FROM COURTYARD TO MONUMENT:

Effect of changing social values on spatial configuration of "the cities of the holy shrines" in Iraq

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Abstract

The cities of the holy shrines of Iraq constitute historic cores of big city centers that have grown and developed since hundreds of years ago. They were first established as shrines for religious personalities (Muslim, Christian, Jewish or from any other religion). The importance of the holy shrines is measured by the number of pilgrims visiting the shrine in any religious event. The most significant cities among these are (NAJAF, KARBALA, SAMARRA, KADHIMIYA), where the number of pilgrims may reach up to 2 million a day during religious events. Therefore, these cities represent main economic hubs of major cities according to the density of visitors during the religious tourism.

The original urban patterns of these cities are unique and prominent among other historic cores in the Middle East and Islamic cities. They have two main elements; the first is the organic compact traditional urban fabric and the second is the holy shrine building, which consists of the courtyard and the shrine. Likewise, the city does not embrace any other monument except the holy shrine with its minarets and domes. In contrary, there currently appears an obvious change in the cities of the holy shrines as a result of rational urban planning intervention. They are now connected together to form historic cores to the movement network in the big city and its new sectors. In spite of these changes, these cities continue to relatively preserve its urban system. Nevertheless, the main challenge of these historic cores is manifested in the changing social values and its impact on the spatial configuration, including the change of the main urban space of the city into a monument surrounded with a street that is accessed via wide vertical streets penetrating the old urban fabric, instead of the old Winding narrow pathways.

The Paper seeks to understand the effect of social value changes to the spatial configuration of these historic urban cores that lead to a conflict in the urban space values as a result of the impact of the linear streets and their new buildings, versus the continuity and the increased centrality of the urban structure arising from the increased. And the Paper also tries to find an answer to the following question: Is it possible to preserve the fundamental spatial configuration of the cities of holy Shrine which is based on Invariant social values despite the changed of morphological characteristics of the historic urban fabric?

Keywords: *the cities of the holy Shrines (chS), spatial configuration, social values, linear penetrating streets, urban intervention.*

Theme: *Historical Evolution of the Built Form*

1. Introduction

Social values and belief systems have significantly influenced construction techniques and the spatial organization of dwellings to satisfy the evolving community needs and to enhance the place identity and the community's sense of belonging. On the other hand, religion and belief systems contribute to the location and settlement pattern of different communities. Mosques, Shrine, temples and churches are significant built forms that enhance the identity of a culture.

Today, where spatial and temporal barriers are diminishing, the architecture, cultural heritage and their historical characteristics become dynamic values which combine local and global aspects. Beyond their physical importance, cities have psychological and social importance for their inhabitants. Therefore, historic traditional cities reflect the local socio-cultural values and psychological meanings of the city. For that reason, a holistic approach should be adopted to maintain the character of these valuable cities and move them forward in future developments to maintain social and cultural sustainability and help people to bind their lives with the past, present and future (Gur, Kirli, and Cahantimur).

This Paper discusses the urban intervention as one of the main problems that encounters the Arab historic cores as in the cities of the holy Shrines (chS) and all changes and transformations affected these cores by time after attempts made to merge the historic cores with the new urban sectors through master plans, urban development strategies and comprehensive transportation plans, by the clearance parts of the old urban fabric which caused the change social values and loss of synthetic's characteristics and the weak potential of achieving the physical and social requirements of the occupants of these cores.

1.2. The General Problem

It is identified in the separating central public space "the courtyard of the city of the holy Shrine" from their organic context and exposing it as if it was isolated monuments, resulting from the trend towards rational planning to link the historic core with new sectors in the major city. This approach allowed an intervention by using linear streets that penetrate these cores and divide its urban fabric, causing initially a social-spatial segregation. It is what made (chS) include two systems of values, first the original value system of the(chS) and the second system of contemporary life values associated with new sectors of the major city. As that the trend towards rational planning by using "the penetrating linear streets" is not always motivated by mere traffic considerations, but to enhance the shrine as a central monument building which attracting large numbers of national and international visitors (pilgrims) and to deliver adequate utilities to the Shrine.

In view of the continuity of the importance of shrines as a religious value that's behind the emergence of the historical core, the Paper discussed the problem through introducing the concept of "change and the stability of the social values "of the (chS) as historic cores. In light of the discussions of the studies that handled the general problem with this concept, the Paper problem was identified in the lack of a clear vision on the effect of changing the social values on the spatial configuration. However, the Paper thesis was "spatial configuration of space follows the invariant social values, even if the visible urban form of the (chS) is changed.

1.3. The objectives

The primary research objectives are:

1. Identify appropriate methodology to study and quantify the spatial configurations of organically evolved built environments of the (chS) in Iraq.

2. Build intellectual model explains the relationship between social values and special configuration.

3. Determine the effect of changing social values on spatial configuration of the (chS).

1.4. Methodology

In order to achieve the objectives of the research, it was required to adopt a methodology that was correlated to: (a.) Building an epistemological base that embraces the of the concept of the (chS) in Iraq as a historic cores, characteristics of the spatial structure, the social values associated with spatial configuration and then, reaching an intellectual model to determine the relationship between the social values and spatial configuration. (b.) Using space syntax theory as a tool to monitor the spatial configuration evolution to four (chS) in Iraq to investigate the effect of changing social values on spatial configuration system in a comparative analysis method for maps and statics.

2. Epistemological base

This review provides a summary of literature pertinent to the (chS)/cultural/social values related to the spatial configuration. Because the shaping of the built environment throughout the centuries has been and still is linked to the dynamism of culture, it is important to determine if changes in social values results in changes or perceived changes in the spatial configuration.

2.1. The cities of the holy Shrines

The (chS) are a historic cores which has survived in a relatively undamaged, and its integrity as an urban structure is therefore of high importance. It must be remembered the origin of the foundation of these cities were "spontaneous", grown slowly over time developed "by radiating outwards from the shrine, (Raymond A., 1984) and built right up to the walls of its large courtyard of the shrine which adhesive to the residential buildings. Those cities can be distinguished according to their function holy cities, which are centers of worship, pilgrimage or religious learning (Hourani A.H., 1970).

The importance of the holy shrines is measured by the number of pilgrims visiting the shrine in any religious event. The most significant cities among these are, Najaf, Karbala, Kadhimiya and Samrra, is now relatively preserved for historical and geographical reasons. It is basically a circular township covering 40- 70 hectares and of a radius of about half a kilometre. At its centre, the shrine dominates its entire dense urban fabric and strongly influences its functional as well as its socio-religious composition.

Figure 1: the locations of the (chS) for Iraq

2.2. Historical Evolution of the Built Form

One of the most important phenomena in the formation of these cities is that they emerged from the evolution of the tombs "capitals or major cities," usually located on the boundaries, and justification that these tombs surrounding the mausoleum to the Crown or a person in favor, then expanded and evolved after a while. As in "Samarra", in the early Abbasid period, the same area developed into a major cemetery on the edge of the ancient Samarra (a capital of Islamic world) which extend more than 30km elongate form along eastern bank of the Tigris, and, by the late Abbasid period (When turning the ancient capital city of Samarra and abandoned by its inhabitants) the cemetery evolved into a small walled township around the tombs of Ali Alhadi and Hassan Alaskari, which is now Samarra city.

A shrine was first built over the Imam's tombs, and afterwards the courtyard "the central big space". The gradual accumulation of urban fabric around the Shrine resulted in the distinctive historic urban form of "city of holy shrine" seen today. The Shrine's status in the town is primary - the town owing its existence to the Shrine.

The Shrine complex is roughly a square area of about (200 m each side) consisting of four major components:1-The outer, 12 m. high wall pierced by 10 portals and containing some 80 rooms;2- A U-shaped open courtyard which surrounds the inner building proper except its one side;3-The tomb building which is about 50 x 50 m. overall, consisting of the inner sanctum surmounted by one or two superb gilded domes directly over the silver-screened; and the surrounding inner "riwaq" with its flat-roofed outer colonnaded porticos. The corners of the tomb building are expressed by four 40 m. high minarets with canopied balconies and gilded upper sections. (Warren J. 1980)

In the last sixty years, a lot of changes conducted on the urban structure of this historic cores, new streets have been constructed and considerable modern commercial and residential developments have quickly penetrated and surrounded the parts of the Core itself. Of necessity new streets were forcibly and somewhat insensitively driven through the dense historic fabric, as well as the recent clearance of the areas immediately surrounding the Shrine, not only destroyed more than 20 hectares of some of the most architecturally interesting parts of the

Core, but also brought an inevitable array of modern multi-storey blocks that are unsightly and unsympathetic to the overall historic character of the town.

Today the (chS) in Iraq are a holiest places for Shias and Sunnis Muslims after Mecca and Medina, and many make pilgrimages to the site. The religious importance of the each shrine attracts large numbers of national and international visitors. 5,000- 10,000 people visit (pilgrims) the Shrine on a normal day, rising to 50,000 - 100,000 people on Thursdays, on special religious days over 6,000,000 people visit the Shrine in a 48 hour period[1]. This is what makes these cities in front of the challenge is clear: either the maintain and preserve the urban traditional fabric and social life, either to provide adequate services for the large numbers of pilgrims in order to achieve urban management appropriate for the religious core function of the city and the Shrine, and this is what makes these historic cores unstable physically and socially permanently.

2.3. Spatial characteristics and social values of Arab towns and the (chS)

The original urban patterns of these cities are unique and prominent among other historic cores in the Middle East and Islamic cities. They have two main elements; the first is the organic compact traditional urban fabric and the second is the holy shrine building while other cities included on other distinctive landmarks such as the Citadel and the governor's mansion and administrative buildings as well as the mosque.

On the other hand, it seems difficult to explain the apparent similarities in the street configuration or the differences in the structure of the urban grid of the between the Arab city and the (chS). Where many of the previous studies of the physical structure has emphasized four characteristics in the structuring of space of Arab cities ,which based on the correlation to " religious and social values " or norms, traditions , rituals and rites:

1. **PRIVACY**: The division of the city into two separate domains, the public and the private; (Balbas. T., Marcais. G., Planhol. X., Raymond. A., Lapidus) so "the factor which distinguishes a Muslim town from a Christian one, namely the separation of commercial quarters from residential areas, where as the residential quarters, as it were, turn their back on the commercial arteries leading to mosque, and more generally, the separation of the public from the private domain.

2. **HIERARCHY**: A streets system seen as hierarchized sequence and a hierarchical organization of open space based on three fold hierarchical model, from the most public thoroughfares linking the city gates, across the semi-public streets which give access to the separate quarters, to the more private small alleys and dead-ends which lead to the houses. (Lynch K., 1981), (Hakim B., 1986), (Delaval B., 1979), (Abu Lughod J., 1980), (Gustave E., 1970)

3. **TERRITORIALITY**: The division of the urban fabric into distinct quarters: the third characteristic repeatedly acknowledged as prevalent in the of Arab cities is the division of the urban fabric into self-contained quarters along tribe or professional lines and has a social homogeneity , each quarter of the city has its essential services, and its gates locked during the night,. The number of quarters in the city depended upon the extent of the social heterogeneity of its population. (Lynch, 1981). (Grunebaum G. E., 1955), (Ismail A. A., 1972). While others argued that the security as a "social value" is the main driving force behind the division of the city into quarters, providing consciousness of social identity and security**. (**Khan S. M, Serageldin I. and El-Sadek S., 1981, p. 164), (Roberts H., 1979, p. 39).

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[1] The Ministry of Planning-Iraq– report of Central Statistics Organization-2011

4. **CENTRALITY**: centrality of the public facilities, especially the great mosque and the market streets. (Burckhardt T., 1980)., (Grunebaum G. E. V., 1955)., (Balbas T., 1942,); (Lebon J. H. G., 1971). On the other hand, the importance of religion is, symbolized by the position of the great mosque which is, always located in the centre of the town and surrounded by a commercial complex.

This characteristic is different in the "spatial system" of the (chS) for two reasons: The first, the walls of the large courtyard are adhesive to the residential buildings that form the organic fabric, and the courtyard does not contain any facades from the outside, but only a main entrance with four sides. The second, that means turning arterial roads key to the streets closed end in the evening. It was the most important characteristic of cities shrines from other Arab cities that was the courtyard or central open space of the shrine which is not surrounded by streets. The center represents the effective only religious and social .So, the main road lead from the gates city to the entrances of great courtyard will turn to a cul-de-sac when the entrances locked. (Warren J.), (Gustave E., 1953)

Figure 2: a courtyard walls are adhesive to the residential buildings in Najaf-before the intervention

Centrality is ascribed to nodes located on short paths between many other nodes in the network, thus identifying funnels in the flow of information. It takes into to length (Stephenson and Zelen, 1991; Wassermann and Faust, 1994). It is important to distinguish central places from the concept of centrality as introduced above. Central places refer to a specific social and spatial organization, in this context a chiefdom and a hierarchical settlement pattern. Centrality is an analytical technique which is used in the investigation of social interaction networks in general. A central place will invariably possess high centrality, but high centrality may also exist in a system without central places.

2.3.1. A new configurational element

An extra element which lacks it by organic Arab towns is a major path for the movement marches crowds of pilgrims' performers of religious rites and rituals.

The rite and ritual route is considered the most important in the streets system in terms it's the most commonly used by the local population and visiting pilgrims and the most versatile of where religious and everyday life activities in addition to micro-economic activity, so the route represents the integration core for the global level of the (chS) (Loumi, 1987; Karimi, 1997; Hillier, 2000) therefore the (rite and ritual route) represent the centrality of the public global facilities of (chS).

So, the structure of the (chS) is essentially determined by two elements associated with the essential social values, first: the central positioning of the courtyard of the Shrine which represent the main access point and highly accessible from all its surrounding points (areas), and the second: the centrality of the public global facilities is Processions path of the religious rites which links three places in the city (gate - the shrine - Other Gate). (Gustave E., 1953)

Figure 3: density of crowds of pilgrims in the (ritual route) in KARBALA after the urban intervention

2.4. Social value

"Values are the ideals that give significance to our live, that are reflected through the priorities we choose and that we act on consistently and repeatedly". Brian Hall (1994:39)

Planning and urban design reflect the values of the people involved-whether these be professionals or not. (Rapoport-1977). Several of theoretical and architectural theses have concentrated on identifying the relations between social values and built environment for both dimensions formal and spatial. For the spatial dimension has been associated with several concepts including" values, embodied in lifestyle by choices and activities, (Rapoport, 1977), social values are thoroughly integrated into everyday life and the dominant social values on the everyday life (Joas, 2000; Foucault, 1986), interaction between spatial organization and social values (Levi-Strauss, 1967; Giddens, 1977), principles of urban layout reflects certain fundamental social values (Lynch, 1981) and, Spatial relations are inextricably intertwined with a society's underlying principles of spatial organization (Giddens, 1977; Sewell, 1992; Soja, 1985)."

For the formal dimension has been associated with several concepts including "Social values behind the meanings attached to the built environment (Clifford, 1992, P. 88; Knox, 1984; Williams and Stewart, 1998; Carmona, 2000; Beckley, 2004), the relationship between urban form and social values (Carol Leggitt, 1964) and value affect city form (Lynch, 1981). Obviously, the fact that urban forms, structures and spaces reflect societies that have created them and epochs, in which they have appeared, is not new. This conclusion is drawn by different city and urban culture researchers (C. Alexander, E. N. Bacon, L. Krier, C. Mougtin, M. R. G. Conzen, S. Kostof, V. Kavolis)

For Hillier, each aspect of the physical and the spatial, already has a social value, and provides opportunity for the further elaboration of this value, in that the physical form of the building may be given further cultural significance by the shaping and decoration of elements, and the spatial form may be made more complex, by conceptual or physical distinctions, to provide a spatial patterning of activities and relationships. (Hillier, 2007, p. 15). Social values are represented in visible form, and the continuing debate about architectural ideas and their relation to social values that is conducted between architecture and its public. And, an architectural intention is usually a proposal to create a social outcome through a spatial form. Intentional statements in architecture therefore inevitably associate social values with spatial concepts, and become in effect propositions about the relation between architecture and how life should be lived in space (Hillier, 2007, p. 331-33).

While, the buildings operate socially in two ways: they constitute the social organisation of everyday life as the spatial configurations of space in which we live and move, and represent social organisation as physical configurations of forms and elements that we see. Both social dimensions of building are therefore configurational in nature, and it is the habit of the human mind to handle configuration unconsciously and intuitively, in much the same way as we handle the grammatical and semantic structures of a language intuitively (Hillier 2007, p. 3).

Consequently, there are two dimensions for the effect of social values on the configurational system: first, the spatial dimension which is linked to everyday life spatial relation, urban layout, spatial organization and patterns of activities therefore it affects on the spatial configuration of the space. Second, the formal dimension which is linked to the visible form, urban form, physical pattern, and formal physical relations therefore it affects on the physical configuration of the form.
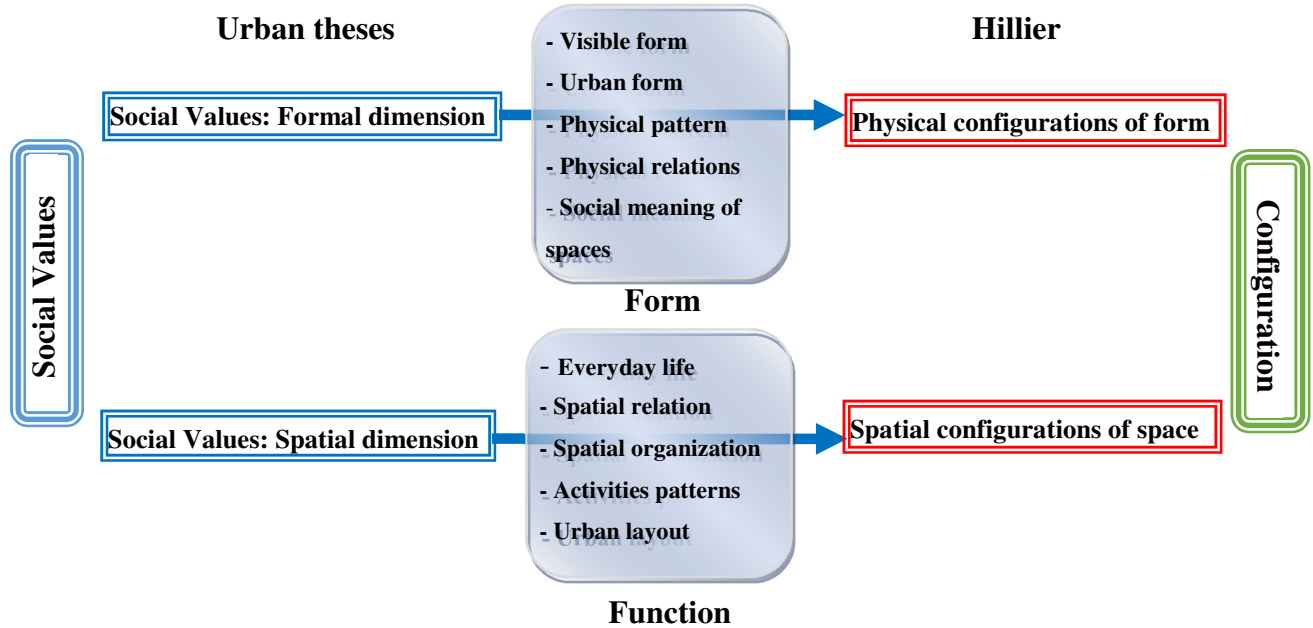
Figure 4: Intellectual model explains the relationship between social values and spatial configuration.

2.5. Changing social values

Le Corbusier shared with the other utopian designers and theorists discussed here was a belief that changing the spatial layout of cities would lead to changes in social values, conditions and lifestyles. Their work has been criticized since the late 1970's as utopian, a criticism that reveals how, according to 'social idealism leads so quickly to social catastrophe' (Jencks 1985).Where the design value of Social change can be described as a commitment to the change of society for the "better" through architecture and functional objects (Zipf, 2004; Hughes, 1991). And this changing is often associated with political, economical forces and subsequent building program such as the social building initiatives found in Europe between and after the World War I and World War II (Smith, 2004; Sanoff, 2000).

One of the most prominent urban change during the 1930s that took place in Iraqi cities was the emergence of new suburbs outside the historic center or the walled heart of the city. By the 1950s the urban picture of these cities was turned upside down, new streets that cut through the traditional fabric increased and the suburbs expanded, prompting efforts to come up with the basic urban planning for the city or parts of it. However, the influence of modernism thinking on the society has been the greatest. The skyline became pierced by high rise building that changed its traditional look and with the introduction of new material and methods of construction the horizontal line of the city changed and became filled with multi- story buildings and concrete structures with modem finishing material that replaced the traditional forms and features. Progress somehow was linked to the western model or modern thinking social habit and norms began to break away from the traditional limits.

Changing social values for "urban historic cores" is very difficult when the religious beliefs and practices form the center of social values and cultural life for the populations of these cores as in the (chS). But changing social values that can happen by rapid and sudden change, when the principles of cutting through the historic fabric in the name of hygiene and traffic–in a word, of modernisation- were still largely applied.

After 1950s, urban intervention in the (chS) had led to many changes identified by generating two patterns of the spatial configuration for a spatial relation between linear streets with the

old organic fabric: before 1990s: (2nd stage) The "axial linear street" segregated from the organic fabric and integrated with vehicular movement system of major city, that helped the establishment of two lines of high commercial buildings alongside the "axial linear street" (new building typologies thoroughly), and then dividing and destructing the urban structures of the (chS) and disrupting the physical visual unit of the urban structure ,it makes a visual and social segregation through segregating the residential area from the general new spaces and segregate it from the remaining parts of the (chS). After 1990s, (3rd stage) The "axial linear street" re-integrated with the organic fabric after liberated from car traffic, and re-integration of urban structure of the (chS) for both the physical and functional sides between the old and the new through penetration of movement spaces between them by mean a spatial modulating of the two lines of the buildings alongside the "axial linear street" with the cutting ends of the narrow twisted alleys of the old fabric. In these spaces, usually overcrowded, most of all walk visitors, shoppers. Ground floors are mainly turned into shops, restaurants, and even into large department stores. The final setting is totally organised in order to create that kind of popular atmosphere that seems necessary to buy, consume and pay any type of product. The same recipe is being used in a contact areas between old and new: pedestrianisation, commercialisation, gentrification.

The phenomenon of segregation and urban re-integration resulting from an intervention in the historic cores usually lead to the loss of many of the characteristics of the built environment related to social values .But still some of these constant values which represent the invariant values and the essence of the emergence of the (chS).

As it was observed that the number of visitors is increasing since last 20 years while maintaining the fundamental social values represented by an attachment of rites and rituals with the everyday spatial relationships in spite of all the changes in visible form, urban form, physical pattern, and formal physical relations resulting from the operations that produced new types of commercial and utilities activities and changed the social relations of organic fabric. This led to change many of the social values associated with the spatial characteristics of the Arab towns.

Thus, the "invariant social values" affecting the spatial configuration of the space of (chS) which is related with the religious nature of functional central of the Holy Shrine, but not related with form concepts as in the cosmic model as set forth by Lynch: (•Axial line of procession, Orientation due to the relation to the sun and seasons, •The regular grid,• Bilateral symmetry, •Landmarks, •The sacred natural environment) (Lynch, 1987: 74), so the urban form and physical patterns are subject to change over time, but the "functional stability" which is related the "invariant fundamental social values" lead to the invariant fundamental spatial configuration.

2.6. Spatial configuration

In syntax terms, spatial configuration means relations between spaces which take into account other relations, and so in effect relations between all the various spaces of a system. Space syntax, in effect, takes certain common measures of relationality in graphs, (Hillier and Hanson, 1984). These measures are essentially formal interpretations of the notion of spatial integration and segregation. And configurational theories, methods, and tools contribute to more nuanced descriptions of spatial relations on both a local and a comprehensive level and analysis has the ability to shed light on essential differences in neighborhoods and in the city as a whole.

Thus, the space syntax methodology with its techniques to quantify configurations; can certainly help to deduce the changing and stabilizing of the social values after the intervention in the (chS). Hence, axial line analysis is chosen as appropriate method for Paper under consideration,

as it captures the basic features of a system of spaces in a built environment. The space is represented by straight lines, so-called axial-lines. In brief, the space to be examined is modeled by 'fewest and longest straight lines covering all convex spaces'. (Hillier and Hansson, 1984) These axes are the representative lines of sight or visibility- and movement – or permeability. Therefore, the configurations of the four (chS) ; are inspected by representing the system of spaces through axial maps and doing such type of syntactic analysis; so Depthmap by ULC is identified and used for the study.

3. Procedure for Analysis

Based on the previously mentioned about the relationship of the invariant social values (for inhabitants and visitors whose increases their numbers in some occasion several times the number of inhabitants) with tow spatial characteristics of (chS) What distinguishes it from other organic Arab city: 1st - Central positioning of the Shrine (the main access point and highly accessible from all its surrounding points). 2nd - Centrality of the public global facilities which links the edges with the Shrine building as a rite and ritual route (gate - the shrine - other gate).

The analysis of the selected (chS) aims at determining the effect of changing and stabilizing of the social values on spatial configuration on the local and global level, thus, this comparative analysis will highlight whether a repetitive pattern of spatial configurations.

The most important parameters can quantify the spatial configuration is the connectivity of an axial line measures the number of lines that directly intersect that given axial line. Thus connectivity of a space represented as an axial space, denotes the number of immediate neighborhoods of a space. Integration of a space is by definition expressed by a value that indicates the degree to which that space is integrated or segregated from a system as a whole (global integration), or from a partial system consisting of spaces a few steps away (local integration).The correlation between connectivity and global integration is an important indicator of how clear an urban system is for its users; and is called as Intelligibility. The relationship between local integration R3 and global integration Rn, is called synergy. It indicates the relationship between parts of the spatial system to whole system.

The historical and morphological evolution in three different stages is highlighted by using syntactic maps of the urban structure of the (chS): from 1920 to 2012

1st. Stage: in (1920s) with two different cases with two axial maps: (A) Without central courtyard. (B) With central courtyard. To measure the impact of the courtyard as a convergence space of the main axes, a central location and distributor correlated with a specific social values of the fundamental characteristics of the (chS).

2nd. Stage: after urban intervention (1950s-1980s) .A stage of segregation organic urban fabric by a linear penetrating street.

3rd. Stage: after (1990s). A stage of re-integration organic urban fabric by re-weaving the deform organic fabric with the linear penetrating streets which turns into a mainstream.

3.1. Findings: syntactic analysis

3.1.1. Before the intervention

1st. Stage (1920s): The comparative analysis of two different configurational cases of the four (chS)s: (A) Without central courtyard) – (B)With central courtyard, where analysis shows the following results:

1- Central courtyard: the central place and the main access point with highly accessible from all its surrounding areas. It is the centre of social and cultural everyday life, where it appears its overall impact on the global level, therefore in the case (B) rising average values of(connectivity, Integration [HH],Integration [HH] R3, Intelligibility, Synergy) rising number of Axes ,and lower the value of Mean Depth in all four (chS). As in the axial maps: figure (5-A1, A2, B1, B2), (6-A3, A4, B3, B4) and the table (1) Numerical Synthesis.

2- Rite and ritual route: represents integration core, where it appears its overall impact on the global level, always its path associated with the two gates of the city east and south, which is evident in the axial maps of (Najaf, Kadhimiya, Samarra) except (Karbala), the direction of the path associated with the northern and southern gateway as a result of the presence of two Holy Shrine. figure (5- B1,B2), (6- C1,C2)

At this stage, case (B) the (chS) had kept all its original characteristics (mentioned previously) that related to a social values before the intervention Urban.

Table 1: Numerical Synthesis: Comparative analyses of the (chS) before the intervention (1st Stage)

	KARBALA		NAJAF		SAMARRA		KADHIMIYA	
	1920without Courtyard	1920 with Courtyard	1920without Courtyard	1920 with Courtyard	1920without Courtyard	1920 with Courtyard	1920without Courtyard	1920 with Courtyard
	A1	B1	A2	B2	A3	B3	A4	B4
Connectivity	2.3734	2.5049	2.57549	2.80129	2.78302	3.13761	2.5298	2.61692
Integration [HH]	0.3919	0.458708	0.52368	0.62373	0.5253	0.6606	0.40916	0.44638
Integration [HH] R3	1.1301	1.16201	1.2344	1.28666	1.3251	1.4133	1.20132	1.2237
Mean Depth	21.7773	19.0851	15.23	13.1618	12.9076	10.651	21.3603	19.876
Number of Axes	1395	1416	914	931	424	436	1593	1608
Intelligibility	0.05818	0.1607	0.118795	0.234555	0.2756	0.4187	0.115192	0.150124
Synergy (local_R-3/global)	0.21686	0.3389	0.369356	0.543778	0.4952	0.6513	0.299357	0.320762

3.1.2. After the intervention

The comparative analysis of two different configurational cases: 2nd Stage (1950s-1980s) and 3rd Stage after (1990s), where analysis shows the following results:

2nd Stage:

1- Urban intervention policies in (chS) have depended on using the penetrating linear streets as a main goal to correlate the (chS) to the new sectors in the major city, so the integration values of linear streets represents the highest.

2- Linear streets cannot be established unless after the replaced a parts of the organic urban fabric with two lines of buildings alongside the penetrating streets in the historic centers, so, the lower average values of connectivity, Integration [HH] R3, Mean Depth and a lower values of (number of Axes). As in the axial maps: figure (5-C1, C2), (6-C3, C4) and the table (2) numerical Synthesis.

Table 2: Numerical Synthesis: Comparative analyses of the (chS) after the intervention (2nd Stage, 3rd Stage)

	KARBALA		NAJAF		SAMARRA		KADHIMIYA	
	(1950-1980s)	After 1990s	(1950-1980s)	After 1990s	(1950-1980s)	After 1990s	(1950-1980s)	After 1990s
	C1	D1	C2	D2	C3	D3	C4	D4
Connectivity	2.3573	2.6319	2.6425	2.903	2.765	3.007	2.5057	2.8190
Integration [HH]	0.5541	0.8097	0.6710	0.94395	0.7147	0.844	0.5072	0.67016
Integration[HH]R3	1.1278	1.2991	1.27309	1.4885	1.31987	1.4506	1.1971	1.33975
Mean Depth	15.7581	10.8143	12.1553	8.729	9.908	8.4978	17.6382	13.4178
Number of Axes	1178	1144	800	728	397	394	1479	1426
Intelligibility	0.1018	0.1958	0.1510	0.1538	0.26	0.2730	0.0855	0.107764
Synergy (local_R-3/ global)	0.3193	0.5304	0.4165	0.617837	0.4788	0.5132	0.2579	0.473226

3- From courtyard to monument: Transformation the central space which is associated with the natural movement in (chS), to a monument of which is associated with the transit car movement in within the new integration core, so, the lower values of the (Intelligibility and Synergy). As in the numerical Synthesis in table (2)

The organic urban fabric have segregated from the linear streets and its new building with the weakness permeability between the old and the new, natural movement (depends on pedestrians movement) have segregated from transit car movement in the (chS) has helped to keep the importance of the route of the rites and ritual, which attached to the religious beliefs and the cultural life ,which attracts of the micro-economic activity by encouraging change many of the residential buildings to commercial , this is due to strength correlation historical route religious ,economic and social life of the (chS), which mainly depends on pedestrians movement and favored by visitors and pilgrims local and international.

Accordingly, there are two segregated movement systems in the 3rd stage: the first system to serve the Shrine and link it with the car movement, the second the old system linked to rites and rituals route, which is associated to the micro-economic activity of the (chS), In other words, a correlation the Shrine with the route of the rites and ritual (r.r.r) through two different movement systems.

A Spatial configuration of the 2nd.stage has helped to deduce the culture specific human preferences about space of (chS). This is differs from the premise of Hillier which states "socio-cultural factors generate the differences by imposing a certain local geometry on the local construction of settlement space, while micro-economic factors, generate the invariants" (Hillier, 2001).

3rd Stage:

4- A Spatial configuration of the 3rd. stage after liberated from car traffic reveals re-integration of urban structure of the (chS) for both the physical and functional sides between the old and the new have achieved at the and local level through penetration of movement spaces between the old and the new, therefore , in 3rd stage rising average values of (Connectivity, Integration [HH],Integration [HH] R3, Intelligibility, Synergy) rising number of Axes ,and lower the value of Mean Depth in all four the (chS). As in the axial maps: figure (5- D1, D2), (6-D3, D4) and the table (2) numerical Synthesis.

6- Re-integration spatial system is achieved by:

•   Re-integration urban grid through the Integration the movement system between the new (the linear streets) and the old (the old urban fabric) is based on the penetration of movement spaces between the old and the new which helped to transformation the ground floor land use to commercial in the connect areas between the old with new fabric .

•   A correlation the Shrine with the route of the rites and ritual (r.r.r.) in one movement systems as a result of turning "movement system" the (chS) into only a "pedestrian system" which helped to turned the linear streets to be (rites and ritual street) that is most strongly associated with the integration core and micro-economic activity, thus, the linear streets in 3rd.stage formed the route of cultural life and micro-economic activity.

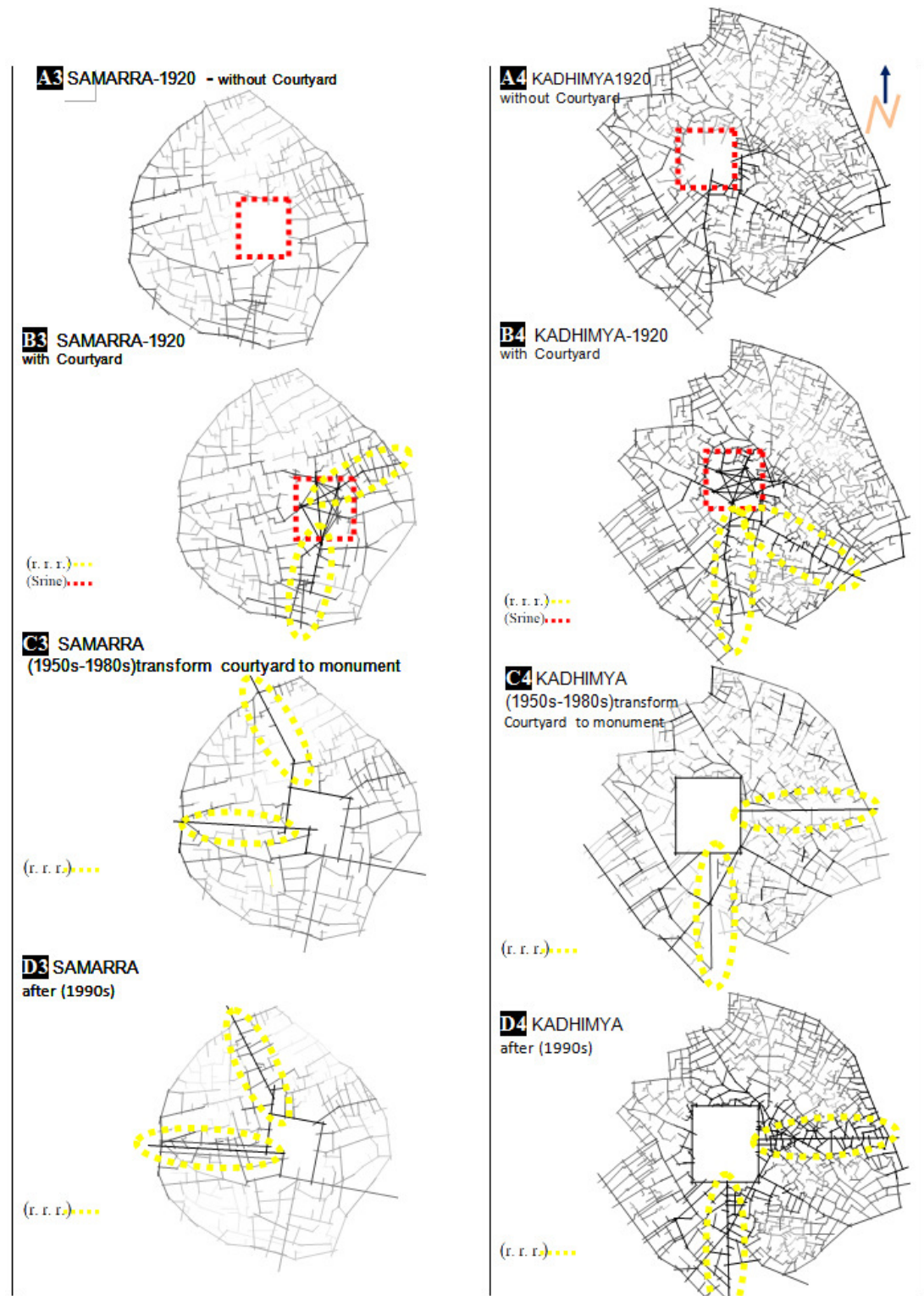**Figure 5:** Integration 25%Rn maps-the historical Evolution of the Built Form of NAJAF&KARBALA

Figure 6: Integration 25%Rn maps-the historical Evolution of KADHIMIYA&SAMARRA

3.1.3. The comparative analysis of two different configurational cases of the 1st stage (1920s) and 3rd stage after (1990) in Al-Kadhimiya.

Through the comparative analysis of two different configurational cases of the 1st. stage (1920s) and 3rd stage after (1990) in Al-Kadhimiya, Figures (7), (8), as we can see that the Shrine and the Route of rite and ritual (rrr) for both stages are:

1- Located in the integration core, it is the centre of social and cultural everyday life, where it appears its overall impact on the global level.

2- They have the highest values of the global and local integration, control, choice, connectivity shows the congruent the synthetic cores on the same spaces in the urban structure.

3- Although, after the changing of urban form in the 2nd stage, It is what led to the change of the position and direction of Route of rite and ritual (rrr) in 3rd stage and transformation of the courtyard (Space) of the Shrine to monument (object) and transformation of the main access point of courtyard to roundabout junction of the monument, but in the 3rd stage the shrine is still within integration core with highly accessible from all its surrounding points. Figure (7).

4- The (natural movement of people to and from the courtyard) influenced by the spatial configuration of the city has a high possibility in the sample of being in the courtyard of Shrine and in the route of rite and ritual. This tendency in the sample indicates that the courtyard is located in the integration core. A further consideration of the role of the courtyard to act as a main access point with highly accessible from all its surrounding areas.
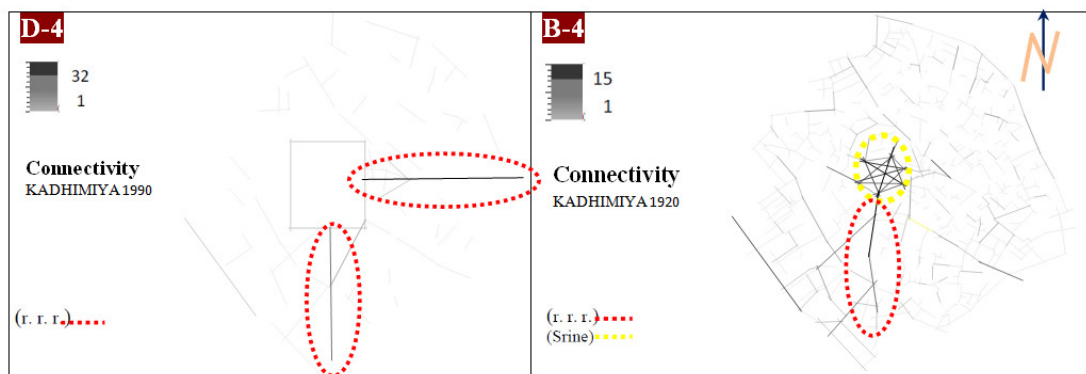

Figure 7: The comparative analysis of connectivity between 1st stage, 3rd stage of Al-KADHIMYA
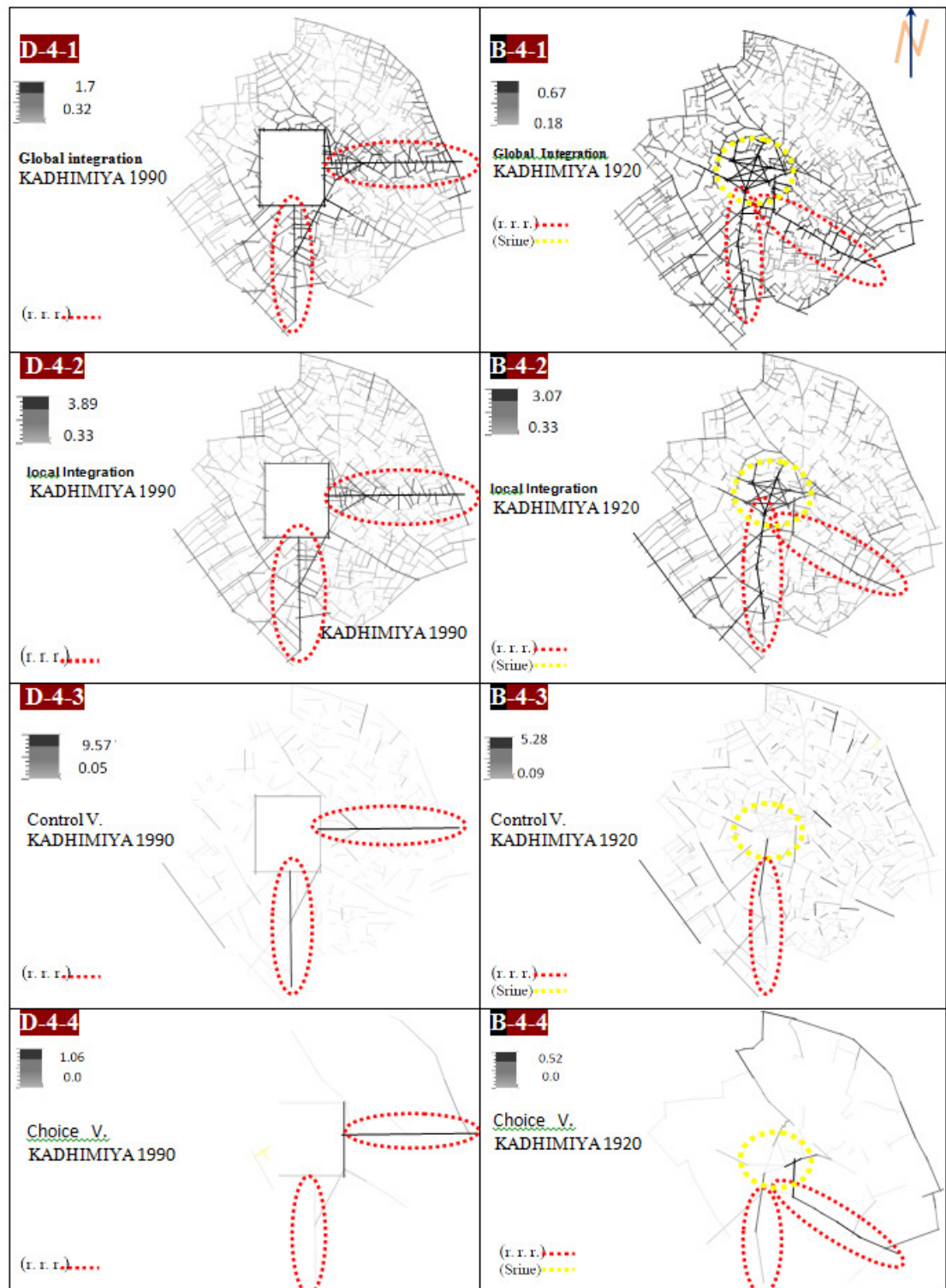
Figure 8: The comparative analysis of two different configurational cases 1st stage, 3rd stage of Al-KADHIMYA
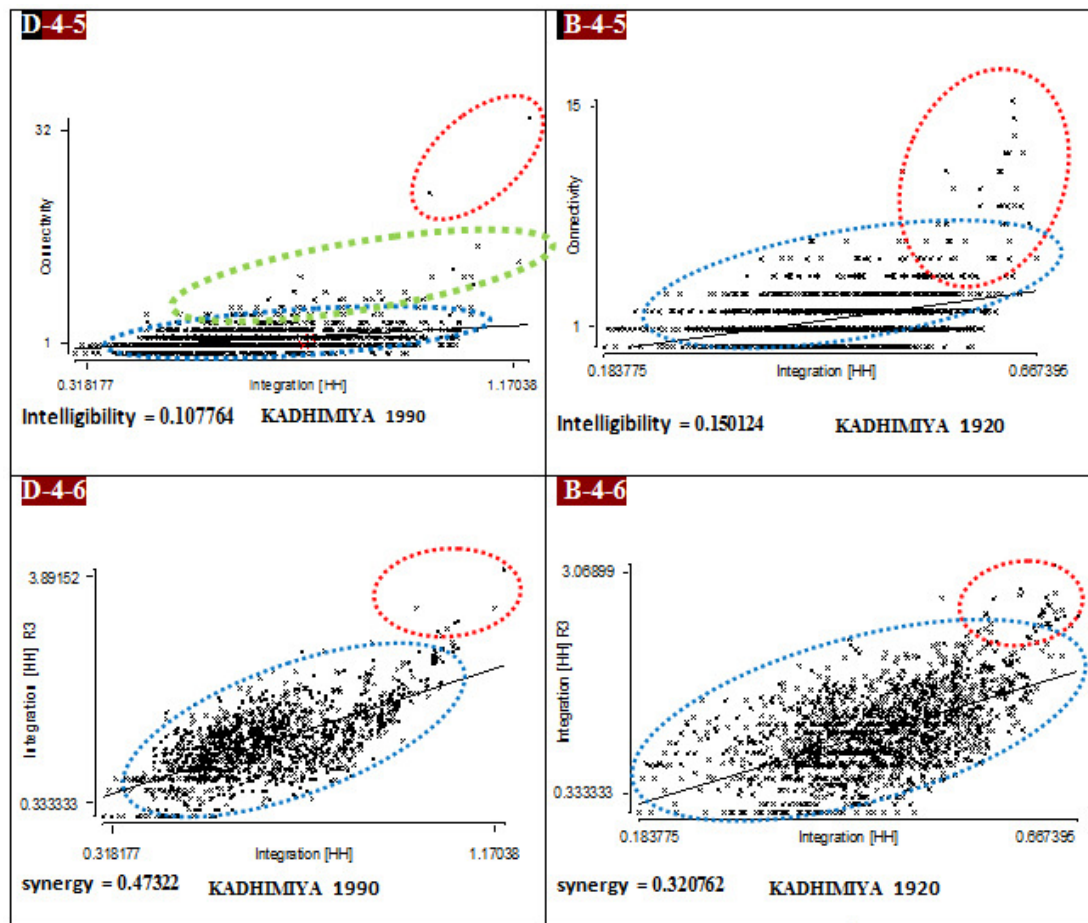
Figure 9: Scatter plots showing intelligibility and synergy of the two different configurational cases 1st stage, 3rd stage of Al-KADHIMYA

The scatter plots showing the intelligibility of the street layout of Al-KADHIMYA in tow periods:

In1920 (Figure 9 (B, 4-5)), shows smoothly gradient values, and most highest integration (0.66) and connectivity (15) in the shrine (courtyard) and the route of the rites and rituals(r.r.r). In 1990 (Figure 9 (D,4-5)), shows, first: average values (represent the old organic fabric closest to the average of the intelligibility), Second: extreme values represent the new fabric of linear street(r.r.r) and surrounding street of Shrine, which indicate that they are more integrated than the average level of the whole city(1.17), third: in between values (represent the Extension links between of the ends street of the old fabric and axial linear streets(r.r.r.)) causing decrease of the intelligibility value , which helped to changed the patterns and formal space of the old fabric and changing the activities patterns and thus changed the social values of inhabitants.

The scatter plots showing the synergy of the street layout of Al-KADHIMYA in tow periods:

In1920: (Figure 9 (B, 4-6)), shows smoothly gradient values, and most highest global integration(0.66) and local integration (3.06) in the shrine (courtyard)and the route of the rites and rituals(r.r.r). In 1990 (Figure 9 (D, 4-6)), shows, first: average values (represent the old organic fabric closest to the average of the intelligibility), Second: extreme values represent the new fabric of linear street(r.r.r) and surrounding street of Shrine, which indicate that they are more integrated than the average level of the whole city (global integration(1.17) and local integration (3.89), causing decrease of the synergy value.

The high values of synergy is the result of re-integration of the old fabric (which represents the local level) with the **axial linear streets**(r.r.r) and the shrine(which represents the global level, which helped the emergence of the ideal state of the interrelationship between the local level and global of urban structure, where an axiality is the means of linking the local 'place' to the global structure.

Through synthetic analysis mentioned above this paper is trying to prove, the urban form and physical patterns are subject to change over time, but a stability of the fundamental function of the (chS) which is related to the "invariant fundamental social values" lead to the fundamental spatial configuration of (chS) and(everyday life spatial relation, urban layout, spatial organization).

Where the fundamental spatial configuration is related to the tow element at global level of erban structure of (chS): - Central place of the Shrine (the main access point and highly accessible from all its surrounding points) and - Centrality of the public global facilities which links the edges with the Shrine building as a rite and ritual route (gate - the shrine - other gate). In contrast, the local level of (chS) represent the old urban fabric which heavily influenced by the configurational properties that have been changed morphologically by modernization processes.

Thus, the re-integration of the old fabric with linear streets represents restore the natural relationship between the shrine and fabric (natural movement) based on the spatial configuration of the integrated urban grid between the old and the new, while maintaining the fundamental spatial configuration of the (chS).

4. Conclusion

This paper revealed the importance of the social values (religious beliefs and practices) for the (chS) in determining the main characteristics of their urban structures.

Through the space syntax theory and tools, the effect of changing social values on the spatial configuration has been confirmed, after it has been building an intellectual model of the relationship between the two variables. And made an attempt to prove the hypothesis, which was "spatial configuration of space follows the invariant social values, even if the visible urban form of the (chS) is changed, so the spatial configuration is more invariant from formal configuration of the (chS). While the variant social values correlates with urban form and patterns which are subject to the human and social needs and that it changing over time.

An integration that has occurred between the new (the linear streets) and the old (the old urban fabric) in the cities of the holy Shrine is based on the invariant social values as a forces that generate the configurational relations between the centre of cultural life) representative by the new broad linear street as (ritual route) which passes and contains the monument (Shrine)as a central place and the with the rest of the narrow winding streets of the old fabric, and this configuration represent the invariant genetic patterns that specify these cities. This view contradicts with a concept (design principles stemmed from Islamic law), because of the values can be represented in many forms while maintaining their "importance, necessity and centrality" for society.

Consequently, this paper confirms it is possible to preserve the old urban historic fabric despite the changes in the social values lying behind the formal configuration of this fabric and the continuity of its "invariant social values" that correlated to the religious function that determines the spatial configuration of the (chS).

It is important to highlight the social values as an operators for a spatial configuration "of the cities of the holy shrines" especially it is receives" the millions going to the shrine, which exposing "urban fabric" in danger of complete elimination and immigration the societies, as it happened in (Al-Medina in KSA) where the historical urban fabric surrounding the mosque of Prophet was removed entirely and replaced it with a high buildings as a gentrification approach, necessitating the need to pay attention to this cities as a world Heritage.

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