

## Urban Design

# Redesigning bazaar physical structure according to its dealing culture structure (Case study: Arab bazaar in Ahvaz city)

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### Abstract

The Bazaar physical structure is formed based on the arrangement of division units, Interfaces, joints and boundaries to each other and the Arabic Bazaar follows this example as well. This structure is the result of arrangement syntax of division units with a linear pattern around an axis. Culture is a life style of people that fulfills their needs with its "Pattern variable" based on the values of their culture. The Arabs considered as the buyers and sellers use a dealing pattern in this bazaar that is different from others. The interactions between the roles results in the formation of networks with different contents. The networks tie to each other and form the dealing culture structures. The Current physical structures are not in accordance with the dealing culture structure thus it results in irregularity. The changed structure of the shops with the counter of vendors that is put next to the shop can be an indication of inappropriateness of physical structure, transaction culture structure which results in disarrangements in bazaar. The inappropriateness of the two structures made some irregularities in bazaar. The aim of the current research is to solve the above mentioned problem by utilizing the general structure connection model based on the system theory for physical structures. Therefore, the present research attempts to achieve the association of physical and cultural structure as the aim in order to seek the answers of the following questions:

1. According to the culture structure, how is the physical structure designed?
2. How is the form of components and their connection to each other designed in physical structure according to the networks and relations between them in culture structure?
3. How are the elements of components and the relationship between them designed in physical structure with content and pattern variable in culture structure?

Hence the dealing culture structure in the Ahwaz Arab Bazaar was identified using the ethnographic method based on the network theory; the results were applied in the redesign of the physical structure. Culture regularity in dealing networks is the result of the present study that facilitates the dealing of goods and information in bazaar. In the current study, the framework was presented for utilization in the design process by network theory and Parsons' cultural theory that was used mainly in sociological studies. The model of culture structure was extracted by output of ethnographic research method and interpretive method and it was used as one of the criteria for choosing the physical structure design. Creating the possibility of comparing physical body in correspondence with the culture is another result of the obtained culture structure model. It is recommended to use the obtained results in redesigning other old bazaars.

**Keywords:** Redesigning, Physical structure, Dealing culture structure, Arab bazaar.

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## 1. INTRODUCTION

The fitness of physical structure with dealing culture structure for interposition of Arab bazaar is the result of studying numerous examples of bazaar design and bazaar concept in various aspects. Social and physical dimensions

are among the most significant dimensions in the current study. In the social dimension, the bazaar is an area which is composed of the networks of agents that are linked together [1]. In the physical dimension, considering bazaar as the name of a place is the receptacle for business activities where goods are exchanged between the seller and the buyer [2-4].

In this dimension, an arrangement of the components of bazaar creates different structures such as cruciate, liner and complex [5-6]. The process of studies identified

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the presence of a distance between the physical body studies and social studies of bazaar. Although bazaar studies are rich in many of the dimensions, there seems to be a weak link between the dimensions of the market. With regards to the link between these dimensions in the market, it was assumed that the physical body of bazaar, with any possible pattern, is a suitable receptacle for the network type in which they have a deal. The types and contents of networks that interact with each other create the structure for dealing network that can be called a culture structure. The bazaar culture structure was investigated by an ethnographic method and bazaar physical structure by the use of survey and descriptive methods. The majority of sources which reviewed the bazaar physical dimension, extensively employed this research method and the other similar methods for designing or redesigning bazaar. However, in some cases of intervention on bazaar for example "Restructuring and Reconstruction of the Old Souk-Al Bawaba Square in Tyre" project used social studies in order to classify the users of the bazaar, but there was a paucity of specific research for identify the dealing network specifically [7]. In the "Rehabilitation of Tabriz Bazaar" project which won the Aga Khan Award, it seems that the role of dealing networks is somewhat considered through ethnographic studies [8]. Though, in the design projects of "Central Market Koudougou, Burkina Faso" and "Grand Market in Ouahigouya, Burkina Faso"[9] a great deal of attention was paid to the dealing culture of native users and it was obvious that the designs were based on the dealing culture although the lack of ethnographic research and application of the results in the design was quite evident. With regards to the above mentioned points, the association of physical and cultural structure is considered as an important factor in the design of Arab bazaar. Values and norms in the culture structure result in different patterns in the physical structure. In structuralism thinking, the patterns employed in the physical structures are due to infrastructure. Thus, by identifying this infra-structure the different structures can be reproduced. The patterns of the physical structure in the redesigning of the Arabs bazaar are extracted from the infra-structure in the specified cultures. This indicates that the cultural structure is considered as the infra-structure in redesigning of the physical structure. In order to investigate the cultural dealing structure patterns, first, the foundations of this structure have to be identified. Then by interpreting the infra-structure and the super-structure, the rules and patterns of the cultural structures are extracted. Therefore, the structures of the physical and dealing culture associate with them, thus it indicates the significance of these structures in the Arab bazaar of

Ahvaz city center, because the incompatibility patterns of these two structures result in irregularities in the bazaar. Therefore, it is required to identify the patterns of the dealing culture structure and then to employ this pattern for redesigning the physical structure and correcting the irregularities. In this physical structure, the Arabs transformed the components and their relationship to each other. Most of the physical structure borders of the shops are expanding from the original boundaries and the informal structure of the peddler's stalls are turned into an extension connected to the shop. In addition to borders, division units, Interfaces and joints are also changed based on the extended shops boundaries. The Arab dealing culture caused the physical structure to change based on the pattern variables and the contents of the dealing network ties. As a result, bazaar observed some irregularities.

For this purpose, Ethnographic research methods and techniques of observing, filming and interviewing were employed in order to identify the dealing culture structure. The physical structure is identified with a systemic approach based on the "General structure connection model" and the posteriori research methods.

The results of the research demonstrate that the theory of networks and Parsons cultural theory as well as the structuralism of Strauss that were previously applied in sociology, are Generalizable and usable in urban design process models. In addition, the generalizations of structuralism of Strauss, Saussure and Chomsky to the design process models are considered as the aids for designing the patterns and rules of urban structures.

## 2. THEORETICAL FRAMEWORK

In the present study, in order to conform the physical structure to the dealing culture structure, the bazaar concept is investigated based on the network theory and from the structuralism point of view. In the current study, the Bazaar is considered as a complex of the connections between sub-network actors who deal in a specific physical structure. In order to identify the Arab cultural structure in the bazaar, a set of value ties are investigated for each actor and the tie connections between the actors with different pattern contents, indicate a network arrangement pattern that is the structure of dealing culture. The model of the Cultural structure with its components (networks), relation patterns and the rules between them, provide the possibility of according the physical structures with the dealing culture structure. Therefore, the components, relations and the rules between them, in the culture structure, should be according to those in the physical structures.

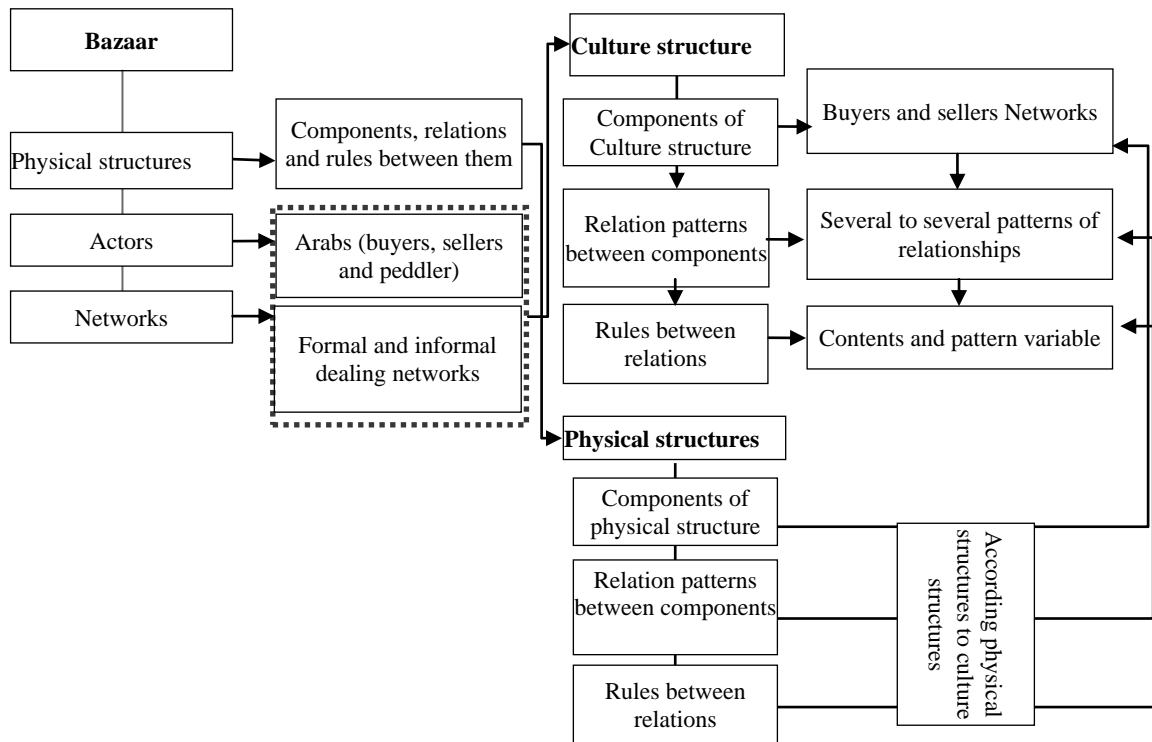


Fig. 1 Theoretical framework

### 3. THEORETICAL FOUNDATIONS

#### 3.1. Structure

The literal meaning of structure is a set of methods which can be employed for connecting the parts of something in order to make it to a whole. Considering this definition, structure is introduced as a method. In other words, structure is regarded as a quality, namely an "to arrange the different parts of something into a pattern or system in which each part is connected to the others" [10]. This definition of "structure" considers the means and methods within it and these methods are utilized by the model and the system. According to the meanings provided in dictionaries, structure can be defined as: "The structure is the usage of the methods in accordance with the pattern, which connects the components with a specific shape and arrangement for a certain purpose". According to Saussure, language has two orders of Syntagmatic and associative relations that can lead to various combinations of a sentence [11]. Syntagmatic relations justify the connections between elements in the chain and sentences and depend on the substituent group or class which this element affiliates to [12]. So, Saussure acknowledged language as a structure of sign and meaning (words), which come together and make up the text by the rules of grammar (succession and syntagmatic rules). Such structure has a hierarchy that puts the elements together under the laws to form a means transmission system [13]. After Saussure, Levi-Strauss enters structuralism to sociology. In his structure method, rather than considering the nature of the phenomenon, every phenomenon will be studied based on the relationships with the other

phenomena. Therefore, it can be concluded that discovering the unconscious nature of collective phenomena which studies the unconscious infrastructure of the variable conscious phenomena constitutes the basis of the mentioned structuralism [14]. In this approach, the social structure is considered as dialectic between superstructure and infrastructures, and by social interaction as the raw material which constitutes the social structure rules, these structures can be realized. The social construction is actually the outer protests of behavior in social interaction that are perceived in the context of a system [15]. Strauss hierarchal interpretation of the structure differs from Saussure. Saussure defines the structure at different levels of components and the connection between them, while the structure levels in Strauss's view are the levels of components and their combinations in the form of a structure in different layers are based on the primary structures or infrastructure. However, based on Chomsky's theory of syntactic structures in linguistics, infrastructures are basic or core sentences that are converted to the superstructure by transformational rules. The transformation can extract derivative sentences from the determined nuclear sentences [16]. This structuralism is placed in the syntactic structures of the generative grammar. In generative grammar a set of syntactic structures is generated in the form of sentences [17]. According to the expressed definitions and concepts, "Structure" can be observed as a hierarchy of elements, which are connected, based on proven relationships to each other. Furthermore, a system where the role and position of each element is determined by a fixed relationship is considered as its consequence. Therefore, in order to design or produce each structure,

some components are required:

1. The relationships or structure patterns based on fundamental and basic patterns or prior structures.
2. The structural elements.
3. The structure rules in order to maintain the constant and primary relations during growth or change in construction. These rules will be determined based on different theories:

(A) According to Saussure opinion, these rule are divided into two categories: The rules relating to the way that different elements accord together (the rules of succession) and the rules of the elements selection or the possibility of placing elements in the structure according to semantic similarity or association (the rules of Syntagmatic).

(B) According to Chomsky's theories, the Generation and conversion rules are the reason for the generation of the derivative structures from the instinctive "Fixed patterns". The rules are the interpretations from a myriad of truly expressed or heard statements.

(C) According to Strauss, the generating of new structures is always based on the fixed patterns that pre-existed in the communities. That is why the structure rules (e.g. rules of marriage) will be fixed at different times.

### *3.2. Culture*

Culture is the explicit and implicit pattern that is shared by a relatively large group of people and transmitted from one generation to another [18]. In anthropology, Culture is defined as a system of shared meanings between individuals, groups, organizations or communities. The meaning of the system is based on the social interaction and is learned through life and is ultimately passed on and will be used by people to interpret the social behavior [19]. Therefore, in order to perceive social behavior, it is required to understand the meaning in each specific culture because cultural meanings are conveyed through behavior [20]. Considering culture as a way of life refers to a network of learned patterns of meanings that people have used and shared in social interactions [21]. Different theorists defined the concept of culture in relation to the actions between actors. Social action necessarily implies that subject-actors must choose among various possible ways of acting which are sometimes pattern variables. People will have a choice value in social interactions among the various behavioral patterns. The decisions that actors make against various models is derived from the values that they have [22]. Rapoport considers all the environment as a result of electing solutions between all the possible options and as the basis and common feature of all the designed activities [23]. Talcott Parsons explains "Pattern variables" that are the number of polar alternatives of possible "Orientation-selection". This is a variable in various communities with different social systems. In the social system, the interactions are based on the orientation-selection models. These orientations indicate the clusters of choice [24]. He suggests that in every interaction where the actor connects with other actors, he or she is faced with five choices or tendencies which are two-by-two Opposite. These ten choices

include: 1. Affectivity-Affective Neutrality, 2- Self-orientation-collectivity-orientation, 3- Universalism-particularism, 4- Ascription-Achievement, and 5- Specificity-Diffuseness [25].

### *3.3. Bazaar*

Investigating the definitions of the term "Market" indicates that the majority of meanings refer to the "Place names" of the market. The place is the function of commodity exchange or where a group of people gather together for exchange. The markets in Iran can be defined in terms of the social and economic aspects. Economic aspects of the market can be considered as a pricing mechanism and as an entity [26]. However, in the social dimension, the market can be described as a network of activists, including wholesalers, brokers, retailers and others. Networks facilitate the exchange. Network, is defined as a batch of contacts and communications between the individuals and groups that practice a member of a network to interact with other people [1]. In network analysis, the form and content of the relationship between the nodes are considered significantly compared to the characters and attributes of the actors. Knoke and Kuklinski divide the relations content into multiple types:

- Transaction relations: Actors exchange the control over a physical or symbolic media, such as economic sales and purchases.
- Communication relations: Links between the actors are channels of communications within the system.
- Boundary penetration relations: The ties between the actors are subcomponents of the system held in common.
- Instrumental relations: Actors contact each other in an effort to secure valuable goods, services, or information.
- Authority/power relations: Identifying rights and obligations of actors in order to issue and obey commands [27].

In network theory, social structures are the orderly patterns of relations between the actors and the position and the role that they have in a subgroup network and how they connect with other actors occupying a position in the network and make up the new positions. A unique opportunity which creates a bunch of links [28].

According to the definitions, it is indicated that: "The market is a **place** with its specific structure that **actors** exchange certain goods in the form of **networks**. Therefore, the markets can be classified based on three concepts: "Place", "Actor" and "Network". The two compound concepts of the "bazaar physical structure" and the "Bazaar culture structure" can be extracted based on these three concepts. In the "Bazaar physical structure" concept, the market is investigated as a place with its specific structure and in the "Bazaar culture structure" the actors and the relation Networks between them are investigated.

### *3.4. Bazaar physical structure*

According to the definition of "Structure", the "General structure connection model" is employed for determining "Physical structure" components [29]. Then, the relations

between components and the rules between the relations are scrutinized, which determines the arrangement syntax of the components. Therefore, the division units, Interfaces, joints and boundaries are structure components, which according to various relations and rules and the arrangement syntax of components will determine the different structural levels of the bazaar. Rules specify syntagmatic syntax of the components together with the different arrangement in physical structure.

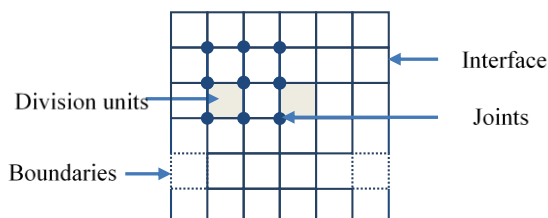


Fig. 2 General structure connection model (Source: [29])

### 3.5. Bazaar culture structure

According to the definitions, culture can be considered as the structure of interactions between actors, with different roles, on the basis of their particular values and norms. The connections among these patterns form a whole and compose a system. The interaction between actors includes choosing between several "Pattern variable" due to particular values. In order to investigate the culture structure such as physical structure of the components, the connections and rules between them should be identified. The structure components in culture are the actors. By identifying the connections between actors and repeating them in a synchronized relationship the connection patterns between actors can be extracted. The extracted pattern is then interpreted based on the "Pattern variables" and content of its ties to discover the rules of the cultural structure. Rules are the specifying generative syntax of dealing networks in the cultural structure. Actor connection patterns and the rules between them, form the networks in the Bazaar. In the present study, "Bazaar culture structure" is a combination of the unique ties between dealing networks and their arrangements in that specific culture.

## 4. RESEARCH METHOD

In the current study, the ethnography research method is employed to understand the Arabs dealing culture. Based on the theories of Parsons and the general structure connection model, the Arabs dealing culture structure is offered. In the ethnography study, researchers describe the precise behavior of people of particular culture in the field of practice and try to see their value systems and understand their behavioral norms from the same people's viewpoint [30]. Ethnography is also a method for the analysis of social structures that indicates the social relationships based on its patterns and logical models by examining and interpreting the context in which the

behaviors are embedded [31]. In this study, posterior data collection was carried out with the etic approach and the data are analyzed by the use of "Methodology of interpretation". Therefore, in extracting the culture structural rules, the interpretation method was employed to determine the definition of interactions based on the pattern variables and the tie Content. The first step was by "Unstructured observation" in the Field. In the "Unstructured observation" that is applied in the preliminary stages of research, the objective is achieving general information and finding the appropriate criterions to evaluate a subject. In the observation without participation method, the observer simply pursues the events as the role of the viewer without intervention and analyzes the social activities. This type of observation is structured and operationalized using the coded observation table. Further, the observer only focuses on the types of coded behavior. Using the coded observation table that is the basis of the interaction analysis, behaviors can be categorized [32]. In order to find the patterns of action, the category of characteristics action are recorded at each level in the bazaar. In these tables, the repeat rate of each actions is recorded for action [33]. The shape of actions that have the most abundant are depicted by sociogram and are introduced as action patterns. The sociogram is a technique for deriving actors' behavioral maps in which the relationships between members of a group are drawn [34]. In fact, the sociogram as a Technique for representing the formal properties of social configuration is represented as the chains of connection among actors in one group. In the sociogram shapes, individuals are represented by points and their social relationships to one another by line. This shapes are similar to graphs [35].

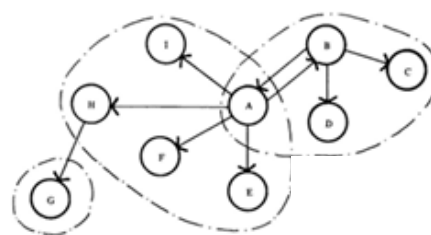


Fig. 3 View sociogram with line and dot (source: [35])

After direct observations and the recording of events, the written descriptive report of the interaction, dealing form, arrangement syntax of the shops and the peddlers counter are provided. This report is specifically provided to answer the quiddity (what) question to achieve a clear image of the Arab dealing culture. Then by the use of reports and reviewing the theoretical fundamentals and frameworks, the observation structure is utilized at the next step to explore the culture structure. Then in this step the observations are based on the interactions between buyer-seller- peddlers (pairwise relations permutation of actors with each other). "Pattern variables" and tie Contents is also classified. For further completion, precision and focus on the action of filming techniques are employed as well. In addition to the fixed

filming of a commercial unit in a period time, the total units of bazaar were also filmed in order to examine the actions throughout the bazaar. Use is made of observation in order to recognize these ties, and "Semi-structured" interviews [36]. Data from observation and interviews is classified in the Table 3 based on the relationships between the actors and the type of

relationships. Classified data were analyzed using thematic analysis. In the Thematic analysis method, a number of concepts and fundamental meaning patterns are extracted using data classification and categorization [37]. By the obtained comparison and analysis of data from Table 3, the tie patterns, type of pattern variables and tie contents are determined in bazaar.

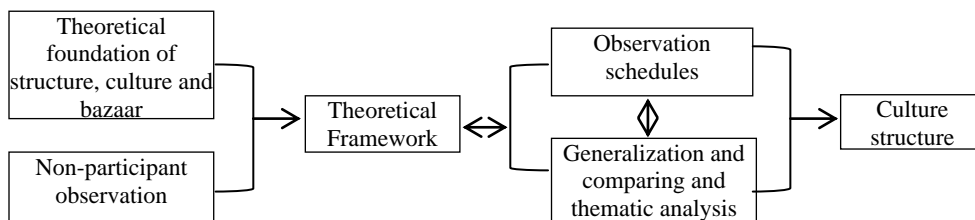


Fig. 3 Ethnographic research process



Fig. 4 Location of Arab bazaar in Ahvaz city

## 5. DISCUSSION

### 5.1. Ahvaz Arab bazaar recognition

#### Location of Arab Bazaar in the City

Arab bazaar is located in the center of Ahvaz city. This part of the city was formed during the Qajar era simultaneously with the new development of new Ahvaz as a commercial harbor.

### 5.2. The recognition of physical structure of Arab Bazaar

The recognition of bazaar physical structure is based on physical structure theory and general structure connection model. Structure rules will be adjusted according to Saussure's structuralism. In level 1, bazaar physical structure as a whole, beside another bazaar formed a checkered structure Fig. 5.

The neighboring of two parallel blocks with each other formed the structure in level 2 Table 1 based on the linear pattern. In level 3 Table 2, neighboring of shops alongside and against each other formed the bazaar physical structure.



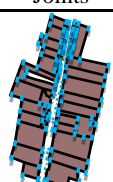
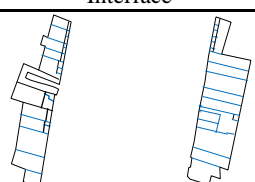
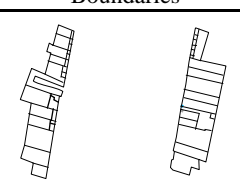
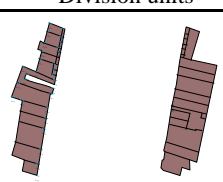
Fig. 5 The map of Arab bazaar physical structure, beside another bazaar in level 1

Table 1 Description of structure in level 2

Components of physical structure			
Joints	Interface	Boundaries	Division units
The hypothetical line from the stretch of the East and West blocks	Two cross streets	Rectangular closed borders with irregular geometry	Eastern and western blocs
	Linear pattern		Structure pattern
	The neighboring of two parallel blocks with each other		Structure rules



**Table 2** Description of structure in level 3

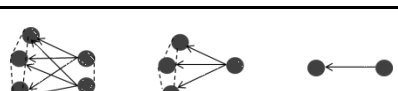

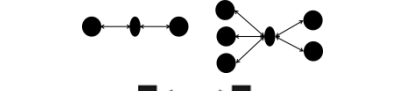


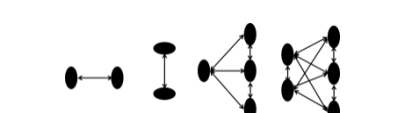
Components of physical structure			
Joints	Interface	Boundaries	Division units
			
The intersection points of the boundaries in each block form the point joints and the joints between the two blocks are the hypothetical lines along the intersection of the intersection	The interfaces conform to the interior boundaries of shops and the interfaces between the two blocks are hypothetical surface from stretch of boundaries shop boundaries with the bazaar axis  Checked pattern	Closed and rectangular boundaries for each division unit	Shops
Neighboring of shops alongside and against each other.			Structure pattern  Structure rules

5.3. Recognition of Arab dealing culture structure

The recognition of culture structure, discovering structure rules and the recognition of infrastructure is conducted according to Strauss's structuralism. This infrastructure is considered as a permanent pattern then superstructures will be generated based on it in bazaar. The components of the dealing culture structures include buyer, seller, and peddler (dependent and independent) in Arab bazaar. The actors are tied each other with "Pattern variable" and various contents which generate the dealing networks in Arab bazaar. In field observations and ethnography data collection from Arab behavior in bazaar, connection patterns between actors is investigated in the six categories with using pairwise relations permutation:

Connection between "Buyers-buyers", "Buyers-sellers", "Sellers- sellers", "Buyers- peddlers", "Sellers-peddlers " and "Peddlers - peddlers". Then, these connections are put together and form the networks in bazaar in accordance with generated structure rules. Generative rules are discovered by the interpretation of type and content of ties according to cultural theory (parsons theory) and network theory. There are formal and informal dealing networks in Arab bazaar. Formal networks deal in shop and passage while informal networks deal in outside shops along the bazaar axis. The dependent informal networks are generally located in front of small shops in the north area of the bazaar; and are independent networks generally located in front of passage and dilapidated and abandoned parts in the south and middle of the bazaar.

**Table 3** Category, type and pattern of ties between buyers, sellers and peddlers in Arab bazaar

Tie contents	Type of pattern variables	Tie patterns models	Tie patterns	Type & patterns of ties Actors relations
Communication, sentiment, instrument, boundary penetration	Affectivity versus		One to one, one to Several & Several to several ties	Buyers- buyers
Transaction, sentiment	All of pattern variables		One to one & Several to one ties	buyers-sellers
Transaction, sentiment	All of pattern variables		Several to one ties	Buyers-peddlers
Instrument, sentiment	Affectivity versus		One to one ties	Sellers-sellers
Instrument, sentiment, transaction	Private, Value-Orientation & Affectivity versus		One to one ties	Sellers-peddlers
Instrument, sentiment	Affectivity versus		One to one, Several to one & Several to several	Peddlers-peddlers

Each dealing network is related to the others by a tie at any level and generated other networks in the higher

level. Identified deal network by posteriori method in low level as an infrastructure that tied them to each other

generated culture superstructure in higher levels. The two identified networks as the infrastructures generated by tying buyers, sellers and peddlers to each other. These networks are called "Formal dealing network" and "Informal dealing network" Figs. 6-7. Buyers and sellers are the components of formal dealing network. The tie types between buyers and sellers are all of pattern variables with sentiment and sometimes transaction content. Tie patterns are one to one and several to one

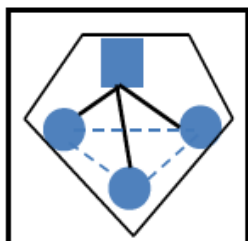


Fig. 6 Tie model between actors in formal network

from one side and front of the seller. Buyers and peddlers are the components of informal dealing network. The tie types between buyers and sellers are all of pattern variables with sentiment, communication and sometimes transaction content. Tie patterns are one to several and several to several from four side of seller. In two networks, tie types between buyers is affectivity versus the pattern variables with Communication, sentiment, instrument and boundary penetration content.

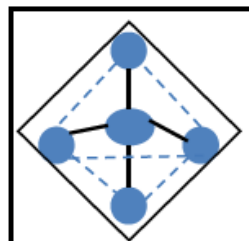


Fig. 7 Tie model between actors in informal network

In a higher level, infra-structure generated "Formal-formal" and "Informal-informal" networks with pairwise to each other. Networks tied in this level by buyer to each other with boundary penetration content and affectivity versus of pattern variables in formal-formal network but

peddlers tied to each other also in "Informal-informal" network. In this tie, the pattern variables are affectivity versus communication and sentiment content. In a higher level (the whole bazaar) generated culture structures tie these networks to each other.

Table 4 Dealing culture structure of Arab bazaar

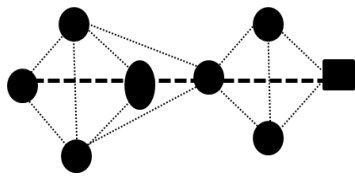
Tie contents	Type of pattern variables	Tie patterns model	Networks	
Transaction contents between sellers & peddlers, boundary penetration contents between buyers	Affectivity versus, and private		Formal-informal network	Dealing culture structure of Arab Bazaar in level 3
Communication, sentiment, instrument, boundary penetration contents between networks	Affectivity versus		Informal-informal network	
Sentiment, boundary penetration, Communication contents between networks	Affectivity versus		Formal-formal network	
Sentiment & communication contents between networks			All network of bazaar	Dealing culture structure of Arab bazaar in level 2

5.4. Redesigning arab bazaar:

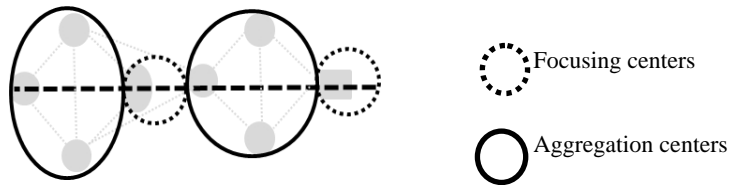
In order to conform the physical structure to the culture structure in bazaar, blocks should be separated in a way that they could contain the culture structure networks. Thus, the syntax arrangement of culture structure networks is scrutinized initially and then the blocks are separated according to it. Each network generates central structures around the axes along dealing centers of peddler 'stalls and sellers' shops. In the offered model the imaginary axes of

culture structure networks in Arab bazaar are indicated in which the axes where aggregations around two points of peddlers' stalls and sellers' shops are formed. Based on these axes, the two main aggregation centers are shaped in bazaars which are called "Aggregation centers" and "Focusing Centers". Focusing Centers are peddlers and sellers seating nodes; and aggregation centers are accumulation boundaries of buyer's networks. Consequently, there are two types of centers interconnected in each axis Figs. 8-9.





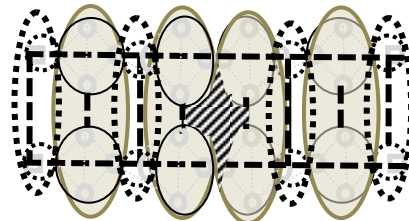
**Fig. 8** Pattern of tie between culture structure networks



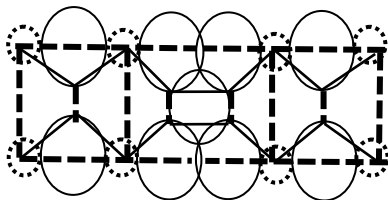
**Fig. 9** Centralized structure around an axis from tie of culture structure networks

Tying networks to each other generates the network structure from the centers and axes Fig. 10.

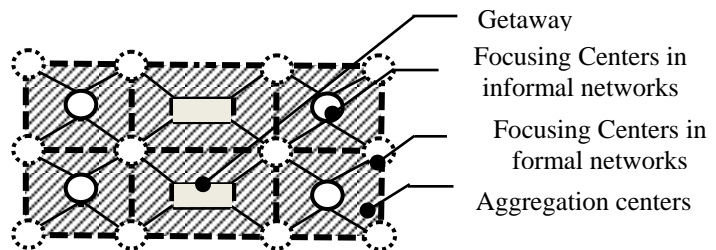
According to the dealing culture structure model, the bazaar physical structure in level 2 can be built. As a result, network structure with several centers and axes is physical structure according to the culture structure Figs. 11-12.



**Fig. 10** network pattern of culture structure based on centers and axes



**Fig. 11** Frame of physical structure based on network pattern



**Fig. 12** Offered model of networking physical structure to fit with culture structure

The syntax of axes and centers next to each other is demonstrated in Fig. 12. Aggregation centers are considered among the focusing centers. Getaway centers that generate tie between networks in two sides of bazaar are considered among these two centers. By connecting the centers to the axes, the bazaar physical structure can be designed according to the culture structure.

In suggested design, all getaway centers are arranged on an axis. Aggregation centers and focusing centers are also arranged on an axis which is parallel to the axis of getaway centers. In this generated structure culture structure networks are very similar to the existing deal networks in Arab bazaar. Focusing centers as Structure division units, Aggregation centers and getaway centers as interfaces are structure components in this level Fig. 13.

**Table 5** Redesigning Arab bazaar in level 2

Suggested of structure network		
Resulting cultural network		

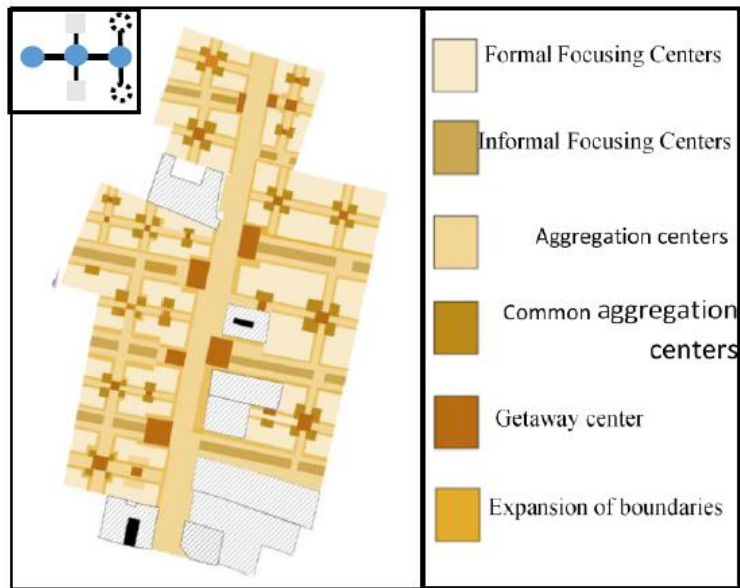


Fig. 13 Redesigning physical structure bazaar in level 2

Redesigning bazaar in level 3 is included in the networks of dealing unit as filler in aggregation centers as frame. Each dealing unit Fig. 14 is formed from shops that are related to each other by a joint interface and generated

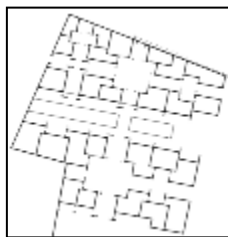


Fig. 14 An example of units in the Bazaar

In structure design, expansion is floor, walls and ceiling Figs. 17-18. As a result, each shop can expand each boundaries based on the efficacy and private pattern variables. In addition, this boundaries expansion leads to the relationship between formal and informal networks in

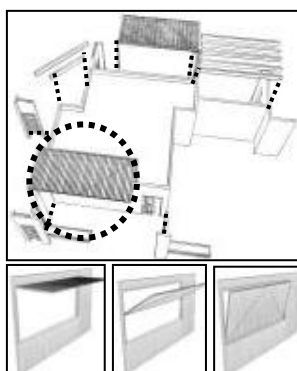


Fig. 17 Expanding of boundaries by movable ceiling

The design of dealing unit structure is arranged by Focusing Centers and Aggregation centers according to the culture structure around the getaway center Fig. 19. Tied

a network with several to several ties in dealing Fig. 15. This interface is based on the physical structure with several to several patterns in Arab dealing culture structure.

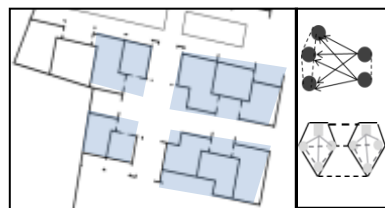


Fig. 15 An example of shops has common interfaces

the dealing units. Also, the informal networks within it can be accommodated by ad joint structure that are based on Private pattern variables and tie the formal and informal networks. This expansion is from floor of division units and adjacent to informal networks structure.

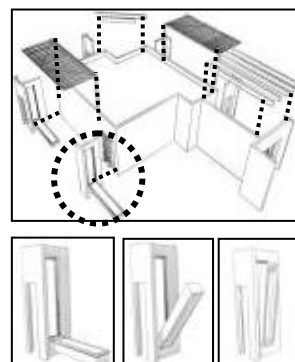


Fig. 18 Expanding of boundaries by movable floor

with Affectivity versus pattern variables and sentiment content between sellers; and tied with Affectivity versus pattern and boundary penetration- Communication content

between buyers generated in joint interface of shops Fig. 20. Also tied with Affectivity versus pattern and sentiment content between sellers and boundary penetration-

Communication content between buyers is generated in interface with short distances (aggregation centers) among shops Fig. 21.

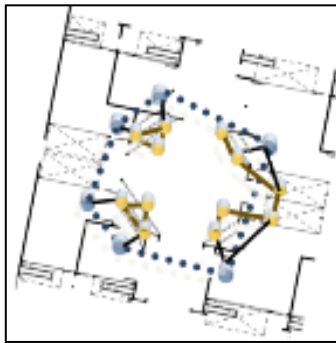


Fig. 19 Getaway center

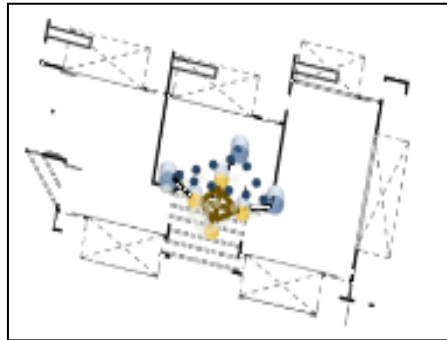


Fig. 20 Common interfaces of shops



Fig. 21 Aggregation centers

## 6. DISCUSSION

The review of the bazaar resources in architecture and urban design field indicates a physical approach that is dominant until this stage. The two categories of old bazaars (as a monument) that are restored and new bazaars that are designed can be examined. In the studies, it seems that they do not attract much attention to the dealing network and their role in shaping the culture structure in these bazaars. Therefore, the dealing culture is usually negligible in designing the physical structure. This is due to the inability of using specific research method to intervene the bazaar. The ethnography method in bazaar is more visible in anthropological projects such as "A naturalistic inquiry into buyer and seller behavior at a swap meet" [38], "An ethnographic study of an urban periodic marketplace: lesson from the Midville Farmers' market" [39] As well as in sociological projects such as the "Typology of buyers in urban shopping centers: A case study of the Bostan Shopping Center [40] and Women, passage and use up signs [41]. Therefore, the present study seeks to employ the ethnographic research methodology in design and market design projects. The current study can be considered as a bridge between the designs of new bazaar and the restoration of old bazaar. In this case, for the purpose of Proportionality of two structures which are existent, the physical structure and culture structure are identified. The inputs which are generated in this research can be utilized as the outputs for Restoration, design, redesign, and any other intervention in the bazaar.

## 7. CONCLUSION

In Arab bazaar of Ahwaz, The networks of actors were observed and then by identifying them, the components of the culture structure were identified. The relationship patterns between actors were discovered based on the form of links that the actors have with each other in dealing networks. The rule of these relations was identified and was interpreted based on the parsons' theory. The models of dealing network were extracted based on these patterns

and the rules between them as the culture structure, in order to allocate with the culture structure. Physical structure was investigated with Structural link theory and systemic approach. The physical structure of bazaar was studied with Structural link theory and systemic approach and it was identified in various levels. The next investigation indicated that syntagmatic rules of shops as a component of physical structure follow the "Pattern variables" of parsons in culture networks. Finally, by identifying the components, their relationships and the rules of the relationship in culture structure were detected proportionally with physical structure. Therefore, each dealing networks in bazaar has a proportional component in physical structure. In this regard, the way of putting together the physical structure components follows the form and relation content that exist in networks of culture structure. Since the physical structure in the macro, middle, and minor layers appears therefore, this implies a correspondence between these two structures at different levels. It is crucial to pay attention to the correspondence of these two at the mentioned levels in the bazaar because, considering this in the design, bazaar physical structure formed proportionally to the goals that dealing network have been formed for it. The discussions of market networks and their role in facilitating exchanges can be used to restore resuscitate and to protect the Old Iranian markets in which the networks were the major Break up and basic changes. It seems that the above mentioned issues can be used to redesign other urban spaces so that these spaces are shaped by its correspondence and appropriate culture. The topics presented in the redesign of the physical structure according to the culture structure indicate the methodological categories on urban design field and they are aimed at making decisions and preparing necessary fields for realizing the redesigning of the decisions that there was a requirement for their existence.

## CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest regarding the publication of this manuscript.

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