

# The Sustainable Architecture of Bazaars and its Relation with Social, Cultural and Economic Components

## (Case Study: The Historic Bazaar of Tabriz)

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**ABSTRACT:** Urban commercial quarters such as bazaars can be found all over the world, from Turkey to Egypt, from Tajikistan to Iran. In Iranian cities, bazaars have very specific and unique architectural features and they have played an important role as economic and social engines. In addition, bazaars are an integral part of the cultural geography of Iran and have contributed to the definition of urban development patterns. This paper aims to critically explore sustainable architectural elements in historic bazaars and their relation to social and cultural components. This paper's theoretical exploration is developed by detailing relevant findings from a case study on the significance of the sustainable architectural elements of the historic Bazaar of Tabriz, and it debates the relationship between those architectural elements and socio-cultural and economic components. A qualitative methodology, specifically in-depth interviews with shop-owners and customers and in loco observation, was employed. Findings show that the Bazaar of Tabriz has preserved its sustainability both in terms of architecture, by rigorous preservation, and in terms of socio-cultural and economic components, by maintaining an exciting daily dynamic and a healthy relationship between shop-owners, customers, local administration and the city of Tabriz. The preservation of unique and authentic sustainable architectural features, together with the maintenance of public spaces, such as mosques and schools, benefits the population of Tabriz and brings visitors every day to the shopping area of the complex, thus maintaining a constant flux and social, cultural and economic dynamics.

**Keywords:** Culture, Historic Bazaars, Socio-Economic, Sustainable Architecture, Tabriz.

## INTRODUCTION

This paper brings together a sustainable architecture approach and the economic and socio-cultural components involved in historic bazaars, an under-researched topic in academia and praxis. According to Guy & Farmer (2001), sustainable architecture is an approach and an attitude towards the conception of structures, such as buildings or commercial complexes like bazaars. According to Ibrahim and Mohamed (2005), the introduction of a more sustainable approach in architecture reflects the principles of sustainable development. Sustainable architecture in a nutshell can be defined by the dominance of energy efficiency and climate adaptation strategies aimed at improving economic performance as well as the efficiency of buildings and infrastructures in general. The notion implies a thoughtful, effective

and efficient use of energy systems and materials to make buildings that are more conducive to human use and comfort, without generating pollutants or borrowing natural and non-renewable resources from future generations (Bennetts et al., 2004). The design process for buildings which incorporate sustainable features has intensified during the past years (Bodart & Edward, 2011). The core idea behind sustainable architecture advocacy is that buildings and infrastructures must become producers rather than exclusively consumers of energy. Sassi (2006) argues that the relationship between architecture and social sustainability can help put into practice and even encourage a sustainable way of life. Bazaars could be seen as pioneers in applying sustainable features while enhancing a sense of belonging and attachment to place (Ashworth & Graham, 2005), as they are spaces where social interactions are dominant, culture is nourished and economic value is

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generated and hopefully maintained. According to Moosavi (2005), a bazaar is a covered public passageway which is surrounded by shops on two sides. The architectural features were highly dependent on the climate, culture and economic power of the city in which it is located. Bazaars are examples of structures designed with an awareness of sustainable architecture. Bazaars also reflect the symbioses between the need to create structures for the communities to develop their activities, the need for adaptation to the territorial physical characteristics and the need to create dynamics of spatial (urban) development (Correia et al., 2009). The bazaar is a traditional public space and part of the urban fabric of several cities in Iran. The bazaar is not only the commercial centre of traditional cities in Iran, but also the centre of social, cultural, political and religious activities, and is hence interconnected with economic, social and environmental sustainability (Alipoor & Raeesolmohadesin, 2012). This is the case with the historic Bazaar of Tabriz in northwest Iran. The architecture of the Bazaar of Tabriz reflects the links between the climate and local culture. In addition, it has been contributing by adding economic value to the city, supporting job creation and maintaining and developing the surrounding urban area. The language of architecture is more than a form; it evokes the past, prefigures the future and articulates the present for all citizens and communities (Eldemery, 2010), and it represents an integral part of the manifestation of a society or the image of a place. The historic bazaars of Iran have always been public spaces for commercial activities and centres of social, cultural, political and religious activities where the architecture mirrors societal behaviours. By taking the historic Bazaar of Tabriz as a case study, this paper aims to critically explore the sustainable architectural elements of historic bazaars and their relation with social and cultural components.

## MATERIALS AND METHODS

In conducting this study, a qualitative method of research was employed. Primary data were gathered through observation at the Bazaar of Tabriz and in-depth interviews with 40 shop-owners and customers. In-depth interviews were used in order to collect information regarding the perceptions of those that interact with the Bazaar on a daily basis. The selection

of respondents started as a process of convenience sampling (Neuman, 2011) following the examples of previous studies (Maroofi et al., 2014) and continued as snowball sampling. Interviews and observation were both carried out by the authors at the Bazaar of Tabriz in August 2014.

## RESULTS AND DISCUSSION

### Historic Bazaars

The word “bazaar” is related to “Çarşı” in Turkish, “Bazaar” in Persian and “Bazzarro” in Italian. Bazaars have always accommodated a large number of activities and have become intrinsically linked to the development of cities, architecture and a sense of place (Pirnia, 2007). First, the bazaar may be viewed as a symbol of tradition and as a market which operates not only in economic terms. Secondly, it may be viewed as part of a city’s tangible and intangible heritage. Similar to the ‘plaza’ of the preindustrial European cities, bazaars were also the most popular site for the development of social, political, cultural and civic activities of people, like the forum or agora of ancient cities (Edgu et al., 2012).

### The Bazaar in the Islamic Republic of Iran

Bazaars can be found in various cities of the Islamic Republic of Iran, such as in Shiraz, Isfahan and Tabriz. The bazaar is not only the commercial centre of traditional cities in Iran, but also the meeting point for social and cultural interactions. These cultural and social activities are the result of the sustainable dimension regarding the architecture of the bazaars. Climate is one of the main factors that determine the architecture of buildings including bazaars in Iranian cities (Fig. 1).

### The Bazaar of Tabriz

The historic Bazaar of Tabriz (Fig. 2 and 3) is the largest traditional covered bazaar in the world with the finest art and sustainable architectural features. Its strategic location on the Silk Road has always contributed to its economic vitality. Social, religious, communicational, political and cultural functions can also be witnessed throughout history. These elements have been kept alive until today.

The Bazaar of Tabriz covers an area of over three square kilometres and in 2010 it was included on the World Heritage List by the United Nations Educational, Scientific and Cultural

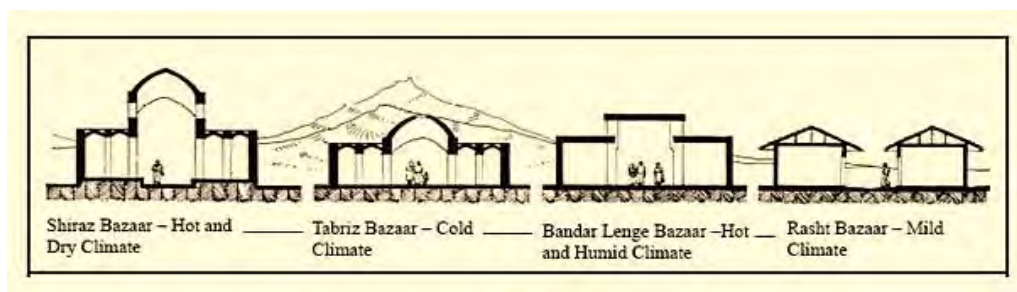


Fig. 1: Climatic influence on the bazaar structure in four Iranian cities.



Fig. 2: Historic Bazaar of Tabriz.



Fig. 3: Historic Bazaar of Tabriz with an emphasis on the roof function.

Organization (UNESCO, 2010). The Bazaar was built on the main circulation axis of the city, connecting the east to the northwest, dividing the Bazaar into two main parallel *rasteh*:

The main “*rasteh*”;

The “*kohne rasteh*”.

In recent times, some parts of the Bazaar were destroyed and some functions were changed along the main *rasteh* and streets of the Bazaar. The Mehran River separates the Bazaar into two parts: the northern part of the Bazaar that includes Saheb Abad Square and Akbarieh Madrasa, which was added to the Bazaar complex during the nineteenth century, and the southern part, which was the main area of the Bazaar (Edgu et al., 2012).

### Main Findings on the Architecture of the Historic Bazaar of Tabriz from Observations

As the result of the observation conducted by the authors, the historic Bazaar of Tabriz consists of a series of interconnected, covered brick structures, buildings and enclosed spaces for different functions, which has preserved its sustainability both in terms of structural firmness, economic, social and cultural dimensions. The first floor is composed of commercial spaces, while the second floor is composed of the warehouse and offices. Most of the shops and workshops at the Bazaar are separated from the streets by stairs. The Bazaar of Tabriz is also consists of a mosque, a courtyard, a school and several streets. The Bazaar of Tabriz, being the biggest covered bazaar in the world, perfectly exemplifies the relation between its architecture and the city-region’s climate. Due to the geographical location of Tabriz in a mountainous region, the climatic conditions are characterized by severely cold winters with heavy snowfall, a mild climate in the summer and

noticeable temperature variation between day and night time. In order to face these climate challenges, the Bazaar was built with the aim of providing protection against climatic conditions, thus responding to the natural environmental conditions.

For example, the Bazaar consists of a large covered brick complex containing both public buildings and lanes lined with small stalls. High vaulted ceilings often have circular openings that admit shafts of light and provide ventilation. During the summer season, the roof provides shade and during the winter it protects from snow and rain. Table 1 summarizes the main features of the structure of the historic Bazaar of Tabriz.

Table 1: Main features of the structure of the historic Bazaar of Tabriz

The sārās (or khāns)
Large complexes with a spacious central courtyard surrounded by one- or two-storey rows of rooms where goods are stored.
The Timcheh
The Timches are used for the storage and trading of expensive goods.
The Rasteh
The basic elements of the Bazaar. They consist of a double row of shops aligned along an often roofed linear path.
The chārsugis
The vaulted intersections of two perpendicular Rasteh.

### Non-economic Activities Performed at the Historic Bazaar of Tabriz

Several social, cultural and religious activities are performed in non-economic areas of the Bazaar, which makes it a unique

architectural element in the city. The Bazaar of Tabriz is equipped with:

Table 2: Non-economic activities performed at the historic Bazaar of Tabriz

Bathhouse
Courtyard
Mosque
Places of mourning
School
Several squares
Shrines
Sport clubs
Tea houses

The abovementioned activities (Table 2) together with the presence of banks, governmental institutions and a post office, join the spine of the Bazaar and create a general and multifunctional complex. The Bazaar block ends at the Jameh Mosque, the greatest mosque in the city. These activities, therefore, contribute to the stability of the others and to the functionality of the Bazaar as a whole. The visual integrity of the Bazaar has been maintained and the sequence of open and covered spaces can still be made out, despite some unsympathetic and controversial recent interventions.

### The Economic Component of the Bazaar

The historic Bazaar of Tabriz is considered to have outstanding universal value by the national organizations, and today plays a fundamental role in urban development as well as in the economic dynamic of the city of Tabriz. The multifunctionality of the Bazaar of Tabriz is still alive despite the fact that certain activities, such as manufacturing, have been transferred to other areas of the city (Weiss & Westermann, 1998). Moreover, the Bazaar is fundamental to the future development of tourism and urban dynamics, and that requires the correct urban management strategies to always keep it alive and socially, culturally and economically dynamic.

### Social and Cultural Components of the Bazaar

The social and cultural aspects include the inner satisfaction and pleasure of being at the historic Bazaar of Tabriz. The Bazaar has always played a central role in spreading cultural trends, thanks to its long-standing vitality as a trade centre. The healthy interactions between the complex of buildings and pathways and the people (the customers and shop-owners) have created a unique cultural atmosphere, argue Weiss and Westermann (1998). The Bazaar of Tabriz has unique physical, economic, social, cultural and religious features, and bears exceptional testimony to a civilization that is still enthusiastically inhabiting the place. Over the centuries, thanks to its strategic location, and to wise policies of endowments and tax exemptions, the Bazaar of Tabriz has developed into a social and cultural system in which specialized architectural

structures, functions, professions, and people from different cultures are integrated into a unique living environment (Kheirabadi, 2000). The activities described in Table 2 bring a daily dynamic to the place. Among the interesting elements that keep the place so dynamic, apart from the natural need to go there to trade and buy goods, are the architectural elements that allow the development of those dynamics and facilitate the social and cultural interactions among those that frequent the complex.

### The Architecture of the Bazaar and its Social and Cultural Components

The best examples of social and cultural components and architectural elements are the public meetings by the shop-owners that take place inside the mosque, together with an informal consultancy, to try to solve problems and assist each other (Sangsai et al., 2008). The Bazaar of Tabriz, aside from its important social role, also enhances cultural initiatives by supporting some decision-making processes, spreading news and even rumours around the city. The memories the Bazaar evokes are also one of the main elements that tie the people to the complex beyond trade, as they involve different activities (for-profit and not-for-profit).

### Main Findings of the in-depth Interviews

Respondents in the in-depth interviews declared that when a shop-owner or neighbour is facing a problem (personal or professional), the shop-owners meet together in the mosque and try to solve the matter. Several times, some of the shop-owners have lost their finance support and faced bankruptcy. In this circumstance the shop-owners argue that they immediately provide financial assistance to the shop-owner in crisis. In addition, the shop-owners argued that they like to support other people, and that they are all happy to do that, because everyone that works or has a business at the Bazaar is susceptible to those situations, so cooperation gives them assurance. Respondents have also argued that the social and cultural aspects include the inner satisfaction and pleasure of being at the Bazaar. The Bazaar users are attracted by the historical and traditional atmosphere and feel comfortable at the complex. Walking through the Bazaar, noticing the function of different places provides an opportunity for people to enjoy different kinds of activities inside the complex which generate dynamic, social interactions and provide a distinct perimeter. These activities are significant elements in shaping the sense of place and attachment to place (of people to place). Visitors and customers have mutual experiences of the different parts of the Bazaar. The Bazaar is a unique complex of activities, which are unified by their organic spontaneity and flexibility, creating a sense of place which generates community cohesion, at the same time as being environmentally friendly and economically and socially sustainable.

## Main Findings Related with Architectural Sustainability

The findings related to the architectural elements of the Bazaar, and in particular the sustainable elements, can be categorized as Table 3.



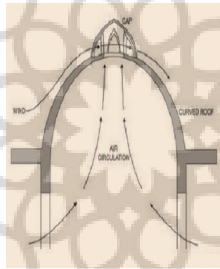
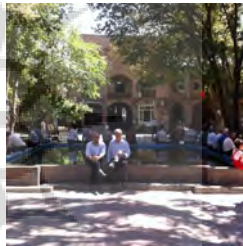
Table 3: Architectural elements of the historic Bazaar of Tabriz

<p>Climatically responsible design                  Construction materials                  Solar energy performance                  Roof function                  Natural lighting                  Ventilation and courtyard functions</p>
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Climatically responsible design means that the construction of the Bazaar has respected the climate conditions of Tabriz, by applying a thermal system for heating the building in the very cold winters and providing ventilation of the building through the domed roof during the hot summer season. Generally, the construction material was mainly brick. Therefore, the brick vault acts as a strong thermal mass element for storing heat. Public activities, light and heating inside the building were sufficient to supply a favourable temperature during the cold winters.

At the Bazaar of Tabriz, open spaces in which various activities take place are properly mixed together and the central courtyards help the regulation of air in the inner

Table 4: Main findings related to architectural sustainability

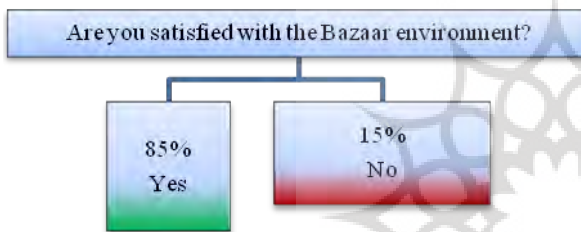
The materials used during the construction process	The roof function	Natural lighting	Function of courtyards	Function of courtyards
				
<p>The Bazaar of Tabriz is mostly made of solid local materials such as brick and stone. The main advantage of this material is to produce a kind of thermal “envelope” which helps control the temperature.</p>	<p>The Bazaar of Tabriz is one of the masterpieces of the Iranian architecture. Is decorated with magnificent stuccos and high brick arched (e.g., dome and vault) roofs (Fig. 3). The vault and dome roof are mostly built with brick masonry because of its low cost and good thermal performance. These kinds of roof have been extensively used in order to protect against wind storms and severe sunshine, and the consequent lower heat transfer into the building (Faghih &amp; Bahadori, 2009; Faghih, 2011) and the fact that natural light is allowed to come inside the main commercial areas.</p>	<p>Lighting quality affects human behaviour, comfort, health, efficiency, safety and security. In most of the significant traditional monuments, such as in the Bazaar of Tabriz, lighting application was based on factors such as spiritual dimensions and holiness of light, light adjustment and uniformity, temperature regulation and energy storage in proportion to the climatic conditions.</p>	<p>Courtyards are seen as climate modifiers; they allow domestic outdoor activities to occur with protection from wind, dust and sun. Courtyards serve as light-wells in a type of building that must restrict exterior openings. They also serve as air-wells into which the cool, dense night air sinks, and through which the fresh morning and post-rain air make their way into the building via plentiful openings that open from surrounding spaces onto courtyards. The combination of vegetation and fountains allows for the creation of a safe and comfortable environment which is ideal for the development of social interactions and cultural development.</p>	<p>In the Bazaar of Tabriz a corridor model with two “timches” in the north-western and southern parts constitutes a unified area, which for analytical purposes can be viewed as the aggregate of the central “hashti-o-nim-hashti” and four “nimhashts”, unique elements of the architecture of the Bazaar.</p>

space. The existence of green areas and waterfalls supports the sustainability of the complex, and shops are shaped around these spaces. The complex has used natural resources prudently and recyclable materials have been utilized. The air, land and water pollution are minimized by using vernacular and environmentally friendly materials, and giving access mainly to people rather than to vehicles.(Table 4)

### Shop-owners' Perspectives and Satisfaction Assessment

Results of the interviews conducted indicate that the majority of the traders and shop-owners are satisfied with the Bazaar environment (85 %) whereas a minority declares that they are not very happy with the environment (15 %) (Fig. 4).

Fig. 4: Shop-owners' perspectives on the Bazaar environment.



Those respondents who are satisfied with the Bazaar's economic, social and architectural environment state six different reasons for their satisfaction (Table 5).

Table 5: Six different reasons for shop-owners' satisfaction

1	Good income from the business/trade activities
2	Mixed activities that take place at the Bazaar
3	Friendly atmosphere
4	Sense of belonging
5	Participation in religious celebrations inside the Bazaar complex
6	Growing number of customers

Table 6 shows the reasons for dissatisfaction with the Bazaar of Tabriz environment.

Table 6: Three different reasons for shop-owners' dissatisfaction

1	Cultural and language prejudice
2	Imitation of products
3	Increase in the number of modern products

It is interesting to underline that the comfortable atmosphere and good lighting and ventilation – part of the sustainable architectural elements of the complex – are also positive determinants when comes to choosing the Bazaar instead of other shopping areas in the city, together with the mixed activities, such as the post office and banks, as well as the diversity of local and handmade products (Fig. 5).



Fig. 5: Main reasons to visit the Bazaar of Tabriz.

### The Role of Memories

The memories the Bazaar brings to people's minds are also one of the main reasons for them to visit the place multiple times. The childhood memories of attending the school at the Bazaar or the public baths, and of playing in the courtyard, bring reminiscences of the past to the present. Those memories are important for the visitors as well for the developers (e.g., shop-owners, traders) and enhance the sense of place in the Bazaar of Tabriz. Visitors and traders are tied to the Bazaar's ambience by emotion bonds. The Bazaar creates imaginings and still constitutes a powerful part of the individual and social practices which people consciously use to transform the material world into cultural and economic realms of meaning and lived experience.

### Dynamic and Vibrant Atmosphere

The strong ability of the environment of the historic Bazaar of Tabriz to sustain its vibrant and dynamic atmosphere through the various activities (trade, social, cultural, religious, educational) embodies the high level of functionality, satisfaction and continuous commitment. The Bazaar was made by the people, for the people, and the way it was designed – the architecture, the sustainable materials – makes the people feel good to be at the Bazaar. Therefore, the high frequency of people keeps the place socially and culturally dynamic.

### CONCLUSION

The historic Bazaar of Tabriz includes very varied architectural spaces and buildings for commercial/trade functions, and that makes the place one of the most important trading centres

in northwest Iran. The Bazaar of Tabriz is located in the centre of the city and is accessible from almost every part of it. The complex is also well connected to the main roads and accessible by public transportation. In addition, the main public services such as banks, governmental institutions, the post office and other organizations and activities are located around the Bazaar, creating a perfect environment for a multiplicity of activities and large daily visitor numbers. The Tabriz inhabitants can use other activities around the Bazaar during the same visit which helps to save time and costs of travelling when fulfilling their daily tasks, even at peak traffic hours. It is important to note that the excellent accessibility and possibility of accessing the Bazaar using public transportation is one to the main reasons for users to choose the Bazaar for shopping. The Bazaar has preserved its sustainability both in terms of physical/structural stability and social and cultural aspects by keeping an exciting daily dynamic. The shops (“hojres”), the “saras”, the “timches” and “rastes” contribute to the sustainability of the Bazaar by creating an appropriate social and economic interaction. The courtyards and their green elements and water-wells help to use natural resources for ventilation and adjust the interior climate, as well as creating a social space for increasing community wellbeing and creating ambiance and spirit. The Tabriz Bazaar is a good example of sustainable architecture from the past to the present that survives for the future, thus contributing to the sustainable urban development of the city of Tabriz and beyond. As managerial recommendations the authors suggest to enhance the preservation of the unique features of the Bazaar of Tabriz, particularly its architecture. In addition, is important to understand and value the Bazaar as an important element for urban development. Better public transportation, more services offered within the Bazaar premises will greatly contribute to the dynamic and vibrant atmosphere of the Bazaar. The Bazaar has enormous potential to boost sense of belonging and to work as an important engine for tourism development. For that an integrative approach that respects local communities, contributes to its well-being and attempt to a social responsible future is needed.

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