Late Ottoman Architectural Style in Koya: Old Qaisaria as a Case Study

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ABSTRACT

Koya district is one of the oldest settlements in the Iraqi Kurdistan region; it has a strategic location that connects the three major cities of Erbil, Suleimani and Kirkuk; that of course enabled it to be one of the commercial stations during the Ottoman period. Koya; also known as Koysanjaq, was under the Ottoman rule starting from the 16th century until the British mandate in the end of 1918. All the remaining heritage buildings in Koya old town including houses, grand mosque and qaisarias belong to that epoch and particularly to the 19th and early 20th centuries. In many cases of these buildings, Persian scripts were found to indicate that the master builders (Austas) were from Iran. This paper aims to examine the influence of the architectural styles that were used in Turkey as the seat of the Ottoman rule, Iran, where the craftsmen came, and Iraq on developing Koya's local architectural style during the 19th century. The Old Qaisaria of Koya (1840) is chosen as a case study that exemplifies the local architectural style. The paper provides a comparative analysis of Koya's Qaisaria with other qaisarias from Iraq (Mosul), Turkey (Istanbul), and Iran (Isfahan) to find out their similarities and differences. This study provides a new insight on Koya local architectural style that could evoke further architectural studies to cover other architectural features in Koya.

KEYWORDS: Late Ottoman Architectural Style, Koya Old Town, Qaisaria, Bazaar

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1. INTRODUCTION

Koya is one of the Erbil's old districts[1]. Despite its heritage important value, Koya old town faced a great neglect through time which caused losing historic architectural features. What can be detected easily currently in the old town is the traditional architectural layer of the 19th and early 20th centuries. The lack of architectural studies that cover the built heritage of Koya old town and the fear of losing the remained architectural traditional layers that demonstrate the characteristics of the local traditional architectural style in Koya, speak volumes of the necessity of studying, documenting and protecting this valuable heritage. This paper tries to make its contribution through studying the local traditional architectural style in Koya during the 19th century.

Koya has enjoyed a strategic location that connects the three major cities of Erbil, Suleimani and Kirkuk, that location enables it also to be connected to Iran through Suleimani, to Mosul and Turkey through Erbil, and to Baghdad and Southern Iraq through Kirkuk. This location surely helped the city to be one of the commercial stations in the region during the Ottoman period (figure 1). The paper studies the influence of the nearby previously developed architectural styles namely the Ottoman architectural style in Turkey and its colonies including Iraq, and the Safavid[2] architectural style in Iran on developing Koya's local architectural style.

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[1] Recent excavations identified Satu Qala one of Koya's archaeological sites with Idu the ancient Assyrian provincial capital from the 14th to the 11th centuries B.C.; evidences also suggest that the location was occupied around the late Epipalaeolithic or early Neolithic period and other later ancient periods up to the Parthian and Sasanian Periods (Kopanias, MacGinnis, & Ur, 2015, p. 42).

[2] Though the Qajari dynasty had ruled Iran from 1796 to 1925, but the architectural style especially in the early stage of its rule was a continuation of the Safavid architectural style particularly for markets, as it was the style of the most important markets in Iran. (Yekta, 2015, pp. 281-288).

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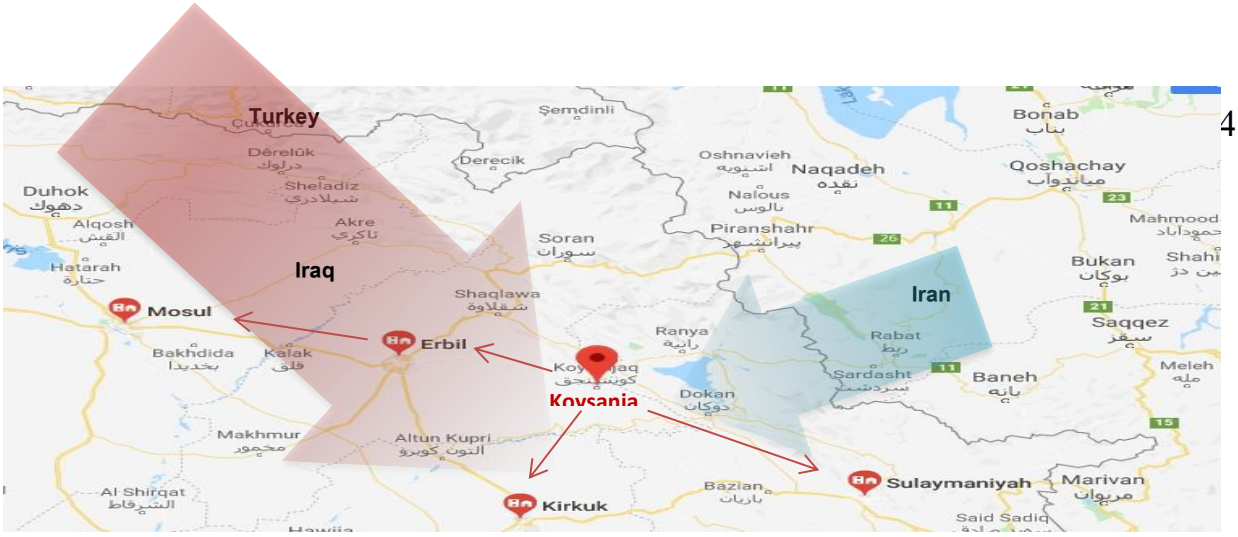


Figure 1: Koya's Location. *Source:* Authors based on (Google Maps, 2019)

One of the important traditional architectural features in Koya that reflect its role as a commercial station during the 19th and early 20th centuries is its bazaar with its two qaisarias; the Old Qaisaria which is also known as the Qaisaria of Haji Bakr Aghai Hawezi (built in 1840), some local citizens would rather call it the small Qaisaria (Figure 2); and the new Qaisaria which is known as the Qaisaria of Haji Mustafa Maskin (built in 1904), also known as the big Qaisaria. The new Qaisaria demonstrates the same features of the old Qaisaria except for the size of the qaisaria, as the second one is bigger than the first one. The old Qaisaria was clearly the reference for the new one. The old Qaisaria was chosen to detect the main characteristics of the local traditional architectural style, and to examine the connections between the local style and other nearby styles.



Figure 2: The portal of Koya's Old Qaisaria. *Source:* (Kawez, 2017)

1. METHODOLOGY

This study is exploratory in nature, to detect the possible similarities and differences between Koya's local traditional architectural style and other traditional architectural styles that were developed nearby previously. Each chosen case has a table that describes it (tables 1-4) and shows its main features and characteristics to prepare them for the comparison. A comparison was made

between Koya's old Qaisaria with three other qaisarias in Mosul, Istanbul and Isfahan. Data for this study were collected using field study, personal observations and analysis of the plans and sections, as well as relevant literature. Two tables were made to make the comparison; the first one (table 5a and b) lists the spatial relations, while the second one (table 6) lists the form characteristics. The results were summed in a third table that shows the similarities and differences among the styles (table 7).

2. FROM AGORA TO BAZAAR AND QAISARIA

3.1 Greek Agora and Stoa

According to Taghizadehvahed (2015, pp. 13-18) the Greek agora[3] and its stoa with its covered walkways or porticos and inner colonnades form the initial type of the shopping place (figure 3), as the stoa which is the main part of the agora was the place where the merchants sell their goods under its colonnades. (Taghizadehvahed, 2015)

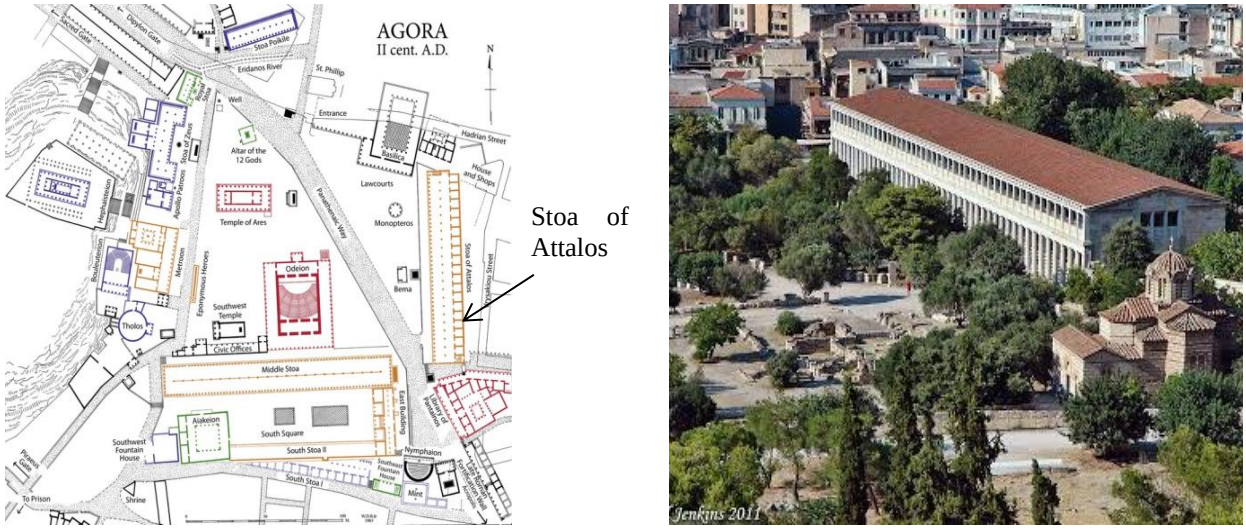


Figure 3: The Greek Agora of Athens and its Stoa of Attalos. Source: (DH Conley Visual Arts)

3.2 Roman Forum

The Roman forum was like the Greek agora; it had rectangular courtyard surrounded by shops. Various types of fora were in Roman cities with different types of markets (Taghizadehvahed, 2015). The shops of the forum of Trajan (early 2nd century B.C.) were similar to those of the 14th century in Italy; they extends to both sides of the entrance and occupy multi-storeys (Pevsner, 1997, p. 257) where the offices are located on the upper floors (figure 4). That was apparently the seed of today's shopping mall (Taghizadehvahed, 2015).

[3] Agora was the gathering and market place of the Greek polis where a wide range of public activities used to be held in; therefore, it has been usually referred to as "the heart of the ancient polis" (Dickenson, 2017, pp. 1-3)

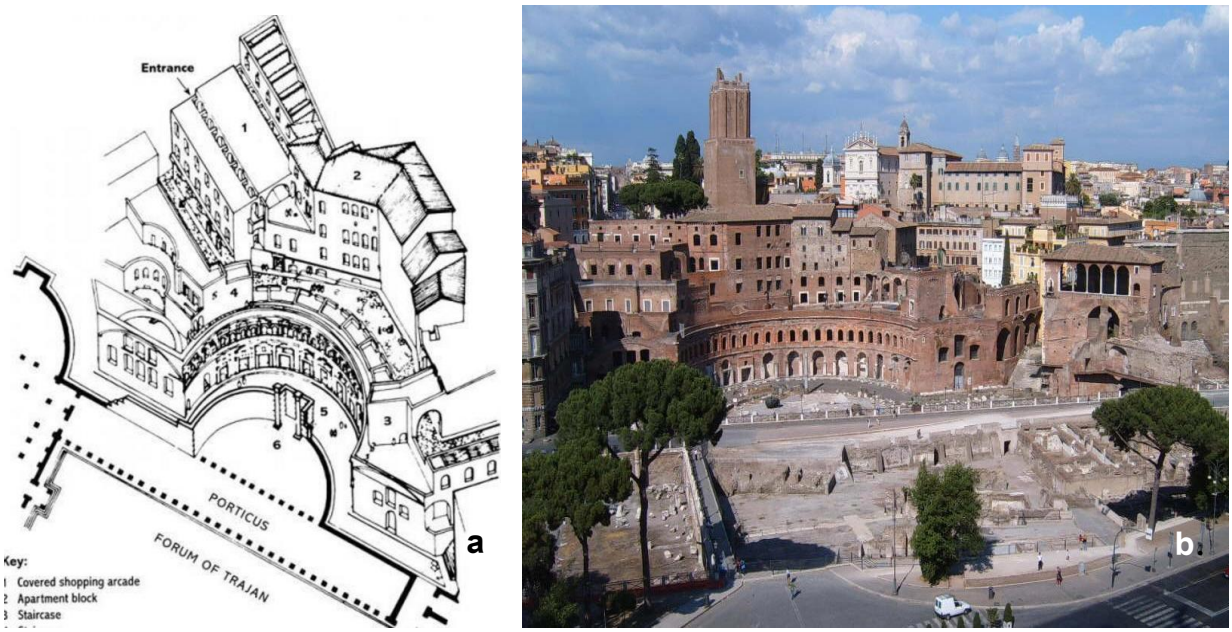


Figure 4: The Roman Forum of Trajan and the Trajan's Market in Rome.
Source: a. (Taghizadehvahed, 2015), b. (Vision Roma Past & Present)

3.3 Middle Eastern Bazaar

During the fourth century, bazaars were emerged in the Middle East along the main routes in the city. The bazaar is made of shops in vaulted streets closed by doors at each end. The size of the bazaar depends on the importance of the city. The key difference between bazaars and European markets is that the bazaar is inward looking where the shops face the covered road or inner space, while the European markets in general with shops facing outward to squares and streets. (Taghizadehvahed, 2015, p. 18) Kalan and Oliveira (2015) states that the Persian word bazaar is related to the Turkish çarşi and Italian bazzarro and that the Iranian bazaars are not only commercial centers but play also as a gathering place for social and cultural activities and that such activities are taken place there as a result of the good environmental solutions for bazaar buildings as the "climate is one of the main factors that determine the architecture of buildings including bazaars in Iranian cities" (Kalan & Oliveira, 2015, p. 6) (Figure 5). In his comparison between Turkish and Iranian bazaars Edgu (2012) remarks that the Iranian bazaars are either organic or planned, and usually located at the center of the cities, in spite of that the layouts are usually linear in shape, positioning the public and socio-cultural spaces through this linear form; and that "in Turkish social system, covered bazaars are usually built as a part of a larger complex including, hammams, soup kitchens, and such as a source of revenue for mosques, religious or charitable trusts known as vakıfs, where the donated assets cannot be turned over to individuals or institutions. In Iranian system however, covered bazaars are built by state authorities or wealthy individuals solely for the purpose of commerce, although the latter may also include mentioned public amenities. On the other hand, unlike Turkish organizations, having a strong political and/or religious demonstration tradition, Iranian covered bazaars act as a reflection of social indicator.

This distinction presents formal variations in layout and attributes semantic uses to spaces as well." (Edgü, Ünlü, Şalgamcioğlu, & Mansouri, 2012) (Figure 6)

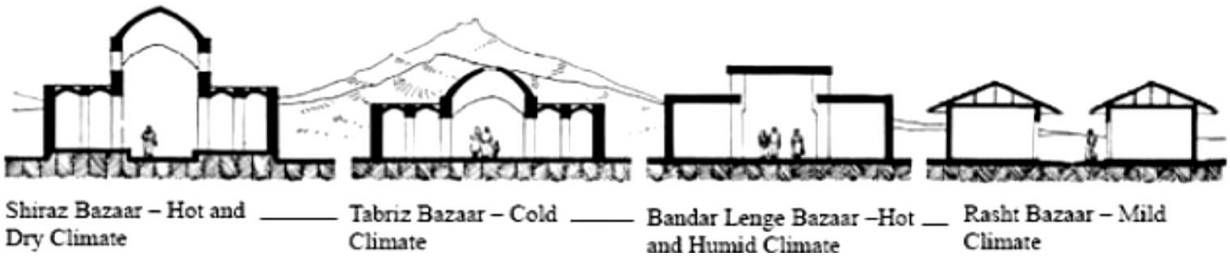


Figure 5: Climate influence on the bazaar structure in four Iranian cities. Source: (Kalan & Oliveira, 2015, p. 6)



Figure 6: View of Istanbul, Tabriz and Rey Bazaars. Source: (Pourjafar, Samani, pourjafar, & Hoorshenas, 2012, p. 46)

3.4 Qaisaria

Though we have a historic overview of the bazaars in the previous section, we still need to know more about qaisarias and how they are related to bazaars. As defined by Al-Bradosti (2011) qaisaria refers to a group of public buildings that consist of chunks of shops, sometimes with living rooms, but in the archaeological/architectural terminology, it refers to a type of commercial buildings that is known in Islamic architecture as a commercial building for marketing only. Opinions varied about the origin of the word qaisaria, as some said it could be the Sumerian *Ki-Sar* which means the place for selling; others would say it's a Latin word that refers to the Roman Caesar and might indicate a royal building, or maybe the royal market. Others think that the Greek stoa and Agora is the base of the qaisaria, but the qaisaria is only for commercial use where people can sell their goods by retail only and that goes particularly with the one-story qaisarias, some others would see it as a small khan especially that the two-story qaisarias had its upper floor for accommodation while the lower one for retailing (Al-Bradosti, 2011, pp. 221-226). According to Lewis (1937) qaisaria in Islamic cities is "a strong, closed in building where foreign goods and valuables are stored. The name is probably of Byzantine origin." (Lewis, 1937, p. 20). Gharipour (2003) in the other hand says that qaisaria is "derived from "kaisara", a Roman word, was the name

given to long roofed corridors in which shopkeepers and craftsmen with the same business show their products. In Isfahan these complexes are also called "bazaarche"" (Gharipour, 2003). Qaisarias are commonly located within bazaars or attached to them and have their own identified space with clear gates and entrances. It sounds that when qaisaria is huge in size it would tend to be publicly recognized as a bazaar just like in the case of Isfahan Qaisaria Bazaar which is also widely known as the Grand Bazaar of Isfahan, and that takes us back to the Persian name of qaisaria in Isfahan which is "bazaarche" which means small bazaar.

Al-Hadad and Malaka (2015) identify three types of commercial buildings during the Ottoman period which are the hans (khans), the bedestan, and the market (Arasta), They recognized each type according mainly to their forms; the Ottoman hans "were buildings with inner courtyards surrounded by porticos", while "most of the 15th Century Ottoman bedestans have interior cells or shops and the passage-way running along the front of these shops is covered", and "the Arasta consisted of a street with shops on both sides and it could be closed or open." It is interesting that in their study of the Ottoman commercial buildings according to the travelers' writings, Al-Hadad and Malaka note that most of those writings "about the Ottoman bazaars in Istanbul or Constantinople refer to all types of the commercial buildings under the name of market or bazaar. Sometimes they mention this word (khan or han) as a separate type of building, and they refer to the bedestan or arasta as bazaars or markets". (Al-Hadad & Malaka, 2015, p. 288) (Figure 7)That shows clearly the common mix between the terms bazaar and qaisaria, but it also shows that bazaar has a broader meaning than the qaisaria and qaisaria is a special kind of bazaars. Al-Bradosti (2011) suggests that in Turkey, qaisaria could be called arasta and also bedestan, and he refers to the bedestan as the place where valuables are sold. (Al-Bradosti, 2011, p. 223) In Al-Bradosti note about bedestan we can see that it's closer to the word qaisaria in its particularity while the arasta is like the bazaar in its broader use.

3. CASE STUDY

In this section three qaisarias were chosen to represent the famous architectural styles that were developed near Koya[4] and could be considered as references for many qaisarias in their regions. The first qaisaria was chosen from Istanbul the seat of the Ottoman rule to recognize the ottoman style there; the second case was chosen from Mosul as it was one of the main Ottomans' provinces in Iraq for centuries, and the closest to Istanbul to see how would the style vary in form when it becomes inside Iraq; and because of the strong relationships between Iraqi Kurds and Iranians especially in Koya, as it is believed that Kurds and Iranians share the same origins, moreover, the Iranian Kurds shared the same Kurdish dialectic that is used by Iraqi Kurds in Koya; Persian along with Arabic were the main language in Koya's religious schools and Koya's famous poets used to write many of their poems in Persian (Lashkry, 2019); furthermore, some of the Iranians particularly the Kurds went to Koya for work especially in construction profession; therefore, the

[4] Koya as well as the rest of Iraq was under the Ottoman rule starting from the 16th century until the British mandate in the early 20th century that started with Baghdad in 1917 and covered all Iraq including Koya in 1918. (Al-Bradosti, 2011, p. 40)

third case was chosen from Iran. Case study's descriptive tables were used to describe the main features and characteristics of the chosen qaisarias from Istanbul, Mosul, Isfahan and Koya to prepare them for comparison.

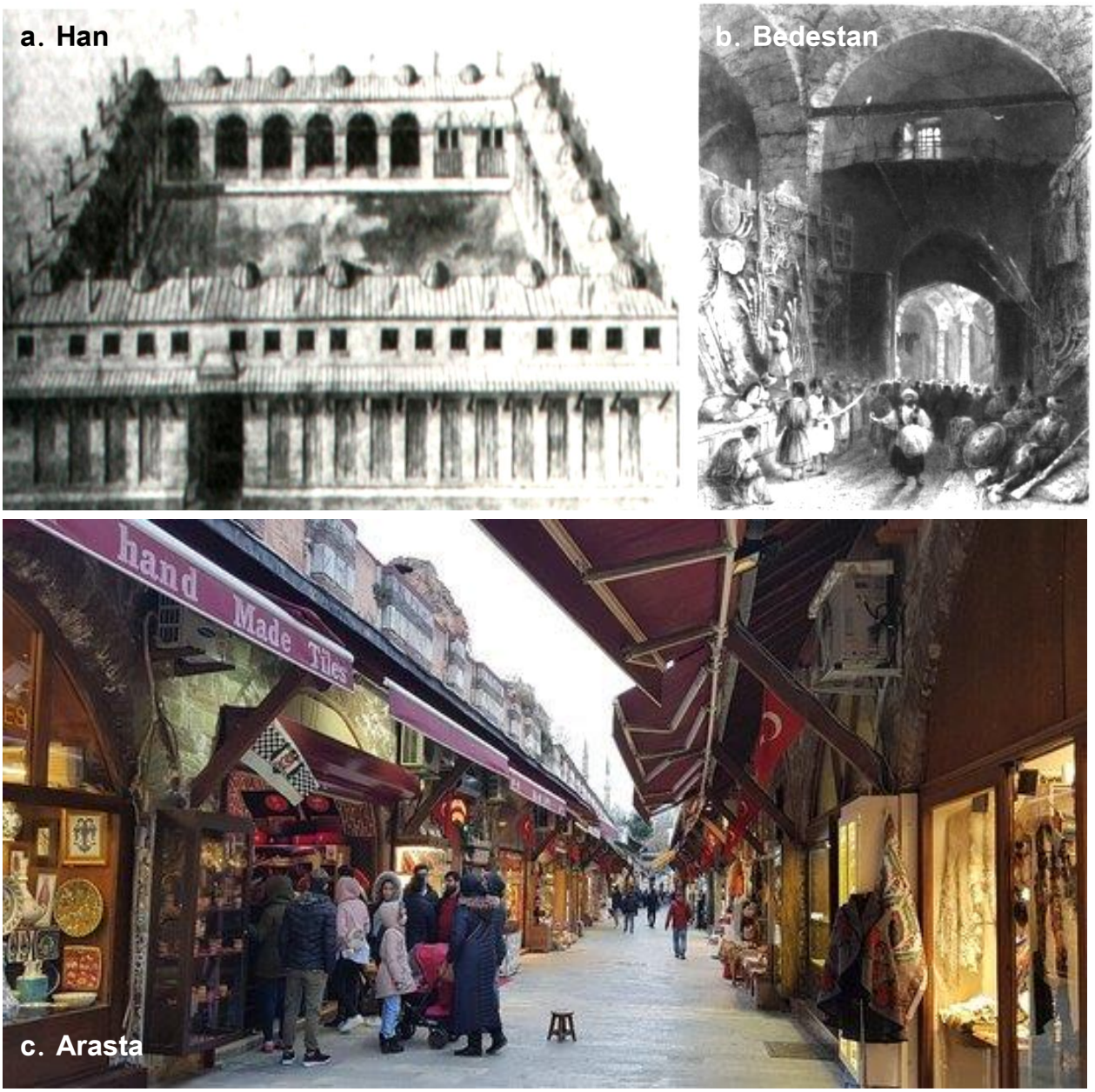


Figure 7: Types of Commercial Buildings in Ottoman Period in Istanbul.
Source: a &b (Al-Hadad & Malaka, 2015), c (Trip Advisor)

4.1 Qaisaria from Koya: Qaisaria of Haji Bakr Aghai Hawezi

According to Jelemordi (2011) the Qaisaria of Haji Bakr Aghai Hawezi was built in 1840[5] by Haji Bakr Aghai Hawezi the elder of the Hawezi clan which is one of the two big powerful clans in Koya at that time which are Hawezi and Ghafori. The qaisaria was located within the city center inside the Grand Bazaar of Koya, it faces the new qaisaria and close to Koya's Grand Mosque (Mizgawti Gawra) which was built before the qaisaria; it's also close to Mahmood Agha Grand Khan. (Jelemordi, 2011, p. 98) It is the oldest qaisaria in Koya; therefore, it is called the old Qaisaria, and it's smaller than the new qaisaria of Koya (1904) therefore it is also known as the small Qaisaria. Its total area is 553m^2 and consists of a big arcade with two smaller corridors and 32 shops distributed on both sides of the main arcade. The arcade with its seven pointed arches and domes that roof the spaces between each two arches go straight from north to south, each of its domes has a square opening on the top to provide lighting and ventilation. The qaisaria has three entrances; the southern entrance is located approximately in the middle of the southern wall, and it was built of marble and has a canopy, this entrance was decorated by ornaments that were common during the Ottoman epoch; the other two entrances were both located on the eastern wall, the first one in the middle of the eastern wall and the other one in the end of the eastern wall close to the northeast corner of the qaisaria; both northern entrances were decorated (Al-Bradosti, 2011, pp. 228-233) (Table 1).

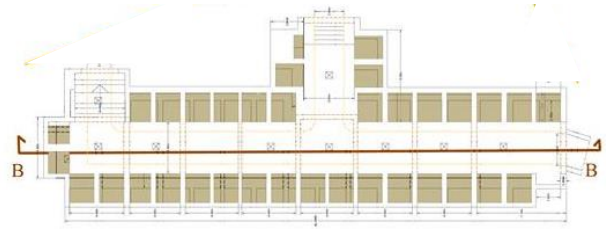


Figure 8: Inside the Qaisaria of Haji Bakr Aghai Hawezi in Koya. Source: (Kawez, 2017)

Table 1 Koya Qaisaria. Source: Authors according to (Al-Bradosti, 2011), (Jelemordi, 2011) and (Students Fieldwork, 4th Stage, 2013)

	Qaisaria of Haji Bakr Aghai Hawezi 1840	Analysis

[5] Qaisaria's building year and owner's name were clearly scripted on the curved pediment of the gate of the qaisaria (figure 2).

Location:	The old center of the city	As in the Islamic cities, the qaisaria is near the main market, and the mosque.
Plans and sections	  Section B-B 	Typical qaisaria consists of a main path, and the shops are located on its both sides, with three entrances, and gates that isolate the indoor from the outdoor and the rest of the bazaar. Each shop has a rectangular shape topped by a pointed arch. The shops are closed by wooden doors. The qaisaria is roofed by domes and vaults with openings for ventilation and lighting. The elements: arches and entrance are pointed. Limestone was used for the structure. We can see the ornaments that were carved on arched frame that enclose the gates', which are commonly used in that epoch.
Summery	The axial path of the qaisaria with the repetition of the same arches create a spatial sequence that encourages people to continue their journey, the proportion of the spaces and elements create a human scale for the qaisaria and support the enclosure of the spaces, and the unity of the shape to keep the regularity of the form.	

4.2 Qaisaria from Istanbul: Iç Bedestan

As mentioned previously in item (3.4) about the types of commercial buildings in Turkey, that the bedestan is the closest of those types to the concept of qaisaria. The bedestan determines the formation of the whole bazaar as can be seen in the covered bazaar (Pourjafar, Samani, pourjafar, & Hoorshenas, 2012, p. 43) such as the old IÇ Bedestan at the Grand Bazaar of Istanbul which was therefore chosen here as a reference for the Ottoman style in Istanbul (figure 9).

The core of what will be known later on as the Grand Bazaar was built in Istanbul in 1455/56 just after the Ottoman occupation of Constantinople, as Sultan Mehmet II ordered to have a large building for trading textiles. (Pourjafar, Samani, pourjafar, & Hoorshenas, 2012)

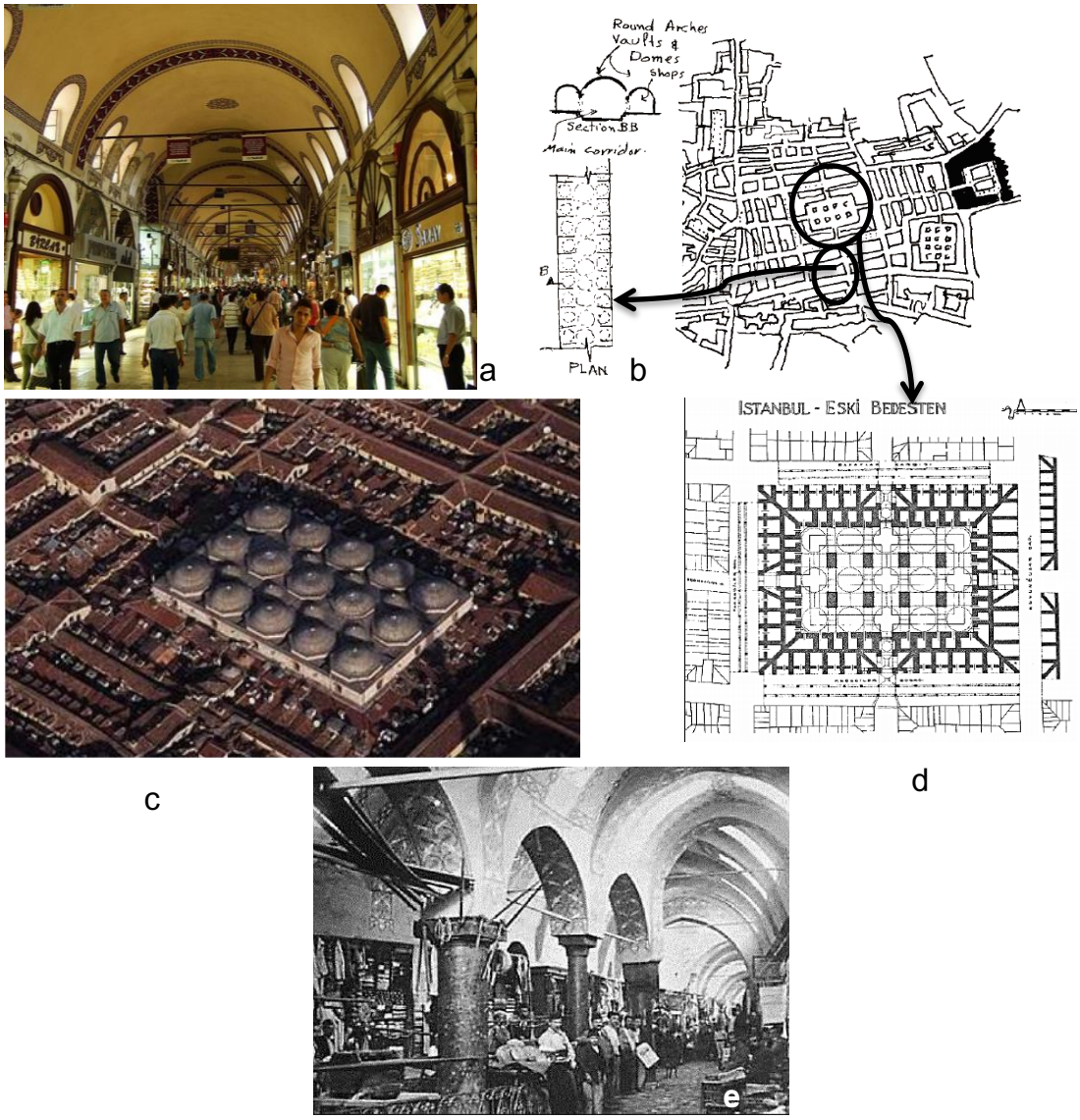
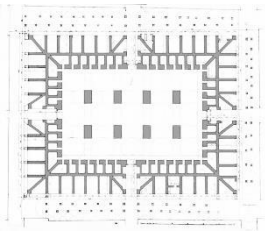
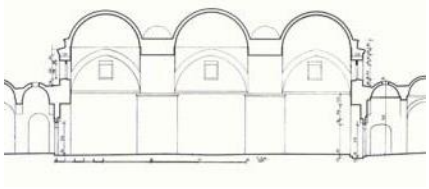


Figure 9: The Grand Bazaar in Istanbul and its Iç Bedestan. a. Inside the bazaar, b. the plan of the Grand Bazaar with its qaisaria, c. Top view of the IÇ Bedestan, d. the plan of the IÇ Bedestan, e. Inside the Iç Bedestan. Source: a (Turkey Travel Journal), b (Pourjafar, Samani, pourjafar, & Hoorshenas, 2012), c, d &e (Taghizadehvahed, 2015)

The bazaar is developed of linear strips, it is formed with the "connections of Rastes[6] acting as gridiron building blocks" (Pourjafar, Samani, pourjafar, & Hoorshenas, 2012, p. 43) Iç Bedestan (inner bedestan) is covered and enclosed building that act as the core of the bazaar and dedicated for selling valuable textiles, and it's the oldest one of the two bedestans of the Grand Bazaar; its area is around 1332 m^2 with a gate in the middle of its sides and covered by 15 domes and 3 rows (Taghizadehvahed, 2015, p. 43) .

Table 2 Iç Bedestan in Istanbul. Source: Authors according to (Edgü, Ünlü, Şalgamcioğlu, & Mansouri, 2012) (Pourjafar, Samani, pourjafar, & Hoorshenas, 2012) (Taghizadehvahed, 2015)

	Iç Bedestan in Istanbul 1456	Analysis
Location:	The old center of Istanbul city, it's a main part of the old city.	As in Islamic cities, the qaisaria is near, the mosque, the main market, and the public bath.
Plans and sections	  	The bedestan consists of a number of paths, with four entrances, and gates that isolate the bedestan from the whole bazaar. The shops are identified by columns topped by semicircular arches. The bedestan covered by domes and vaults with openings for ventilation and lighting in the top of the walls and in the lower part of the vaults. Semicircular arches, vaults and domes. The material is stone for the structure The stone ornaments used at the gates' arches, and painting inside the bedestan. It was built of cut stone and brick, where brick was used for vaults particularly.
Summery	The spatial sequence is a result of the axial path in the bedestan, with the repetition of the same arches that create a continuous scene and encourage people to continue their journey, and sequence of the scene continued to the other parts of the bazaar. The proportions and scale of the spaces are large, the unity of the shape comes from the repetition of using the same elements along the paths and keeping the regular grid iron of the whole form.	

[6] Raste is a Persian word that means (path). (Taghizadehvahed, 2015)

4.3 Qaisaria from Mosul: Qaisaria of Al-Attarin

The Qaisaria of Al-Attarin[7] (currently known as Suq Al-Atiq[8]) is chosen as one of Mosul's famous old qaisarias that were built with local Ottoman style before the initiating of Koya's Old Qaisaria. It was built in 1755 by Muhammed Amin Pasha Al-Jalili the Wali[9] of Mosul. This qaisaria is located in the middle of Mosul Grand Bazaar (figure 10) close to the hamam (public bath) and has three entrances; the western entrance leads to Suq Al-Fahamin[10]; the Northern entrance leads to Hamam Al-Attarin and Suq Al-Attarin, while the Southern entrance leads to Suq Al-Aymanjia[11]. This qaisaria was built of stone, gypsum and plaster in addition to marble for its arches. It's a two-story qaisaria where 49 shops were located in the lower floor and 13 rooms in the upper one (Engineering Construction Office in Mosul, 1983, p. 17). (Table 3)



1. Hamam Al-Attarin
2. Qaisaria of Al-Attarin
3. Al-Pasha Mosque
4. Khan (Han)
5. Mosque
6. Qaisaria

Figure 10: Qaisaria of Al-Attarin location within Mosul Grand Bazaar. Source: (Engineering Construction Office in Mosul, 1983)

[7] Attarin is the plural of the Arabic word Attar which refers to the perfumer/druggist and sometimes to the spice dealer.

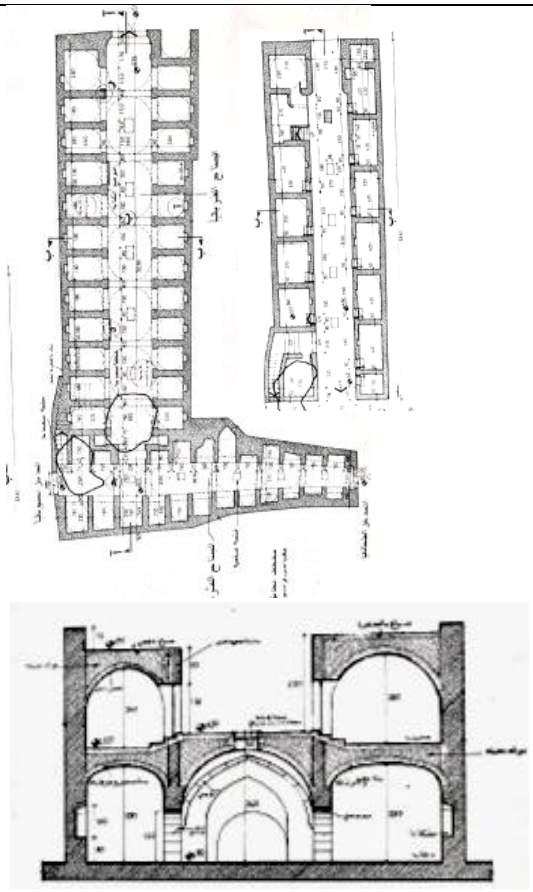
[8] Suq Al-Atiq is an Arabic expression to refer to the place where they sell old second hand goods. the reason why this qaisaria is currently called so is because it is recently used to sell second hand shoes. (Engineering Construction Office in Mosul, 1983, p. 17)

[9] Wali is an Arabic term means the governor of a province, mainly used during the Ottoman rule to indicate that the Ottoman reign is an extension of the Islamic Caliphate. It is derived from Islamic term (Wilyat Al-Amr) which means handling the responsibility of (Muslims/ people).

[10] Al-Fahamin is the plural of the Arabic word faham which refers to the coal cutter, and Suq Al-Fahamin is where the coal is sold.

[11] Al-Aymanjia is the plural of Aymanji which is a common term in the area that refers to the shoemaker of a special type of shoes used to be known as Aymani which is probably derived from Yemeni that is related to Yemen, this type of shoes is rarely found nowadays, except may be for rural areas. (Engineering Construction Office in Mosul, 1983, p. 17)

Table 3 Mosul Qaisaria. Source: Authors according to (Engineering Construction Office in Mosul, 1983)

	Qaisaria of Al-Attarin 1755	Analysis
Location:	The old center of Mosul city	As in Islamic cities, the qaisaria is near the mosque, the main market, and the public bath.
Plans and sections		The typical qaisaria consists of the main strait path in the middle and the shops are located on both of its sides, with three entrances, and gates that isolate the indoor from the outdoor. Each shop has a rectangular shape. Its covered shops and paths are topped with pointed and semicircular arches for their elevations. The shops are closed by wooden doors. This qaisaria has two floors, while the typical local Qaisarias had one floor. The second floor has 13 rooms; they reached them by a stair, and the roofs are flat from the outside with indoor vaults. Semicircular arches were used mainly for the shops, while the pointed arches were used for the entrances and in the paths. The materials are concrete for the walls covered by stone, gypsum and plaster for the structure and marble for the arches. The ornaments used in this qaisaria are very simple no more than grooves in the capitals of its columns, and simple paintings on stone that refers to the owner of each shop.
summery	The axial path of the qaisaria with the repetition of the same arches create a spatial sequence that encourage people to continue their journey, the proportions of the spaces and elements create a human scale for the qaisaria and support the enclosure of the spaces, and the unity of the shape to keep the regularity of the form.	

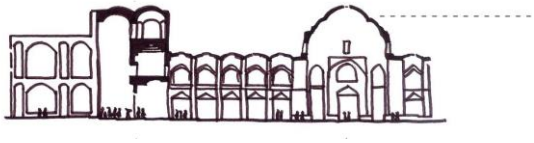
4.4 Qaisaria from Isfahan: Bazarche Blind (Shahi Bazaar)

Qaisaria Bazaar is one of the most important and biggest bazaars in Iran; its current building belongs to the Safavid era, as the Safavid Shah Abbas I ordered to build it as part of his monumental campaign to make Isfahan an imperial city (ARCHNET). The most important qaisaria in it, is known as Bazarche Blind (or Boland) which means the high Qaisaria due to it magnificent height; it is also known as Shahi Bazaar (Gharipour, 2003). It was built in 1706 (Isfahan City.com). It is located between Naghsh-e-Jahan square and Chaharbagh Street. "There are many goldsmiths' shops and other artistic shops in this qaisaria" (Gharipour, 2003).



Figure 11: Shahi Bazaar: a. The main arcade, b. The plan of the Qaisaria Bazaar and the location of Shahi Bazaar within it, c. Section in Shahi Bazaar, d. the domes and their oculi. Source: a &b (Gharipour, 2003), c. (Najdjavadipour, 2011), d. (WIKIMEDIA)

Table 4 Shahi Bazaar. Source: Authors according to (Gharipour, 2003) (Isfahan City.com) (ARCHNET)

	Shahi Bazaar 1706	Analysis
Location:	The old center of the Isfahan city, it's a main part of the old city.	As in Islamic cities, the qaisaria is near, the mosque, the main market, and the public bath.
Plans and sections	  	The qaisaria consists of one main path and the shops are located on its both sides. With 4 entrances, that semi-isolate the qaisaria from the other zones of the bazaar. Each shop has a rectangular shape covered by pointed arches. The qaisaria is covered by domes and vaults with openings for ventilation and lighting. The use of pointed Arches. The materials are brick for the structure The brick ornaments were used at the gates' arches, and the shops arches inside the qaisaria.
Summery	The spatial sequence is a result of the axial path in the qaisaria, with the repetition of the same arches that create a continuous scene and encourage people to continue their journey, the brick ornament helps to let people focus on details rather than huge height of the vaults and domes as their enclosure value varies between 1.5- 4 the latter value could create uncomfortable high enclosure for the qaisaria. The unity of the shape keeps the regularity of the form.	

4. RESULTS

Tables 5 a and b show how would the three cases of Isfahan, Istanbul and Mosul Qaisarias match and differ with the case of Koya Qaisaria in terms of spatial relations.

Table 5a Spatial Relations Comparison

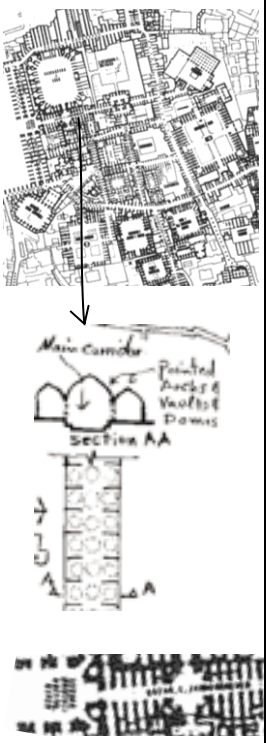
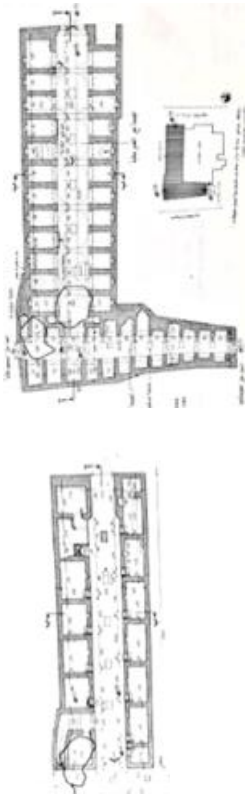
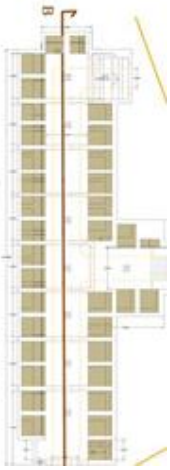
		Shahi Bazaar 1706		Iç Bedestan in Istanbul 1456		Qaisaria of Al-Attarin in Mosul 1755		Qaisaria of Haji Bakr Aghai Hawezi in Koya 1840	
Spatial Relations	Part and Whole	Integrated together, main path with shops defined by walls on each side.	✓	Integrated together, main path with shops defined by walls and by columns on each side.	✓	Integrated together, main path with shops defined by walls on each side.	✓	Integrated together, main path with shops defined by walls on each side.	
	Indoor and Outdoor	Separated, by gates.	✓	Separated, by gates.	✓	Separated, by a gate.	✓	Separated, by a gate.	
	Isolation level from the main bazaar path	Semi-isolated due to its integration with other markets.	✓	Clearly isolated.	✓	Clearly isolated due its mono path and smaller size.	✓	Clearly isolated due its mono path and smaller size.	
	Form Configuration	regular	✓	regular	✓	regular	✓	regular	
	Plans								

Table 5b Spatial Relations Comparison

		Shahi Bazaar 1706		Iç Bedestan in in Istanbul 1456		Qaisaria of Al-Attarin in Mosul 1755		Qaisaria of Haji Bakr Aghai Hawezi in Koya 1840	
Spatial Relations	Uniformity	Unified	✓	Unified	✓	Unified	✓	Unified	
	Polarization	Multi polar	×	Multi polar	×	Limited polar	✓	Limited polar	
	Enclosure	Enclosure ratio[12] 4	×	Enclosure ratio 1	✓	Enclosure ratio 0.84	×	Enclosure ratio 1	
	Spatial sequence	Sequential	✓	Sequential	✓	Sequential	✓	Sequential	
	Transitional space	Indirect with a neck that defines the transmission from path to another	✓	Indirect with a neck that defines the transmission from path to another in the multi paths of Qaisaria	✓	Indirect with a neck that defines the transmission from the mono path Qaisaria with the main bazaar	✓	Indirect with a neck that defines the transmission from the mono path Qaisaria with the main bazaar	
	Pattern	Linear	✓	Grid	×	Linear	✓	linear	
	Relation with the context (Main features of the city)	Near the mosque, hamam, market and madrasas of the city center	✓	Near the mosque, hamam, market and khans of the city center	✓	Near the mosque, hamam, market and khans in the city center	✓	Near the mosque, market and khan in the city center	

Table 6 shows how would the three cases of Isfahan, Istanbul and Mosul Qaisarias match and differ with the case of Koya Qaisaria in terms of form's characteristics.

According to table 5a and b about the spatial relations; Koya Qaisaria matched with all other cases in most of the listed relations, except for the polarization, enclosure, and pattern.

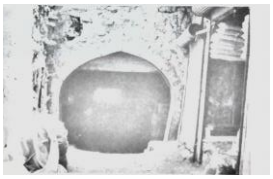
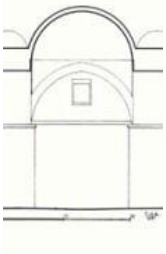
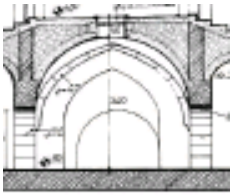
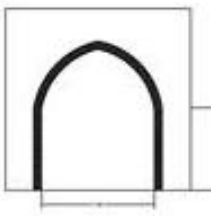
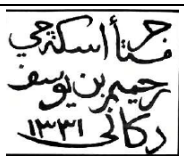
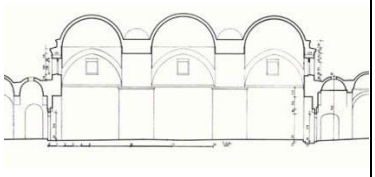
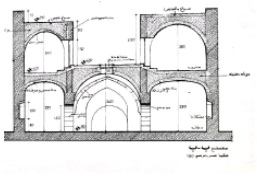
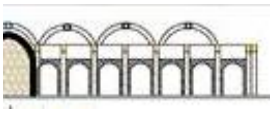
Koya Qaisaria matched with Mosul Qaisaria in polarization and with both the Qaisaria of Mosul and the Qaisaria of Isfahan in pattern.

According to table 6 about the form characteristics; Koya Qaisaria matched with the Qaisaria of Mosul in materials, and proportion and scale rather than the other cases; Koya Qaisaria also go with both the Qaisaria of Mosul and the Qaisaria of Isfahan in elements. Koya Qaisaria shows similarities with the Qaisaria of Isfahan in openings and construction technique rather than the other cases.

[12] Enclosure Ratio: Spatial enclosure is created by the height of buildings relative to the width of the street or open space = Height/Width of the space, "Extreme high values of enclosure evoke claustrophobia and confinement, while extreme low values of enclosure evoke discomfort because of lack of psychological shelter. There are preferred values of enclosure in the middle" (Alkhresheh, 2007, p. 22).

Koya Qaisaria matched with the Qaisaria of Isfahan in elements and construction technique; which is the same technique that was used in Istanbul Qaisaria too.

Table 6 Form Characteristics Comparison

	Shahi Bazaar 1706		l 1456		Qaisaria of Al-Attarin in Mosul 1755		Qaisaria of Haji Bakr Aghai Hawezi in Koya 1840	
Materials								
	Brick	×	Cut stone and brick	×	Stone and marble	✓	Limestone and marble	
Elements								
	Pointed arches	✓	Semicircular arches mainly	×	Pointed arches mainly	✓	Pointed arches mainly	
Openings	At the top of the domes	✓	At the top of the walls and lower part of vaults	×	At the top of the vault	×	At the top of the domes (with square shape)	
Ornaments								
	Brick ornament	×	Paintings	×	Paintings/Shops' titles	×	Ornaments carved on stone and marble	
Proportions and Scale								
	Huge Scale	×	Large scale	×	Human Scale	✓	Human Scale	

Construction Technique	Vaults and domes, with openings for ventilation and Lighting 		Vaults and domes, with openings for ventilation and Lighting 		Two floor story with Flat roofs 		Vaults and domes with openings for ventilation and Lighting 	
		✓		✓		×		

Table 7 The Spatial Relations and Form Characteristics Comparison Results

		Koya	Isfahan	Istanbul	Mosul
Spatial Relations	Part and whole		1	1	1
	Indoor and outdoor		1	1	1
	Isolation level from the main bazaar path		1	1	1
	Form configuration		1	1	1
	Uniformity		1	1	1
	Polarization		0	0	1
	Enclosure		0	1	0
	Spatial sequence		1	1	1
	Transitional space		1	1	1
	Pattern		1	0	1
	Relation with the context (the features of the city)		1	1	1
Form Characteristics	Materials		0	0	1
	Elements		1	0	1
	Openings		1	0	0
	Ornaments		0	0	0
	Proportion and scale		0	0	1
	Construction Technique		1	1	0
Total			12/17	10/17	13/17
Total regardless of the common features and characteristics			4/9	2/9	5/9

5. CONCLUSIONS

Koya Qaisaria matches with the cases of Mosul, Istanbul and Isfahan Qaisarias in the following spatial relations: part and whole, indoor and outdoor, isolation level from the bazaar main path, form configuration, uniformity, spatial sequence, transitional space and relation with the context; which all seems common and identify bazaars in general. Koya Qaisaria matches with Istanbul Qaisaria in enclosure ratio which is one and that is considered as the optimum enclosure ratio; though the size of Istanbul Qaisaria is larger. Koya Qaisaria would rather go with Mosul Qaisaria in terms of polarization and pattern as these relations were clearly influenced by the size of the Qaisaria, so for smaller Qaisarias like in the case of Koya and Mosul, Qaisarias tend to be in a

linear clear shape with limited polarity, while when they get bigger in size like in the case of Istanbul and Isfahan, they get more variety in shape and would tend to have a grid or a distorted grid configuration with multi polarity.

Even though Koya Qaisaria is rather similar to the chosen qaisarias in spatial relations, but it's different from them in the detailed form characteristics' level:

- Materials: Limestone is the essential material in Koya Qaisaria, it's very common in Koya, as it's locally available, even though Mosul Qaisaria used stone but it's a different kind of stones.
- Elements: The pointed arches that are used in Koya Qaisaria is similar to the ones that were used in Isfahan and Mosul Qaisarias though the scale might differ, while in the case Istanbul Qaisaria all the arches except for the main gates were semicircular.
- Ornaments: Even though Koya Qaisaria is kind of similar to the Mosul Qaisaria in using stone ornaments, but they are different in the type of ornaments as in Mosul they depend mainly on the use of Muqarnas, while in Koya they depend mainly on using reliefs that might be related to ancient symbols that were common in the area in certain times and by certain groups; and that suggests a future study for the ornaments in Koya and their origins.
- Proportion and scale: Koya Qaisaria adapted human scale for all the elements, arches, entrances, space dimensions.
- Construction Technique: Koya Qaisaria used domes and vaults to cover the spaces, with openings for ventilation and lighting, and it's similar to the cases of Isfahan and Istanbul Qaisarias but different from Mosul Qaisaria in which it had flat wooden roofs stuffed with plaster.

This research is exploratory in nature, we need to do further studies and similar comparisons before generalizing its results, but for these cases particularly, the architectural style of the Qaisaria of Koya's shows more similarity with the Safavid architectural style of the Qaisaria of Isfahan rather than the Ottoman architectural style of the Bedestan of Istanbul. But the results also show that the architectural style of the Qaisaria of Koya goes even more with the local Ottoman style of its neighbor Iraqi city Mosul.

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