from the models of pre-Islamic Iran. In the Ilkhanid period, greater emphasis was placed on the regularization of roads, while in the Timurid period, the growth of trade stimulated the construction of caravanserais with a four-iwan plan, richly decorated with tiles. With the rise of the Safavid dynasty and the consolidation of Islam, both the number and importance of caravanserais increased significantly. The height of prosperity was reached in the Safavid era, particularly under Shah Abbas I. Construction activity continued into the Qajar period, during which trade and commerce once again flourished (Abedi et al., 2022: 614). Caravanserais can generally be divided into two categories—urban and extra-urban—depending on their function and location. The urban caravanserais, also known as "sara," primarily served as centers of trade and transactions and were often directly linked to bazaars (Ehsani, 2011: 84).

Kermanshah urban caravanserais have historically held great importance because of their location within the commercial fabric of the city's bazaar. The Historic Bazaar of Kermanshah had gained considerable fame due to the city's strategic position—which for centuries lay along one of the most important trade and caravan routes that connected the western Zagros Mountains to their eastern regions. During the Qajar period, this market expanded extensively along the same route, extending from the west (Sar Ghabr Agha Gate) to the east of the city (Chiya Sorkh Gate) (Hashemi, 2012: 100). The urban caravanserais of the bazaar, in addition to functioning as central nodes of commercial activity, have consistently



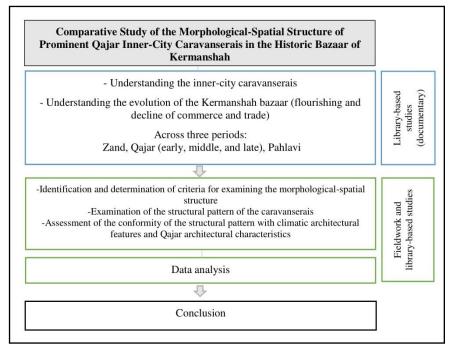
served as important venues of interaction among different cultural groups, and these cultural exchanges have in turn contributed significantly to the enrichment and enhancement of their architectural values. Over the course of time, some of these bazaar-based urban caravanserais in Kermanshah have been abandoned and fallen into ruin, while others—despite retaining much of their original physical integrity—have nevertheless been subjected to a variety of alterations. Unfortunately, numerous inappropriate restorations and reconstructions, often carried out in ways that were inconsistent with their original architectural design, have gradually resulted in a decline in their former historical and cultural values. For this reason, under the present circumstances, identifying the design principles and spatial concepts embedded within these urban caravanserais, and extracting the architectural strengths that define them, can provide a valuable framework for guiding future restorations and revitalization projects. Such an approach would ensure compatibility with the original spatial-physical structure of the urban caravanserais, while also offering practical models for the design of new commercial spaces within the bazaar context. Therefore, the primary aim of this research is to study and interpret the spatial organization of the historical urban caravanserais of Kermanshah, and to examine in detail the elements and patterns of their physical structure, with a particular emphasis on both the architectural features characteristic of the Qajar period and the climatic conditions specific to the Kermanshah region.

Research Questions and Hypotheses: What are the most important factors affecting the formation of the historical urban caravanserais of Kermanshah's bazaar during the Qajar period? How were the structural characteristics and physical-spatial elements of the urban caravanserais in the Historical Bazaar of Kermanshah defined during the Qajar era? The first assumption of the present research is that, in the Qajar era, significant developments such as the establishment of road security and the expansion of international trade provided the foundation for the growth and siting of caravanserais. In addition, consideration of Kermanshah's climatic conditions and the impact of Western architectural elements, introduced through international trade, were also influential in the formation and construction of these buildings. The second hypothesis of the study suggests that the structure of the examined urban caravanserais was derived from a central layout pattern—an introverted design employing a fouriwan scheme—while their physical-spatial elements were shaped by the influence of surrounding neighborhood contexts and adjacent structures.

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Research Method: The method employed in this research is characterized by its objective and descriptive-analytical nature, utilizing a case study strategy as its primary approach. Initially, the researcher reviews the background and theoretical foundations pertinent to the subject matter. In the theoretical segment, the research explores the emergence and subsequent changes—including both the periods of prosperity and decline—of the Kermanshah bazaar and its urban caravanserais throughout three distinct phases of the Qajar period: early, middle, and late. Following this, four urban caravanserais in Kermanshah, differentiated by their size, accessibility, and function during the middle and late Qajar periods (noting that those from the early period have been destroyed), were selected for analysis using the case study method. Given that comprehending these concepts aids in recognizing the architectural patterns and elements of the past, the research concurrently investigates the spatial-physical structure of these urban caravanserais, alongside specific architectural characteristics of the buildings and their connection to both the Qajar era and the climatic conditions of Kermanshah. The diagram presented below (Fig. 1) illustrates the comprehensive research framework and process.



**◄**Fig. 1: Research Process (Author, 2024).

#### Research Background

Numerous studies have been conducted on caravanserais and urban caravanserais. Among these, Piri & Afshari Azad (2015), in their research titled "A Study of Urban Caravanserais of the Qajar Period in Hamedan: Case



Study of Haj Safarkhani Caravanserais," examined this urban caravanserai in terms of the region's climatic conditions, the decorative characteristics of the Qajar era, and local architectural features. The building was constructed under the combined influence of Hamedan's climatic conditions and the architectural characteristics of the Qajar period. Moshabaki Esfahani (2018), in a study entitled "A Comparative Analysis of Architectural Space of Safavid Era Caravanserais with a Physical Approach," examined eight extra-urban caravanserais of the Safavid period based on four components: solid and void spaces, the position of the courtyard and garden in relation to the caravanserai building, the physical location of the courtyard, and the main axis. These features were considered to be influenced by the power and wealth of the ruling authority, as well as the climatic conditions of different regions.

Vahdatpour et al. (2018), in a study entitled "A Comparative Study of Isfahan's Urban and Extra-Urban Caravanserais in the Architecture of Physical Space," compared factors such as geometric proportions, spatial organization, and patterns of movement in both urban and extraurban caravanserais of Isfahan. They argue that the construction and location of these buildings, influenced by the site and the design of various architectural elements according to the needs of the people, constitute fundamental principles in the design of Isfahan's urban and extra-urban caravanserais. Pouriani (2019), in a study titled "Study and Understanding of Urban Caravanserais in Mazandaran Province; Case Study: Sari and Babol Cities," examined the characteristics of caravanserais in temperate and humid regions, their location, the architectural features of Qajar caravanserais, the architectural characteristics of Pahlavi buildings, the materials used, and the occupations associated with the caravanserais of Sari and Babol. He states that the architecture of these caravanserais is influenced by the temperate northern climate and the architectural features of the Qajar period.

Molaei & Sabermand (2019), in a study titled "Characteristics and Archetypes of the Central Courtyard in the Iranian Historical Bazaar: Case Study: the Urban Caravanserais of the Historical Bazaar of Tabriz," examined twelve urban caravanserais of the historical bazaar of Tabriz based on typological criteria across physical, economic, social, cultural, and environmental dimensions, and state that in the historical bazaar of Tabriz, a diverse range of urban caravanserais have been used from the past to the present, both physically and economically. Sekhavat-Doost &

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Soltan-Zadeh (2019), in a study titled "The Role of the Type of Function and the Social and Political Position of the Founders in the Formation of the Physical Structure of Caravanserais and Urban Caravanserais in Qazvin," state that the type of function (reception, loading, commercial activities) has influenced the physical structure of the urban caravanserais, and that the social and political status of the founders also determined the quality and extent of open, closed, and semi-open space decorations, the diversity of service and commercial spaces, and consequently, the commercial prosperity of urban caravanserais.

Mohaymeni & Nabavi (2021), in a study titled "Investigation of the Physical-Spatial Structure of Caravanserais along the Abrisham Road in Greater Khorasan," examined four structural factors—mass-space, spatial hierarchy, and solid and void spaces—which form the basis of the physical-spatial structure, in four extra-urban caravanserais located in different periods. They note that caravanserais were accompanied by a four-iwan plan during the Seljuk period. They also consider the Safavid period as the golden age of caravanserai construction, with the Qajar period representing a continuation of Safavid architectural patterns.

Regarding the bazaar and caravanserais of Kermanshah, we can also cite the research of Mirzaei et al. (2012), entitled "Meaning in Place and the Creation of Identity; Case Study: Kermanshah Bazaar", which identified the bazaar as playing a key role in the formation of collective memory, cultural values, and, subsequently, collective identity. Hashemi (2013), in a study titled "The History of the Construction of Kermanshah Bazaar with a Look at the Supporters and Founders of Its Buildings", analyzed the construction history of the bazaar and explored how it was shaped by its founders. Sajjadzadeh et al. (2019), in a study titled "Enhancement and Organization of the Structure of Traditional Bazaar Rows with Emphasis on Spatial Configuration and Connectivity; Case Study: Kermanshah Bazaar", while examining spatial configuration and interconnection, argue that creating greater integration within the spatial organization of cities is effective both for revitalizing the old fabric and for addressing the disorganization of contemporary urban fabrics. Rahromehrbani & Nouri (2022), in a work entitled "Comparative Analysis of Safavid Era Caravanserais in Kermanshah Province from a Typological Perspective in Order to Present Influential Physical Components", examined three extraurban Safavid caravanserais in Kermanshah from a typological perspective, analyzing the components of solid-void space density, quantitative and



formal proportions, quantitative spatial distribution, and the skyline. Among these, the index of solid-void space density was identified as the most influential factor in the extra-urban caravanserais of Kermanshah during the Safavid period.

Based on previous studies, the innovative aspect of the present research lies in the fact that most prior work has focused primarily on understanding caravanserais and urban caravanserais (sara) as well as architectural issues, whereas no research has yet addressed the urban caravanserais of Kermanshah's historical bazaar in the Qajar period. As noted, only the extra-urban caravanserais of Kermanshah from the Safavid period have been studied previously.

## Urban Caravanserais (Sarā)

The urban caravanserais, also known as khān or sarā, held great importance in the commercial sector, ranking immediately after religious buildings in contributing to the expansion and development of the bazaar. In addition to providing security and accommodation for merchants, their spaces were also used as venues for the sale of goods (Sekhavat-Doost & Soltan-Zadeh, 2010: 71). Typically, urban caravanserais were situated along the main streets of the bazaar owing to their commercial function, and their layout and physical form, like most caravanserais, followed a central courtyard plan. The urban caravanserai (sarā) functioned as a commercial hub where wholesalers and merchants from one or two specific trades established shops. Ethnic and local origins often led to the concentration of merchants from the same trade within a single urban caravanserai. Across different bazaars, urban caravanserais (sarā) were named after cities or provinces, such as the Qazvini Sarā in Tehran and the Kāshi Sarā in Isfahan Bazaar, or after their founder, owner, or the type of goods sold. The sponsors of an urban caravanserai were usually one or two merchants; however, the lifespan of these structures often far outlasted their patrons, as they were designed to endure for centuries (Taronyeh, 1957: 387).

Although the overall form of urban caravanserais resembled that of most caravanserais, notable physical differences arose due to their distinct functions. A caravanserai was an inn located outside the city, whereas an urban caravanserai served as a commercial center. Accordingly, urban caravanserais generally lacked stables, and their ancillary spaces were usually placed at the rear of the building or in underground levels for goods storage. Furthermore, because of limited space and high land



values in bazaars, urban caravanserais were most often constructed as two-story buildings. In addition, unlike caravanserais, which were generally independent and detached from surrounding structures, urban caravanserais were fully integrated, both physically and functionally, into the fabric of the bazaar (Ghobadian, 2013: 199). Tim and Timcheh also played a role similar to that of the urban caravanserai and shared comparable characteristics. These two types of spaces were often designed and built in combination. The principal distinction between an urban caravanserai and a Tim or Timcheh lies in the roof structure: urban caravanserais generally lack vaulted roofs, whereas Tims and Timchehs feature one or several tall vaults over the central courtyard. The overall plan of urban caravanserais was usually square or rectangular, while the plan of Timchehs was predominantly rectangular (Kiani & Kleiss, 1989: 3).

The plan of a few urban caravanserais—such as the Haj Karim and Mokhless caravanserais in Isfahan—followed a four-iwan layout, while in some cases a two-iwan scheme was employed. In fact, many urban caravanserais did not include deep and grand iwans because of functional or economic constraints. In certain instances, the chambers located along the main axes were arranged in a way that suggested a two- or four-iwan plan. Additionally, the construction of upper floors above the ground level produced varied and diverse layouts. In many urban caravanserais, the upper floor was slightly recessed compared with the ground floor, creating a mezzanine or arcade in front that provided access to the chambers on that level (Soltanzadeh, 2001: 73).

From a climatic perspective, it can be observed that Tims, Timchehs, and urban caravanserais—whether vaulted or non-vaulted—were built in both cold and hot-arid regions. Vaults proved effective in moderating temperatures in both climatic conditions. Additionally, the height of the vaults and the size of their openings were generally greater in hot-arid areas than in cold regions. In cold regions, the materials used in these commercial centers, similar to those in other market buildings, were primarily masonry, and the vaults were mostly constructed as domes or arches. In these areas, some commercial centers also included basements, which served mainly for goods storage and, in certain cases, as resting places where shop owners could benefit from their relatively moderate temperatures (Ghobadian, 2013: 202).



# The Historical Bazaar of Kermanshah and Its Urban Caravanserais

The Kermanshah Bazaar, as one of the main components of the city's historical fabric, has a history of approximately two hundred years and can be examined across three historical periods: Zand, Qajar, and Pahlavi periods (Fig. 2).

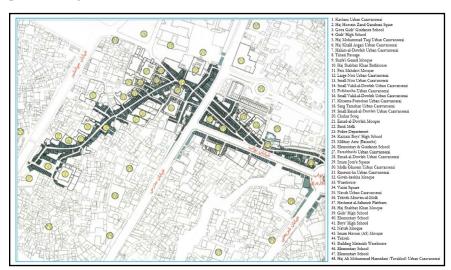


Fig. 2: The extent of the Historical Bazaar of Kermanshah (Archive of Kermanshah Province Cultural Heritage, Handicrafts, and Tourism Organization, 2008). ▶

## Kermanshah Bazaar during the Zand Period

During this period, due to the security of roads and the provision of infrastructure, commerce was promoted; however, trade in Kermanshah was local and modest, with limited connection to the international network (Olivier, 1992: 176). The Zands constructed a bazaar called "Tarikeh Bazaar" in the Feyz-Abad neighborhood, which was small and local, and during the Qajar period it became a place for goods exchange. This section of the bazaar has been largely destroyed in recent years, and the only remaining trace is the passage that once formed the covered row of the bazaar (Hashemi, 2013: 99).

## The Bazaar of Kermanshah during the Qajar Period

The interest of European countries in trade coincided with the rise of Mohammad Ali Mirza Dowlatshah, the eldest son of Fath-Ali Shah, and his attempts to establish stability and encourage commerce. For a period of 100 years (1807–1906 CE / 1186–1285 SH), peace and security largely prevailed in the region. Conflicts with the Ottoman Empire decreased, resulting in a century of relative peace. Necessary infrastructure—such as roadside caravanserais, road security officers, fair customs regulations, the rulers' support for trade, the presence of British and Russian consulates,



and the Ottoman commitment to sustaining commerce—all contributed to the flourishing of trade in Kermanshah (Isavi, 1983: 236). Consequently, England, the Ottoman Empire, and Russia became active in Kermanshah through the involvement of non-Kurdish merchants. At the same time, the prosperity of Kermanshah's commerce attracted migrants from many parts of Iran, particularly from Isfahan, Kashan, Shiraz, Shushtar, Yazd, Tehran, Tabriz, Hamadan, and Arak (Grothe, 1990: 99).

During the Qajar period, the Kermanshah Bazaar took shape as a traditional bazaar. It began at the "Sar Ghabr Agha" Gate in the west of the city, crossed the Abshuran River, and extended to the "Chiya Sorkh" Gate in the east. The bazaar itself served as the main route for caravan movement and functioned as the central hub of trade, flanked on both sides by urban caravanserais. The bazaar axis was considered a major commercial center along the main Tehran–Baghdad route (Hashemi, 2013: 100). The development and evolution of the bazaar during the Qajar period can be divided into three chronological stages:

## Initial Stage (1747–1801 CE / 1120–1180 SH)

During this period, Dowlatshah [the governor of Kermanshah province] played a prominent role as a merchant and supported trade insofar as his own interests were not at risk. He was fully aware of Kermanshah's strategic position for commerce and actively promoted the construction of its bazaar. Consequently, large bazaars that were spacious, well-lit, wide, vaulted, and constructed of brick were built during this time (Buckingham, 1830: 179). According to the map (Fig. 3), seven bazaars from this period can be identified, including the Shahi Bazaar and the Chal Hassan Khan Bazaar, both commissioned by Dowlatshah and his mayor, Hassan Khan. Other structures, such as the Haj Shahbaz Khan Mosque and Bath, the Navab Aliyeh Mosque, and his caravanserai, were also constructed during this period. The caravanserai was later demolished with the construction of Rashid Yasemi Street, whereas the mosques have remained intact (Hashemi, 2013: 103).

## Middle Stage (1851–1881 CE / 1230–1260 SH)

During this period, trade—and consequently the bazaar—expanded significantly. Commercial activities extended westward along the Chal Hassan Khan and Qeysariyeh Bazaar rows, transforming the bazaar into the city's main commercial artery and economic center. At this time,

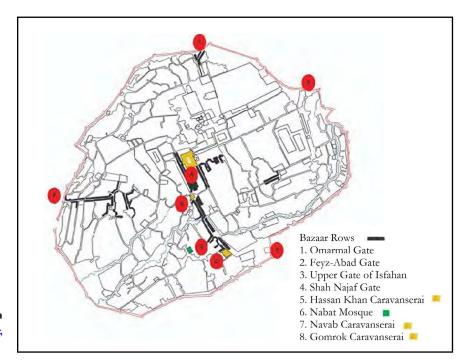


Fig. 3: The condition of the Kermanshah Bazaar in 1850 CE / 1229 SH (Mehryar, 2008). ▶

numerous mosques, urban caravanserais (saras), Tims, bazaar rows, and Chahar Souqs were constructed, all contributing to the continuous growth of the bazaar (from the Bazaz Khaneh and Jewish Bazaar to the terminus of the Vakil al-Dowleh complex). The Vakil al-Dowleh urban caravanserai, Emad al-Dowleh urban caravanserai, Molla Ghasem urban caravanserai, Isfahani urban caravanserai, and Khorma-Furushan urban caravanserai were all built during this era (Fig. 4), (Hashemi, 2013: 110).

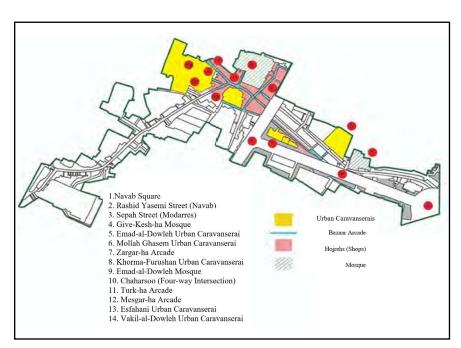
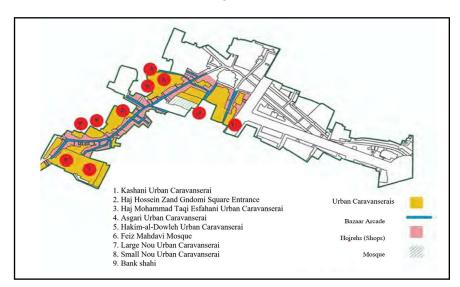


Fig. 4: Expansion of the Kermanshah Bazaar during the Middle Period (1230–1260) (Clark & Clarke, 1969). ▶



## Final Period (1881-1925 CE / 1260-1304 SH)

During this period, the economic and social conditions of the country and the Kermanshah province were unfavorable, as the Kermanshah Bazaar primarily functioned as a hub for the transfer of goods and operated according to its own internal logic. This logic was centered on meeting the needs of the central countries rather than serving local relationships. The British and Ottoman governments worked to ensure the security of the trade routes, which sustained the bazaar and prevented its decline, while merchants played a significant role in the construction of market buildings. During this time, the bazaar expanded eastward and westward. On the western side, it extended from the Vakil al-Dowleh complex toward 'Allaff Khaneh Square and Darb Tavileh. On the eastern side of 'Allaff Khaneh Square, a large caravanserai known as the Kashani Caravanserai was constructed (Keshavarz, 2003: 771). The Rasteh-e-Turks was bounded on the east by the Rasteh-e-Serraj-ha and on the west by the beginning of the Rasteh-e-'Allaf Khaneh. From there, the Rasteh-e-'Allaf Khaneh extended westward until it reached the 'Allaf Khaneh Square. Along this route, several structures were built, although no surviving evidence clarifies their date of construction or patrons. Among these were the Hakim al-Dowleh urban caravanserai, the Nou urban caravanserai—consisting of a small caravanserai and a larger one with the Imperial Bank located at its center and finally, the 'Allaf Khaneh Square, marking the present westernmost end of the Kermanshah Bazaar (Fig. 5), (Hashemi, 2013: 112).



After this period, the situation of the Kermanshah market deteriorated, leading to its gradual decline. Among the factors

◆Fig. 5: The growth and development of the Kermanshah Bazaar (western section) during the final period (1260–1304 SH / 1881–1925 CE), (Clark & Clarke, 1969).



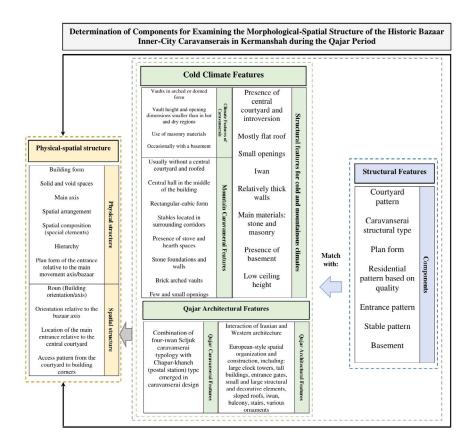
contributing to the decline of commerce and the relocalization of the Kermanshah market were, first, the upgrading of production tools and transportation infrastructure, which required substantial foreign and domestic capital. Consequently, neither the British, Ottoman, and Russian governments nor domestic and foreign merchants were willing to invest in this sector. Second, tribal nobility and lord-serf relations presented serious obstacles to capital accumulation (Fouran, 2013: 37). The construction of the national railway also contributed to the diminishing commercial significance of Kermanshah. With the outbreak of World War II, Kermanshah's commerce became further restricted, and in the subsequent years, no recovery occurred, eventually reverting the market to a primarily local function (Pashazadeh, 2012: 61). Furthermore, during the Pahlavi era, with the construction of several streets, including Sepah Street (currently Modares) and Javanshir Street, the Kermanshah Bazaar was intersected at multiple points, and gradually, sections of it suffered significant damage or were destroyed (Hashemi, 2013: 100). The studies conducted relied on existing evidence and documents, which can be supplemented if new sources are discovered, because many of the palaces were built during the Qajar period, but no evidence exists regarding the exact dates of their construction. Based on the theoretical section of this research, the author has determined the criteria and influential characteristics for examining the urban caravanserais of the historical Kermanshah Bazaar during the Qajar period, in line with the research objectives (Fig. 6).

## **Research Sample**

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Based on the discussion presented in the theoretical section of the research regarding the historical Kermanshah Bazaar during the early, middle, and late Qajar periods, no caravanserais from the early period have survived. According to the available records, the caravanserais of this period were demolished, and the remaining urban caravanserais in Kermanshah date to the middle and late Qajar periods. Therefore, the objective of this research is to examine the caravanserais that were considered significant during the middle and late Qajar periods in terms of accessibility, size, and function. The selected caravanserais had multiple access points to accommodate both pedestrian and pack-animal entrances, operated as cohesive complexes in terms of size, and held considerable importance during the Qajar era with regard to their caravan-trading functions.





**▼**Fig. 6: Research operational model (Author, 2024).

Based on the available evidence, during the middle period, the Vakil al-Dowleh complex, which includes the Vakil al-Dowleh urban caravanserai, two open Timchehs, and the Khorma-Furush-ha urban caravanserai, functioned as an interconnected unit. In terms of accessibility, it had one entrance from the bazaar and one from the Khorma-Furush-ha caravanserai, facilitating the entry and exit of caravans with pack animals. In the final period, the Nou urban caravanserai complex, consisting of a large caravanserai, a small caravanserai, and the Imperial Bank located within the large caravanserai, had three access points: two from the bazaar and one from the current Javanshir Street, also allowing for the movement of caravans with pack animals.

The Kashani urban caravanserai, located to the east of 'Allaf Khaneh Square, was connected to both the bazaar and the square, with access available from 'Allaf Khaneh Square. Access to the square itself was possible from three directions: the bazaar, Javanshir Street, and an alley. The Hamedani (Tavakkol) urban caravanserai, whose exact date of construction is unknown, is identified as a Qajar-era building and noted for its significance based on records held by the Kermanshah Cultural



Table 1: Introduction of the urban caravanserais studied in the historical Bazaar of Kermanshah during the Qajar period. (Author, 2024). ▼

Heritage Organization (Rashidi, 2014) and interviews with long-time local residents. This caravanserai was highly important due to its commercial-caravan function, its thriving activity, and its other uses, which included serving as a Russian barracks and a traditional school (Maktabkhāneh). Table 1 introduces the urban caravanserais examined in this study.

	ımber o			atial on	ıture	ral	etry	<b>x</b>	eriod	rai
Secondary	Primary	Total	Access	Size and Spatial Composition	Building Feature	Architectural pattern	Plan Geometry	Typology	Historical Period	Caravanserai Name
1	1	2	With 2 accesses: one from the bazaar (for pedestrians), one from the Khorma-Furush-ha urban caravanserai (for pedestrians and pack animals)	A complex consisting of: Vakil al-Dowleh urban caravanserai (commercial- caravan), two open Timchehs (commercial), Khorma-Furush-ha urban caravanserai (commercial), with stable	Vakil al-Dowleh urban caravanserai it has two floors (ground floor, first floor) and a basement.	Central courtyard (introversion) Two-Iwan	Rectangular and its Variations	Urban	Qajar period	Vakil al-Dowleh urban caravanserai
2	1	3	With 3 accesses: two from the bazaar (for pedestrians), one from Javanshir Street (for pedestrians and pack animals)	A complex consisting of: Nou Small urban caravanserai (commercial), Nou Large urban caravanserai (commercial-caravan), Imperial Bank of Persai (Shahanshahi Bank) in the large caravanserai, with stable	large urban caravanserai has two floors (ground floor, first floor); small urban caravanserai with one floor, without basement	Central courtyard (introversion) small urban caravanserai: with two-Iwan; large urban caravanserai of various plans	Rectangular and its Variations	Urban	Qajar period	Nou urban caravanserai
	1	1	With 2 accesses: one from the bazaar (for pedestrians) and one from Rashid Yasemi Street (for pedestrians and pack animals)	Urban caravanserai (caravan- commercial), with stable	With two floors (ground and first) and basement	Central courtyard (introversion); various plans	Rectangular and its Variations	Urban	Qajar period	Hamedani urban caravanserai (Tvakol)
	1	1	With 3 accesses via Allaf Khaneh Square: one from the bazaar (for pedestrians), one from the alley, and one from Javanshir Street (for pedestrians and pack animals)	Urban caravanserai (caravan-commercial) connected to Allaf Khaneh Square, with stable	With one floor and without basement	Central courtyard (introversion); Single-Iwan	Rectangular	Urban	Qajar period	Kashani urban caravanserai

## Vakil-al-Dowleh Urban Caravanserai

Haj Agha Hassan Vakil-al-Dowleh, who served as the British commercial and economic representative in Kermanshah between 1297 and 1310 SH,



established a complex in the Kermanshah Bazaar known as the Vakil-al-Dowleh Complex. This complex included the Vakil-al-Dowleh Urban Caravanserai, the Khorma-Furush-ha Urban Caravanserai to the west, and two Tīmchehs to the east of the main caravanserai. Based on the endowment document, it can be inferred that the Vakil-al-Dowleh Complex was constructed shortly before 1308 SH (Hashemi, 2013: 107).

This urban caravanserai is located at the intersection of the Mesgar Bazaar route (running west–east) and the Turk Bazaar route (running south–north), which converge near the large central square of the bazaar. The main entrance to the complex lies within the Turk Bazaar, flanked by chambers on both sides; beyond this passage is the gateway leading to the main courtyard. In the past, the courtyard was paved and contained a central pond and trees, elements of which no longer remain. It is currently surrounded by two-story chambers. To the west, behind the central courtyard, lies the Khorma-Furush-ha Urban Caravanserai, constructed in the same style as the Vakil-al-Dowleh Urban Caravanserai. The difference is that, due to the natural slope at its entrance, the Khorma-Furush-ha Caravanserai was built as a three-story structure overlooking the Vakil-al-Dowleh Caravanserai. It is also connected to the Isfahani Urban Caravanserai to the south, and the northern side of the complex includes a basement.

This caravanserai was officially registered as one of the national monuments of Iran in 1386 SH (Archives of the Cultural Heritage, Handicrafts and Tourism Organization of Kermanshah Province, 2010). Historically, the Vakil-al-Dowleh Urban Caravanserai served a commercial-caravan function. According to interviews with long-time market owners, it was previously used for residential purposes, while the Khorma-Furushha Caravanserai and the timchehs were primarily commercial. Today, however, the Vakil-al-Dowleh Caravanserai is largely used for storage. The chambers have been renovated, and the first-floor vaults that once functioned as corridors providing access to residential spaces have been closed and converted into windows. Both open-air chambers remain active, with rooms now used for artistic activities such as painting and weaving. Unfortunately, many of the rooms in the Khorma-Furush-ha Urban Caravanserai are damaged and require restoration.

Figs. 7, 8, and 9 present the plans and images of the Vakil-al-Dowleh Urban Caravanserai, while Table 2 provides an analysis of its structural characteristics in comparison with the climatic and architectural features of the Qajar period.



Plan

Fig. 7: Floor plans (ground floor, basement, first and second) of the Vakil-al-Dowleh urban caravanserai (Archives of the Cultural Heritage, Handicrafts and Tourism Organization of Kermanshah Province, 2010). ▶



Fig. 8: Vakil-al-Dowleh Urban Caravanserai; A: Entrance porch and eastern facade; B: West facade porch (opposite the entrance porch); C: South facade (closing the first-floor arches and converting them into windows); D: View of the open Timcheh of Vakil-al-Dowleh Urban Caravanserai (Author, 2024). ▶

## The Urban Caravanserai of Nou

The Nou urban caravanserai is situated in the Feyz-Abad neighborhood, recognized as one of the oldest and most historically significant areas of Kermanshah, within the confines of the city's historical bazaar. This structure originates from the late Qajar period, although specific details regarding the exact year of its construction remain unclear (Hashemi, 2013: 112). The urban caravanserai features a central courtyard, a corridor that runs along the east—west axis of the courtyard, and an angular courtyard located in the southeast corner. It is linked to the market square via a short corridor or hallway, although the entrance to this corridor is not particularly conspicuous. An additional entrance to the urban caravanserai is accessible through a passage that begins from the alley to the east of the complex, leading to the central opening of the eastern façade. Given that the axis



Table 2: The structural features of the Vakil-al-Dowleh Palace, and its comparison with the climatic and architectural features of the Qajar period (Author, 2024).  $\blacksquare$ 

Feature of	Climatic		Structural Features		
Qajar Architecture	feature				
*Modeled after	*Central		*Central courtyard		Yard pattern
the 2-iwan	courtyard		*Rectangular with beveled corners		Turu puotern
design with a	pattern and		*Two-Iwan		
central	introversion		Based on the model of a Two-Iwan cara	vanserai	Structural
courtyard of	*Using curved				type of Urban
the Qajar era	covering				caravanserai
(Fig. 8a and b) *Entrance	(pointed and oval arches)	Comparison with climatic and architectural characteristics of the	Irregular rectangle	T	Plan form
Iwan with	oval arches) and arches in	npa	*Location of rooms around the central		Residential
decorations	the Roman,	ari:	courtyard on 4 sides	TI 6 11	Pattern
(Fig. 8a)	rabbi and	Son	*With four rooms on each side of the	The Cell	Based On
*Semicircular	lapoush	¥.	entrance hall *Location of two rooms on each side of		Quality
arches in the	methods	th	the Iwans		Quanty
small Iwans	*Using a	clin	*With a room on the northern side of		
and chambers	veranda	nat	the basement		
(Fig. 8)	*Using a	ic ;	*Location of residential spaces on the	Residence	
*The small	basement to	md	first floor		
Iwans on the	regulate	ar	*With independent small Iwans		
first floor were	temperature	chi	* The small Iwans had access to each		
connected to each other and	*Using an arch to regulate	itec	other and acted as an arcade on the first		
functioned like	temperature	Ē	floor, which is now closed and turned		
a portico (now	*Using brick	2	into windows (Fig. 8 b and c)		
removed and	materials (in	ch	*Access to the first floor via staircases		
closed by	walls, lintels	ıra	in the corners of the western facade  *The main entrance is located on the ea		
windows)	and arches) -	cte	and has an entrance hall and no vestibule		Input pattern
	stone	rist	*It has an entrance porch on the eastern f		input pattern
	materials	ics	central courtyard (Fig. 8a)	lacade of the	
	(foundation,	$\mathbf{0f}$	*The height of the porch is two stories		
	kerb-tile and	the	*It has two arches on the arms on both	sides of the	
	plinth)		entrance porch		
	and wood (in	Qajar period:	The stables were located in the Khorm	a-Furush-ha	Stable pattern
	doors and	r p	urban caravanserai because the entranc		
	windows) *Small	eri	was possible from the Khorma-Furus		
	openings (now	od:	caravanserai and the caravansers entere		
	the openings		al-Dowleh urban caravanserai through	the corridor	
	have been		(Fig. 9). Located on the northern front of the Vaki	1 .1 D1.1	D 4
	enlarged by		urban caravanserai - connected to the base		Basement
	removing the		the central courtyard by four staircases	sement from	
	verandas and		inc central courty and by four staff cases		
	converting				
	them into				
	windows)				
	(Fig. 8 b and c)				





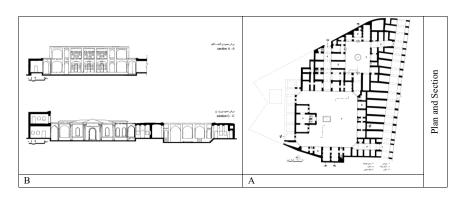
▲ Fig. 9: The Khorma-Furush-ha Urban Caravanserai; Entrance to the Vakil-al-Dowleh Urban Caravanserai), (Author, 2024).

of this entrance is perpendicular to the sides of the main courtyard and faces the two-story façade opposite it (the western façade), it seems that this corridor functioned as the primary entrance to the urban caravanserai, facilitating direct access for caravans to the building.

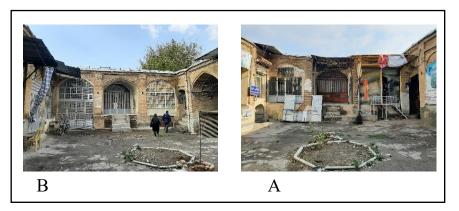
The configuration of the chambers encircling the courtyard is based on a symmetrical layout, yet the design of each side is distinct from the others. The eastern facade presents a more proportionate arrangement, with divisions set in odd numbers. In contrast, the divisions of the western facade bear resemblance to those of the eastern side, although its twostory height changes its overall character. On the northern edge of the main courtyard is the Shahenshahi Bank (Imperial Bank of Persia), a structure that stands apart from the rest of the complex. Its asymmetrical yet balanced volume juts into the courtyard's center, disrupting the otherwise consistent geometry of the space. This building was likely constructed during the late Qajar or early Pahlavi period and showcases a Western architectural influence. A smaller urban caravanserai is situated in the southeast corner of the complex, featuring a simple, one-story rectangular courtyard with basic geometry. The overall ground plan of this urban caravanserai is quite irregular (Archives of the Cultural Heritage, Handicrafts and Tourism Organization of Kermanshah Province, 2011). In earlier times, this urban caravanserai served dual purpose of commerce and caravan accommodation, with ground-floor rooms allocated for trade and the upper floor designated for lodging. At present, the smaller urban caravanserai's rooms are used for tailoring, while the larger one is utilized for fabric storage. The residential section on the first floor of the larger urban caravanserai is in a state of disrepair and requires restoration. Fig. 10 displays the plan, Figures 11–13 include photographs of the Nou urban



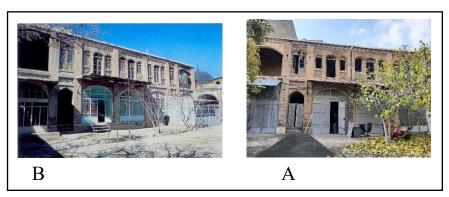
caravanserai, and Table 3 compares its structural characteristics with the climatic and architectural traits of the Qajar period.



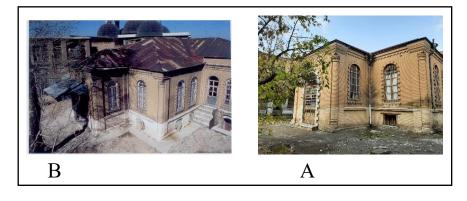
◆ Fig: 10. The Nou urban caravanserai; a)
Plan of the larger and smaller caravanserai;
b) Section of the Nou urban caravanserai
(Archives of the Cultural Heritage,
Handicrafts and Tourism Organization of
Kermanshah Province, 2011).



◀ Fig. 11: The Nou urban caravanserai; A: Eastern facade of the smaller caravanserai (Iwan in the middle of the facade); B: Western facade of the larger caravanserai (Iwan in the middle of the facade opposite the eastern facade), (Author, 2024).



◀ Fig. 12: Western facade of the Nou caravanserai (A: Archive of Cultural Heritage, Handicrafts and Tourism of Kermanshah Province, 2011; B: Author, 2024).



◀ Fig. 13: Northern facade of the Nou caravanserai; (A: Archive of Cultural Heritage, Handicrafts and Tourism of Kermanshah Province, 2011; B: Author, 2024).



Table 3: Study of the structural features of the Nou caravanserai, and comparison with climatic and architectural features of Qajar period (Author, 2024). ▼

Features of Qajar	Climatic		Structural features			
Architecture	Feature					
General plan:  *Modeled on the two- Iwan plan with a central courtyard of Qajar caravanserais (Fig. 11)	*Central courtyard pattern and introversion *Using arch		square with beveled cor	vanserai: mers ourtyard:	Central courtyard	Yard pattern
*Use of Iwan *Brick decorations on the arch and window lintels	and pediment covering		Taken from Caravanso Miscellaneous	erai Plan	Big Urban caravanserai	Structural type of urban
(Fig. 12) *Use of semi-circular arches above the door and	*Using a veranda *Using	Co	Taken from the Caravanserai	2-Ivani	Small Urban caravanserai	caravanse rai
windows (Fig. 12) *Brick designs based on	building materials	mpar	Irregular rectangle			Plan form
plant designs above the window lintels	(mainly brick-plaster and lime, soil and lime mortar) *Using stone materials (intersection of the	Comparison with climatic and architectural characteristics	*Around the central courtyard on the eastern, southern, western fronts *Around the entrance corridors	Big Urban caravan serai	the cell	Residenti al pattern based on quality
Shahanshahi Bank (Imperial Bank of Persia): Use of Western architectural style of the Qajar period including	Chinese seat and the floor of the space, the floor of the stairs, the entrance to	rchitectural cha	*Around the central courtyard on four sides *Around the entrance corridors	small Urban caravan serai		
use of gable roof, roof ridge, corner half- columns, entrance canopy, location of stairs inside the building,	the Shahanshahi Bank) *Using wood in the window and	racteristics of t	*First floor of the west the Grand urban carava * Access to the first fl staircase located on facade	nserai oor via a the west	residence	
decorations around doors and windows, facade divisions (Fig. 13)	door frames	of the Qajar period:	*Location on the northe the main courtyard caused the geometric str the main courtyard to be * Taken from Western architecture	, which ructure of reak	Shahanshahi Bank (Imperial Bank of Persia)	
		. <del></del>	*Location on the easter *With entrance hall *No vestibule *With entrance hall *Entrance set back of facade		original	Input pattern
			Located on the southers the bazaar - has an entr - no vestibule - no front	ance hall	sub	
			The courtyard of the livestock.	sara was	used to keep	Stable pattern
			No basement			Basement



#### Hamedani Urban Caravanserai

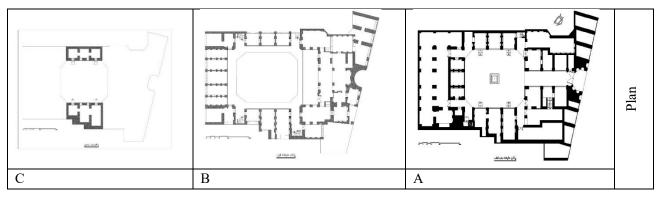
The Haji Ali Hamedani urban caravanserai was built during the Qajar period in the Feyz-Abad neighborhood, one of the oldest historical districts of Kermanshah, and was founded by Haj Ali Mohammad Hamedani. During its peak of prosperity, the building functioned as both a commercial hub and caravanserai, linked with the Tarikeh Bazaar and the Jolo-Khan Passage. It served as a place for distributing goods required by local residents and fostered trade and cultural connections with other cities by hosting and accommodating merchants. Over time, this urban caravanserai has had different functions; it was at one point occupied by Russian soldiers and used as a barracks, and for a period it also served as a school. The urban caravanserai features a central courtyard in the shape of an octagon. On the western side of the courtyard is the entrance hall, which opens onto an alley with a relatively steep slope (known as the Tarikeh Bazaar during the flourishing period of the old Kermanshah bazaar). The entrance of the building is adorned with elaborate tiling and knotwork. Flanking it are rooms that were connected to the Molabashi Bazaar. On the ground floor, there are three rooms on the north, south, and east sides, and two rooms on the west side. The entrances to some of these rooms open onto the corridors, while others face directly into the courtyard.

The entrance of the chambers also open into the courtyard. There are basements on the northern and southern sides, which were connected by two staircases descending from the courtyard; today, one staircase remains on each side. The entrance to the stables is located in the northern corridor, while the entrance to the prayer room lies in the southern corridor. On the western front of the first floor are a series of interconnected rooms, which were used to accommodate and entertain merchants arriving from other cities. In front of these first-floor rooms is a wooden portico supported by columns with decorative capitals (Rashidi, 2014). In more recent times, the building was used as a warehouse and distribution center for Kermanshahi oil, but it is now abandoned and in need of restoration. Fig. 14 presents the plan, Figures 15 and 16 show images of the Hamedani urban caravanserai, and Table 4 outlines its structural features and compares them with the climatic and architectural characteristics of the Qajar period.

#### Kashani Urban Caravanserai

On the eastern side of Allaf Khaneh Square (Gandomi Square) stands a large palace known as the Kashani urban caravanserai. Precise information





▲ Fig. 14: The Hamedani urban caravanserai (Tavakkol); a) Ground floor plan; b) First floor plan; c) Basement plan (Rashidi, 2014).



Fig. 15: Hamedani urban caravanserai; A: The northern facade of Hamedani caravanserai; B: Southern facade of the caravanserai; C: Western facade of Hamedani caravanserai; D: Eastern facade (Author, 2024). ▶

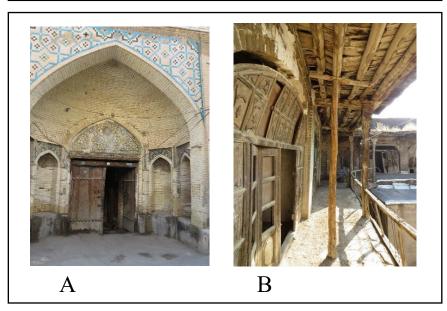


Fig. 16: Hamedani urban caravanserai; A: Main entrance; B: Columned portico on the first floor (Author, 2024). ▶



Table 4: Study of the structural features of the Hamedani caravanserai (Tavakkol), and its comparison with the climatic and architectural features of the Qajar period (Author, 2024). ▼

<b>Characteristics</b> of	Climatic feature		Structural features	
Qajar Architecture				
*Modeled after the single-Iwan design	*Central courtyard pattern and		*Central courtyard *Octagonal in shape	Yard pattern
with a central courtyard of the Qajar era *Entrance hall with decorations (Fig. 16a) *Columnized porch with wooden capitals (Fig. 16b)  *Semicircular arches above doors and windows (Fig. 15 A and B) *Using designs and	introversion and rectangular plan  *Use of curved covering (singular vault, quadripartite vault, and three types of flat vault)  *Use of basement for temperature regulation  *Use of stables as a buffer space  *Use of brick materials and stone and wood foundations  *Use of awnings for ground floor rooms (dock = columned porch in front of ground floor rooms)	Comparison with climatic and architectural characteristics of the Qajar per	Irregular rectangle  *Has three rooms on the northern, southern and eastern sides of the central courtyard *Has two rooms on the western side of the central courtyard *Has three rooms on the northern and southern sides of the basement *Has a columned portico in front of the rooms on the first floor (northern and eastern sides)  *Nested rooms on the west side of the first floor *Access via a staircase in the entrance hallway	Structural type of urban caravanse rai  Plan form Residentia 1 pattern based on quality
patterns on wooden doors and windows			*Location of the main entrance on the western facade - with a front porch and entrance hall *Retreat of the main entrance relative to the facade *Has a half-domed entrance hall	Input pattern
ABITA		iod:	Location on the eastern front - connection through the corridor on the northern front of the central courtyard  Located on the north and south fronts - connected by two staircases from the central courtyard	Stable pattern basement
			Contair Courty and	



about this palace and its founder is lacking; the only documentary evidence concerning the building's history is a deed of endowment issued in 1349 SH in the name of Mehdi Kashanian.

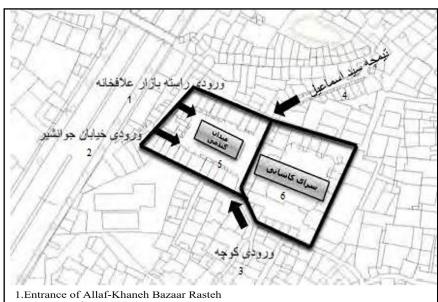
According to the endowment certificate, the urban caravanserai is recorded as the property of Mohammad Mehdi Kashani, not as a building he constructed. Because this document does not mention the building's construction or its founder, and in the absence of other evidence, it is not possible to determine the date of its construction; however, it is probable that this building, like other structures in this part of the bazaar, dates back to the late Qajar period (Hashemi, 2013: 111). The urban caravanserai was constructed on a single storey, with a central courtyard and a single porch; its function was to provide lodging for travelers who frequently visited the city for trade and commerce. The entrance to this urban caravanserai is on the southern façade, and, after passing through the vestibule and corridor, one reaches the building's main courtyard.

Chambers are arranged around the central courtyard on the northern and western sides and are accessed from the courtyard; additionally, there are five chambers flanking the entrance that open onto Allaf Khaneh Square. The eastern front of the central courtyard comprises vacant land, behind which seven rooms are accessed via an alley. According to the current plan, the passenger accommodation spaces lie behind the rooms on the northern front. The stable areas occupy the northeastern corner of the central courtyard, with access to them provided via the courtyard and a vestibulelike space (Archives of the Cultural Heritage, Handicrafts and Tourism Organization of Kermanshah Province, 2012). Unfortunately, the building is presently abandoned and requires reconstruction and restoration owing to its dilapidated and damaged condition. Figures 17 and 18 illustrate the location and plan of the Kashani urban caravanserai; Fig. 19 presents photographs of the palace, and Table 5 summarises the structural features and compares them with the climatic and architectural characteristics of the Qajar period.

## Research Findings

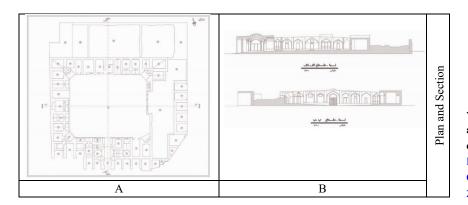
To analyse the selected urban caravanserais of the historical Bazaar of Kermanshah during the Qajar period, we extracted physical-spatial structure criteria based on an operational research model (Fig. 6). To characterize the physical structure of the urban caravanserais, we examined criteria including building form, solid—void relationships, main axis, spatial





◆ Fig. 17: Aerial map of Kashani urban caravanserai and Alafkhaneh Square (Gandomi Square), (Author, 2024).

- 2. Entrance of Javanshir Street
- 3. Alley Entrance
- 4. Timcheh Seyed Esmaeil
- 5. Gandomi Square
- 6. Kashani Urban Caravanserai



◆ Fig. 18: Kashani urban caravanserai; a) Plan; b) Section of Kashani urban caravanserai (Archives of the Cultural Heritage, Handicrafts Tourism and Organization of Kermanshah Province, 2012).



◆ Fig. 19: Kashani urban caravanserai; A: South Front; B: West Front; C: North Front (Author, 2024).

Table 5: Study of the structural features of Kashani urban caravanserai, and its compatibility with the climatic and architectural characteristics of the Qajar period (Author, 2024). ▼

<b>Characteristics</b> of	Climatic		Structural Features	
Qajar Architecture	Characteristics			
			*Central courtyard *Rectangular with	Yard
			beveled corners	pattern
			*Taken from the single porch pattern	Structural
				model of the
	*Pattern of central			urban
*Modeled after the	courtyard and	Co		caravanserai
single-iwan design	introversion	m		
with a central	*Use of veranda	Comparison with	*Rectangle	Plan form
courtyard of the Qajar	*Use of arch and	son	*Location of the chambers   the cell	Residential
period	vault covering	₩.	on the northern, eastern and	Pattern
* With an arch next to	*Use of dome	th	western sides of the central	Based
the entrance porch in	covering for the	clin	courtyard	On
the central courtyard	entrance vestibule	climatic and architectural characteristics of the Qajar pe	*Five chambers on each	Quality
(Fig. 19 A)	*Use of building	c a	entrance arm and access to	
	materials mainly	nd	them from the Allaf Khaneh	
	brick	arc	Square (Gandomi Square)	
	*Use of rectangular	hit	*Seven chambers on the	
	plan shape	ectu	eastern side and access to	
		ıral	them from the alley	
		ch	*Residential spaces behind residence	
		ara	the chambers of the northern	
		cte	facade	
		rist	*Located in the middle of	
		ics	the western facade of the	
		of t	central courtyard	
		he	Located on the southern side of the	Input
		Qaj	central courtyard - has a corridor and	pattern
		ar	vestibule - has an entrance Iwan in the	
		per	central courtyard - has two arches in the	
		riod:	arm of the entrance porch (Fig. 19 A)	64 - 1-1 -
		••	*Located in the northeast corner of the	Stable
			central courtyard - has a vestibule-like	pattern
			space to connect the central courtyard	
			with three stable spaces *In the northwest corner are also spaces	
			similar to the stable pattern, which are	
			now destroyed and are likely to be stables	
			No basement	basement
			INO DASCINCIIL	Dasement



arrangement, spatial composition, hierarchy, and the shape of the entrance plan relative to the movement path.

Table 6, 7 and 8 summarizes the physical structure of the selected study centers. In all four of the studied urban caravanserais, the building plan is rectangular and introverted around a central courtyard, and the spatial arrangement of the main elements has developed around the central space (central courtyard); furthermore, depending on the function and characteristics of the design field, they have been complemented by other service organs (stables and storage) and communication organs (entrances and accesses). All four urban caravanserais of Vakil-al-Dowleh, Nou, Hamedani and Kashani had a commercial-caravan function. The largest portion of space is allocated to the chambers, with commercial chambers located on the ground floor in all four urban caravanserais. Also, the small iwans, as intermediate communication spaces between the chambers and the mezzanine, are shaped by the form of the chambers. Residential spaces are located on the first floor in the three urban caravanserais of Vakilal-Dowleh, Nou, and Hamedani, and on the ground floor in the Kashani urban caravanserai; the share of residential space in the Vakil-al-Dowleh urban caravanserai is greater than in the other urban caravanserais. Given the commercial-caravan function of each of the four urban caravanserais, access to the stable space in the Hamedani and Kashani urban caravanserais is provided via the corridor and vestibule. In the Vakil-al-Dowleh urban caravanserai, owing to its connection with the Khorama-Furusha-ha urban caravanserai and its convenient street access for livestock entry, the stable space is located at the entrance to the Khorama-Furusha-ha urban caravanserai. In the Nou urban caravanserai there was no dedicated stable area and, likely based on evidence in the central courtyard (where elements for tying livestock occur), the courtyard itself was used to keep animals.

The share of stable space in the Hamedani urban caravanserai is larger than in the other buildings. The entrance and access spaces in these urban caravanserais are designed to serve communication and trade with the various sections of the bazaar and its ancillary spaces, and the main axis in these urban caravanserais coincides with the principal entrance axis. The movement path also acts as a connecting element between the interior and exterior spaces of the building, as the analysis of these urban caravanserais shows. The hierarchy of porch—doorway—vestibule—hallway—porch is established along the linear entrance sequence in the urban caravanserais under study. Also, regarding the entrance shape relative to the movement



path, the three urban caravanserais Nou, Hamedani, and Kashani display a set-back entrance form in the design to emphasise the entry and improve legibility, whereas the Vakil-al-Dowleh urban caravanserai presents an entrance aligned with the body of the bazaar.

Table 6: Analysis of the physical layout of the historical bazaar urban Caravanserais located in Kermanshah (Author, 2024). ▶

<b>Spatial Arrangement</b>	Main axis	Solid and void space	<b>Building Form</b>	Name
				Vakil-al-Dowleh
		6		Nou
				Hamedani (Tavakkol)
				Kashani

Table 7: Analysis of the physical layout (Spatial Composition) of the historical bazaar urban Caravanserais located in Kermanshah. (Author, 2024). ▶

	Spatial Composition	(special elements)		Name
Stable	Residential space	Entry and Access	Iwan and Veranda (Ivanche)	
	* 701		THE STATE OF THE S	Vakil-al- Dowleh
The central courtyard is used for keeping livestock.	First floor, west front (plan not available)			Nou
				Hamedani (Tavakkol)
				Kashani

In examining the spatial organization of the urban caravanserais, criteria including orientation, relationship to the bazaar, entrance placement in relation to the mezzanine, and forms of access to the building's corners were analyzed. The spatial organization of the urban caravanserais within the historical bazaar of Kermanshah is based on a central arrangement.



The shape of the entry plan relative to	Hierarchy	Name	
the main movement path / market	Path Shape	Access Arrangement	
Sitting Back	Linear	Porch - Doorway - Hallway	Nou
Parallel	Linear	Porch - Doorway - Hallway -	Vakil-al-
		Porch	Dowleh
Sitting Back	Linear	Front Porch - Porch - Doorway	Hamedani
		- Hallway	(Tavakkol)
Sitting Back	Linear	Porch - Doorway - Vestibule -	Kashani
		Hallway - Porch	

◀ Table 8: Continuation of the physical organization (Hierarchy and the shape of the entry plan) of the urban Caravanserai of historical bazaar of Kermanshah (Author, 2024).

The Nou caravanserai contains two central courtyards connected by a linear axis of access. In identifying the Rons of the palaces, all four urban caravanserais—Nou, Vakil-al-Dowleh, Hamedani, and Kashani— adhered to the principles of the Ron. In examining the orientation of the entrance axis and the longitudinal axis of the urban caravanserais under study with respect to the main movement path or market line, two methods—perpendicular and parallel—were employed. Regarding the position of the main entrance relative to the mezzanine and the form of access from the mezzanines to the corners of the building, it can be observed that all examples, taking into account the surrounding neighbourhoods and the form of the straight movement path, provide access to the mezzanine through entrances aligned with perpendicular axes. Otherwise, the entrance is rotated relative to the mezzanine's main axis and placed at its corner. Access to the corners of the building was generally rectangular, sometimes with bevelled or octagonal corners, while the secondary accesses were rectangular. Table 9 presents the spatial structure of the selected urban caravanserais included in this study.

#### Discussion

In general, the factors influencing the formation of urban caravanserais in the traditional market of Kermanshah during the Qajar period can be classified into two groups: internal and external factors. During the Zand period, although trade was emphasized, commerce in Kermanshah remained local and underdeveloped, with only limited connections to international trade. In the 13th century, the Iranian economy became dependent on the emerging global economy and international markets through the initiatives of Western investors and Iranian merchants, and the city of Kermanshah also benefited from this development.

During the reign of Dowlat Shah, trade flourished in Kermanshah due to essential infrastructure such as roadside caravanserais, road security, trade agencies, and the presence of British and Russian consulates,

Table 9: Analysis of the spatial organization of the urban caravanserais in Kermanshah's historical bazaar (Author, 2024). ▼

The form of access to the corners of the building		Entrance (main) to the intersection	Market orientation		Ron	Name
Sub	Original		main axis	Input axis		
Rectangle	Rectangle With Beveled Corners	Main: Middle - Sub: Corner	Parallel	Vertical	Isfahani	Nou
-	Octagonal	The Middle	Vertical	Vertical	Rasteh	Vakil-Al- Dowleh
-	Rectangle with Beveled Corners	The Middle	Vertical	Vertical	Isfahani	Hamedani (Tavakkol)
-	Octagonal	The Middle	Vertical	Vertical	Rasteh	Kashani

along with the interests of the Ottomans. As a result, both Britain and the Ottoman Empire sought to expand their share in the Kermanshah bazaar, strengthen their financial networks, and facilitate commercial exchange. Consequently, the Baghdad–Kermanshah trade route gained great importance during the Qajar period as a central hub for Iran's needs and exerted significant influence on both the country and the city of Kermanshah. These factors provided the foundation for the expansion and consolidation of the Kermanshah bazaar during the early, middle, and late Qajar periods and constituted the most important elements in the formation of urban caravanserais.

Findings from the study of four major urban caravanserais of the Qajar period in the traditional bazaar of Kermanshah (examined in



terms of access, size, and function) indicate that Vakil-al-Dowleh, Nou, Hamedani, and Kashani shared broadly similar architectural forms and fulfilled combined commercial and caravan functions. Their general structure is introverted, organized around a central courtyard. The Vakil-al-Dowleh and Nou urban caravanserais employ a two-iwan layout, while the Kashani and Hamedani urban caravanserais use a single-iwan design. The iwans of the Vakil-al-Dowleh urban caravanserai are more elaborate than those of the other three, both in decoration and height (two stories) (Fig. 8A & B), while the porches of the other three complexes are closer in form to simple arches.

The rooms in all four urban caravanserais are arranged on the ground floor around the central courtyard, with residential spaces located on the first floor (except in the Kashani urban caravanserai, where residences are on the ground floor). In the Vakil-al-Dowleh urban caravanserai, part of the first-floor residential spaces on the northern façade, distinguished by its gable roof, appears not to have been constructed simultaneously with the other sections, as arches were used on the remaining façades of this urban caravanserai. From the perspective of cold-climate adaptation, all four complexes employed arches (to regulate temperature) and locally available building materials, while in the Vakil-al-Dowleh and Hamedani urban caravanserais, basements were also incorporated for thermal regulation.

The presence of verandas in the Vakil-al-Dowleh urban caravanserai and the small iwans in the Hamedani urban caravanserai (a similar feature can be observed in the urban caravanserai of the Hamedan Bazaar), in addition to their communicative function, served to protect against rain and regulate direct sunlight, although the verandas of the Vakil-al-Dowleh urban caravanserai have now been enclosed and converted into large windows, which is not consistent with cold-climate considerations (Fig. 8B & C). In addition, the inclusion of elements such as the gable roof (a characteristic of Russian architecture) in part of the Vakil-al-Dowleh urban caravanserai and the Shahanshahi Bank (Imperial Bank of Persia) building in the Nou urban caravanserai; semicircular arches above the doors and windows in the Vakil-al-Dowleh, Nou, and Hamedani urban caravanserais; arches (also associated with Russian architectural influence) in the Kashani urban caravanserai; and brick motifs derived from plant-based designs above the doors and windows in the Nou and Hamedani urban caravanserais all demonstrate the stylistic features



of Qajar architecture, which was influenced by Western, particularly Russian, architecture in Kermanshah.

The results obtained from the physical-organization studies also indicate that the form of the buildings in these four urban caravanserais is derived from a rectangular plan. The solid-to-void ratio in the Nou, Vakil-al-Dowleh, and Kashani urban caravanserais is approximately two to one, while in the Hamedani urban caravanserai it is about four to one. The spatial arrangement in each of the four urban caravanserais follows a central organization, and the functions of these complexes have influenced the characteristics of specific design elements as well as the relationships among their constituent parts.

Thus, in the Nou urban caravanserai and Vakil-al-Dowleh urban caravanserai, due to their commercial function, the largest share of space is allocated to the rooms, while in the Hamedani urban caravanserai and Kashani urban caravanserai, the greatest share of space after the rooms is dedicated to living areas, stables, and storage spaces. The entrances and circulation routes of these urban caravanserais are determined according to their commercial role and their level of connection to the market square. The Nou urban caravanserai has three entrances (one main entrance and two secondary ones), whereas the other urban caravanserais each have a single main entrance aligned with the primary axis of the complex. The hierarchy of entrances in the urban caravanserais follows a sequence of front porch – doorway – vestibule – hallway – porch, arranged in a linear layout. The entrance plan is set back from the circulation path to enhance legibility in the three urban caravanserais of Nou, Hamedani, and Kashani, while in the Vakil-al-Dowleh urban caravanserai it is aligned with the order of the bazaar.

The results of the analysis of spatial organization further indicate that all four urban caravanserais examined conform to the principles of Ron. The Vakil-al-Dowleh and Kashani urban caravanserais are oriented according to the Rasteh Ron, while the Nou and Hamedani urban caravanserais are oriented according to the Esfahani Ron. Regarding the orientation of the entrance axis in relation to the traffic route (bazaar route), in all four urban caravanserais the entrance is perpendicular to the traffic route. The main axis is also perpendicular in the Vakil-al-Dowleh, Hamedani, and Kashani urban caravanserais, whereas it is parallel to the bazaar traffic route in the Nou urban caravanserai. The climatic orientation (east—west extension of the building) and the presence of adjacent functional spaces



along the bazaar route can be identified as influential factors in whether the design expanded vertically or parallel to the traffic route. Concerning the location of the main entrance, all four urban caravanserais feature a central access form leading to the mezzanine, and the mezzanine accesses located at the corners of the buildings employ a rectangular configuration with beveled and octagonal corners. Table 10 presents a comparative summary of the structural characteristics and the physical–spatial organization of selected urban caravanserais in the historical bazaar of Kermanshah during the Qajar period.

#### Conclusion

In response to the initial research question, "What were the factors influencing the development of Kermanshah's bazaars and urban caravanserais during the Qajar era, and what impact did they have on the physical structure of the buildings?" it can be observed that among the internal factors were the weakness and lack of prosperity of Kermanshah's local trade and market during the Zand period, which facilitated the establishment of the necessary infrastructure for international trade during the Qajar period. Among the external factors was the establishment of British, Russian, and Ottoman consulates in Kermanshah, which significantly contributed to the flourishing of bazaar trade in the city, particularly in the late Qajar period, when the British and Ottomans endeavored to maintain the bazaar's prosperity. Another internal factor was the influx of merchants from neighboring cities such as Isfahan, Kashan, Shiraz, Shushtar, Yazd, Tehran, Tabriz, Hamedan, and Arak to Kermanshah. All these factors were crucial in the development and expansion of Kermanshah's bazaars and urban caravanserais.

This has resulted in the incorporation of historical, political, cultural, and local elements into the physical design of significant structures. Additionally, an internal factor was the influx of merchants from nearby cities such as Isfahan, Kashan, Shiraz, Shushtar, Yazd, Tehran, Tabriz, Hamedan, and Arak into Kermanshah. Collectively, these elements were crucial in the development and expansion of Kermanshah's bazaar and urban caravanserais, particularly regarding their size, accessibility, and functionality. Consequently, the inward-looking urban caravanserais, characterized by a central layout, traditional design, and climatic adaptations, are a product of the artisans' preference for local architectural styles. Furthermore, the impact of Western architecture, particularly



Russian influences, evident in the decorative elements, gable roofs, porches, arches, and semicircular arches, reflects the builders' attraction to Western architectural trends that were prominent in Kermanshah during that period.

Upon analyzing the physical composition of the unique elements throughout the entirety of these structures, it is demonstrated that the proportion of filled to unfilled space in the three urban caravanserais—Nou, Vakil-al-Dowleh, and Kashani—stands at a ratio of two to one. Within these urban caravanserais, the predominant allocation of space is primarily designated for the chambers, followed by residential areas, storage facilities, and stables.

In each of the four urban caravanserais, the areas designated for communication, such as entrances and access points, have expanded to facilitate smoother commercial interactions and traffic flow. This expansion is also influenced by the dimensions of the caravanserais themselves; notably, small iwans do not constitute a primary feature of these structures and, at times, may be entirely absent due to spatial constraints. Regarding spatial circulation, the configuration of the linear pathways in all four caravanserais is shaped by the pre-existing movement routes, specifically the market row, and is oriented perpendicular to it. Furthermore, the design of the entrance to the urban caravanserais is either recessed for enhanced spatial emphasis and clarity or aligned with the movement path, as it integrates into the market framework and is constrained by the narrowness of the rows.

The recognition of the spatial arrangement of the studied urban caravanserais indicates that the design and orientation based on climate (Ron), was a fundamental principle in the construction of these structures. Additionally, the Rasteh and Esfahani Rons were incorporated into the architectural design of the buildings. The positioning of the entrance in relation to the mezzanine is also determined by the building's function, with the primary entrances situated at the center of the mezzanine. Furthermore, the configuration of the main mezzanine's access to the building's corners illustrates that, in each of the four urban caravanserais, considerations such as diverse designs and the potential for access to service areas (including stables and storage spaces) were implemented.



Table 10: Summary and comparison of structural and spatial organization characteristics of the urban caravanserais in Kermanshah's historical bazaar during the Qajar period (Author, 2024). ▼

Kashani	Hamedani	Vakil-al-Dowleh	Nou	Criteria	
urban Caravanserai	Urban Caravanserai (Tavakkol)	urban Caravanserai	urban Caravanserai		
Single-Iwan introversion - rooms around the central courtyard - with living space and stables - main entrance from the Allaf Khaneh Square and with a vestibule and entrance Iwan - no basemen	Introversion derived from the single-Iwan design - rooms around the central courtyard - residential space on the first floor with stables - main entrance from the bazaar and with a front Iwan, vestibule and entrance Iwan - with a basement -	Introversion: 2- iwan; rooms around the central courtyard - no stables - main entrance from the bazaar and with an entrance Iwan from inside the building - with a basement	Large introverted urban Caravanserai with a different plan/Small introverted urban Caravanserai with 2-iwan; Rooms around the central courtyard-No stables or basement/Has one main entrance and two secondary entrances from the	Structural features	structural
match match	match match	match match	bazaar match match	Structure adapted to climatic characteristics Structure consistent with Qajar	-
rectangle The arena is four	Irregular rectangle The arena is twice as solid	Irregular rectangle The arena is twice	Irregular rectangle The arena is twice as	architecture building form Solid and void	
Matches the main input central	as it is void  Matches the main input.  central	as solid as it is void  Matches the main input central	solid as it is void  Matches the main input central	space main axis  Spatial arrangement	P
Cellars, storages, lodgings and stables	Cellars, storages, lodgings and stables	The highest share of cells	The highest share of cells	Spatial composition (special elements)	Physical organization
Porch - Doorway - Vestibule – Hallway - Porch Linear Path	Front porch - porch - doorway - hallway Linear route	Porch-Dormitory- Hallway-Iwan Linear Path	Archway - Doorway - Hallway Linear Path	Hierarchy and shape of the movement path	ization
sitting back	sitting back	aligned	sitting back	The shape of the entry plan relative to the market	
Rasteh	Isfahani	Rasteh	Isfahani	Ron	
vertical	vertical	vertical	vertical Input axis	Market	
vertical the middle	vertical the middle	vertical the middle	parallel main axis the middle	orientation  The main entrance location relative to the intersection	Spatial organization
octagonal	Rectangle with beveled corners	octagonal	Rectangle with beveled corners	The shape of the access to the corners of the building from the middle	nization



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#### **Conflict of Interest**

The Author declares that there is no conflict of interest while observing publication ethics in referencing.

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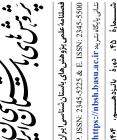
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I. استادیار گروه معماری، دانشکدهٔ هنر و معماری، واحد اسلام آباد غرب، دانشگاه آزاد اسلامی، اسلام آبادغرب، ايران.

Email: Fa.Taheri@iau.ac.in

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## حكىدە

سراهای درون شهری بازار کرمانشاه، به عنوان فضاهای نیمه باز و گرههای تنفسی، درمیان بافت سرپوشیدهٔ بازار قرار داشتند و محل تعاملات اقتصادی، مبادلات کالا و استقرار کاروانیان به شمار می آمدند. شکوفایی این سراها در دورهٔ قاجـار مرهـون ایجاد امنیت، گسترش ارتباطات با انگلستان، روسیه، حکومت عثمانی، و توسعهٔ تجارت داخلی و خارجی بود. در همین دوره، رونق تولید و بازرگانی در کرمانشاه سبب گسترش بازار تاریخی در امتداد مسیر اصلی کاروان رو شهر -که غـرب زاگرس را به شرق آن پیوند می داد - و شکل گیری منسجم سراهای درون شهری به عنوان عناصر کالبدی در ساختار بازار شد. اهمیت پژوهش حاضر از آن جهت است که باوجود جایگاه برجستهٔ بازار و سراهای درون شهری کرمانشاه در دورهٔ قاجار، تاكنون يژوهش مستقلي دربارهٔ آن انجام نشده است؛ از اين رو، هدف اين یژوهش شناخت سازمان فضایی و بررسی عناصر و الگوی ساختار کالبدی سراهای بازار کرمانشاه در دورهٔ قاجار است. مطالعهٔ حاضر به روش توصیفی-تحلیلی و موردیژوهی انجام شده است. چهار سرای درون شهری به عنوان نمونهٔ موردی انتخـاب شـدند و تاریخچـهٔ ییـداش آن هـا بـا اسـتفاده از روش کتابخانـهای و اسـناد تاریخی موردمطالعه قرار گرفت؛ سپس با روش میدانی، اطلاعات این سراها تکمیل گردید و براساس هدف پژوهش، وپژگیهای کالبدی-فضایی آنها تحلیل و بررسی شد. نتایج نشان میدهد که ازجمله مهم ترین عوامل شکلگیری بازار و سراهای درون شهری کرمانشاه، فراهم آمدن زیرساختهای امنیتی برای کاروانیان، موقعیت این شهر در مسیر بازرگانی بغداد-کرمانشاه، استقرار کنسولگری بریتانیا، روسیه و عثمانی در این شهر و مهاجرت تجار از شهرهای اطراف می باشد؛ که این عوامل، شکوفایی تجارت را به دنبال داشته و به رشد بازار و پیدایش سراهای درون شهری کرمانشاه در دورهٔ قاجار منجر شدهاند. همین امر در ساختار کالبدی سراها به صورت بهرهگیری همزمان از ویژگیهای معماری بومی، معماری قاجار و عناصر برگرفته از معماری غرب نمود یافته است. در بررسی ساختار کالبدی-فضایی چهار سرای وكيل الدوله، نو، همداني و كاشاني نيز مشاهده شد كه طرح اندام هاي گوناگون بنا متأثر از عملکرد کاروانی-تجاری و سامان بخشیدن به طبقات مؤثر و موقعیت بنا از همجواری ها تأثیر پذیرفتهاند.

**کلیدواژگان:** سراهای درونشهری، بازار تاریخی، ساختار کالبدی-فضایی، شهر كرمانشاه، دورهٔ قاجار.