

## Analyzing of spatial-physical structure of urban spaces by using SWOT & GIS techniques (Case study: Borujerd historic bazaar)

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**ABSTRACT** : In recent decade, have been changed urban physical and social conditions. Today, historic Bazaar has lost previous function in our cities. Considering numerous problems related to the old textures, sustainable development can be mentioned as the most efficient approach to avoid consequent shortcomings. This research is applied. Also, method of research is "descriptive – analytical", and data collection method is "document –field". The data are generally gathered from academic centre libraries like universities, organizations, institutes and research centers such as management and planning organization and internet, official statistics and censuses, urban development plans by consulting engineers, and so on. Statistic society is citizens and city of Borujerd. At first by presentation of theoretical framework and by using models such as SWOT technique. After that was used from GIS software.

**KEY WORD:** bazaar, spatial spaces, SWOT technique, borujerd city

### I. INTRODUCTION

Bazaar is a permanent merchandizing area, marketplace, or street of shops where goods and services are exchanged or sold. Originating from ancient Islamic civilizations, the bazaar is the precursor for the modern day supermarket, flea-market, and shopping mall, and has had a great influence on the economic development and centralization in modern cities around the world. The bazaar first appeared along the important trade routes. The constant flow of foreign and exotic goods, along with travelers, gave rise to systems of haggling and trade within the cities themselves. Special areas of cities were eventually designated as areas of trade, and the first bazaars were established. Bazaars rapidly became areas not just for the trading of goods, but were often the social, religious, and financial centers of cities. With their continuing connection to the religious aspects of life through the presence of mosques in the close vicinity, and their attraction to tourists, bazaars have retained more of a historical and local identity than the Western mall. The bazaar has a long history and has served all segments of society well; it continues to develop and modernize externally, retaining its internal character and purpose, it maintains its place in modern society (Moshaver zadeh, 2009:9). The word bazaar derives from the Persian word *bāzār*, the etymology of which goes back to the Pahlavi word *baha-char* meaning "the place of prices". During the time of the Crusades, when Europe and the Middle East had their first major encounters and cultural dissemination took place, the word was assimilated into Italian as *bazzara*, before being transferred to English in its current form, *bazaar*. While currently the word is most often used to denote outdoor shopping areas, particularly those of Islamic origins, the word is sometimes used loosely to refer to such places and events as flea markets or swap-meets (Azizi, 2009:89).

### II. THEORETICAL PRINCIPLE

The bazaar first appeared in the Middle East, around the fourth century. At the time, the area was often at the axis of many important trade routes, which helped establish cities and ports. A constant flow of foreign and exotic goods, along with travelers, gave rise to systems of haggling and trade within the cities themselves. Special areas of cities were eventually designated as areas of trade, and the first bazaars were established. A strong economy has always been an Islamic ideal, so the bazaars were incorporated and actively fostered when the Islamic conquest swept over the region (Ziari, 2008:90).

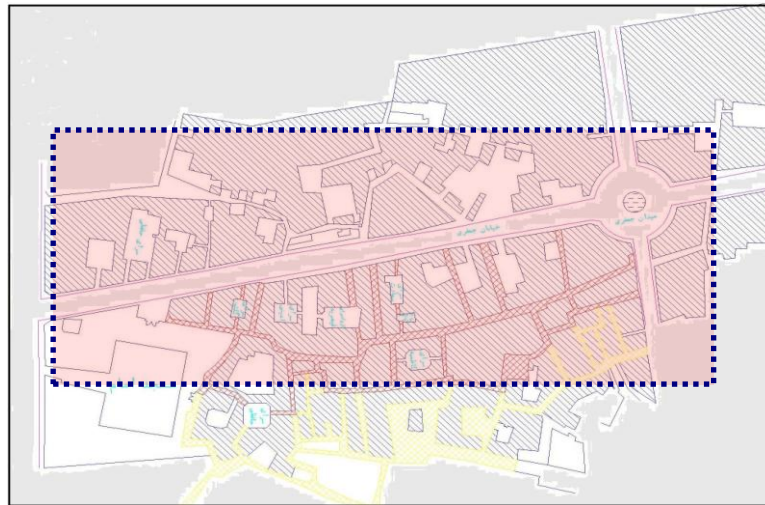
A bazaar, meaning "market"; from Middle Persian (*bahā-chār*), meaning "place of prices") is a permanent enclosed merchandising area, marketplace, or street of shops where goods and services are exchanged or sold. (A *souq*, by contrast, is an open-air marketplace or commercial quarter.) The term is sometimes also used to refer to the "network of merchants, bankers, and craftsmen" who works that area (Baqerian, 2009:34). Although the current meaning of the word is believed to have originated in Persia, its use has spread and now has been accepted into the vernacular in countries around the world. The rise of large bazaars and stock trading centers in the Muslim World allowed the creation of new capitals and eventually new empires. New and wealthy cities such as Isfahan, Golconda, Samarkand, Cairo, Baghdad, and Timbuktu were founded along trade routes and bazaars ( Nouri ,2008 :82 ).

Bazaars became areas not just for the trading of goods, but were often the social, religious, and financial centers of cities. Mosques and coffee shops were often incorporated into established bazaars, as were forms of street entertainment. The idea of a bazaar was carried along trade routes, to east in areas of modern day Afghanistan, Pakistan, India and certain areas in South-East Asia, North to modern day Turkey, Hungary and sporadically into areas of Central Asia. However, the major world bazaars continued to be found in Middle Eastern states, as they still are today (Bernroider,2002 :12) .Many languages have names for this concept, including Arabic and Urdu: Albanian, Bosnian and Turkish: *pazar*, Bengali: Bulgarian and Macedonian: *пазар*, Cypriot Greek: *pantopoula*, Greek: Hindi: Hungarian: *vásár* (term originates from Persian influence around the 7th-8th century and means a regular market, but special occasion markets also exist, such as *Karácsonyi Vásár* or "Christmas Market", and *bazár* or Oriental-style market or shop, the term stemming from Turkish influence around the 16th-17th century), Indonesian and Malay: *pasar*, Polish: *bazar*, Russian: *базар* and Uzbek: *bozor* (Navabakhsh ,2008 :51) .In North America and the United Kingdom, the term can be used as a synonym for a "rummage sale", to describe charity fundraising events held by churches or other community organizations in which either donated used goods (such as books, clothes, and household items) or new and handcrafted (or home-baked) goods are sold for low prices, as at a church or other organization's Christmas bazaar, for example (Mahdizadeh ,2003 :32) .

### III. RESEARCH METHOD

This research is applied. Also, method of research is "descriptive – analytical", and data collection method is "document –field". The data are generally gathered from academic centre libraries like universities, organizations, institutes and research centers such as management and planning organization and internet, official statistics and censuses, urban development plans by consulting engineers, and so on. Statistic society is citizens and city of Borujerd. At first by presentation of theoretical framework and by using models such as SWOT technique. After that was used from GIS software.

**Studied area :**The studied area is 17 of Borujerd district. Borujerd is a city in and capital of Borujerd County, Lorestan Province in western Iran. At the 2006 census, its population was 227,547 in 59,388 families. Among the existing modern cities in Iran, Borujerd is one of the oldest reported at least since the 9th century. In Sassanid Empire, Borujerd was a small town and region neighboring Nahavand. Gaining more attention during Great Seljuk Empire in the 9th and 10th centuries, Borujerd stood as an industrial, commercial and strategic city in Zagros Mountains until the 20th century. In its golden ages, Borujerd was selected as the state capital of Lorestan and Khuzestan region during Qajar dynasty in the 18th and 19th centuries. Today, Borujerd is the second largest city of Lorestan; hence, the major industrial, tourist and cultural center of the region. The city has kept its old architecture and lifestyle mostly through mosques, bazaars and houses built in the Qajar era. Borujerd city is located approximately 1670 meters above sea level and has a moderate climate with cold winters. The highest point is Garrin Mountain 3623 m above sea level and the lowest area is Gel Rood River in South with 1400 m elevation. Borujerd Township has 2600 km<sup>2</sup> area with approximately 400,000 inhabitants distributed in the city of Oshtorinan and more than 180 villages. Borujerd is located on Silakhor Plain which is the largest agricultural land of Lorestan. The high-elevated Zagros Mountains surround it from South East to North West and the peaks are covered with snow most of the times. Rural people work in farms or keep their domestic animals. Other people work in governmental offices, armed forces, factories or small local businesses. The feet of Zagros Mountains is a great destination for nomads and many Lurs and Bakhtiari nomads move there in summer. The area is paved with highways and is a crossroad between Tehran and Khuzestan Province as well as Isfahan Province and Kermanshah Province.

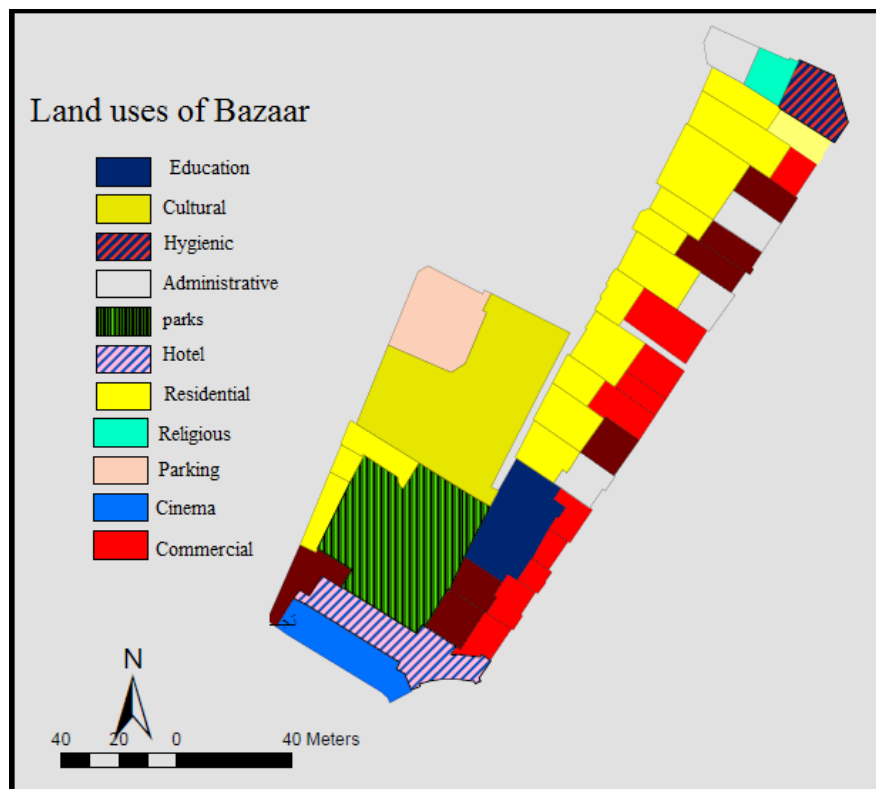


**IV. FINDINGS RESEARCH**

According to mentioned explanation, for analyzing data was used GIS. So has been explained in continue.

**5.1. Physical analyzed in Bazaar**

**5.1.1. Land-uses area :** Based on results, the residential land –use has been the most land –use in studied area (27%). On the other hand the religious and cultural land-uses have been the least area (1.3%, 1.2%). One of weakness of historic fabric was the lake of cultural land-use due to one of the main indicators of Bazaar in Islamic country such as Iran. Mosque was important building in Bazaar. On the other hand cultural land-use is importance because historic fabric attract tourism industry .



**Figure2: exited land-uses plan**

Land use	Area ( m <sup>2</sup> )	Percentage
residential	3786	27
Commercial	3237	23
parking	806	5.7
education	800	5.7
Administrative	905	6.4
hygienic	405	2.7
cultural	241	1.3
Tourism	1436	11
Religious	215	1.2
Parks	2140	16

Table 1: the area of land-uses ( m<sup>2</sup>)

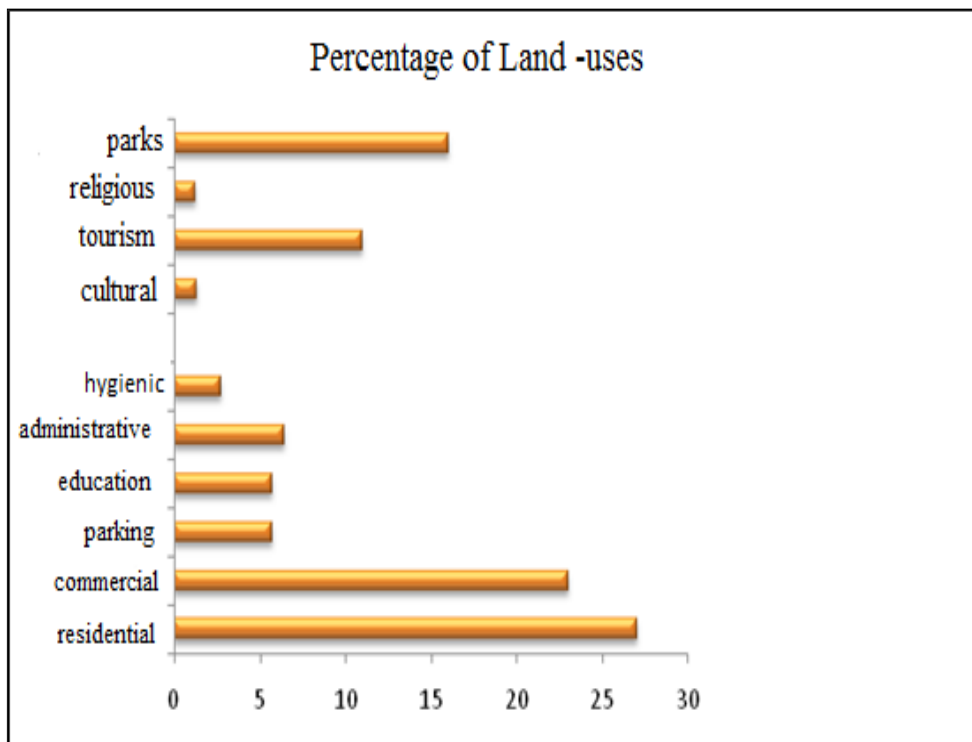


Figure 3: the percentage of land-uses

**5.1.2. Antiquity of building**

According to analyzed studied, 61% of building were 10-25 years. Also 30% of buildings were more than 30 years. So, 91% of buildings were outdated. Also, 9% of buildings were 6-10 years.

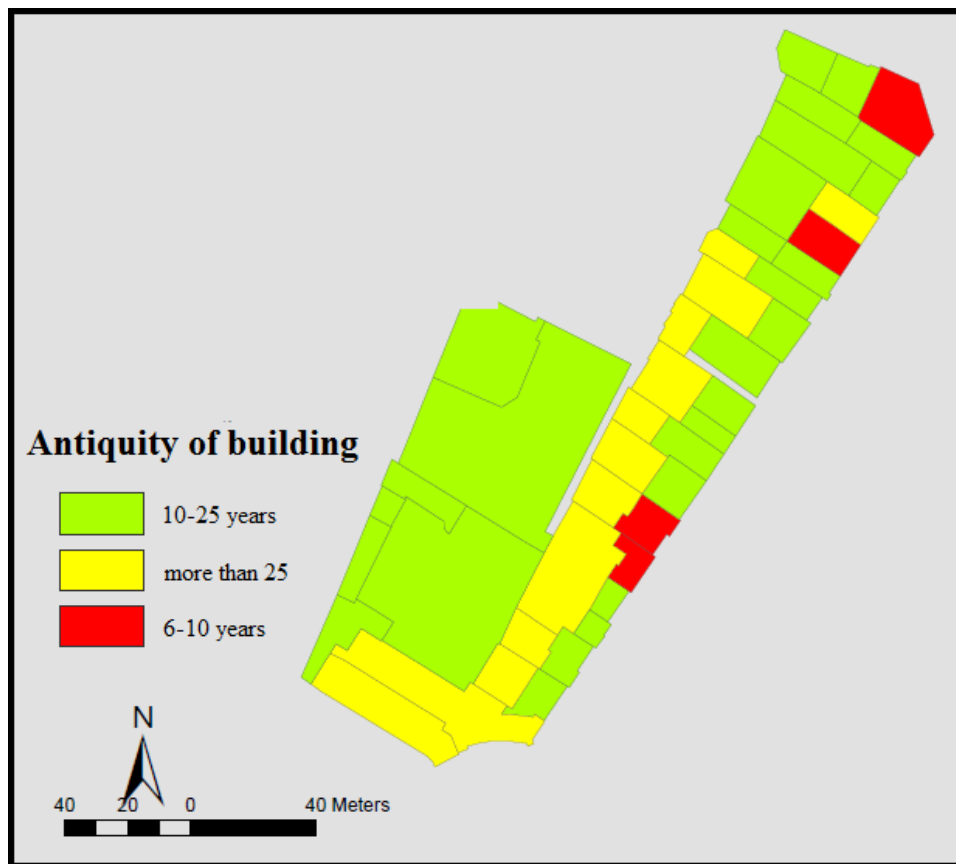


Figure 4: building antiquity of Bazaar plan

building antiquity	Area (m <sup>2</sup> )	Percentage
6-10 years	1005	9
10-25 years	10886	61
More than 25 years	4675	30

Table2: percentage of building antiquity

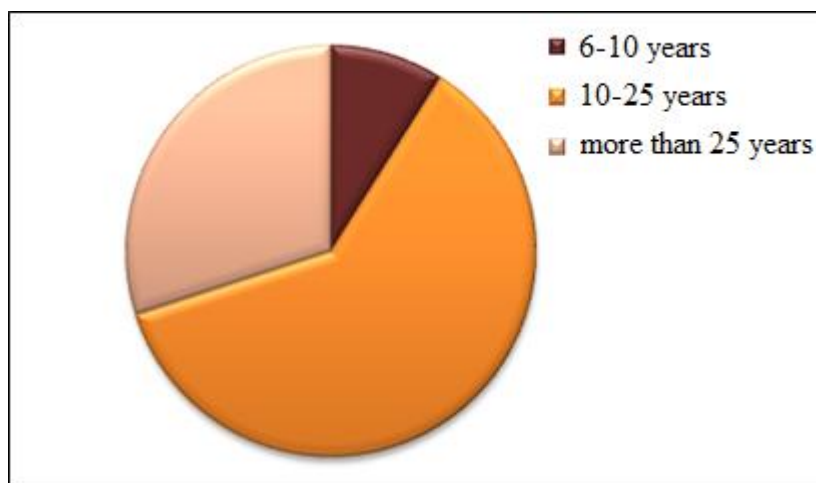


Figure 5: Antiquity of building

5.1.3. Material of building

Nearly 48% of buildings have been consisted break & iron. Also, 6.4% of building have been consisted Concrete. On the other hand, 13% buildings have been consisted of from unstable materials such as: wood. Thus, should be regarded to material in old fabric.

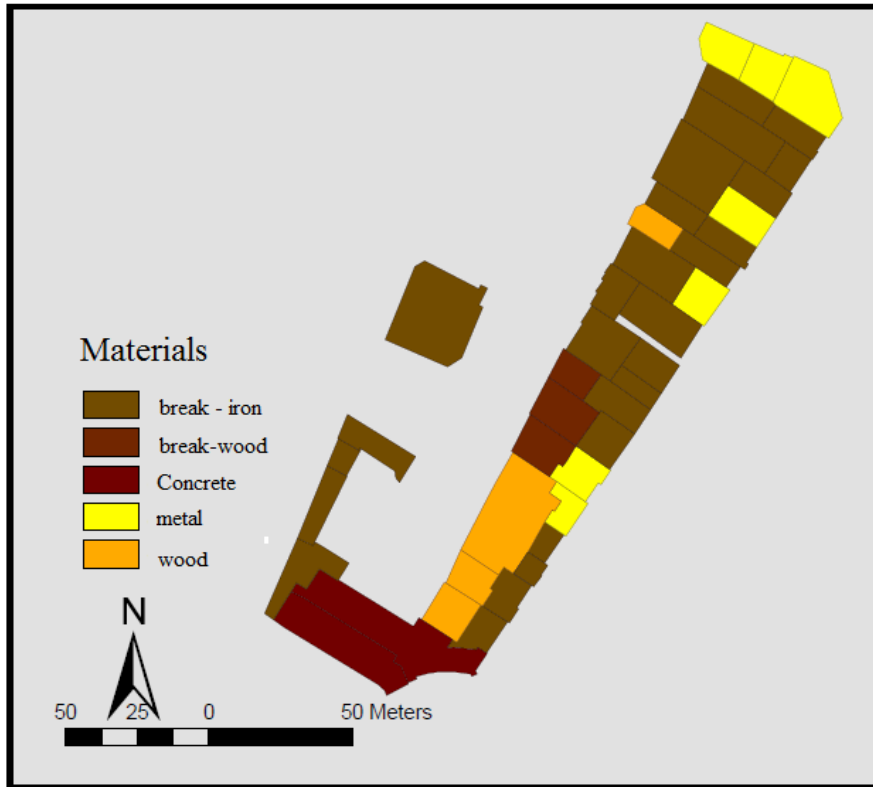


Figure 6: building materials plan

Materials	Area (m <sup>2</sup> )	Percentage
Break-iron	6575	48
Break-wood	728	9.6
Concrete	1437	6.4
Metal	1668	22.5
Wood	1375	12.9

Table3: building materials (percentage %)

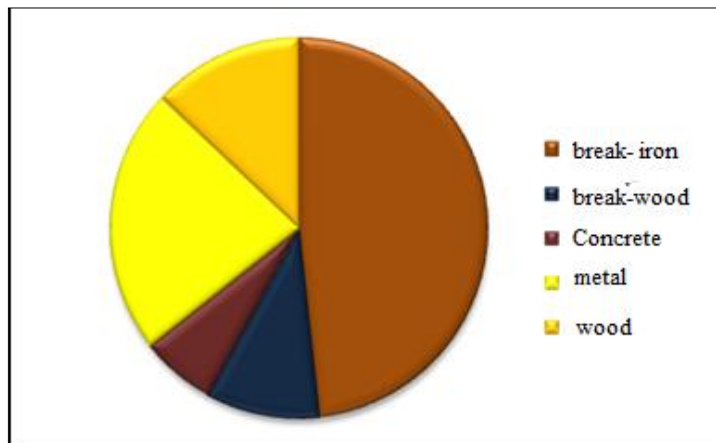


Figure 7: building materials

5.1.4. Building quality

In studied area, 9% of buildings is making now (newly building). 61 % of building had been tenability. But 6% of them were old and destruction. Although, 61% of them were tenability, but new and modern buildings were low. This issue didn't appropriate for important fabric in city .

Building quality	Area (m <sup>2</sup> )	Percentage
Old	1648	6.8
Tenability	10886	61.3
destruction	1217	6.8
New	1005	9

Table3 Building quality (percentage %)

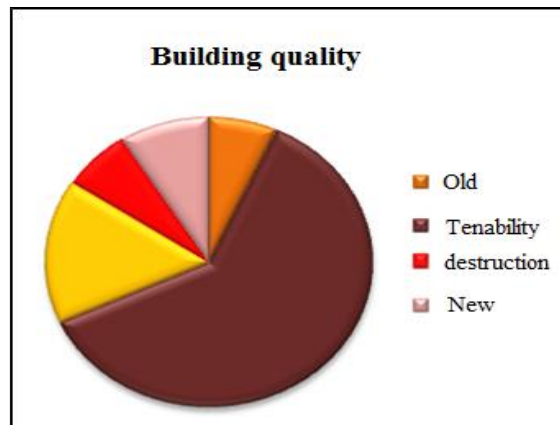


Figure 8: building materials

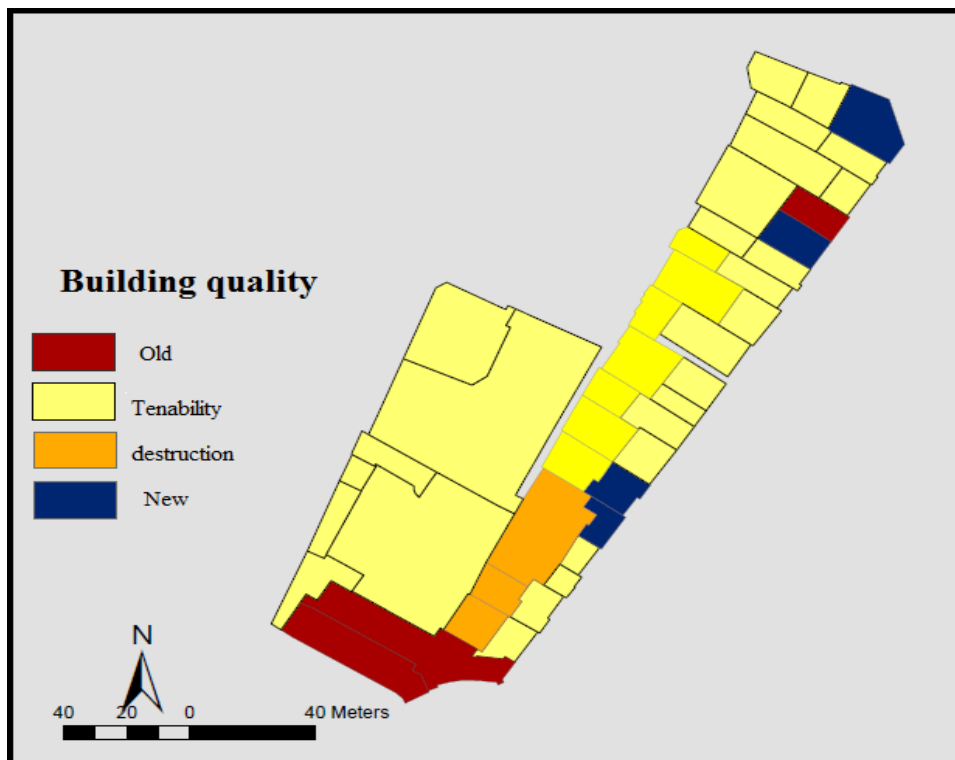


Figure 9: Buildings quality plan



**V. Codification of goals, strategies policies implementation**

After analyzing data that was used from GIS software, was planned in order to improving physical quality of borujerd bazaar. So, were codified strategies and goals in order to improving bazaar condition.

Micro problems	Problems
<ul style="list-style-type: none"> <li>- there is informal construction in studied area</li> <li>- there isn't harmonic development in studied area</li> <li>- there is traffic problem in center of city due to bazaar location</li> <li>- there isn't parking in appropriate location</li> <li>- there is administrative centers in studied area</li> <li>- there isn't urban services and necessary per capita</li> <li>- there is narrow walkway and parking problems</li> <li>- there isn't appropriate cover walkway</li> <li>- there isn't appropriate urban landscape</li> <li>- there is social , environmental , viewpoint in neighborhood</li> <li>- there is inappropriate jobs around bazaar</li> <li>- inappropriate landscape in urban fabric in nearly land-uses</li> </ul>	<p>Physical &amp; social problems in old fabric</p>

Table 4 : urban problems in bazaar

**6.1. Codification of goals from problems**

One of the main steps in urban planning, determining of problems. Also, after that determine goals based on problems. Table 5 shows classification of macro & micro goals according to problems.

Micro goals	Macro goals	Total
<ul style="list-style-type: none"> <li>- improving urban viewpoint quality</li> <li>- preserving of liveability in public urban space</li> <li>- strengthening of urban spaces</li> <li>- creating of security in neighborhood</li> <li>- creating new construction</li> <li>- creating appropriate complex between new and old land-uses</li> <li>- improving new development according to old indicators</li> <li>- design based on natural disasters</li> </ul>	Updating old fabric	
<ul style="list-style-type: none"> <li>- increasing resident participant and local organization</li> <li>- decreasing crime in old fabric</li> <li>- renovation social , historic , cultural in old fabric</li> <li>- preserving of population structure &amp; improving life quality</li> </ul>	Preservation of old fabric as social & cultural welfare by emphasis on historic role	
<ul style="list-style-type: none"> <li>- Preserving indicators and value of old fabric</li> <li>- updating old building</li> <li>- renovation of valuable spaces</li> </ul>	Renovation of historic identity	
<ul style="list-style-type: none"> <li>- improving transport network</li> <li>- preventing from crowded area</li> </ul>	Improving transport system in old fabric	
<ul style="list-style-type: none"> <li>- creating safe environmental</li> <li>- using from modern services</li> <li>- improving water surface</li> </ul>	Improving urban facilities and equipment	

Table 5: determining of goals from problems



**SWOT technique** :After analyzing of Tehran green spaces development was evaluated strategies by using SWOT technique. SWOT analysis (alternately SWOT Matrix) is a structured planning method used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in a project or in a business venture. A SWOT analysis can be carried out for a product, place or person. It involves specifying the objective of the business venture or project and identifying the internal and external factors that are favorable and unfavorable to achieve that objective. The technique is credited to Albert Humphrey, who led a convention at the Stanford Research Institute (now SRI International) in the 1960s and 1970s using data from Fortune 500 companies.

Setting the objective should be done after the SWOT analysis has been performed. This would allow achievable goals or objectives to be set for the organization.

- Strengths: characteristics of the business, or project team that give it an advantage over others
- Weaknesses: are characteristics that place the team at a disadvantage relative to others
- Opportunities: *external* chances to improve performance (e.g. make greater profits) in the environment
- Threats: *external* elements in the environment that could cause trouble for the business or project

Identification of SWOT is essential because subsequent steps in the process of planning for achievement of the selected objective may be derived from the SWOT. First, the decision makers have to determine whether the objective is attainable, given the SWOT. If the objective is NOT attainable a different objective must be selected and the process repeated. Users of SWOT analysis need to ask and answer questions that generate meaningful information for each category (strengths, weaknesses, opportunities, and threats) in order to maximize the benefits of this evaluation and find their competitive advantage (Golkar, 2006 :89).

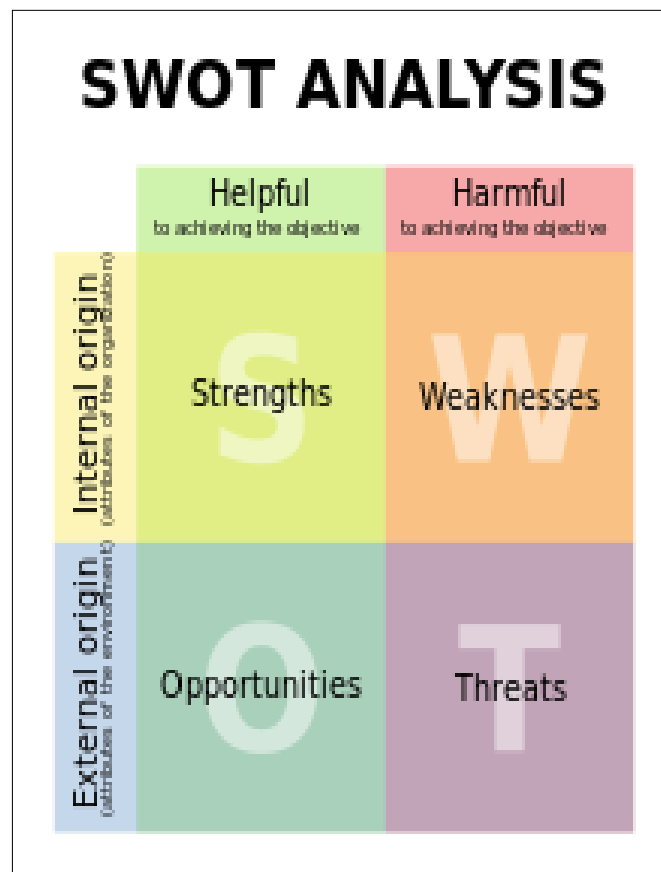


Figure (11): SWOT graph

Opportunities	Threats	Weaknesses	Strengths	Physical & social indicators
<ul style="list-style-type: none"> <li>- there is native resident in old neighborhood</li> <li>- there is functional points in order to presenting to urban services</li> <li>- utilization of city according to natural condition , such as : other old cities</li> </ul>	<ul style="list-style-type: none"> <li>- Unruly construction in old fabric</li> <li>- there is destroy fabric in studied area</li> <li>- there isn't harmonic development in studied area</li> <li>- there is traffic problem in center of city due to bazaar location</li> <li>- there is administrative centers in studied area</li> <li>- there is lack of urban services</li> </ul>	<ul style="list-style-type: none"> <li>-there isn't parking in appropriate location</li> <li>- there isn't edge of valuable &amp; proportion spatial</li> <li>- there is unstable building</li> <li>- there isn't appropriate access To houses</li> </ul>	<ul style="list-style-type: none"> <li>- there is residential land-uses as the most area land-uses</li> <li>- appropriate composition of functional in studied area</li> <li>- there is participant residents in urban issues</li> <li>- there is important spaces in order to liveability in neighborhood</li> <li>- there is indicators of eligibility in studied fabric</li> </ul>	

**Table 6: SWOT table of Bazaar**

**VI. STRATEGIES**

In this research, was presented some strategies in order to improving urban life quality. On the other hand, old fabric in historic cities has special condition. Thus, could be improved urban life condition in current cities. The strategies are:

- [1] Respect to fabric identity
- [2] Regards, to local condition of studied area
- [3] Reformation transfer spaces
- [4] Improving parks and urban green spaces
- [5] Making eligibility of old fabric and urban spaces
- [6] Controlling terrific
- [7] Creating various land-uses in old fabric
- [8] Creating focal points in order to improving urban landscape
- [9] Connection indicators element trough view corridors

**VII. RESULTS**

Considering numerous problems related to the old textures, sustainable development can be mentioned as the most efficient approach to avoid consequent shortcomings. Fabric in borujerd, a city in the western part of Iran. By observing the social, economic, and environmental characteristics in the studied region, and by interviewing the residents in borujerd 's old textures, the SWOT analysis, the analysis of strengths, weaknesses, opportunities and threats using qualitative method, was adopted in order to detect the old textures. In this paper, efforts have been made to analyze the renovation of old urban textures as having in mind the sustainable development. To organize the old textures in borujerd, the SWOT type strategy was adopted from diverse strategies in this paper. The mentioned strategy mainly focuses on the internal strengths in order to eliminate the external threats. So, at finally some implementation policies are proposed.

They are:

- Renovation old bazaar in order to improving fabric quality
- Strengthening access axis in order to improving urban life quality
- Creating complex functional land-uses in studied area
- Gradation of environmental quantity & quality values in order to improving physical quality
- Improving transfer axis in old fabric in order to preserving crowded area

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