

## **VERNACULAR SETTLEMENTS IN CULTURAL CONTINUITY CONTEXT**

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### **ABSTRACT**

Analysing vernacular settlements, in context of reservation of cultural heritage and transferring local identity to future generations, are coming into prominence day by day. In this respect, Anatolia has rich sources in global literature ,especially in residential design. Vernacular settlements in Middle Anatolia, are the best examples of the cultural heritage in terms of spatial organization and configuration characteristics. According to syntax of spaces and functional hierarchy, analysing the spatial structure of rural dwellings is very important Because these analyses helps us to explain and understand traditional space culture and effect of life style to spatial form.

Konya as a research area, has significant examples of residential culture in different geographies which consists of several topographic and climatic properties. By analysing rural dwellings in vernacular settlements, it is determined that, they are differentiated plain and mount dwellings according to life styles and environmental factors. It caused metamorphosis in spatial organization and functional structure by the reflection of user requirements.

With the support of technological methods, analysing traditional spaces with modern techniques, is qualified as a “innovative movement”. In this study a mathematical method called “space syntax” is used in proving the relation of spatial organization and social life. By using this technological method, some findings about functional structure and spatial connection occurred. These findings are used to understand the relation of socio-cultural life and spatial configuration.

As a conclusion, it is determined that the trails of culture can be seen in usage and syntax of spaces. The relation of social life and spatial configuration is provided as objective criterion with the help of technological method. And it is predicted as a innovative method in recent house designs.

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**Key Words:** Morphological Analysis, Space Syntax, Spatial Alteration Vernacular Settlements

## 1. INTRODUCTION

For centuries Konya has been placed between most important settlement places of Anatolia, has been a reference city by its social and cultural properties. For centuries it shows regular improvement and evolution pattern which is expanded by radial axes from the center to city fringes. Although improvement and expansion problem is one of the branch of urban planning, it has been in interest of architecture because of its effects on residential design and planning of residential areas.

Economical, political and social improvements caused city improvement and starting migration from rural to city. By migration, residential areas formed on city fringes, families which are keep up with improvement and being urban, move on to city centers. This progress effected city form and has been a guidance factor to decide city improvement direction. In this changing and mutation progress some of residential areas which are migrated from rural to city, are urbanized or leisurely disappeared, some of them currently live in residential areas try to keep their properties in improving city form. In this progress rural residences which are one of the main source of our traditional culture, being urbanized by loosing their properties or changed.

Alteration is a situation of re-interpretation, which provides continuity of cultural identity and contains every value updating, which are transferred from past according to date requirements. In this sense, residences are basic elements of not only cultural continuity but also alterations which happens on this continuity. Spaces and residences; living with the community and reflective arrangements of cultural alterations. Alteration on spatial scale can be evaluated by experiential qualities rather than geometric integrity of space. Provider of continuity of alteration is, occured by expriences of residences and its integrated environment with livings more than the residences physical definitions (Morley and Robbins 1997). According to this alteration concept, the spatial features of plain settlements in Konya region and the alteration of spatial organization in migration process in cultural continuity contex is tried to determined.

## 2. METHODOLOGY

In this study, the comparative spatial analysis of rural houses in the fringes of the city, Space Syntax method was used. Method is one of the analysis methods that included in morphological analysis techniques. Space syntax method can be called as a schematic presentation, which defines the changes in behavior, social relations and cultural differences.

Method is also used to investigate, predict, and evaluate the effects of various design alternatives. Nowadays, it is used to measure the intelligibility of the user or designer's perspective with the building's design styles (Edgü ve Ünlü, 2003).

The most important feature of Space Syntax is, being a numerical technique which has capable of analyzing the abstract characteristics of space as a concrete characteristic. These have a critical role in the formation of knowledge based on the experiences which can be named as a reflection of space in human mind.

The general idea of this method is that, by separating the parts of place that these are "the starting point of human experience", and bringing these pieces into maps or graphs to allow them to make quantitative analysis on (Hillier ve Hanson, 1984).

There are some specific concepts in space syntax methodology. Explanation of these concepts is important to interpret the results of analysis correctly and to understand the logic of the method.

3 key concepts within the scope of the study will be considered for the interpretation of analyzes. These are connectivity value, visual integration value and visual mean depth.

**a) Connectivity**

A measure of the number of directly connected adjacent spaces. A local distance that measures the number of steps away from each line. (Hillier ve Hanson, 1984). This local criteria is the most basic knowledge about understanding space

**b) Visual Integration**

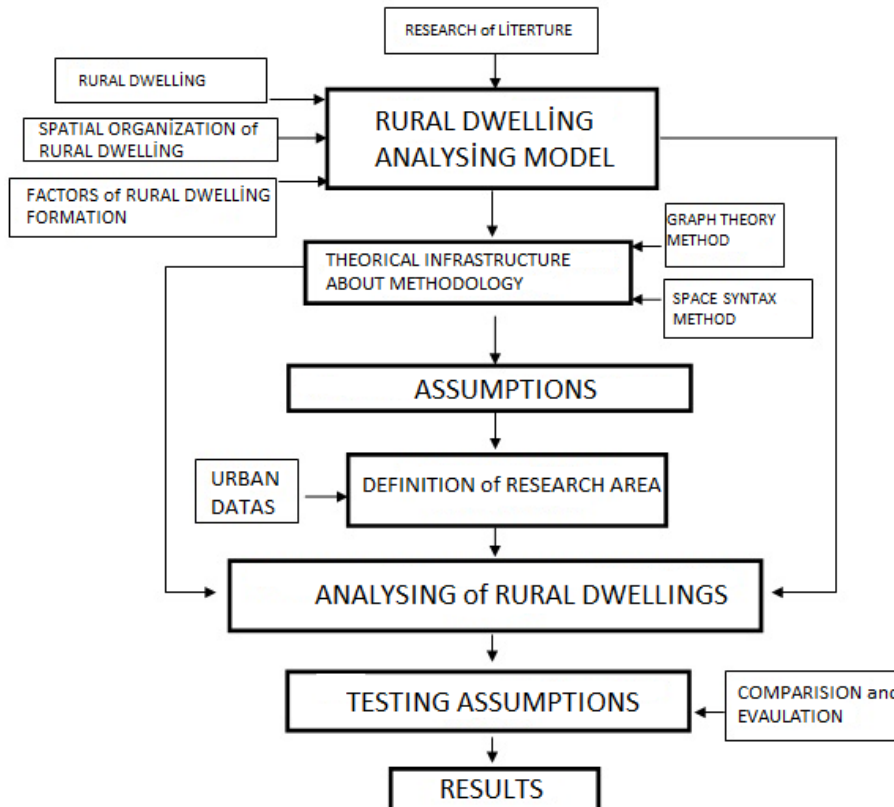
The most important criterion to predict the movement of a movement along the line, is the value of spatial integration. Integration as a global benchmark is the average depth of the space to other spaces within the system. The relationship between the integration value and connectivity value is intelligibility or readability. If connected spaces are also integrated spaces, it means strong and intelligent spatial relation. In this case, all the components that make up the system itself is readable (Hillier ve Hanson, 1984).

**c) Visual mean depth**

One of the most important relations in syntax method is the concept of spatial depth. Depth occurs when there is more than one crossing space to reach a space. If there is a low value to be reached in the deflection space, the depth is "shallow", if there is a high value, the depth is "deep". The important subject in this case is, showing as a value of the relation of each space with other spaces. This refers to the mean value of the whole, and allows for comparison with other systems (Hillier, 1984).

In obtaining the findings the following flow chart related to the method is as follows (Table 1)

**Table 1 :** Flow chart about the methodology of study (Yılmaz Çakmak 2011)



### 3. FIELD WORK

Anatolia is a rich area in local characteristics and rural settlements. For this reason, studies on rural settlements are increasing every day. The basic approach to the tradition of human environment is based on; the human, as well as in all its activities, is affected by geographical conditions in construction of his house. However the settlements built by communities living in natural environments shows important differences. At least, even if it proves not only natural conditions in forming houses and settlements, but it also exposes the importance of culture.

Generally rural settlement can be defined as; intelligent settlements affected by environmental components (geographic and cultural), differentiate by living styles and extensive kinship relations (Çınar 1990, Aydın 2008).

Plain and mountain settlements features are comparatively as follows (Table 2)

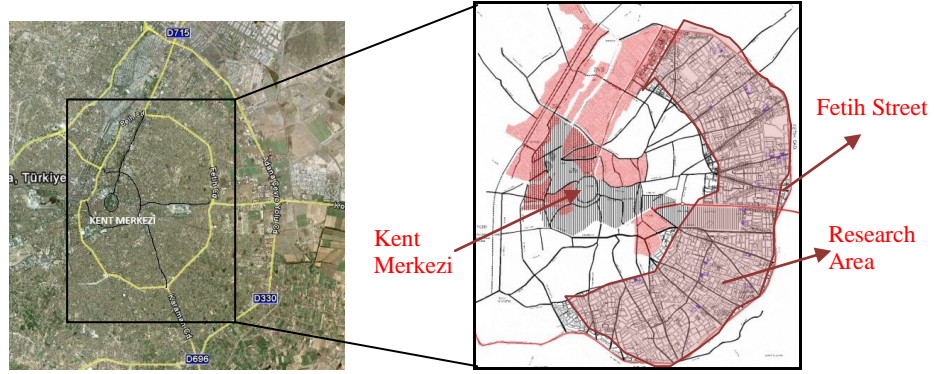
**Table 2:** General characteristics of plain and mountain settlements (Çınar, 1990; Kantar, 1998; Tunçdilek, 1967; Öymen Gür, 2000)

PLAIN SETTLEMENTS	MOUNTAIN SETTLEMENTS
• Dry farming is done	• Irrigated farming is done
• They have flat land structure in terms of topography. They are seen in plains and level areas.	• They have rough land structure in terms of topography. They are seen in the hillsides and slopes of a mountain.
• The accommodation action, food, cleaning and other areas of other actions are separated.	• All the actions are nested.
• The dwelling groups are together and in attached order.	• The dwelling groups are spread over the field in a manner that they are separated from each other at certain intervals.
• Social relations are high.	• Social relations are disconnected.
• Commonly seen in the Central Anatolia, Southeastern Anatolia and Eastern Anatolia Regions.	• Commonly seen in Black Sea Region. It is also seen in the hillside settlements in other regions.
• The facility and network installation is easy.	• The facility and network installation is difficult.
• The construction material is generally adobe for walls, stone for basement and the soil cover on wooden beam for roofs.	• The construction material is stone or wood for walls, stone for basement and wood for roofs.

### 3.1. Research Area, Location and Characteristics

The research area subject is Plain rural settlements, in Middle Anatolian Reigion, that can be seen concreatively in geographical and cultural features. In this context, the selected research area is settlements where migrating groups migrated and settled from plain villages to city fringes.

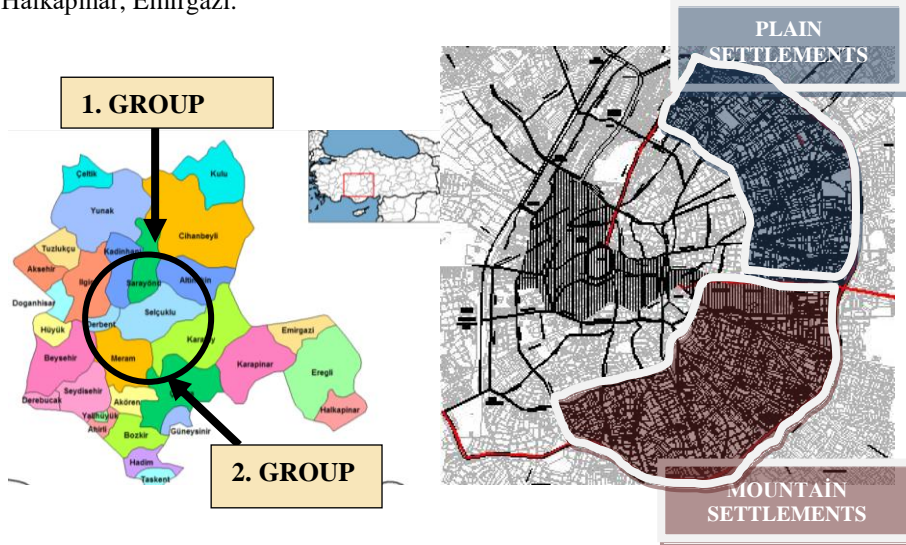
The research area is an area on the north-south axis of Konya city centre, where almost 100.000 people live and which is comprised of 10 districts. The demographical feature of the region is that it is comprised of families migrating from surrounding towns and villages with the industrialization period in Turkey (post-1960). Fetih Street forms the eastern external border of the research area. As the urban change and transformation keep on, rural areas are changed into urban settlements and the local dwellings are disappearing.



**Figure 1:** Konya city fringes and research area (Yılmaz Çakmak 2011)

Movement to city is usually at the Access road route. The classification of Konya, according to accession route is as follows;

- 1.Group(plain settlements),** Kulu, Cihanbeyli, Altınekin, Sarayönü, Kadınhanı, Çeltik, Yunak, Akşehir, Doğanhisar, Tuzlukçu, Ilgın, Hüyük, Derbent, Beyşehir
- 2.Group(mountain settlements),** Derebucak, Seydişehir, Yalhöyük, Ahırlı, Bozkır, Hadim, Taşkent, Akören, Güneysınır, Çumra, Karapınar, Ereğli, Halkapınar, Emirgazi.

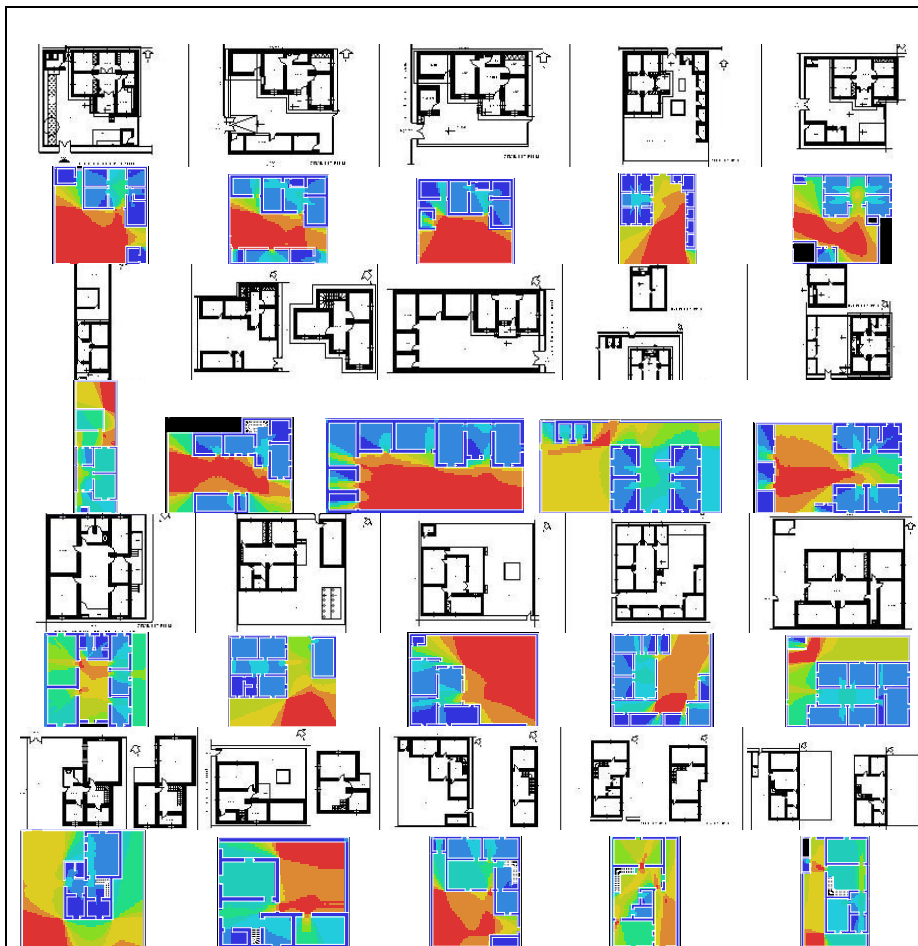


**Figure 2:** The approach to Konya from surrounding districts and plain and mount settlements. (Yılmaz Çakmak 2011)

#### 4. FINDINGS and EVALUATION

Selected 20 dwelling which is settled by families that migrate from village to urban areas have been analyzed and compared according to the characteristics of plain and mountain settlements. The dwellings have been analyzed and classified as (branched or complex) according to functional features, (compact or sectional) according to connectivity and (integrated, connected and mean depth) according to syntactic analysis. These analysis figured out by a mathematical software named UCL Depthmap.

**Table 3:** Syntactic analysis of 20 houses in city fringes (Yılmaz Çakmak 2011)



**Table 4:** The comparison of plain and mountain dwellings as functional structure and syntactic values\*

URBAN	Functional structure analysis values		Syntactic analysis		
	Beta Branched/Complex	Gamma Compact/Sectional	Connectivity	Integration	MeanDepth
PLAIN	0.909	0.180	1019	10.039	2.112
MOUNT	0.917	0,158	858	8.014	2.254

\* Functional structure and syntactic values of dwellings are calculated with the average values of 20 dwellings.

**Table 5:** The comparison of plain and mountain dwellings as functional structure and spatial relation

	SPATIAL FEATURES	FUNCTIONAL STRUCTURE	SPATIAL RELATION	SPATIAL DEPTH
PLAIN	Form of the rooms are rectangle,symetric and	*Intelligible, ( $\beta$ plain=0.536)	*Strong (Bağl=1019)	*low spatial depth (d=2.112)
	There are lots of functional auxiliary space	*Disconnected and sectional (G plain=0.197)	*High integration, movable and intensive spatial usage.(Entg=10.039)	
	Generally has only ground floor. Adobe material			
MOUNT	The form of rooms and courtyard is sectional asymmetric and narrow	*Complex and not intelligible ( $\beta$ mount=0.884)	*Weak and disconnected (Con.=858)	*High spatial depth (d=2.254)
	There is little auxiliary space	*Compact and connected (G mount=0.23).	*Low integration, reduction of movement and intensiveness (Entg=8.014)	
	Generally has 2 floor Stone and wood material.			

The space organization and functional structure of rural dwellings appear as a result of the influences of geography, social relations and life style in rural areas. This formation gives birth to a structural culture which has been shaped in years. When this structural culture which is differentiated as plain and mountain settlements and the settlement areas of those who migrated from rural areas to cities in city fringes, it is concluded that the geography, social relations and life style changed in time and this change affected the space culture as well.

In the cultural infrastructure which constitutes the rural area culture, the functional structure has not changed with the migration from rural areas to cities, there were some important changes in space uses, the relationships of spaces with each other and space depths. This change was highlighted being supported by space syntax method and graph method as numerical data.



Rural dwellings are the ones which are suitable for natural environment and field structure and which pay attention to all geographical and cultural values with their constructions considering climate data and fed by cultural values. The rural dwellings which are shaped by their own life styles shows a structure which ranges from one region to another and even from one village to another in the same region within the cultural richness of the Anatolian society. The rural dwellings which are a whole with their agricultural activities, social relations, natural architectures, and their houses and attachments are effective in the formation of natural environment and space culture. Therefore, the analysis of rural dwellings which are still trying to protect their special structure in the city fringes; however which are trying to accommodate to the city is of great importance. The important data obtained from these dwellings are that they transferred the traces of cultural identity to urban life in the process of migration from rural areas to cities and they protect their identities without ruining the backbone of the rural dwellings while making the spatial organizations in terms of adaptation to urban order.

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